



ABOUT THIS **REPORT**

This Sustainability Report is an Executive Level Annual Statement on our submission to the Environmental Discretionary Reward (EDR) scheme. It also provides an update on progress against our Sustainability Strategy. Details of our Sustainability Strategy are included in this report on page 8.

The EDR provides a financial and reputational incentive for GB electricity transmission owners, encouraging high standards of environmental management as well as facilitating the transition to low-carbon energy systems.

The scope of this report is generally focused on performance data for the financial year reporting period from 1 April 2019 to 31 March 2020, however, future initiatives and activities are also described.

The report is structured in three sections: an introduction which sets out the context of our sustainability actions and strategy; the main body of the report which sets out our strategic areas of focus and the initiatives we progressed in 2019/20 to help deliver improvements in these areas; and a final section on the year ahead and an opportunity for stakeholders to feed in to our plans.



2019/20 IN FOCUS

A total of

6.3GW

of renewable generation connected to our network of which 48 MW connected in 2019/20

Shetland HVDC connection needs case approval

ISO14001 certified

Setting a

Science Based Target

initiative "world first" carbon reduction target

An estimated

4.3 million tonnes

of CO2e displaced in 2019/20

First

SF₆ free technonolgy

energised at Dunbeath 132kV substation

Submission of our

RIIO-T2 (2021-26) **Business Plan**,

A Network for Net Zero

Biodiversity Net Gain (BNG) methodology developed receiving

two national biodiversity awards

No environmental prosecutions or major incidents

in 2019/20



Contents

| Executive introduction | 04 |
|---|----|
| Our response to COVID-19 | 05 |
| The environment we operate in | 06 |
| Contributing to the United Nations Sustainable Development Goals | 07 |
| Our sustainability strategy | 08 |
| Our RIIO-T2 Business Plan | 09 |
| Connecting for Society | 10 |
| Tackling Climate Change | 17 |
| Promoting Natural Environment | 24 |
| Optimising Resources | 28 |
| Supporting Communities | 31 |
| Growing Careers | 36 |
| Summary of 2020/21 | 40 |
| Consultation feedback | 42 |
| Glossary of acronyms | 43 |

WELCOME TO THE SCOTTISH HYDRO ELECTRIC (SHE) TRANSMISSION **ANNUAL SUSTAINABILITY REPORT 2019/20**

I am delighted to share our annual Sustainability Report which highlights our Sustainability performance and progress in implementing our Sustainability Strategy.

Whilst this report provides an update on our sustainability activities over the last financial year, these efforts are contextualised by the challenges that Covid-19 has presented to our business, our county and our world since early 2020. Our overriding priority through the pandemic has been to protect and maintain network operations to keep electricity flowing while ensuring the safety of our customers and colleagues. Recent attention has rightly focused on coronavirus, but climate change hasn't gone away and remains the critical challenge of our generation. Over the past year we made significant achievements in delivering our sustainability plan and supporting our purpose to enable the transition to the low carbon economy.

In June 2019 we aligned our Sustainability Strategy to support Net Zero and placed tackling climate change at the heart of our RIIO-T2 Business Plan - A Network for Net Zero. As part our business plan submission, we have set leading commitments to tackle our own environmental and social impacts that have been strongly supported by our customers and stakeholders.

Earlier this year we welcomed Ofgem's decision to approve the 600MW HVDC transmission link connecting Shetland to the GB mainland. Following years of hard work and ongoing stakeholder engagement from our teams, this is a significant milestone in supporting remote island renewables and the UK and Scotland's Net Zero targets. We have set ourselves extremely ambitious plans to reduce our own emissions in line with what is required to meet net zero emissions and we are absolutely delighted that our carbon reduction commitments have been recognised by the globally renowned and respected Science Based Target initiative. This means that we are the world's first electricity networks company to receive external accreditation for a science-based target in line with a 1.5°C global warming pathway.

To support our science-based target we became the first UK transmission owner to energise Sulphur Hexafluoride (SF6) free technology at our Dunbeath substation in October 2019. This report also shows we have made good progress against our sustainability ambitions from creating our award-winning biodiversity net gain approach with stakeholders, enhancing our cost benefit analysis framework and engaging with our supply chain to inform our sustainable procurement requirements. Looking ahead, net zero presents an opportunity for a green and resilient economic recovery and we are determined to play a leading role. There remains lots to be done on our sustainability journey, but I am very proud of what we have achieved over the last year in creating our net zero pathway that will pave the way for transformation across our industry.



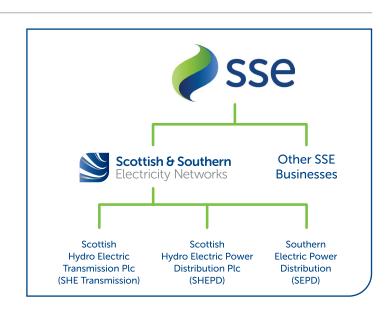
Rob McDonald Managing Director Scottish Hydro Electric Transmission

We are Scottish Hydro Electric Transmission (SHE Transmission), part of the SSE Group, responsible for the electricity transmission network in the north of Scotland.

We operate under the name of Scottish and Southern Electricity Networks, together with our sister companies, Scottish Hydro Electric Power Distribution (SHEPD) and Southern Electric Power Distribution (SEPD). As the Transmission Owner (TO) we maintain and invest in the high voltage 132kV, 275kV and 400kV electricity transmission network in the north of Scotland.

Our network consists of underground cables, overhead lines on wooden poles and steel towers, and electricity substations, extending over a quarter of the UK's land mass crossing some of its most challenging terrain.

We take electricity from generators and transport it at high voltages over long distances through our transmission network for distribution to homes and businesses in villages and towns.



OUR RESPONSE TO COVID-19

The coronavirus pandemic has highlighted the critical importance of electricity network reliability to society, with the people and organisations whose work is crucial to the coronavirus response more dependent than ever on a safe and reliable supply of electricity.

The COVID-19 outbreak and the necessary social measures introduced by government are unprecedented in recent times and our well-established business continuity plans allowed us to ensure a safe and reliable electricity supply is maintained. In line with our continuity plans, we've implemented robust measures to protect our core operations, including operational depots and control rooms, through segregating key personnel and adapting our working protocols.

This ensures we maintained near 100% network reliability during this critical period.

We have postponed all planned external engagement events in line with government guidance, and have shifted to online consultations with stakeholders.

By implementing innovative virtual engagement events we continued to engage with our stakeholders throughout the pandemic. We remain committed to keeping our customers, communities and colleagues safe and informed.



THE ENVIRONMENT WE OPERATE IN

In recent months, attention has rightly focused on coronavirus, but climate change - which itself poses fundamental risks to human, social and economic wellbeing - hasn't gone away.

The transition to net zero presents an opportunity for a green and resilient economic recovery. Net zero is a state where we add no incremental greenhouse gases to the atmosphere.

The GB transmission network has a crucial role to play in this. Our network region is home to some of the UK's best resources of renewable energy, from hydro power and wind, to wave

In our North of Scotland Future Energy Scenarios, we have described a credible pathway for renewable energy growth in the north of Scotland consistent with keeping temperature increases below 1.5°C, a crucial step in the transition to net zero.

We have a proud track record of delivering our major reinforcements on time and budget and remain committed to playing a leading role in tackling the climate emergency that threatens current and future generations.





DEVELOPING OUR RIIO-T2 SUSTAINABILITY ACTION PLAN

Since the publication of our stakeholder-led Sustainability Strategy in May 2018, we have developed our delivery plans to implement our six sustainability sustainability outcomes presented in our Business Plan, Networks for Net Zero. Supported by our stakeholders, this action plan meets the Ofgem requirements for the Environmental Action Plan (EAP) and includes our broader action on socio-economic sustainability requested by our stakeholders. The plan includes timebound actions and outputs against which our performance will be measured, enabling stakeholders to hold us to account during the next price control period, RIIO-T2 (2021-2026).

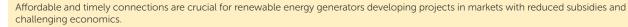
As part of our Sustainability Action Plan, we engaged independent consultants to undertake benchmarking of our current performance and ambitions against and laggard performer in three categories. Of the organisations in the study, we demonstrate he strongest overall performance and ambition.

Read our Sustainability Action Plan: www.ssen-transmission.co.uk/media/3759/sustainability-action-plan.pdf

CONTRIBUTING TO THE UN SDGs

Beyond enabling decarbonisation and the transition to a low-carbon economy, we have wider economic, social and environmental impacts. We support the United Nations Sustainable Development Goals (SDGs), which provide a common framework for targeting improvements in wider sustainability. We assess the materiality of our business operations against the SDGs and we actively support nine of them.

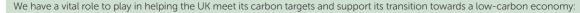
7 AFFORDABLE AND CLEAN ENERGY





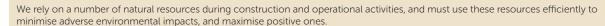
- 48 MW of low-carbon generation connected to our network in 2019/20.
- 82% of generation connected to our network is clean renewable generation.
- Our network supports over 6 GW of clean, renewable electricity generation.

13 CLIMATE ACTION



- 33 million tCO2e displaced since March 2013 by the generation connected to our network.
- We have delivered a 30% reduction in our Business Carbon Footprint from 2013 (see page 17).

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



- We have been collaborating with other TOs to develop a methodology for embodied carbon (see page 26)
- Included circular economy requirements within our sustainable procurement policies

9 INDUSTRY, INNOVATION AND INFRASTRUCTUR



The UK's industry needs sufficient green energy. To support this, we develop and upgrade the electricity infrastructure in the north of Scotland.

- Our capital expenditure totalled £329m in 2019/20 with a £2.4 billion business plan for the next price control period (2021-2026).

DECENT WORK AND



An engaging, supportive and fair place to work generates long-term benefits for our business. We seek to create sustainable careers for a workforce which better reflects the society in which we operate.

- All Transmission jobs feature 'happy to talk flexible working' logo
- Inclusion and Diversity training mandatory for all employees

5 GENDER EQUALITY



As part of a traditionally male-dominated sector, we have a lot of work to do to attract more women into our business, and ensure the roles they come into have good earning and progression potential.

- Sustainable workforce plan developed for RIIO-T2
- Full review of our gender balance with the creation of our Sustainable Workforce strategy

11 SUSTAINABLE CITIES AND COMMUNITIES



We are committed to developing our network infrastructure in a safe and sustainable way while minimising its visual impacts and preserving the natural beauty of the environment we operate in.

- Implementing Local Area Energy Plans with Dundee City Council (see page 14)

15 ON LAND

We recognise that the natural environment has an essential role in sustaining society, and work to manage our impacts on biodiversity and the natural world in a responsible and sustainable way.

- We published "Approach to Implementing Biodiversity Net Gain"
- We have won two biodiversity awards (see page 24).
- Zero environmental prosecutions or major incidents in 2019/20.

14 LIFE BELOW WATER

We aim to sustainably manage and protect marine and coastal ecosystems from the environmental impacts of our operations.

- Environmental Appraisals completed for Shetland HVDC link



OUR **SUSTAINABILITY STRATEGY**

Our strategic objective is to enable the transition to a low carbon economy, and we have set achieving leadership in sustainability as a critical element of this objective. This means being a trusted partner of customers and communities, realising long term benefit for society, economy and the environment. Our sustainability strategy, comprising six stretching ambitions, outlines our approach based on three underlying principles:

Adopting a holistic approach for true sustainability

Taking stretching and ambitious action

Supporting and influencing positive change

OUR SUSTAINABILITY AMBITIONS



ANNUAL STRATEGY REVIEW

As part of our sustainability governance, our networks board sustainability subcommittee undertook an annual review of our Sustainability Strategy to ensure it continues to meet the requirements of stakeholders, emerging trends and policy. Our strategy review has reinforced that our Sustainability Strategy remains fit for purpose and our ambitions meet the needs of our stakeholders. In 2019/20 we aligned our Sustainability Strategy and Business Plan to achieve net zero committing our business to a sustainable future.

ENGAGING WITH STAKEHOLDERS

We have undertaken a targeted programme of stakeholder engagement on our sustainability activities with our stakeholders on a range of issues including sustainability, whole system and transmission losses.

During 2019, we shared our sustainability strategy and action plan with over 150 stakeholders to increase awareness of our plans and receive feedback. We also held a sustainability workshop and six round table events with high impact and expert stakeholders. Feedback from the Sustainability Plan consultation indicated that our proposed actions are material, likely to be impactful and timescales are suitably ambitious. Further suggestions were also made that the following areas should receive greater focus and action: climate change adaptation; visual amenity; focus of our feedback has been incorporated into our Sustainability Strategy update and our RIIO-T2 Business Plan.

The business has set out an ambitious and credible Sustainability Ambition in Section 6 of the Business Plan and in the Sustainability Action Plan (SAP) for delivery in RIIO-2. This plan builds upon the business' established Sustainability Strategy clearly setting out their ambitions for delivering an environmentally sustainable network in RIIO-2 through leadership in sustainability across clearly defined and assessed impact areas. Of note is the fact that the business' sustainability strategy and approach already has a significant degree of maturity and materiality. It has already been developed with updated and integrated into the business processes.

OUR RIIO-T2 BUSINESS PLAN: A NETWORK FOR NET ZERO

In December 2019 we published our business plan co-created with our stakeholders for the future of the north of Scotland electricity transmission system in 2021-2026. 'A Network for Net Zero' sets out a pathway for the north of Scotland to play its role in limiting global temperature increases to 1.5°C.

As well as facilitating future growth in renewable electricity, we intend to show leadership on wider sustainability criteria during this five-year period. We have also published our Sustainability Action Plan which sets out stretching ambitions which will enable a truly sustainable transmission network into the next price control period and beyond.

Key highlights include:



Reducing our own greenhouse gas emissions by one third, consistent with that required to deliver a pathway to net zero



To set our own carbon targets verified by the **Science Based Target Initiative**



Achieve biodiversity 'No Net Loss' on new projects gaining consent in 2020 onwards and biodiversity 'Net Gain' on projects gaining consent in 2025 onwards



Committing to zero waste sent to landfill across all waste streams by the end of RIIO-T2



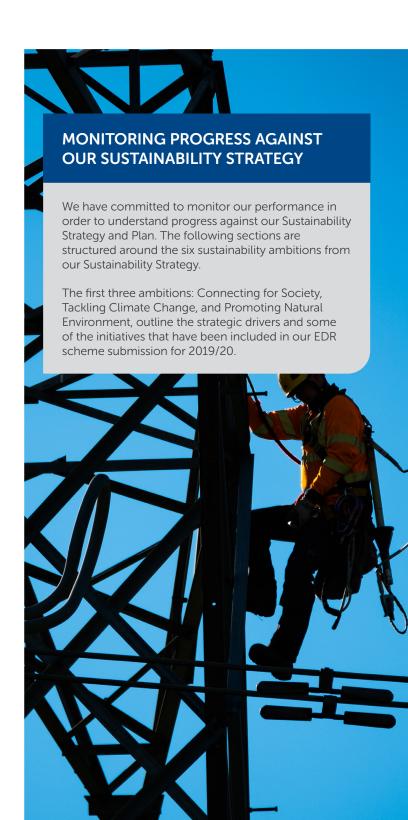
Attain 'No Net Loss' of all woodland cover on new projects consented from 2021



Supporting communities and local supply chains by ensuring at least 25% of approved suppliers are based in the north of Scotland



Implementing our Local Area Energy Planning Framework.



CONNECTING FOR SOCIETY

Working collaboratively to deliver a whole system solution that promotes affordability, considers societal benefits and supports community renewable connections.

The timely delivery of large-scale capital investment in new infrastructure across the north of Scotland remains one of our key priorities. Through accommodating increasing levels of renewable electricity generation, we are facilitating the transition towards a low carbon economy. We have a strong track record for capital delivery on time and on budget whilst ensuring we do the right thing, at the right time, in the right way.

By providing a quality connections service to our customers, we aim to transport the renewable electricity that powers 10 million homes by 2026. We will deliver tailored solutions and services for all our connection customers throughout the customer experience that are optimal for both the customer and the wider GB energy consumer.

DELIVERING
CONNECTIONS
FOR LOW
CARBON
GENERATION

Support for remote islands renewables

Support for community and locally owned renewable energy projects

SUCCESSFUL
DELIVERY OF
NEW NETWORK
INFRASTRUCTURE

Infrastructure to connect renewable generation

Delivering investment for network reinforcements

Refreshing our approach to new capital projects

DEVELOPING SMART AND FLEXIBLE NETWORKS Connection of battery storage for constraint management

Coordinated approach to offshore wind connections

PLANNING FOR FUTURE NETWORK NEEDS Net zero network scenarios

Network charging reform advocacy

Leadership approach to queue management

MEASURING PERFORMANCE



Our network supports

over 6 GW of clean, renewable

of clean, renewable electricity generation*



Shetland

HVDC connection needs case approval



Over 3 GW

of low carbon generation connected to our network between 2013 and 2020*



An estimated

4.3 million tonnes of CO₂e

displaced by clean, renewable electricity generation in 2019/201



An estimated

33 million tonnes of CO₂e

displaced by the generation connected to our networks since March 2013



82%

of all generation connected to our

 $^{^{1}} Displaced carbon estimates derived from models based on Scottish Government Renewable Electricity Output Calculator: www2.gov.scot/Topics/Statistics/Browse/Business/Energy/onlinetools/ElecCalc$

^{*}Figures reported include small embedded generation connections

DELIVERING CONNECTIONS FOR LOW CARBON GENERATION

Connecting renewable energy generators to the network comes with new technical and commercial challenges that must be overcome if we are to continue to decarbonise the energy system. Some of the initiatives that we have introduced to tackle these challenges are described below.

Support for remote islands renewables

Background

A lack of network capacity to transport renewable energy generation from the Scottish Islands to the GB mainland is the primary inhibitor of further development on the islands and the significant contribution that this low carbon energy could make to meeting UK decarbonisation targets.

Current Status

Transmission links to the Scottish Islands of Orkney, Shetland and the Western Isles continue to be a major element of our approach to the low carbon transition and achieving a net zero future. During 2019/20 we have taken further actions to support and progress transmission connections to the Scottish Islands as a major part of our business activity.

The Scottish Islands have over 1.4 GW of contracted generation: enough to displace approximately 5MtCO2e during the RIIO-T2 price control period.

Spotlight - Shetland transmission link

600 MW HVDC transmission link

Stakeholders involved Regulator, community, developers Non-conventional solutions Transmission connections to remote islands

In July 2020, following years of hard work and ongoing stakeholder engagement from our teams, Ofgem announced the approval of the 600MW HVDC transmission link connecting Shetland to the GB mainland. This follows the closure of Ofgem's recent consultation on a "mindedto" approve decision for the link and is subject to Viking Energy – who are going to build a 103 turbine wind farm on Shetland - closing off on their conditions as outlined in Ofgem's April 2020 minded-to decision document. This is a positive development, enabling a 'whole system' approach to decarbonising Shetland's economy by connecting it to the GB mainland transmission system for the first time. This is the first crucial step in unlocking a net zero future for the island.

With all necessary regulatory and planning approvals now in place, construction of the subsea link and its associated onshore transmission infrastructure will scale up throughout 2020, supporting skilled job creation and supply chain opportunities as we play our part in a green economic recovery post Covid-19 and help to deliver the UK and Scotland's commitments to net zero emissions by 2050 and 2045 respectively.



Support for community and locally owned renewable energy projects

Background

In December 2019 we published our Supporting Local Area Energy Planning and Community Energy Development paper detailing our commitment to supporting local and community energy development. Through this we will draw on the policies across our business plan to address barriers that local communities have told us they face when taking a project from concept to delivery.

For projects that are able to connect we aim to implement queue management to bring these forward.

Support for local and community energy will be a key enabler for achieving the UK and Scottish Government net zero targets as well as the Scottish Government's ambitious target of delivering 1GW of community and locally owned energy by 2020 and 2GW by 2030.

Playing an enabling and supporting role aligns with our strategic purpose to enable the transition to a low carbon economy.

Read our Supporting Local Area Energy Planning and Community Energy Development paper: www.ssen-transmission.co.uk/ media/3721/local-energy-areaplans-community-energy.pdf

SUCCESSFUL DELIVERY OF NEW NETWORK INFRASTRUCTURE

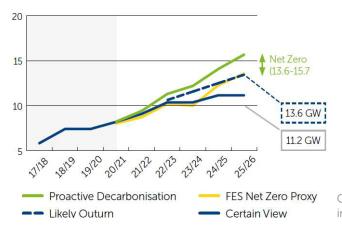
In 2019/20 our capital expenditure totalled £329m. We have a further £466m capital expenditure forecast in the final year of the current price control period. With the publication of our RIIO-T2 Business Plan we have forecast an estimated £2.4bn and the Shetland HVDC link estimated to cost another £700m capital investment from 2021 through to 2026. With this continued investment in network development, it is essential that we meet the wider societal expectations that accompany this investment.

Infrastructure to connect renewable generation

Our network region is home to some of the UK's greatest resources of renewable energy. During 2019/20 we connected 48MW of new renewable electricity generation, contributing to an overall increase in the total renewable capacity connected to SHE Transmission's network from 3.3GW at the start of RIIO-T1 to over 6.3GW today.

Based on our "Certain View" of generation growth forecast over the RIIO-T2 period, SHE Transmission expects the installed renewable capacity connected to its network in the north of Scotland will increase to at least 10GW, the equivalent of powering 10 million homes by 2026.

As SHE Transmission plays its part in enabling a net-zero economy, it will be guided by its strategy which is focused on innovative and flexible connections, delivered in greater collaboration with customers and other stakeholders.



Certain View: Net zero emissions pathways for generation connected in the north of Scotland (MW) from our RIIO-T2 Business Plan

Delivering investment for network reinforcements

Progress made on the capital investment programme can be seen in the new 400kV substation at Fort Augustus, which remains on track for completion in 2021. The substation is a key component to support the growth in renewables unlocked by the replacement Beauly to Denny line that was completed in 2015. The Fort Augustus substation builds on a number of delivery milestones in 2019/20 including completion, on time and on budget, of the Fort Augustus to Fort William overhead line refurbishment and completion of the 275kV line between Knocknagael and a new substation at Tomatin.

A significant proportion of current and future works are focused on the east coast, building the transmission network infrastructure required to connect and transport the growth in renewable energy. This includes the ongoing construction of new substations at New Deer and Rothienorman, which are progressing well. Both will initially operate at 275kV, increasing to 400kV as part of the wider east coast onshore reinforcements that are scheduled for RIIO-T2, which will see the capacity of the existing east coast line increase to 400kV.

We are also working with the other GB Transmission Owners, SP Energy Networks and National Grid Electricity Transmission, on grid reinforcement proposals to develop a subsea High Voltage Direct Current (HVDC) link from Peterhead substation to Drax substation in the north east of England.

Using green finance to support the net-zero transition. In September 2019, SHE Transmission issued its inaugural £350m Green Bond. The proceeds of this Green Bond were fully advocated at issuance to refinance part of SSE Group's £1.3bn portfolio of eligible transmission projects, including the 1,200MW Caithness-Moray transmission project.

Refreshing our approach to new capital projects

In delivering a Network for Net Zero we need to make sure that our investment decisions are justified and that impacts are fully understood. We have expanded the scope of our planning analysis and quantifying the wider social, environmental and economic impacts of projects to inform decision-making through a Cost Benefit Analysis (CBA) framework.

The purpose of our CBA methodology is to help decision makers within SHE Transmission make informed choices on investment decisions

It provides a framework for assessing the comparative societal, environmental and economic trade-offs associated with proposed investment options to enable selection of the best value option for the end customer.

As part of this CBA framework we developed a carbon pricing model used to estimate the whole life carbon impacts of projects and provide input into our strategic optioneering process.

This innovative model for our industry uses input on asset data to develop an estimate of the carbon emissions associated with the construction, operation and decommissioning of each project option. In November 2019, we commissioned AECOM to complete an external peer review of the carbon pricing model in the CBA to ensure that it is fit for purpose and to provide feedback on how we can develop the model in the future.

DEVELOPING SMART AND FLEXIBLE NETWORKS

The flexible, smart networks that we will need to decarbonise the GB energy system cannot be realised by working in isolation. We will work collaboratively with energy sector partners, like Distribution Network Operators (DNOs) and the Electricity System Operator (ESO), to support the development of a decentralised and decarbonised network which meets the needs of customers and consumers.

Connection of Battery Storage for Constraint Management

Background

The connection of battery storage will be essential for managing the transition to a low carbon electricity network where there is a high number of intermittent renewable energy sources.

Last year the ESO launched a Constraint Management Pathfinder project with the aim of reducing the cost of network constraints. This is a potential alternative to asset-build reinforcement and SHE Transmission have received several requests from developers who are interested in providing a battery energy storage solution. SHE Transmission have provided guidance to developers to help enable the early connection of these solutions

This guidance provides information for developers to help identify locations on our network that have the potential to connect a battery in short timescales without the need for major transmission reinforcement. To date consents have been approved for 40MW battery storage to connect to our network, with a further 69MW at the scoping and awaiting consents

Coordinated Approach to Offshore Wind Connections

The first round of offshore wind leasing in Scottish water in a decade, called ScotWind Leasing was launched in June 2020. This enables developers to apply to build Scotland's new generation of offshore wind farms. This offers an exciting opportunity to match Scotland's ambitious net zero targets with practical action, as well as adding dynamic growth to the Scottish offshore wind supply chain.

SHE Transmission has initiated discussions with key stakeholders about a more co-ordinated approach to the connection of prospective offshore wind farms. Meetings have involved Marine Scotland, Crown Estate Scotland, The Scottish Government, as well as the National Grid Electricity System Operator. With the amount of generation potentially coming from the latest ScotWind leasing round, a more collaborative approach to connections is seen as being in the best interests of developers as well as the most economical for the GB user.



PLANNING FOR FUTURE NETWORK NEEDS

Understanding emerging trends and anticipating the future needs of customers and consumers through a joined-up approach to network development.

Net Zero Network Scenarios

Our Business Plan is aligned to what we call the Certain View where all activities and investments we propose have a strong, evidence-based need to be done. Under the Certain View, the renewable generation connected to the north of Scotland transmission system will reach nearly 10 GW by March 2026 and the total generation will be 11.2 GW.

In response to stakeholders' requests for further detail on the Certain View and, how the Certain View compares with future energy scenarios we published our Planning for Net Zero outlining the requirements our network will need to meet in order to deliver a net zero power Our established approach to network planning ensures that we are well positioned to deliver a network for net zero

Case Study – Whole System Approach to Decarbonisation

Impact

Identify the impact of decarbonisation plans Stakeholders involved DNO, community, developers, ESO Non-conventional solutions Whole System Planning Solutions

Local Area Energy Plans (LAEP) and Local Heat and Energy **Efficiency Strategies (LHEES)**

Local Area Energy Plans (LAEP) and Local Heat and Energy Efficiency Strategies (LHEES) in Scotland are initiatives led by local authorities to create shared purpose around decarbonisation to deliver transformation to the local energy system.

This creates a significant opportunity to coordinate engagement and manage the exchange of information between SHE Transmission, Scottish Hydro Electric Power Distribution (SHEPD) and key stakeholders, identifying whole system development opportunities and ensuring the complimentary development of national infrastructure and local decarbonisation

We are currently working with SHEPD and Dundee City Council to create a Regional Energy System Optimisation tool (RESOP) which will help local authorities identify the impact of their decarbonisation plans on the energy networks and the role of low carbon technologies in managing this impact. The outputs of this study will help inform the whole system solution for Dundee city.

4D Heat

We have also partnered with National Grid Electricity System Operator (ESO) to explore the potential of using surplus wind power to heat houses though the 4D Heat project. The project aims to examine the potential and feasibility of smartly controlling electric heating to help manage grid constraints

This would both help to balance the grid, ensuring less wind power is curtailed, and heat off-gas grid areas in northern Scotland where there are large numbers of electrified residential heating. There are around 380,000 homes in Scotland that could move to a range of electric heating solutions, from storage heaters to air or ground source heat pumps.

By reducing the amount of wind curtailed whilst improving the business case for low-carbon electric heat it is hoped this will set the groundwork for follow-up initiatives, as the UK as a whole increasingly focuses on the challenges of decarbonising the heat sector.

Network Charging Reform Advocacy

At SHE Transmission we are actively engaged in the Signicant Code Review (SCR): Reform of Network Access and Forward-Looking Charging Review as well as monitoring the progress of the implementation of the Targeted Charging Review decision made in November 2019.

Our ongoing involvement in charging reform is principle led, ensuring that all reform considers the impact that charging will have on the transition to net zero. We have productive and proactive engagement at a working and delivery group level whilst engaging with relevant industry stakeholders and our customers, allowing us to advocate their interests to pursue practical, pragmatic, fair reform.

Our customers have told us that Transmission Network Use of System (TNUoS) charges can be a barrier to entry and that can continue to cause issues around the sustainability of developments when connected. We have acted upon this by enhancing our own in-house knowledge and expertise in this area allowing us to include such issues in our communications with the regulator requesting that these issues are taken into consideration in any reform of the current charging methodologies.

With our license area being rich in renewable resources and being a "Network for Net Zero" we believe it is critical and have been promoting that charging methodologies link and enable the transition to net zero. When reform proposals do not align with decarbonisation, we represent our customers and society by highlighting the importance of the role that charging plays in the transition to net zero.

Leadership approach to Queue Management

Queue management is not a new concept for electricity networks. This is the process by which network companies manage contracted connections against limited capacity. To date this has largely relied on a 'first to contract, first to connect' principle.

However, as the customer base across transmission and distribution has evolved with growth in renewable generators and the introduction of new technologies, there is some concern that the existing framework no longer delivers the best outcome for network companies and their customers.

SHE Transmission has taken a leadership role in developing the industry's approach to Queue Management. A consultation webinar was held to provide an overview of the Queue Management principles and questions were posed to those who attended.

As a result of the consultation, there was broad support for the principle of queue management and for the proposal to promote flexibility in the connection queue where it frees capacity for others.



TACKLING CLIMATE CHANGE

Managing Resources over the whole asset lifecycle to reduce our greenhouse gas emissions in line with climate science and become a climate resilient business.

Climate change is already affecting people, ecosystems and livelihoods around the world. The international scientific community presents consistent and compelling evidence of anthropogenic climate change and the consequential far-reaching changes for the global environment.

Considerable change has been made in the decarbonisation of the electricity generation sector over the past decade. While this change has been rapid and profound, more remains to be done. The north of Scotland and its islands have a significant renewable energy resource from onshore and offshore wind, hydro, marine and tidal.

As the owner of the transmission network in the in the north of Scotland, our role is vital in the enabling of a transition to a low carbon electricity network. We are also committed to reducing our own emissions and have pledged to a one third reduction in our greenhouse gas emissions by 2026, consistent with a net zero emissions pathway. We have also set our 2030 science-based target for the 1.5-degree pathway.

REDUCING
OUR BUSINESS
CARBON
FOOTPRINT
AND BUILDING
RESILIENCE TO
CLIMATE CHANGE

Reducing our business carbon footprint

Setting a Science Based Target initiative carbon reduction target

Management of Sulphur Hexafluoride (SF6) and Insulation Interruption Gases (IIGs)

Tackling Transmission Losses

Responding to the risk of wildfires

MEASURING PERFORMANCE



30% reduction

in SHE Transmission Business Carbon Footprint since 2013/14



6% increase

in SHE Transmission Business Carbon Footprint since 2018/19*



Setting our

Science Based Target

for emissions reduction



First SF₆ free

technology energised at Dunbeath 132kV substation



Strategies published

to minimise SF6
emissions and
Transmission Losses



Our offices and depots are powered by

100% renewable electricity

*Increase due to growth in network from rising number of low carbon connections

REDUCING OUR BUSINESS CARBON FOOTPRINT

Our overall Business Carbon Footprint (BCF) for 2019/20 has been calculated as 129,361 tonnes of CO2 equivalent (tCO2e). This is an increase of 6% compared to the last financial year 2018/19 (121,777 tCO2e) but represents a 30% reduction from 2013/14. This also represents a 20% reduction in our Scope 1 and Scope 2 emissions from 2013/14. The increase between 2018/19 and 2019/20 is primarily the result of an increase in transmission losses on the network during the last financial year and the addition of new SF₆ assets to growth of the network to enable low carbon generation.

| Data Gathered ² | 2013/14 | 2017/18 | 2018/19 | 2019/20 |
|---------------------------------------|------------|------------|------------|------------|
| Scope 1 | tCO2e | tCO2e | tCO2e | tCO2e |
| Buildings Energy usage- Gas Fuel | - | 15.36 | 15.36 | 9.78 |
| Operational Transport | 4,491.31 | 580.85 | 568.37 | 519.83 |
| Fugitive Emissions | 4,204.15 | 7,451.95 | 8,491.63 | 9,871.26 |
| Fuel Combustion | - | 0.00 | 99.87 | 68.99 |
| Total | 8,695.46 | 8,048.16 | 9,175.22 | 10,469.86 |
| Scope 2 | tCO2e | tCO2e | tCO2e | tCO2e |
| Buildings energy usage | 752.37 | 238.14 | 189.83 | 157.08 |
| Substations Energy Usage | 6,183.26 | 2,014.07 | 1,897.75 | 1,725.46 |
| Total | 6,935.63 | 2,252.21 | 2,087.58 | 1,882.54 |
| Scope 3 | tCO2e | tCO2e | tCO2e | tCO2e |
| SHE Transmission's Business Transport | - | 705.26 | 670.53 | 756.32 |
| Losses | 169,282.40 | 87,000.92 | 100,206.78 | 109,971.74 |
| Total Contractors' Carbon Footprint | - | 146,36.18 | 9,637.11 | 6,280.49 |
| Total | 169,282.40 | 102,342.37 | 110,514.42 | 117,008.55 |
| | · | | | |
| Total BCF | 184,913 | 112,643 | 121,777 | 129,361 |

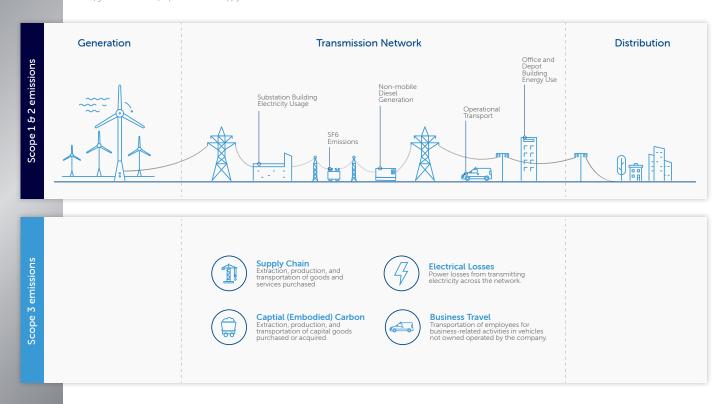
Sources of Carbon Emissions from the SHE Transmission Network



Scope 1: direct greenhouse gas emissions occurring from sources owned or controlled by the company e.g. our operational transport, on-site generators and SF6 fugitive emissions;

Scope 2; indirect greenhouse gas emissions from the generation of purchased electricity consumed by the company, and the company of the

Scope 3: all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions e.g.. business travel, grid electrical losses, capital carbon and supply chain emissions.



Setting a Science Based Target initiative "world first" carbon reduction target

In May 2018 we made a commitment to set a science-based target to reduce our greenhouse gas emissions which we have had approved by the Science Based Target initiative, becoming the world's first electricity networks company to receive validation for a science-based target in line with a 1.5°C global warming pathway.

Aligning with the 2016 Paris Agreement, the validation of our ambitious carbon reduction objectives will ensure that our business follows a credible and scientifically verified carbon reduction pathway as we support the journey to net zero emissions.

This includes:

- Committing to reduce our absolute Scope 1 and 2 GHG emissions by 46% by 2030 from a 2018/19 base year. We intend to do this by making our substations more energy efficient, replacing our operational vehicle fleet with EVs and tackling SF₆ emissions.
- A commitment to reduce Scope 3 Transmission Losses GHG emissions 50% per gCO2e from losses/kWh by 2030 from a 2018/19 base year, by implementing a transmission losses strategy and connecting more renewable electricity to our network in the north of Scotland.

Working with our supply chain so that two thirds of our suppliers by spend will have a science-based target by 2024/25.



DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Alexander Farsan, global lead for Science Based Targets at World Wide Fund for Nature, one of the Science Based Targets

"We congratulate SSEN Transmission for becoming the first electricity transmission network operator to set emissions reduction targets consistent with limiting warming to 1.5°C above pre-industrial levels. This is the Paris Agreement's most ambitious goal and what the Intergovernmental Panel on Climate Change says is required to prevent the catastrophic effects of climate change. SSEN Transmission has cleared a high bar and is setting an example that their peers must follow."

Our Science-based target greenhouse gas reporting methodology update

As part of our RIIO-T2 business plan submission, we have strengthened our calculation and reporting methodologies for our Substation Electricity Usage, SF6 leakage and Scope 3 emissions for our sciencebased target baseline.

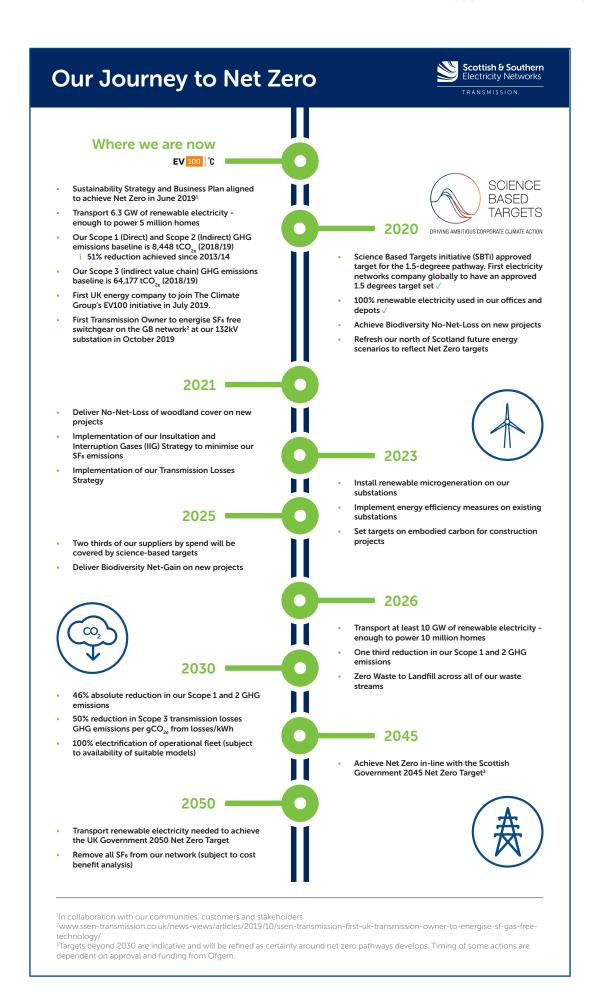
To accurately reflect the emissions resulting from transmission losses across our network we have adopted a location-specific grid emission factor for our network area.

This methodology and the resultant emissions from transmission losses will be integrated into our GHG accounting procedures and assurance processes during this financial year.

As part of our ongoing approach to continuous improvement we will seek external assurance on our GHG emissions throughout the RIIO-T2 price control period.

We will adopt our new reporting methodology at the start our next price control period and will report against our science-based target from April 2021, which will allow us to continue to report consistently over the current price control period. Our reported SBT baseline emissions for financial year 2018/19 are as follows:

- Scope 1 (direct) and Scope 2 (indirect) = 8,448 (tCO2e)
- Scope 3 (indirect) = 64,177(tCO2e)



Management of Sulphur Hexafluoride (SF6) and Insulation Interruption Gases (IIGs)

SF₆ gas (a greenhouse gas) has been used extensively across the electrical industry as an insulating gas for switchgear in substations. SF6 emissions are a key contribution of our business carbon footprint.

Therefore, in keeping with our strategic theme of 'Leadership in Sustainability'.

In December 2019 we published our Strategy for the Management of Insulation and Interruption Gases.

In order to meet our ambitious carbon reduction goals, we are looking to move away from SF6 being a primary insulation solution in the coming years, and alternatives should be adopted where technically and commercially viable.

We will ensure that SF₆ becomes the last resort during the design and specification stage. Currently we are undertaking revisions to our specifications to avoid the use of insulating gasses with Global Warming Potential (GWP) greater than 1000 on our network where possible.

In October 2019, we became the first UK transmission owner to energise sulphur hexafluoride gas (SF6) free technology at our 132kV substation in Dunbeath. By using technology developed by Siemens, utilising a combination of vacuum and clean air technology to provide the same level of reliability, without the need for SF6 gas and no Global Warming Potential (GWP).

Case Study – SF₆ Alternatives at Fort Augustus & New Deer

Impact Reduction in GHG emissions Stakeholders involved Suppliers, network operators

Timescales Construction in 2020

Our forthcoming projects at Fort Augustus, Inverness-shire, and New Deer in Aberdeenshire will see the installation of GE's gas-insulated switchgear and busbars utilising g3 gas in place of SF6. This is an innovative project by installing this new technology on our network. With g3 gas insulated busbars (GIB) measuring over 1km, the New Deer site will see the world's largest volume of the gas installed at one location.

The Fort Augustus substation expansion will be the first transmission site in the country to have a fully g3 insulated substation and also a significant length of g3 insulated GIB. Across these two substations, we will avoid the equivalent of 200,000 tonnes of CO2e over their asset life.



Tackling Transmission Losses

Transmission power losses are an inevitable consequence of generating, transmitting and distributing electricity to consumers. Transmission losses can be broadly described at the difference between the energy entering into a system by generation and the energy taken out of the system by demand. Increased generation capacity, often large distances from demand centres lead to higher losses across our network.

In December 2019, we published our losses strategy which outlines our approach to minimise the level of transmission losses and the associated Scope 3 indirect carbon emissions on our transmission system in order to support our sustainability ambitions

Key actions include:

- Introduce a clear transparent methodology for calculating lifetime losses - typically 40 years - of new assets in our procurement process.
- Explore enhancements in annual losses reporting.
- Include losses accounting within our new whole system cost benefit analysis framework.



During the RIIO-T2 price control period, we are proposing a number of transmission developments to accommodate the rapid growth in renewable generation in the north of Scotland, critical to the transition to a lower carbon economy.

These developments include various conventional reinforcement works, such as new overhead lines and substations, re-insulation and reprofiling of existing overhead lines, new HVDC links as well as substation energy usage improvement. In addition, by increasing the renewable capacity on our network, the greenhouse gas intensity of losses will reduce as a result.

During 2019, our offices and depots have switched to 100% renewable electricity certified by Renewable Energy Guarantees of Origin (REGOs).

Responding to the risk of wildfires

2019 saw an increase in the number and impact that wildfires had on the electricity network infrastructure in the north of Scotland.

While wildfires are not uncommon in our network area, the increasing severity is a cause of concern for the business and we are working to understand whether this is being exacerbated by changes in climate and weather conditions. In response to this trend, SHE Transmission's Asset Management Steering Group created a Wildfires subgroup to assess risk and develop a mitigation strategy for the business.

The subgroup has reviewed its safety management procedures which manage its response to wildfires and has appointed the expertise of specialist wildfire consultants to provide risk forecasts for wildfires in their network area.

It has also engaged with other UK asset owners and electricity transmission businesses worldwide to understand risk, control and mitigation measures they have in place to deal with Wildfires.

An awareness campaign has also been launched to inform stakeholders, such as owners and users of the land SHE Transmission's assets run across, about the dangers and causes of wildfires and the impact they have to electricity network infrastructure. In seeking to increase the resilience of their assets to climate related risks such as wildfires, SHE Transmission are contributing towards their RIIO-T2 Business Plan goal of 100% transmission network reliability for homes and businesses by 2026.

PROMOTING NATURAL ENVIRONMENT

Delivering biodiversity net-gain and driving environmental stewardship best practice.

Promoting our natural environment encompasses many areas (but not limited to) biodiversity, woodland and forestry, visual amenity, oil and noise management. This broad definition is consistent with the international standard for environmental management, ISO 14001, which we have been working towards in the financial year. In February 2020, we were recommended for certification to ISO 14001:2015 for our EMS by external auditors.

As a responsible network owner, we are committed to reducing our environmental impacts above and beyond the minimum regulatory requirements. This formal, external, recognition adds additional rigour to our existing environmental management processes around the identification and reduction of significant environmental impacts and business environmental objectives, and formalises a process of continuous improvement.

It is essential that we pursue environmental stewardship and ensure our activities are undertaken in a sustainable manner to protect our natural environment now and for future generations. Our stakeholders have strongly recommended that biodiversity enhancement across our portfolio be a core ambition of our future plans and that we should do more to consider visual amenity as we develop new projects and that continues to be our focus.

ENSURE OUR
ACTIVITIES HELP
TO ENHANCE OR
REDUCE IMPACTS
ON THE NATURAL
ENVIRONMENT

VISTA (Visual Impact of Scottish Transmission Assets)

Delivering Biodiversity net-gain and driving environmental stewardship best practise

CARE (Commitment Awareness Rigour and Engagement)

MEASURING PERFORMANCE



ISO 14001





Zero

environmental prosecutions or enforcement action in 2019/20



Biodiversity Net Gain (BNG) methodology developed

receiving two

national biodiversity awards

VISTA (Visual Impact of Scottish Transmission Assets)

The VISTA scheme is part of a £500m fund, administered by the energy regulator Ofgem, for GB electricity transmission owners to mitigate the impact of existing electricity infrastructure in nationally designated landscapes.

SHE Transmission is in the final stages of delivering two schemes in the Cairngorm National Park and has also applied to mitigate the impact of historic electricity infrastructure in Loch Lomond and the Trossachs National Park.

Case Study – Loch Lomond and Trossachs National Park VISTA

7.5km overhead line and 25 transmission towers removed

Stakeholders involved Conservation experts, regulators, employees

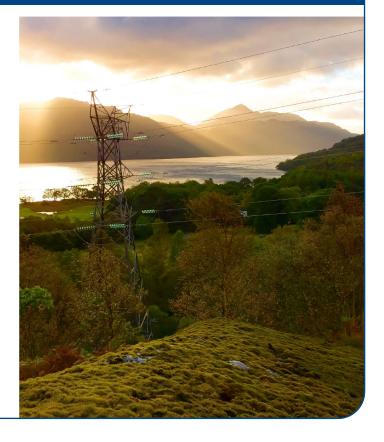
Scheduled for completion in Spring 2022

Following three years of development work, during 2019/20 we finalised environmental assessments, engaged with key consultees and submitted an application to Ofgem for funding to remove 7.5km of overhead transmission lines from the Loch Lomond and Trossachs National Park and replace them with underground cabling. As a result of this work, in July 2020 Ofgem approved the release of £23.5m in funding.

The success of the project was a result of high stakeholder support, working closely with the National Park and a wide range of stakeholders, representing both statutory and nonstatutory organisations.

It was the wealth of experience and the interests of these stakeholders in the landscapes under consideration has helped identify the finally selected key areas for the final proposal. The project will see the removal of two sections of 132kv overhead line, 4.5km of overhead line from Derrydaroch and Crianlarich near Glen Falloch, and 3km between Sloy Dam and Sloy Power Station, with both circuits to be replaced with underground cabling.

These lines are located in areas of the Loch Lomond and Trossachs National Park that attract some of the largest numbers of visitors. Once removed, the visual amenity within the Loch Lomond area will be further enhanced.



Delivering Biodiversity net-gain and driving environmental stewardship best practise

Over the past 50 years there has been a 60% decline in the abundance of key priority species within the UK and now more than ever biodiversity is of vital importance to the natural systems upon which we all depend. From the pollination of crops, the cleaning of air, purification of water, sources of medicines, flood protection as well as benefiting our own wellbeing, these key functions are essential for our existence.

A reduction in these ecosystem services (particularly at the current rate) will very quickly begin to impact human health, wellbeing and prosperity.

It is therefore critical that we play our part, not only in halting the decline, but where possible 'enhancing' the areas in which we work.

We are committed to biodiversity 'No Net Loss' on new projects gaining consent in 2020 onwards, and achieving biodiversity 'Net Gain' on projects gaining consent in 2025 onwards. Moving forward, we will contribute towards the establishment of common natural capital reporting methodology with the goal of applying this beyond 2025.

Case Study – Biodiversity Net Gain – Developing our industry leading approach

Impact

No net loss from April 2020, Net gain on all projects from 2025

Stakeholders involved

Conservation experts, regulators, employees

Timescales

Formal recognition and awards received in 2019/20

Over the summer of 2019, we had extensive consultation on our proposed approach to Biodiversity Net Gain (BNG), held meetings with key stakeholders and ran two specialist workshops, one in Glasgow and one in London.

SNH "We are pleased SSEN Transmission are taking an industry lead in adopting BNG principles".

The consultation on our BNG approach was welcomed by all stakeholders. It was recognised that we are at the forefront of applying BNG in Scotland and developing the approach. There was also strong recognition and support for the leadership and proactive engagement on BNG that we are providing.

All formal consultation responses were positive and recognised us as being sector leading in our commitments and ambitions in BNG. The final stage of our engagement were bilateral meetings with key stakeholders including The Scottish Environment Protection Agency (SEPA), Scottish Natural Heritage (SNH) and Scottish Wildlife Trust in November 2019.

These collaborative engagements allowed our stakeholders to review our final proposals and discuss opportunities for future partnerships. Our new approach sets out an implementation plan to deliver our commitment of no net loss on any projects consented from 1st April 2020.

SEPA "Your commitment to enhancing biodiversity across the whole of your portfolio, with staff working demonstrates leadership to the wider strategic infrastructure sector."

We have also committed to biodiversity net gain for all projects gaining consent from 2025 onwards. To inform the development of the approach and commitments, we also trialled the BNG Optioneering tool for two projects and demonstrated 34% net gain for Spittal substation and 47% net gain at Tomatin.

Read more about our approach to Biodiversity Net Gain: www.ssen-transmission.co.uk/media/3459/ssen-riio-t2-bio-diversity-net-gain-paper-16pp-22789-web.pdf

External recognition

Moving forward, we have continued to implement our 'Biodiversity Net Gain' principles into our projects, collecting two national awards for our biodiversity work on the Caithness-Moray HVDC link and our Biodiversity Net Gain Approach and Site Optioneering Toolkit.







Green Energy Awards Best Practice Award -Approach to Biodiversity Net Gain **BIG Biodiversity Challenge Awards** Client Award - Caithness-Moray

Two Green Apple Awards

Environmental Best Practice - Great Yellow Bumblebee biodiversity project at Thurso South substation, and Osprey mitigation works near Alyth in Perthshire

We will continue to work with stakeholders to support work to enhance the environment where we operate. Marive survey data gathered by SHE Transmission in 2018/19 has been shared with Scottish Natural Heritage (SNH) to support their work to identify Priority Marine Features (PMF's) in areas where we have previously undertaken survey works, such as Shetland and Orkney, this work is currently ongoing. Survey works planned for later in 2020 include the operation and maintenance surveys of the Kintyre Hunterston marine cables and the Caithness to Moray HVDC Link. The latter survey will also form part or our work to understand the long-term recovery of the seabed and the Noss Head Marine Protected area.

CARE (Commitment Awareness Rigour and Engagement)

Our Environmental Management System (EMS) has been fully implemented in our business and our 'CARE' initiative remains our primary method of embedding environmental and sustainability values in day-to-day operation, project development and construction activities.

We continue to hold contractor forums to develop positive and enhanced communication in support of contractor site ownership, share good practice and build relationships with key delivery partners including contractors and regulators.

Two contractor forums were held between during financial year 2019-20 where performance and information on our environmental impacts was presented.

This included participation from Scottish Environmental Protection Agency (SEPA) - providing information on planning and consenting considerations - and Scottish Natural Heritage (SNH) – updating on species licensing and presenting on protected species.

We continually engage with our employees through regular CARE Newsletters providing regular updates on regulatory developments, key site environmental risks and our wider business performance along with regular lunch and learn sessions to engage and inform colleagues.



Managing resources for a circular economy; achieving zero waste to landfill, increasing resource efficiency and using sustainable materials.

Many of the materials we use in building our infrastructure require to use primary resources, such as steel, aluminium and copper. The environmental impact of manufacturing these materials and inconsistency in local end-of-life solutions, means that we need to work harder to ensure we make best use of resources.

These environmental pressures require us to rethink how we use, manage and dispose of materials to ensure we use resources in a responsible and sustainable way.

MANAGING RESOURCES SUSTAINABLY TO EXTEND **MAXIMUM LIFESPAN AND FACILITATE RE-USE OR RECYCLING AT END OF SERVICE** LIFE

Our approach to embodied carbon on the network

Sustainable procurement

Working with stakeholders to build a circular economy

MEASURING PERFORMANCE



Waste targets

We have set waste and recycling targets



Embodied carbon

We are define our approach for embodied carbon and management for RIIO-T2



Engaging with our

supply chain

to define our

SHE Transmission is developing specific waste and resource use requirements across waste streams from operations and construction projects, and as a regulated business it has set itself targets of zero waste to landfill and 70% or greater recycling, reuse, recovery rate by 2026.

MANAGING RESOURCES SUSTAINABLY TO EXTEND MAXIMUM LIFESPAN AND FACILITATE RE-USE OR RECYCLING AT END OF SERVICE LIFE

Our business will grow to support the transition towards net zero and a low carbon economy. It is therefore essential that we minimise waste, use our available resources efficiently and use sustainable materials throughout our construction projects. We have set ourselves targets in these areas and will continue to monitor and track performance against them.

Developing our approach for embodied carbon in our network

Background

Embodied carbon, broadly defined as the carbon emissions associated with the manufacturing and transport of purchased goods and materials, is becoming an increasingly relevant element of the conversation around the transition to net zero.

As operational emissions decline. the embodied carbon of assets or construction materials procured by businesses will make up a larger percentage of the remaining emissions that need to be managed in order to reach net zero. Ofgem has recognised this and embodied carbon will be a part of future RIIO-T2 reporting requirements.

Current Status

In order to lay the groundwork for RIIO-T2 and to inform our current activities during RIIO-T1, we have been developing our approach towards the management of embodied carbon.

This has included upskilling through training and engagement with other TOs and industry leaders.

Our approach towards embodied carbon has been influenced by the PAS 2080 -Carbon Management in Infrastructure – standard which provides a framework for managing carbon across the life cycle of an infrastructure project.

We have also engaged with Transmission Owners SPT and National Grid to discuss development of an industry-standard methodology for measuring embodied carbon. During the scheme year, these discussions have focused around selecting source databases for the embodied carbon of construction materials, developing an inventory of electrical and civil assets for which embodied carbon data should be collected, agreement on a common message to supply chains requesting Environmental Product Declarations, and the procedures for managing a shared asset database on embodied carbon.



Sustainable Procurement

The increasing importance of embodied carbon and the need to tackle scope 3 emissions in our supply chains has driven our approach toward sustainable procurement. We have conducted questionnaires and telephone interviews with some of our largest suppliers to explore avenues for further collaboration on sustainability and the low carbon transition. By engaging with our supply chain and developing an understanding of ways in which we can collaborate to reduce emissions we aim to be at the forefront of best practice.

The feedback from these engagements have been used to shape our Sustainable Procurement requirements for RIIO-T2 reflecting both the SSE Group's sustainability objectives and SHE Transmission's specific sustainability ambitions.

Our RIIO-T2 Sustainability Action Plan, contains further detail on these requirements, including the draft supplier code (see pages 97-100 of sustainabilityaction-plan).

We are establishing pre-qualification questions used to assess the capability and ambition of contract applicants to deliver on our sustainability requirements and the general works information setting out the requirements that supply chain partners will be expected to adhere to. This will be included within our key RIIO-T2 framework agreements accompanied by associated contractual obligations.

Case Study – Blackhillock - Old substation has a bright new future

Building a new state of the art substation at Blackhillock was a key component of the £1.1bn Caithness-Moray project. Completed in January 2019, the new substation is the largest in the UK, and is home to a High Voltage Direct Current (HVDC) converter for the Caithness - Moray subsea link. The old substation, scheduled for demolition, was redeveloped into a new training facility for our engineers. By re-using assets previously planned for demolition, we were able to avoid the emissions associated with using raw materials and producing new assets. By adopting the principles of the circular economy we have been able to reduce the environmental impact of the project whilst benefiting our business at the same time.



Working with stakeholders to build a circular economy

We believe that building a circular economy is an important step in the wider transition towards net zero. A circular economy is an economic system aimed at eliminating waste and the continual use of resources. As a member of the Scottish Infrastructure Circular Economy Forum (SICEF) we have engaged in several meetings with our peers in the sector which assisted in the publication of the forum's inaugural White Paper in June 2020.

The SICEF White Paper provides a clear signal to policymakers and supply chains on the areas in which SSEN Transmission and other Scottish infrastructure providers seek collaboration in order to advance the circular economy.

Investment in new infrastructure will be a critical part of the net zero transition and in the post-COVID economic recovery.

This is our chance to build back better and we look forward to continuing to work with SICEF to address sustainable resource use in the construction of infrastructure.

The SICEF White Paper can be found here: https://aecom.com/content/ wp-content/uploads/2020/06/ SICEF_White-Paper-1_Final1.pdf



Meeting the needs of vulnerable customers and maximising the local benefit of our investments.

One of the most significant impacts we have on the areas we operate in is the local economic benefits created through some of our major development projects. We have a responsibility to ensure all our customers, communities around our operations and society at large all thrive as a result of our operations. Without the continued support of the communities, we would not be the business we are today or become the business we want to be in the future.

MAXIMISING THE LOCAL SOCIAL **AND ECONOMIC BENEFITS OF OUR INVESTMENTS**

Our response to the coronavirus

Supporting local supply chains

Giving back to communities

Meeting the needs of vulnerable customers

Placing stakeholders and customers at the heart of our business strategy

MEASURING **PERFORMANCE**



3.900

UK jobs supported during 2019/20



27%

approved suppliers



Over 80

engagement events

Spotlight – Our response to COVID-19

In March 2020, SHE Transmission joined forces with a host of businesses in signing the C-19 Business Pledge to support the UK through the coronavirus pandemic and efforts to recover from it. All of SHE Transmission's stakeholders have been affected by coronavirus, and the C-19 Business Pledge was established with the aim of uniting the business community behind three key aims:

- Supporting their own employees throughout and beyond the challenging time of coronavirus;
- Publishing clear and simple advice for customers; and
- Doing what they can to help communities through the pandemic.

In line with this, SHE Transmission's over-riding priority through the pandemic has been to support the safe and reliable supply of electricity, on which the people and organisations whose work is critical to the coronavirus respond depend. At the same time, SHE Transmission is committed to supporting its employees and wider communities with the challenges they face.

Read more about the C-19 Business Pledge here: www.sse.com/news-and-views/2020/03/sse-pledgessupport-for-uks-coronavirus-fight/

MAXIMISING THE LOCAL SOCIAL AND ECONOMIC BENEFITS OF OUR INVESTMENTS

Although the most significant societal value we have on the areas in which we operate are the local economic benefits created through our major development projects, our investments in communities are not only financial, our employees also commit their time to supporting projects in our communities through initiatives such as our employee volunteering scheme. We are also taking steps to understand how we can help address the needs of vulnerable customers and improve how we engage with stakeholders.

Contributing to GDP and Jobs

SHE Transmission aims to take a proactive role in monitoring and disclosing the impact it makes on the economy where our business operates; our business is key in creating and sustaining high-quality jobs, in the places that need them the most.

PwC were commissioned to calculate the scale of the economic value that SHE Transmission adds to society. Over 2019/20, PwC found that SHE Transmission contributed over £550 million to the UK economy, of which over £330 million was in Scotland.

Over 3,900 jobs were supported, either directly or indirectly, with over 900 of these in Scotland. Due to the large and diverse geographical area our network covers, many of these jobs are in some of the most remote places in Scotland.



Supporting local supply chains

Stakeholders consistently prioritise the need to ensure local businesses benefit from our construction projects. Building on the SSE Responsible Procurement Charter that encourages the use of local supply chains and ensuring that we continue to maximise the local benefit of our investments, we aim to support local employment and local supply chains where feasible during the development, construction and operation of our assets.

We actively support local supply chains when developing, constructing and operating our assets. Currently 27% of our approved suppliers are registered in our license area. We have two main initiatives in this area to promote local supply chains: the online platform, Open4Business (O4B), which we have continued to promote through 2019/20 and our local "Meet the Buyer" events.

Both of these initiatives aim to attract local businesses to tender for subcontract opportunities on our large projects, enhancing benefits to local communities

Giving back to communities

All colleagues are encouraged to take part in our Be the Difference scheme by volunteering in the communities they live and work. As a large utilities company, our skill base is wide and we can offer support from across our business. Staff can suggest their own projects or, in order to make access as straightforward as possible, we have a Be the Difference Database.

Since the launch of the volunteering programme, we've helped over 2,500 projects.

This has led to millions of pounds of time and skills being donated to charities, schools and local community groups. In the last financial year, 97 staff have volunteered through the programme, with 23 taking part in school-specific projects.

This resulted in 137 days spent by staff volunteering at local projects and events. This engagement has included:

- 196 hours spent in primary or secondary schools
- 90 hours spent litter picking
- 67.5 hours spent volunteering in Food Banks
- 67.5 hours spent volunteering at nature reserves
- 66.5 hours volunteering at sporting events
- 52.5 hours spent planting trees
- 45 hours spent removing Giant Hogweed
- 22.5 hours spent as a volunteer Youth Mentor

Spotlight – Rothienorman School visit

SHE Transmission staff visited Rothienorman School in December 2019 to talk to the children about how energy works and how they can stay road safe during construction.

The staff were working locally on the construction of the Rothienorman substation, which forms part of SHE Transmission's reinforcement and improvement of the transmission network in the North East and East Coast of Scotland. The school visit marked a busy couple of weeks for the team, following visits to the substation site by members of the local community, Fisherford Community Council and Rothienorman Community Association.

During their visit they talked to the pupils about the key role Rothienorman substation will play in facilitating the connection of renewable energy to the National Grid on the North East Coast.

Showing them how the substation will help control the flow of energy across the north east, directing renewable energy generated around Peterhead, and assist with the delivery of energy to where it's needed. Highlighting the key role, SHE Transmission plays in supporting the transition to net zero.

They also used their visit to talk about staying safe around increased local and construction traffic and gave each pupil a high visibility vest and snap band to wear when travelling to and from school on dark mornings and winter nights. Helping the children to "think bright" about road safety and improve their visibility to drivers on the road.



Meeting the needs of vulnerable customers

Our stakeholders have told us to increase our engagement with hard to reach and vulnerable customers. As a Transmission Owner we do not have a direct customer relationship with end consumers, and for us they are a group which is harder to reach but vitally important to engage with. Based on stakeholder feedback, it is vitally important to address high-risk categories of consumers in the north of Scotland and islands.

In our network area, around 150,000 consumers are currently on Priority Services Register (PSR).

To support vulnerable consumers and introduce measures to tackle fuel poverty, we are working in partnership with third parties to utilise established engagement activities to support vulnerable consumers within the community. We invited Home Energy Scotland (HES) to participate in a stakeholder consultation event for our Business Plan which unlocked an opportunity for more involved dialogue with HES, and further discussion took place to explore shared objectives.

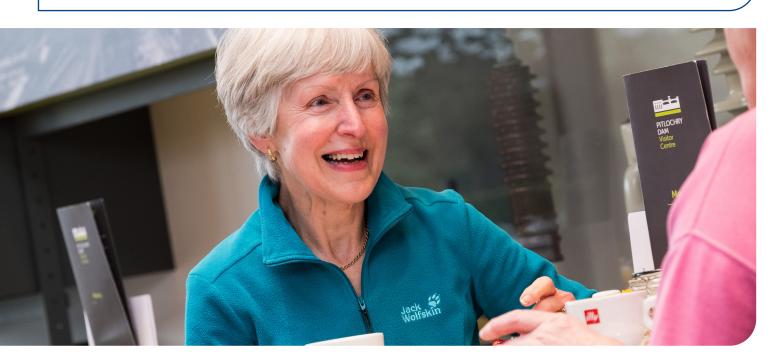
Our aim is to facilitate HES attendance at our public consultation events, whereby HES will provide energy advisors to attend and offer impartial advice. By enabling Home Energy Scotland (HES) to attend our events, they can provide a route to practical advice for customers experiencing fuel poverty, difficulties with bills, or accessing help. We will also utilise the HES initiative to gain knowledge of the needs of hard to reach end customers.

Spotlight – Reviewing languages spoken in our network area

Our Stakeholder Engagement Action Plan contains the action to provide communications in different languages as appropriate.

We know from census data from 2011 that over 27,000 people in the council areas in which we have or are developing our infrastructure could not communicate in English.

During 2019/20 we have undertaken research on the languages spoken within our network, and are looking to create a language plan to ensure that we are being proactive to ensure we can communicate effectively with all of our stakeholders, in their native language. This would aim to promote and encourage the development of language skills within our network and ensuring we meet the needs of our vulnerable customers.



Placing stakeholders and customers at the heart of our business strategy

2019 was a pivotal year for stakeholder engagement in SHE Transmission as we developed, consulted on, published and embedded a new Stakeholder Engagement Strategy. The new strategy was developed based on stakeholder views, best practice within our own business, from other network companies and from outside our sector. The strategy was refined through collaboration and consultation with stakeholders which tailored these approaches to fit our sector and the expectations of our stakeholders

The strategy sets out our clear aim and ambition, the objectives for achieving these, and a set of simple principles for how we engage.

These principles are aligned to the AA1000 Stakeholder Engagement Standard.

Our most successful engagements from recent years have delivered: increased stakeholder satisfaction, better outcomes for consumers and society, and real progress on energy transition aims.

By implementing the strategy consistently across our business, we are delivering these benefits in more areas. The strategy implementation is being delivered through an accelerated business and behaviour change programme at all levels of our business. An independent Healthcheck of our performance against the AA1000 Stakeholder Engagement Standard places our organisation in the 'Mature' category with a total score of 62%.

www.ssen-transmission.co.uk/information-centre/industry-and-regulation/our-new-stakeholder-engagement-strategy/

Spotlight – adapting to online consultations during COVID-19

In June 2020, SHE Transmission held its first ever online consultation events to engage with the local community on plans to upgrade Skye's transmission network.

Consultation on the proposal was originally planned to take place in March 2020, with seven public engagement events planned in locations along the route for the replacement line. However, due to the Covid-19 pandemic these events were cancelled.

To continue engagement on the project, SHE Transmission has developed an online consultation tool, to enable the local community to experience the full exhibition from home on a computer, tablet or mobile device. We listened to local communities to ensure safe working practices for our ongoing essential maintenance and construction work. The online exhibition has been designed to look and feel like a real consultation in a community hall, with exhibition boards, maps, interactive videos and the opportunity to share views on the proposals.



Ensuring an inclusive culture for our employees; adding value through good jobs, training and development.

What we do within the transmission business is nationally vital work and it all depends on the efforts of the people who work for us. We have a significant opportunity as we move forward with our ambitious RIIO-T2 plans to not only grow our business, but also to grow our people. We are committed to ensuring our people have the skills, knowledge and behaviours to manage and develop the transmission network of the future, whilst also retaining the wealth of capabilities necessary to continue to operate our current safe and reliable system. This will deliver the business needs of today, and those of tomorrow.

To achieve this, recruiting, retaining and developing our people is paramount. We want all of our employees to not only be equipped and enabled, but also motivated and inspired as we move into this next phase of our journey.

OUR FOUR PEOPLE AMBITIONS

A Healthy, Happy and Safe Workplace

Right People, Right Skills

One Inclusive and Engaged Team

Empowered Inspirational Leaders

MEASURING PERFORMANCE



29.8%

SHE Transmission median gender pay gap for 2019/20



30%

of employees on SHE Transmission executive committee are women



Around

£500,000

invested in employee learning and development in



1:50

ratio of mental health first aiders to staff



79%

of SHE Transmission employees rated favourably as a Great Place to Work in sustainable engagement index

Creating our Sustainable Workforce Strategy

SHE Transmission designed its People Strategy in 2019 in an inclusive way, with our people, for our people. Workshops and oneto-one discussions were offered to all employees to contribute their opinions on how to make SHE Transmission a great place to work. Furthermore, in November 2019 our strategic workforce plan was created to understand what capability we have, versus what we need to deliver our business plan and create a great place to work.

This included a full review of our generational mix and gender balance.

Read more about our Sustainable Workforce Strategy: www.ssentransmission.co.uk/media/3728/ sustainable-workforce-strategy.pdf











A Healthy, Happy and Safe Workplace

Safety underpins everything we do at SHE Transmission; if its not safe, we don't do it. In order to ensure of happy and safe workplace, we want one of the draws to be how we look after each other, both in and outside of the working environment.

The beginning of 2020 resulted in one of the greatest global health challenges of several generations with the outbreak of COVID-19. Our business had to rapidly adapt to unprecedented change over a short period time.

We were in close contact with the government and the energy regulator, Ofgem, on the latest guidance and committed to supporting efforts to limit and delay the spread of coronavirus (COVID-19).

All staff who could work from home quickly did so, with minimum disruption to overall business productivity. As operational business involved in critical national infrastructure, we've taken steps to segregate our frontline operational

This includes splitting the physical location they work in to ensure we can maintain operations in the event of a localised outbreak or a closure of a site.

We've also modified shift patterns and taken steps to train and secure additional resource, both from internal teams and through our links with key contractors. Workforce resilience will continue to be a key priority for us in the weeks and months ahead.

Right People, Right Skills

The past decade has been a period of rapid change in the energy sector and, for Transmission, huge growth. Our team has grown significantly to support this. With an ageing workforce, and set against a projected future industry skills gap, our expanding network requires an increasing number of skilled employees to keep it running effectively, and to manage the transition to an increasingly decarbonised and decentralised system.

In November 2019, we created our Strategic Workforce plan to understand what capability we have versus what we need to deliver our business plan and create a great place to work. This incorporated a full review of our generational mix and gender balance to determine how we can increase diversity within our organisation.

To further ensure we are building a diverse and inclusive team we need access to the right talent. To facilitate this the recruitment of an Employability and Education Outreach Specialist to driver increased interactions across schools and universities to promote SHE Transmission as a great place to work.

Empowered, inspirational leaders

Leadership matters. We recognise the power of the positive, empowered and inspirational leaders. We will work with leaders at all levels to develop their leadership capabilities and encourage and support those who are seeking to move into leadership roles. We are committed to ensuring there are no gaps in leadership potential or practise.

The Transmission Shadow Board, which first met in July 2018 has become embedded in our business, with the roll out of the second iteration of this forum launching next month.

The Shadow Board is a rolling panel with varied membership throughout the year which allows us to maximise the opportunity for our employees.

The launch of our Inclusive Leadership Programme in winter 2019, with the second iteration of the programme in March 2020 was rolled out to support those at an early stage of their careers to develop the necessary skills required to become the leaders of tomorrow.

We also had our first Transmissions Leadership Conference with the purpose top share vision, create engagement and ensure learning and alignment across our leadership population. The success of this event ensured that it will now become an annual event to continue to inspire and develop tomorrows leaders of our business.



One Inclusive and Engaged Team

SHE Transmission operates in conjunction with our parent company's ambition to become a more inclusive employer, strongly believing that by building a more inclusive culture our organisation is more likely to be both innovative and commercially successful.

The launch of our Inclusive Hiring manager training for all Line Managers, as well as mandatory Inclusion and Diversity e-learning for all employees as part of our business ethics training and Inclusive meeting facilitation training.

From January 2020 we have moved to Inclusive Recruitment Adverts - all Transmission job adverts ads now feature happy to talk flexible working logo and go through a gender de-coder prior to being published.

By launching an online I&D hub for all employees to access tools to help prompt debate in team meetings. This links to inclusion sources including access to the Equal Approach portal so that everyone can grow their understanding and play their part in building an inclusive culture.

Gender Pay Gap

Historically, the engineering sector has had a higher proportion of men compared to women in the workforce and a lower representation of women in senior roles. As we are an engineering focused business, we are committed to addressing both our gender balance and pay gap and have continued to make progress on senior-level gender representation.

Our Diversity Information

An internal campaign was launched during 2019 to encourage employees to voluntarily disclose their diversity information on SSE's central HR system so we can analyse more of our employee's diversity data and develop plans to address. We appreciate how important this data is, not only the numbers but as an indicator for change.

| Proportion of male and female employees in business entity (M%/F%) | Mean hourly pay difference between male and female employees (%) | Proportion of men/ women in upper quartile pay band (M%/F%) |
|--|--|---|
| 79.17/20.83 | 23.23 | 93.14/6.86 |

Case Study – Launching our Engineering Professional Development Forum:

The launch of our Engineering Professional Development Forum in February 2020 is to help us achieve to deliver net zero.

Embedding this forum, in conjunction with our SSE Group partners, ensures that our engineers receive continued professional development and engineering competencies required for attainment of Incorporated (IEng), Chartered (CEng), or Engineering Technician Status.

The importance of chartership across the industry is becoming more prevalent and increasingly important for the larger engineering projects that all of SSE's business are undertaking. Engineers solve problems and chartered engineers design the processes and safe systems of work while leading, managing and developing our people to do this in a way that makes commercial sense and delivers what our customers want and need.

Sustainability Action Plan Review

| Connecting for Society Ambition Delivery Plan | By when | Status |
|--|----------------------|----------|
| Develop CBA framework and methodology | Q1 2019 | Achieved |
| Pilot the CBA framework on test projects | Q2 2019 | Achieved |
| Define and set target for delivering reasonable requests for acceleration of connection dates (annually) and report delivery | Q1 2019 – Ongoing | On track |
| Report on first round of projects assessed against new CBA framework | Ongoing | On track |

| Mitigating Climate Change Ambition Delivery Plan | By when | Status |
|---|---------|----------|
| Scope 1, 2 & 3 carbon reduction targets defined in-line with climate science | Q1 2019 | Achieved |
| Establish quarterly business carbon footprint (BCF) reporting system | Q1 2019 | Achieved |
| Inclusion of mandatory carbon reporting in contract requirement for new projects | Q2 2019 | Achieved |
| Inclusion of carbon assessment and pricing into CBA framework | Q2 2019 | Achieved |
| Create emission reduction plans – identify emission reduction initiatives for each emissions' area to meet the science-based target | Q3 2019 | Achieved |
| Sustainability subcommittee review and approval of SBT Target proposal | Q3 2019 | Achieved |
| Submit target proposal for approval by the SBT initiative | Q4 2019 | Achieved |
| Annual update on climate science, policy and progress towards decarbonisation targets to inform strategy | Ongoing | On track |
| Begin implementation of targeted emission reduction plans for each emission area | Ongoing | On track |

| Promoting the Natural Environment Delivery Plan | By when | Status |
|--|---------|----------|
| Review existing biodiversity guidelines and governance documents to incorporate new biodiversity guide | Q1 2019 | Achieved |
| Develop Biodiversity 'Net-gain' assessment guidelines for all new capital development projects (baseline, principles for design) | Q2 2019 | Achieved |
| Integrate environmental metrics into CBA framework | Q2 2019 | Achieved |
| Review projects on track for planning submission prior to 2020 | Q3 2019 | Achieved |
| Integrate biodiversity net gain approach into environmental impact assessments and construction contracts | Q4 2019 | Ongoing |
| Begin implementation of net gain assessment process on all new projects | Ongoing | On track |
| Start monitoring biodiversity net gain performance against targets | Ongoing | On track |

Short term

Short term

Consultation

We consulted on this statement before final publication to ensure that the statement was clear, easy to understand and met stakeholders' needs. Following that consultation, we made the following amendments:

| Issue Raised | Incorporation in Strategy |
|---|---|
| Clarification should be provided as to what 'Net Zero' is when we refer to it throughout the statement. | Included in the introduction that net zero is a state where we add no incremental greenhouse gases to the atmosphere. |
| The order of the SDG goal in the front of the report should be ordered to reflect which are most impacted by our organisation. | We listened to the feedback and re-ordered the SDG table to those which our actions as an organisation are deemed most impactful. |
| Our gender pay gay was highlighted by stakeholders as an area that needed more focus in our report. | More detail was included in the final report on our gender pay gap. We also included data on the proportion of males and females in our business, the mean hourly pay difference between employees and the proportion of men/women un upper quartile pay bands. |
| One of the respondents highlighted that our temporal resolution of accounting was unclear. | When discussing the lifetime of our assets, we typically refer to 40 years. |
| One respondent suggested that we did not focus enough on our science-based target work. | We have provided further information on our science-based target commitment |
| One stakeholder asked if we could include graphics to represent our business carbon footprint to make trends easier to visualise. | As we are moving towards our science-based target reporting methodology we will look to include graphs to represent our business carbon footprint and its change against the baseline. We have included a graphic of our emissions areas. |
| Stakeholders asked for more detail on our efforts to reduce the intensity of emissions from transmission losses | Since the approval of our science-based target we have been able to provide more detail on our targeted approach to reducing the intensity of our emission related to transmission losses. This is included in the Tackling Climate Change section |

Feedback

As a company, we are always open to further comments. We welcome these throughout the year and they help further inform our work.

We welcome any views, comments or suggestions on what we have published here, a survey is available on our website at:

*URL to be included in final published version

Should you have any further questions, please contact us at lowcarbonteam@sse.com

For further information please refer to our website www.ssen-transmission.co.uk

Glossary of acronyms

| ANM | Active Network Management |
|------------------|---|
| BCF | Business Carbon Footprint |
| СВА | Cost Benefit Analysis |
| DNO | Distribution Network Operator |
| EMS | Environmental Management System |
| ESO | Electricity System Operator |
| GHG | Greenhouse Gas |
| GW | Gigawatt |
| HVDC | High Voltage Direct Current |
| kV | Kilovolt |
| LCA | Life Cycle Assessment |
| MW | Megawatt |
| O4B | Open4Business |
| RIIO-T2 | Revenue = Incentives + Innovation + Outputs (Transmission period 2) |
| SBT | Science Based Target |
| SDGs | United Nations Sustainable Development Goals |
| SF ₆ | Sulphur Hexafluoride |
| SHE Transmission | Scottish Hydro Electric Transmission |
| SHEPD | Scottish Hydro Electric Power Distribution |
| SSEN | Scottish and Southern Electricity Networks |
| то | Transmission Owner |
| VISTA | Visual Impact of Scottish Transmission Assets |



TRANSMISSION







@ssencommunity

