

Sustainability Report 2018/19

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 six.

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 2018 to 31 March 2019, 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 2018/19 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.

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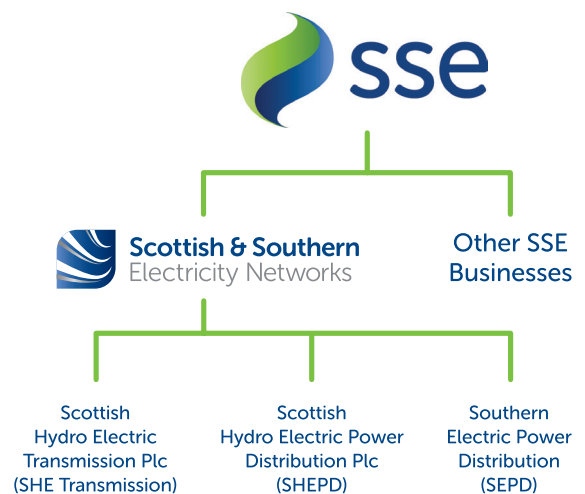
About SHE Transmission

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.



Welcome to the Scottish Hydro Electric (SHE) Transmission Annual Sustainability Report 2018/19

I am delighted to introduce our Annual Sustainability Report which describes the progress in implementing our Sustainability Strategy.

In SHE Transmission, as part of the SSE Group, our business strategy is aligned to the United Nations Sustainable Development Goals (SDGs). We take a holistic approach to sustainability with ambitions to tackle climate change, have a 'net positive' impact on the environment and deliver social value to our communities and employees.

The past year has seen significant developments in climate change science and policy and there is an increasing sense of urgency about the sustainability challenges we face, including the decarbonisation of the energy system. The climate emergency has undoubtedly become the greatest challenge of our generation. As the transmission owner for the north of Scotland, we recognise – and are acting on – our critical role in achieving the UK and Scottish Government's new commitments to net zero emissions.

The transition to a low carbon economy remains our strategic objective and where we can make the greatest contribution to sustainable development. Last year was another record year for connections of renewable electricity to our network: with a further 1GW being energised. Our network now supports over 6GW of clean, renewable electricity, more than double the capacity of a decade ago and generating enough energy to power 5 million homes and businesses across GB.

A significant achievement was the energisation of the flagship Caithness Moray High Voltage Direct Current (HVDC) link in December 2018. The HVDC link is a 113km subsea cable that crosses the Moray Firth from Spittal in Caithness to Blackhillock in Moray that unlocks the potential for up to 1200MW of renewable electricity in the north of Scotland and islands. This award-winning project was delivered on time and on budget.

Over the course of the year we have worked with stakeholders to develop a detailed Sustainability Plan that turns our Sustainability Strategy into action. Through this Plan we show the tangible steps we will take towards our goal of Leadership in Sustainability. Stakeholders have also made a huge contribution to our planning for the RIIO-T2 period. Based on stakeholders' views we have placed sustainability at the heart of our RIIO-T2 Business Plan, A Network for Net Zero.

This report shows that we have made progress in all of our sustainability ambitions over the past year. In some areas that progress has been rapid and material: developing our science-based carbon reduction target in-line with the 1.5 degree climate science pathway; adopting alternatives to SF6 insulating gas; piloting our methodology for biodiversity net gain; supporting local supply chains; and defining our approach for optimising resources.

I am determined to ensure that our sustainability ambitions are central to all of our activities and we keep up our drive towards our goal to be a trusted partner of customers and communities, realising long term benefit for society, economy and the environment. We are just at the beginning of implementing our sustainability plans, but I am optimistic and excited about the future.



Rob

Rob McDonald
Managing Director
Scottish Hydro Electric Transmission

2018/19 in focus



1,027 MW
low-carbon
generation

connected to our network in 2018/19



An estimated
4.6 million tonnes

of CO₂ displaced by the total generation connected to our networks in 2018/19



Our network now supports
over 6 GW

of clean, renewable electricity generation



Zero

environmental prosecutions or major incidents in 2018/19



1.3% below

our SF₆ leakage target for 2018/19



Three

national biodiversity awards



£136,000

awarded through the Resilient Communities Fund in the north of Scotland in 2018/19



Around
£1m

invested in employee learning and development in 2017/18

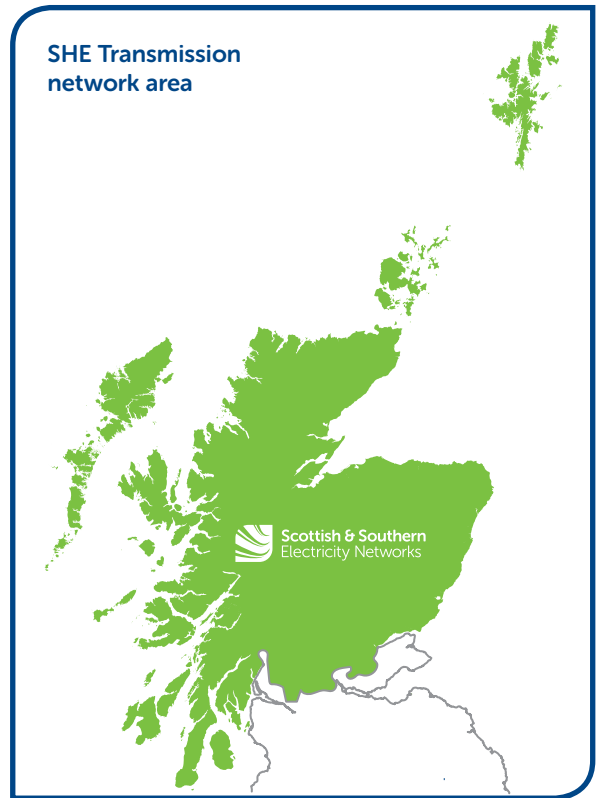
The environment we operate in

The UK Government has adopted the Committee on Climate Change (CCC) recommendation to cut greenhouse gases to Net Zero by 2050. The Scottish Government has also accepted the Committee's recommendation that Scotland adopts the target five years earlier, in 2045.

If we are to limit global temperature increases to below 1.5°C, as recommended by the Intergovernmental Panel on Climate Change (IPCC), and mitigate the worst effects of climate change, we must take further action before 2030.

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 electricity, from hydro power and wind, to wave and tidal. 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 (see page 13 for more information).

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 Sustainability Strategy

Over the course of 2018 we worked with specialists across different areas of the SHE Transmission business to develop our Sustainability Plan that aims to help us turn our sustainability ambitions into action. This forward plan sets out the key activities to achieve our Sustainability Strategy ambitions with timebound milestones against which our performance will be measured, enabling our stakeholders to hold us to account. The draft plan was published for consultation in February 2019 and the feedback received from our stakeholders through this process is being considered to finalise the plan and for the development of our RIIO-T2 (2021-2016) Business Plan.



Read our Sustainability Plan:
<https://www.ssen-transmission.co.uk/sustainability-and-environment/sustainability-strategy/>












Emerging Action icon

We use this icon to draw attention to areas where we are developing our approach and action to implement our new sustainability strategy commitments.

Contributing to the United Nations Sustainable Development Goals

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. In 2018/19 we reviewed our SDG materiality assessment of our business operations against the 17 SDGs, and we now actively support nine of the SDGs including SDG 14 'Life Below Water'.

SDG	Why it is important and how we contribute
<p>13 CLIMATE ACTION</p> 	<p>We have a vital role to play in helping the UK meet its carbon targets and support its transition towards a low-carbon economy.</p> <ul style="list-style-type: none"> - An estimated 4.6 million tonnes of CO2 displaced by the generation connected to our network in 2018/19 - We have delivered a 33.7% reduction in our Business Carbon Footprint from 2013 (see page 16).
<p>7 AFFORDABLE AND CLEAN ENERGY</p> 	<p>Affordable and timely connections are crucial for renewable energy generators developing projects in markets with reduced subsidies and challenging economics.</p> <ul style="list-style-type: none"> - 1,027MW of low-carbon generation connected to our network in 2018/19. - 83% of generation connected to our network is clean renewable generation. - Our network now supports over 6 GW of clean, renewable electricity generation.
<p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p> 	<p>The UK's infrastructure needs sufficient capacity to deliver 'greener' energy. To support this, we develop and upgrade the electricity infrastructure in the north of Scotland.</p> <ul style="list-style-type: none"> - Our capital expenditure totalled £306.2m in 2018/19 with a further £1.3bn of investment planned for the next two years.
<p>8 DECENT WORK AND ECONOMIC GROWTH</p> 	<p>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.</p> <ul style="list-style-type: none"> - We pay the real Living Wage to direct and supply chain employees. - We invested over £1m in employee learning and development in 2018/19.
<p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> 	<p>We rely on a number of natural resources during construction and operational activities, and must use these resources efficiently to minimise adverse environmental impacts, and maximise positive ones.</p> <ul style="list-style-type: none"> - We have been consulting on our circular economy approach with a focus on minimising waste, improving resource efficiency and using sustainable materials (see page 22).
<p>15 LIFE ON LAND</p> 	<p>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.</p> <ul style="list-style-type: none"> - We have trialled incorporating biodiversity net gain principles into two substation projects - We have won three biodiversity awards (see page 20). - Zero environmental prosecutions or major incidents in 2018/19.
<p>5 GENDER EQUALITY</p> 	<p>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.</p> <ul style="list-style-type: none"> - We are implementing the SSE Group's 'IN, ON and UP' strategy to increase gender diversity. - We have established a Shadow Board to bring more diversity into our decision-making - SSE Group established new inclusive hiring criteria in 2018/19 (see page 29).
<p>11 SUSTAINABLE CITIES AND COMMUNITIES</p> 	<p>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.</p> <ul style="list-style-type: none"> - We have submitted two proposals to Ofgem for improving the visual impact of transmission infrastructure (see page 19) - We have provided £136,000 of funding to communities via our Resilient Communities Fund.
<p>14 LIFE BELOW WATER</p> 	<p>We aim to sustainably manage and protect marine and coastal ecosystems from the environmental impacts of our operations.</p> <ul style="list-style-type: none"> - SSEN have developed a pilot Cost Benefit Analysis method statement for a submarine cable project which includes an assessment of the Natural Capital of the seabed.

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



Engaging with stakeholders

We have undertaken a targeted programme of stakeholder engagement on our sustainability activities since late 2017. Over the past year we consulted on our draft Sustainability Plan that includes proposed activities to implement our Sustainability Strategy in February 2019. The consultation provided stakeholders with the opportunity to ensure our actions on sustainability are fit for purpose and meet their reasonable needs and expectations. We have also had significant engagement within the year on our new Connections Policy.

In addition, as part of our RIIO-T2 engagement programme, we consulted a wide stakeholder group at a stakeholder workshop in November 2018 and held an environmental roundtable event with experts to consult on our environment plans in March 2019. The outcome of these consultations have informed our Sustainability Strategy update and the development of our RIIO-T2 Business Plan.

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. However, through this review we have identified several areas in our strategy that we can broaden, expand and strengthen to meet expectations and realise long term benefit for society, economy and the environment. Our latest Sustainability Strategy Update can be found here: www.ssen-transmission.co.uk/media/3498/ssen-riio-t2-sustainability-strategy-update.pdf

Monitoring progress against our Sustainability Strategy

We have committed to monitor our performance in order to understand progress against our Sustainability Strategy and Plan. The following sections are structured around the six sustainability ambitions from our Sustainability Strategy.

The first three ambitions: Connecting for Society, Tackling Climate Change, and Promoting Natural Environment, outline the strategic drivers and some of the initiatives that have been included in our EDR scheme submission for 2018/19.



Connecting for society

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

Our main strategic driver over the past decade has been the timely delivery of large-scale capital investment in new infrastructure to accommodate increasing levels of renewable electricity generation across the north of Scotland.

To cater to our customers' individual projects' economics and timescales we must focus on the quality of the connection service during each stage of the customer experience. Affordability is crucial to the success of low carbon energy development, particularly for local and community owned projects. To arrive at the most optimal connection solution for the customer, the connection service, solution and products must be accessible and tailored to suit each individual customers' need.

Initiatives

Delivering connections for low carbon generation	Support for remote islands renewables
	Accelerated connections for small embedded renewable generators
	Supporting community and locally owned renewable energy projects
Successful delivery of new network infrastructure	Strategic reinforcement to transport low carbon electricity to demand centres
	Using HVDC technology to enable the low carbon transition
	Refreshing our approach to new capital projects
Developing smart, flexible networks to facilitate decentralisation and embedded renewable generation	Cost effective whole system reinforcement solutions
	Supporting the transition to DSO
Planning for future network needs	Supporting whole system planning
	Developing our north of Scotland future energy scenarios

Strategic focus

Measuring performance



An estimated **4.6 Million tonnes of CO₂**

displaced by the total generation connected to our network in 2018/19¹



Our network now supports **over 6GW**

of clean, renewable electricity generation



83%

of all generation connected to our network is renewable



Around **2,870MW**

of low carbon generation connected to our network between 2013 and 2018



In 2018/19, **1,027MW**

of new renewable generation was connected



A further **182MW**

is expected to be connected in 2019/20

*Figures reported include small embedded generation connections

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

Delivering connections for low carbon generation

The transmission infrastructure that we build and operate for the transportation of low-carbon electricity is essential in the transition to a low-carbon electricity system. During 2018/19 we enabled 1,027 MW of low carbon generation to connect to our network. 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.

Support for remote islands renewables

We have continued to actively support transmission connections to the Scottish Islands of Orkney, Shetland and the Western Isles. These connections represent a core part of our approach to the low carbon transition given the significant contribution that they could make to UK decarbonisation targets. The Scottish Islands have the technical potential to provide in excess of 20% of GB demand (80TWh) but they currently only produce around 1.5% of Scottish renewable energy generation (0.33TWh).

Over the last financial year, we have consulted on the commercial arrangements for our proposed Alternative Approach to Orkney, which will reinforce the network in incremental stages and allocate capacity on a ready to connect basis, and submitted needs cases to Ofgem for the Shetland and Western Isles transmission connections.

Shetland and Western Isles Needs Case Submissions to Ofgem

Impacts

604MW and 355MW of renewable capacity enabled

Timescale

Early 2020s, subject to regulator approval

Stakeholders involved

Regulator, communities, developers

Non-conventional solutions

Transmission connections to remote islands



In September 2018 we submitted the Strategic Wider Works (SWW) needs cases for transmission connections to Shetland and the Western Isles to Ofgem. This followed consultation events in May and September where we received further information on new generation projects that may come forward as work on the link progresses.

The weather in and around the Shetland Isles is considered very productive for renewable energy generation. There is in excess of 500 MW of renewable generation proposed that would require a connection to the mainland if constructed. Recent developments in relation to available government funding for generators on the islands has increased the possibility that these renewable generation projects will be progressed. To enable this low carbon potential to be realised, we have proposed to construct a single circuit 600 MW HVDC transmission link between Kergord on the Shetland Islands and Noss Head on the Scottish mainland.

Similarly, the Western Isles has long been recognised as a region with strong potential for the development of renewable energy. The Western Isles project proposes to construct a single circuit 600 MW High Voltage Direct Current (HVDC) transmission link between Arnish on the Isle of Lewis and Beaully on the Scottish mainland, allowing renewable energy generation on and around the islands to connect and export to the wider GB transmission system.

Accelerated connections for small embedded renewable generators

During 2018/19 we implemented further measures to accelerate the connection process and reduce costs for low carbon generation customers. This has included working with the Electricity System Operator (ESO) to reduce system constraints by applying temporary operational rating enhancements to transmission assets, allowing them to run at higher levels of performance and enabling more low carbon generation to access the network. This approach has been used at our Errochty, Beauly, Fort Augustus and Tummel Bridge substations.

We have also worked with the ESO to develop Active Network Management (ANM) projects at Kergord and Fort Augustus, allowing low carbon generators to connect to the network on a temporary non-firm basis ahead of enabling transmission works. This has advanced the connection of 49.9 MW and 217 MW of low carbon generation respectively. We have now embedded our approach to ANM projects as 'business-as-usual' through a new Strategic Optioneering Methodology.

We are also taking steps to further simplify and clarify the connection process. During 2018/19 we have worked collaboratively with Scottish Hydro Electric Power Distribution (SHEPD) and ESO on the Appendix G Planning Limit process. This process will allow one contract for both transmission and distribution works to be issued to embedded generators, enabling faster network access for low carbon generation. Furthermore, in November 2018 we started our consultation on our Transmission Connection Process to develop our new commercial and connections policy.

Supporting community and locally owned renewable energy projects



In our sustainability strategy we committed to review the challenges that our current connections processes and rules pose for local and community renewable energy customers, and take steps to remove barriers and facilitate their connections applications.

Community engagement in the energy transition is high across Scotland, with over 1,000 community-owned renewable energy projects. We understand from our engagement with stakeholders that this is likely to grow further over the next decade and potentially expand in scope. In accordance with Scotland's Energy Strategy, which argues for "a smarter local energy model" with a commitment to "empower our local communities, supporting the development of innovative and integrated local energy systems and networks", we are taking steps to understand how we can support the move towards a more democratised energy system.

We established a research study last year to review the challenges that our current connections processes pose for customers, to determine the steps required to remove barriers to facilitate their connections. This study will determine our approach for supporting community and locally owned renewable energy organisations and will support our plans for an accessible connection process during our next price control, RIIO-T2.

In addition to the large wind farm developments proposed for Shetland and the Western Isles, there is significant interest from community and local renewables. Our inclusive approach has sought to identify and support this small-scale development. We have actively engaged with stakeholders on the islands and organised workshops on grid connection and charging.



Successful delivery of new network infrastructure

In 2018/19 our capital expenditure (adjusted) totalled £306.2m. We have a pipeline of investment of £1.3bn for the remaining two years of the current price control period. With the publication of our RII0-T2 Business Plan we have forecast an estimated £1.8bn of 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.

Strategic reinforcement to transport low carbon electricity to demand centres

Working in collaboration with our stakeholders and the ESO we continue to advance the business case for cost-effective network reinforcement to enable the transport of low carbon energy to demand centres across the GB Network.

In January 2019, the ESO published its annual Network Options Assessment (NOA) report outlining which major projects will be required to meet the future needs of GB's electricity transmission system. The NOA report recommends which investments would best manage the capability of the GB transmission networks against the ESO's Future Energy Scenarios (FES).

The 2019 report recommends, under all FES scenarios, that the proposed East Coast reinforcements in our network area "proceed" to support an expected increase in renewable generation capacity during the continued transition to a low carbon economy. This includes upgrading East Coast overhead lines to operate at 275kV/400kV and constructing the Eastern HVDC link from Scotland to England.

Over the past year we have formalised our approach to strategic network development through our Strategic Optioneering Methodology. The aim of the Strategic Optioneering Methodology is to provide structure to the optioneering phase of a project or projects such that the synergies between scheme types and drivers can be identified across a geographical region and the overall system delivered provides a holistic benefit.

Read the Strategic Optioneering Methodology:

www.ssen-transmission.co.uk/media/3406/strategic-optioneering-methodology.pdf

Using HVDC technology to enable the low carbon transition

High Voltage Direct Current (HVDC) is the most efficient way to transmit electricity over long distances (particularly via subsea cables) with reduced electricity losses and increased capacity. We have taken a lead in successfully integrating HVDC technology onto the GB transmission system through our National HVDC Test Centre and the completion of our Caithness-Moray HVDC link.

We are continuing to take the lead in HVDC technology through development of the following projects:

- Eastern HVDC link – connecting Peterhead substation in east Scotland to Drax substation in the north east of England via subsea cable, this link will enable the transport of low carbon energy in Scotland to demand centres in Britain
- Shetland & Western Isles HVDC links – transmission connections to the Shetland and Western Isles will unlock these islands' significant low carbon energy potential by allowing them to transport electricity to the mainland

Completion of Caithness-Moray HVDC link

Impacts

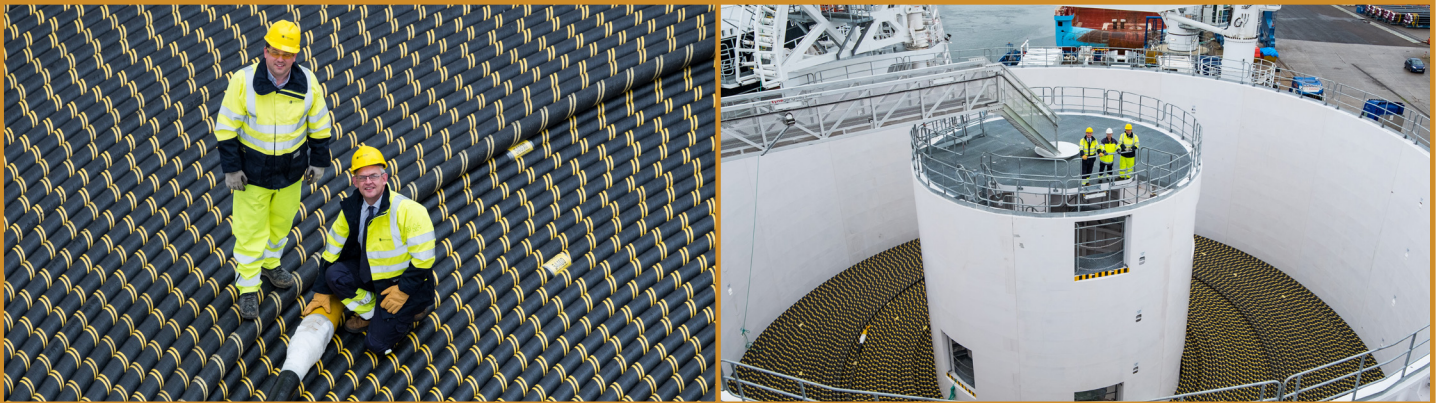
1.2GW connection, £643.3m added to UK economy

Stakeholders involved

System operator, supply chain partners, local communities

Non-conventional solutions

HVDC technology



In December 2018 we completed the construction, connection and energisation of the Caithness-Moray HVDC link. The link uses HVDC technology to transmit power through a 113km subsea cable beneath the Moray Firth seabed between new converter stations at Spittal in Caithness and Blackhillock in Moray. This will enable up to 1,200MW of capacity to transmit power from the increasing sources of renewable energy in the north of Scotland, further enabling the transition to a low carbon economy.

This link represents the largest single investment we have ever undertaken, not just by SHE Transmission, but by the SSE Group and represents the biggest single investment in the north of Scotland electricity transmission system since the 1950s. This investment has added £643.3m to the UK economy, of which £265.5m contributed to Scotland, and supported 10,971 years of employment in the UK economy, of which 4,975 years are supported in Scotland².

The success of Caithness-Moray has also been recognised by the Royal Institute of Chartered Surveyors (RICS) and Network Magazine where the project picked up both the Infrastructure and Project of the Year categories at the April 2018 RICS Awards³ and Engineering Project of the Year at the Networks Magazine Awards in March 2019⁴.

Refreshing our approach to new capital projects



Throughout 2018/19 we have been developing our new Cost Benefit Analysis (CBA) framework to include broader social, environmental and economic considerations. The new CBA methodology will use whole-life costing and assess whole-system solutions and will assess our projects wider societal benefits to ensure we offer best value for customers and society as a whole. This will enable the identification of alternative 'non-standard' approaches to system planning and network development, including the implementation of our innovation strategy, where these can deliver better value - whether that value is economic, social or environmental. This CBA project is being piloted and applied to our future projects during 2019/20.

In September 2018 we also published our Transmission Asset Development Process⁵ for consultation. This document sets out our approach to network development for new transmission assets. We consulted a wide range of stakeholders to gain feedback on the process we use to make decisions specifically when developing overhead lines, underground cables and substations, and highlights the technical, environmental and economic criteria we consider at each stage. It also explains to our stakeholders the points where further engagement is undertaken on a project-by-project basis.

A wide variety of stakeholders responded to this consultation including developers, statutory consultees, local planning authorities, community councils, landowners, non-governmental organisations, and our supply chain. The feedback was collated and will be used to further develop and refine our approach to network development.

²www.sse.com/media/421062/Caithness-Moray-Delivering-economic-and-social-benefits.pdf

³www.ssen-transmission.co.uk/news-views/articles/2018/4/caithness-moray-wins-two-rics-awards

⁴www.ssen-transmission.co.uk/news-views/articles/2019/3/caithness-moray-scoops-engineering-project-of-the-year-at-network-magazine-awards

⁵www.ssen-transmission.co.uk/media/2948/ssen-riio-t2-project-development-process-document-16pp-web.pdf

Developing smart, flexible networks to facilitate decentralisation and embedded renewable generation

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.

Cost effective whole system reinforcement solutions

SHE Transmission has continued to work collaboratively with Scottish Hydro Electric Power Distribution (SHEPD) and the ESO to determine efficient, cost effective whole system reinforcement solutions at various Grid Supply Points (GSPs) - the interface between the transmission and distribution network. This seeks to enable earlier connection of low carbon generation customers while minimising costs to users and consumers. Notable examples of this collaboration in 2018/19 have included Active Network Management (ANM) schemes at Alness, Boat of Garten, Taynuilt, Fiddes, Fort Augustus and Keith GSPs.

Active Network Management Scheme at Boat of Garten GSP

Impacts

39.1 MW low carbon generation advanced by six months

Stakeholders involved

System operator, DNO, developers

Non-conventional solutions

Active network management



The Tom nan Clach wind farm development is a 39.1 MW embedded generator which is contracted to connect to the local 33kV distribution network supplied from Boat of Garten Grid Supply Point (GSP). However, a connection on a firm basis could not be accommodated on the existing circuit without enabling reinforcement works scheduled to be complete in April 2020.

Recognising the developers' need to meet their contractual requirements and the risk of losing potential low carbon generation on the system, SHE Transmission coordinated with the Scottish and Southern Electricity Networks Active Solution Team (AST) and SHEPD to explore an alternative connection arrangement.

To enable early access to the network, the generator was provided with a temporary connection. This took the form of an Active Network Management scheme which enables the generator to export electricity when the levels of demand on the GSP are higher than the existing connected embedded generation. By taking this approach we were able to advance the connection of Tom nan Clach by six months and allow more low carbon energy to access the network.

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.

Supporting whole system planning

SHE Transmission continues to effectively and actively participate in the whole system planning processes including the production of the Whole System Future Energy Scenarios (FES), the 2018 Electricity Ten Year Statement (ETYS) and the 2018/19 Network Options Assessment (NOA). To ensure coordination of development on the transmission and distribution networks in the SHE Transmission area, SHE Transmission established a Whole System Development Forum (WSDF) for SSEN in 2017/18. The WSDF provides a platform for whole system focused network development and facilitation of economic and efficient solutions recognising current and future system security requirements. During 2018/19, regular meetings of the WSDF have been held and this has led to the development of a proposed approach by SHE Transmission to whole system planning, which will form part of our RIIO-T2 business plan.

SHE Transmission has also engaged with Distribution Network Operators (DNOs) as part of the Distribution System Operator (DSO) transition which involves moving to a “smarter” and more flexible way of managing the distribution network. This transition will enable the network to integrate the technologies and changes necessary to enable the low carbon transition, including greater uptake of distributed generation, electric vehicles, energy storage and smart technologies. In November 2018 we published our ‘Distribution System Operator Impact on SHE Transmission’ paper⁶ which builds on analysis by the ENA Open Networks Project to quantify how DSOs and the transmission network may interact during the RIIO-T2 period.

Developing our north of Scotland future energy scenarios

In August 2018, we published our North of Scotland Future Energy Scenarios (NoFES) report. This publication, which involved engagement with over 150 customers and stakeholders, sets out SHE Transmission’s view of a range of potential generation and demand scenarios in the north of Scotland for the period 2021-2030.

The report outlines three scenarios. A summary of the main assumptions and implications of these scenarios are as follows:



Proactive Decarbonisation

Scottish consumers are supportive of decarbonisation, increasing their use of renewables and engage in the benefits of decarbonisation and decentralisation at local levels. The focus is on capital investment in large scale projects and policy is in place to stimulate the development of less established, low carbon energy technologies.



Cost Limitation

Scottish consumers are less inclined to invest in microgeneration and renewable heating technologies, but energy efficiency continues to be a focus of national and local government. The focus is on delivering cost reduction in energy bills. Decarbonisation is a secondary consideration, as a result there is low uptake in domestic microgeneration and little focus on decentralisation.



Local Optimisation

Scottish consumers and businesses are driven by cost reduction as well as decarbonisation, investing in decentralised, domestic microgeneration to reduce their spend on energy. The focus is on delivering decentralisation and decarbonisation through democratisation of energy supply to deliver improved affordability for consumers and businesses.

The Proactive Decarbonisation scenario is aligned with 1.5°C pathway to limit global warming and as such has informed our business strategy and our subsequent decision to adopt Leadership in Sustainability as a core strategic theme.

During 2018/19 we published two further papers on our analysis of energy, industrial and commercial trends in the north of Scotland. These analyses helped shape the topics which we are investigating for inclusion in a future North of Scotland Future Energy Scenarios publication⁷.

The analysis is helping to shape our business plan for the next price control, RIIO-T2, and informing pathways to Net Zero and the whole system FES.

⁶www.ssen-transmission.co.uk/media/3167/dso-transition-impact-on-she-t-final-002.pdf

⁷www.ssen-transmission.co.uk/information-centre/industry-and-regulation/future-energy-scenarios/



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 no longer a distant threat, but a visible reality. The most recent report by the UN Intergovernmental Panel on Climate Change (IPCC) highlighted again the very real and serious risks that climate change represents.

As the owner of the transmission network in a region rich in renewable energy, our most material contribution to action against climate change is in enabling the transition to lower carbon electricity generation. While acting on this, we are also determined to reduce our own greenhouse gas emissions and make our business resilient to the future risks from climate change.

We have aligned our business carbon reduction strategy with the need to achieve a level of decarbonisation consistent with the 1.5°C pathway recommended by the IPCC.

Initiatives

Strategic focus

Reducing our business carbon footprint and building resilience to climate change

Developing a Science Based Target for our own greenhouse gas emissions

Reducing SF₆ emissions

Tackling greenhouse gas emissions in our supply chain

Managing climate risks to our network



Measuring performance



33.7% Reduction

in SHE Transmission Business Carbon Footprint since 2013/14



1.3% below

our SF₆ leakage target for 2018/19



8% increase

in SHE Transmission Business Carbon Footprint since 2017/18

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

Reducing our business carbon footprint and building resilience to climate change

We believe in taking ambitious action to reduce our own business carbon footprint in a manner consistent with the latest climate science and policy. Recent developments in this area, including the IPCC 1.5°C and 2050 net zero emissions target, highlight the urgency of acting now to seek meaningful reductions.

Developing a Science Based Target for our own greenhouse gas emissions



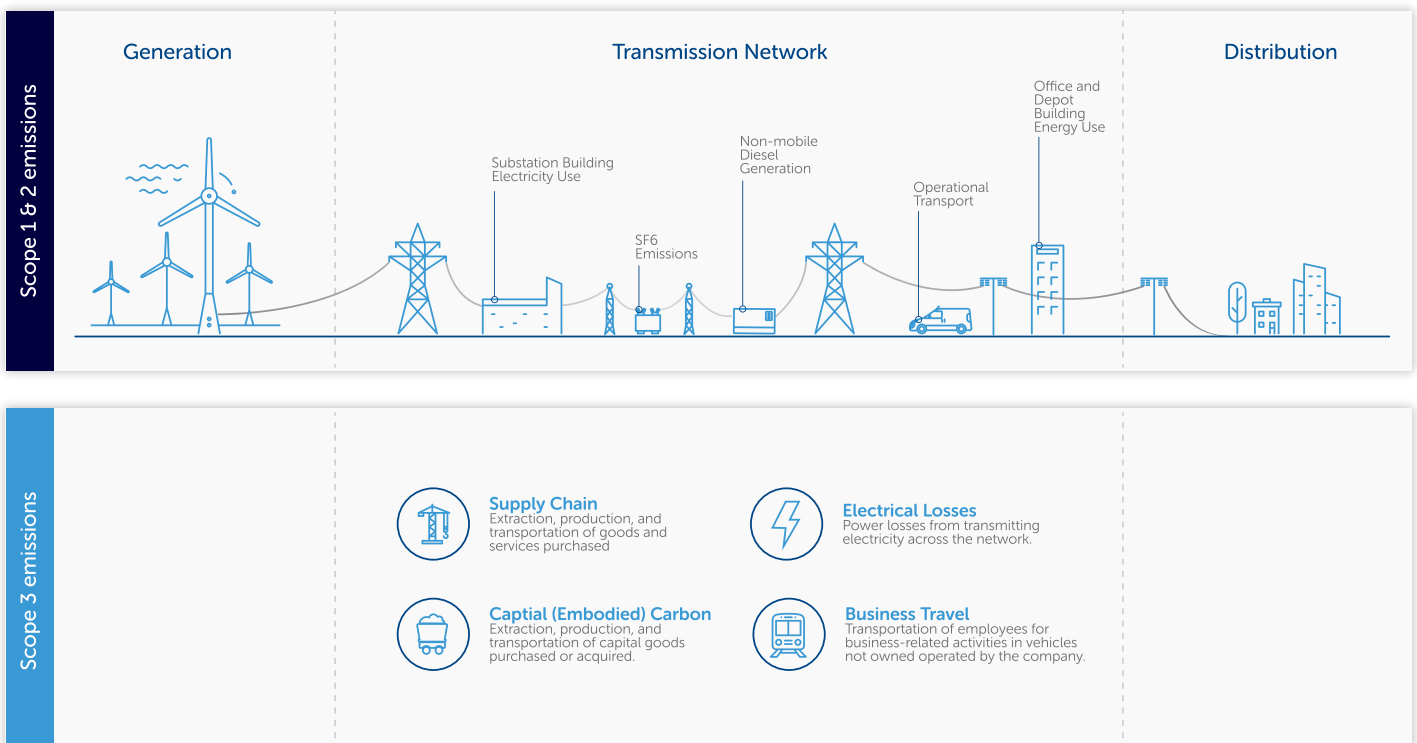
In May 2018 we marked a significant milestone in our low carbon strategy by committing to set a Science Based Target (SBT) for reducing our greenhouse gas emissions. Science based targets provide companies with a clearly defined pathway to future-proof low carbon growth by specifying how much and how quickly they need to reduce their greenhouse gas emissions.

To accomplish this goal, we registered with the SBT Initiative, a collaboration between CDP, the United Nations Global Compact (UNGC), World Resources Institute (WRI), and the World Wide Fund for Nature (WWF).

Over the past year we have been reviewing the different approaches to setting a science-based target and have undertaken scenario analysis and technical feasibility assessments to inform the development carbon emission reduction plans for each of its emissions areas. Work to-date indicates our SBT will require a 45% absolute reduction in scope 1 and 2 carbon emissions by 2030 to meet the 1.5-degree climate science pathway from a 2018/19 baseline. As our network is expected to continue to grow to accommodate renewable generation during this time period, this is a stretching and ambitious target.

Based on this analysis, we have set a clear goal to reduce our scope 1 and 2 carbon emissions by a third compared to 2018/19 during RIIO-T2 (2021-2016). This target aims to meet the 1.5 degree climate science pathway at the trajectory to achieve net zero emissions. We aim to have our science based target set by summer 2020 at the latest.

Sources of greenhouse gas emissions on our network



Our overall Business Carbon Footprint (BCF) for 2018/19 has been calculated as 121,777 tonnes of CO2 equivalent (tCO2e). This is an increase of 8.1% compared to the last financial year 2017/18 (112,643 tCO2e) but represents a 33.7% reduction from 2013/14. The increase between 2017/18 and 2018/19 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 due to the growth of the network to enable low carbon generation.

Data Gathered ^a	2017/18	2018/19
Scope 1 Emissions	(tCO2e)	(tCO2e)
Buildings Energy Usage (Gas Fuel)	15.36	15.35
Operational Transport	580.85	568.37
Fugitive Emissions (SF6)	7,451.95	8,491.63
Fuel Combustion	0	99.87
Total	8,048.16	9,175.22
Scope 2 Emissions		
Office Buildings Electricity Use	238.14	189.83
Substations Electricity Use	2,014.07	1,897.75
Total	2,252.21	2,087.58
Scope 3 Emissions		
SHE Transmission's Business Transport	705.26	670.53
Electrical Losses	87,000.92	100,206.78
Total Contractors' Emissions	14,636.18	9,637.11
Total	102,342.36	110,514.42
Total BCF	112,643	121,777

Reducing SF6 emissions

The electricity transmission industry uses sulphur hexafluoride (SF6) as an insulating gas. While SF6 is widely used in substations across the globe due to its good insulating properties it is also a potent greenhouse gas that has a global warming potential (GWP) 22,800 times more powerful than carbon dioxide.

SHE Transmission has focused on proactive measures to reduce leakage of SF6 on our network. This has included an analysis of underlying leakage trends to identify potential quality control issues with specific assets, improved asset management systems and new operational practices like the use of infrared cameras to pinpoint the source of leaks for faster repair. We have also committed to install SF6 online leakage monitoring on new SF6 assets on the network.

Our SF6 strategy also looks at measures to facilitate the uptake of alternatives to SF6. A prime example of this can be seen in our Fort Augustus, New Deer and Dunbeath substation projects. These projects have involved ground-breaking approaches to emission reduction through the use of alternatives to SF6. The Fort Augustus and New Deer sites will see the installation of GE's gas-insulated switchgear and busbars utilising g³ (Green Gas for Grid) which has a 99% reduced global warming potential compared to SF6. The Fort Augustus substation expansion will be the first transmission site in the country to have a fully g³-insulated substation and the New Deer site will see the world's largest volume of this gas installed at one location. The Dunbeath site will use Siemens Blue clean air technology (see case study below).

We are also sponsoring the ENA switchgear assessment process which will allow easier acceptance by other DNOs and TOs when they begin to use this technology and we have been discussing roadmaps for additional SF6 free equipment at higher voltages with suppliers. By piloting these innovative new gases and sponsoring the ENA switchgear assessment process not only are we reducing the environmental impact on our own network, we are hoping that this will also demonstrate to the wider transmission industry that there is a viable alternative to SF6 out there, and one which they may consider using in similar scenarios in the future.

By piloting these innovative new gases and sponsoring the ENA switchgear assessment process not only are we reducing the environmental impact on our own network, we are hoping that this will also demonstrate to the wider transmission industry that there is a viable alternative to SF6 out there, and one which they may consider using in similar scenarios in the future.

SF₆ alternatives at Dunbeath

Timescales

Construction in 2019

Impacts

Reduction in GHG emissions

Stakeholders involved

Suppliers, network operators



SHE Transmission continues to lead the way in the uptake of alternatives to SF₆ on the transmission network. We have completed an evaluation of the Siemens Blue live tank 132kV circuit breaker concluding it is suitable for use at our Dunbeath substation. We have now successfully completed the Factory Acceptance Test and the circuit breakers will be installed in August 2019.

The Siemens Blue technology uses compressed synthetic air (so called clean air) technology to provide insulation between live parts and the earthed metal housing instead of SF₆ gas. Not only does this eliminate greenhouse emissions associated with SF₆ leakage but it also requires no special precautions to be taken during operation and recycling.

Tackling greenhouse gas emissions in our supply chain

Aligning our business strategy to a 1.5°C pathway means taking action to reduce not only our own greenhouse gas emissions but also influencing our supply chain to reduce the emissions associated with our construction projects. Under the GHG protocol these are classed as scope 3 emissions⁹, outside our direct control but within our value chain.

Based on feedback from our supply chain, we have implemented a new mandatory greenhouse gas emissions reporting requirement in contracts to better understand our scope 3 emissions and seek areas where we can work with contractors to make meaningful reductions. Under this new requirement, the contractor is obliged to provide quarterly reports on emissions from SHE Transmission project construction activities and produce a Site Carbon Reduction Plans detailing the actions they intend to take to reduce these emissions.

Managing climate risks to our network



Through our parent company, SSE Plc, we have contributed towards the implementation of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)¹⁰. This has involved disclosure of how a company manages climate-related risks and opportunities. SSE has committed to fulfil each of the recommendations before the end of financial year 2020/21.

To inform our RIIO-T2 Business Plan we are taking further actions in 2019/20 to assess and manage the risk to our assets from climate-related weather events including flood risk assessments.

⁹www.ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf

¹⁰www.sse.com/media/623847/SSE-Sustainability-report-2019-FINAL-spreads.pdf (pages 21-25)



Promoting Natural Environment

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

As a responsible network owner, we have a responsibility to protect and promote the natural environment as it is crucial to the maintenance of natural systems on which we all depend, for example pollination of crops, flood management and air quality regulation. It is essential that we pursue positive environmental stewardship and ensure our activities are undertaken in a sustainable manner to protect our natural environment now and for future generation.

Promoting our natural environment encompasses many areas including biodiversity, woodland and forestry, visual amenity, oil and noise management. To help us meet the highest standards of environmental management and to provide a framework for implementing our natural environment ambitions we are certifying our business through the international standard for environmental management, ISO 14001.

Initiatives

Strategic focus

Ensure our activities help to enhance or reduce impacts on the natural environment

CARE (Commitment Awareness Rigour and Engagement)

Establishing our Environmental Management System

VISTA (Visual Impact of Scottish Transmission Assets)

Protecting and enhancing biodiversity



Measuring performance



Zero

environmental prosecutions or major incidents in 2018/19



150+

stakeholders consulted on our targets and approach to Biodiversity Net Gain



Three

biodiversity awards



Two

undergrounding projects approved in the Cairngorms National Park

Ensure our activities help to enhance or reduce impacts on the natural environment

There are strong views in Scotland and across GB that our actions must be environmentally sensitive. Our stakeholders have strongly recommended that biodiversity enhancement across our portfolio be a core ambition of our future plan and that we should do more to consider visual amenity as we develop new projects.

CARE (Commitment Awareness Rigour and Engagement)

Our well-embedded environmental 'CARE' initiative continues to be our primary means of promoting environmental and sustainability values in day-to-day operation, project development and construction activities. During 2018/19 the focus of CARE has been on our environmental contractor/supply chain forums. Through these forums we have been facilitating enhanced communication and dialogue between our contractors and regulators.

This has included participation from the Scottish Environmental Protection Agency (SEPA) – sharing learning on implementing the new Construction Site Licensing regime and good practice principles for waste management – and Scottish Natural Heritage (SNH) – reviewing new species licensing implementation models (e.g. Bat Low Impact Licensing), our suite of agreed Species Protection Plans and biodiversity initiatives.

We have also planned and implemented a suite of CARE communications, with the aim of raising awareness about new regulatory developments, key site environmental risks and our wider business performance. This is in the form of a brand-new CARE newsletter with embedded videos and short blogs.

Establishing our Environmental Management System

To complement the SSE Group ISO 14001 management system, in last year's Sustainability Report we outlined our intention to seek certification under the ISO14001 standard for an Environmental Management System (EMS). Since then we have implemented an EMS in our business and finalised our EMS implementation guide that clearly demonstrates what we do, when and how the EMS will be governed. Having a SHE Transmission specific ISO 14001 management system will support improvement in our environmental performance.

In preparation for certification we have reviewed our risks, identified objectives and started to embed the system within our day-to-day business operations. We have also undertaken an external audit to assess our readiness for certification and received good feedback. Following this audit, we aim to achieve certification by the end of financial year 2019/20.

VISTA (Visual Impact of Scottish Transmission Assets)

The VISTA scheme, administered by Ofgem, allows the three GB electricity transmission owners to bid for funding to mitigate the impact of historic electricity infrastructure in National Parks and National Scenic Areas. During 2018/19 we finalised environmental assessments, engaged with key consultees and provided a submission to Ofgem for funding to remove 12km of overhead transmission lines from the Cairngorms National Park and replace them with underground cabling. As a result of this work, in May 2019 Ofgem approved the release of £39.1m in funding. High stakeholder support for this undergrounding project was a significant factor in this success.

The project will involve the removal of two sections of overhead lines, near the villages of Boat of Garten and Nethy Bridge, and will see 46 transmission towers removed from the Cairngorms landscape, with both circuits to be replaced with underground cabling. These lines are located in areas of the Cairngorms that attract some of the largest numbers of visitors to the National Park. Once removed, the visual amenity within the Cairngorms will be further enhanced, building on the removal of over 300 towers, covering a distance of over 90km, as part of the Beaulieu Denny project.

Protecting and enhancing biodiversity



Biodiversity is crucial to the maintenance of the natural systems on which we all depend. The traditional focus on biodiversity during the current price control period has been on impact minimisation and legal compliance through our project optioneering and development phase.

Based on stakeholder feedback to our Sustainability Strategy and RIIO-T2 environmental proposals we have developed commitments for 'no net loss' on new infrastructure projects gaining consent in 2020 onwards and achieving 'net gain' projects gaining consent in 2025 onwards. This reflects the view that our activities should not only maintain the existing biodiversity balance, but help to enhance biodiversity.

Over the past year we have trialled incorporating 'Biodiversity Net Gain' principles into substation design. This has proved successful with most substation projects capable of delivering a 'net gain' by incorporating changes in layout and landscape reinstatement design. For example, our Spital and Tomatin substations have predicted 34% and 47% gains respectively.

In July 2019 we published 'Our Approach to Implementing Biodiversity Net Gain'¹¹ for consultation and convening a specialist working group to further inform our approach and with a view to roll out on projects by the end of the year.

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

Protecting the Great Yellow Bumblebee

Timescales

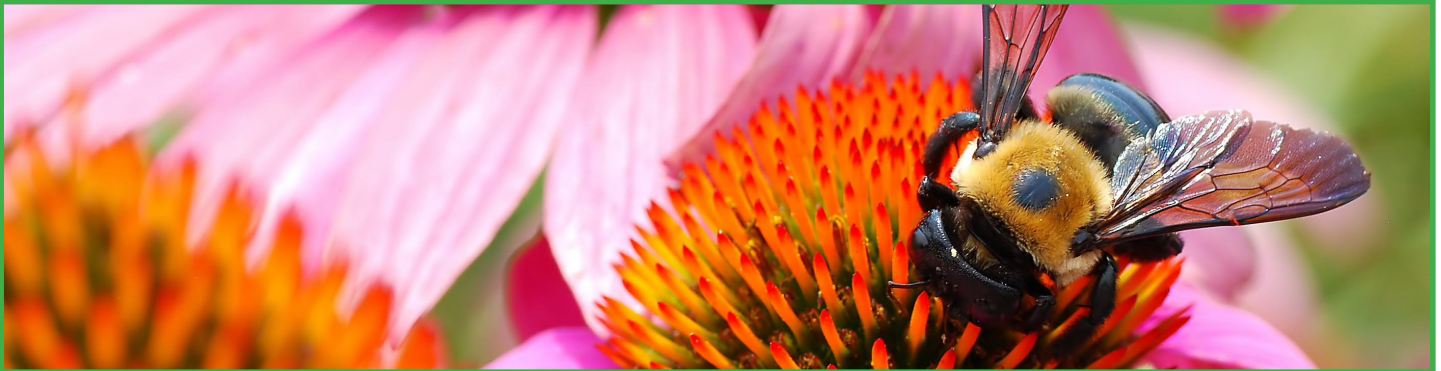
Formal recognition and awards received in 2018/19

Impacts

10 hectares re-seeded to be pollinator friendly, three biodiversity awards

Stakeholders involved

Conservation experts, employees



The Great Yellow Bumblebee is amongst the rarest of bees in the UK with its numbers declining by about 90% in the past 50 years. This drop in numbers is thought to be mainly due to loss of habitat and intensification of farming processes. One of the bees' key habitats is in Caithness, where they can still be found across the region. The flower-rich grassy meadows in the region have different flowering plants, such as bird's-foot trefoil, red clover and knapweed, which provide the ideal habitat for the Great Yellow Bumblebee.

In Autumn 2017, following advice from the Bumblebee Conservation Trust, work was undertaken at our Thurso South substation in Caithness to create a more bee-friendly habitat by planting a flower-rich landscape with around 10 hectares of earth re-seeded around the substation site. The successful establishment of the site was completed in early 2018 and this work was formally recognised and shortlisted for several awards.

In September 2018, SSEN won the "Project of the year: medium/large scale", "Pollinator" and "Overall Winner" awards at the prestigious BIG Biodiversity Challenge Awards¹². In addition, the work also scooped the Gold Construction Industry Sector award at the high profile Scottish Green Apple Awards for Environmental Best Practice¹³ in March 2019.

¹¹www.ssen-transmission.co.uk/media/3459/ssen-riio-t2-bio-diversity-net-gain-paper-16pp-22789-web.pdf

¹²www.ssen-transmission.co.uk/news-views/articles/2018/9/ssen-sweeps-the-board-at-prestigious-big-biodiversity-awards

¹³www.ssen-transmission.co.uk/news-views/articles/2019/3/ssen-transmission-pips-rivals-to-scoop-prizes-at-scottish-green-apple-awards



Optimising Resources

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

Many of the resources we use in building our infrastructure are non-renewable resources, such as steel, aluminium and copper. Increasing material scarcity, the environmental impact of manufacturing these resources and inconsistency in local end-of-life material 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.

Initiatives

Strategic focus

Managing resources sustainably to extend maximum lifespan and facilitate re-use or recycling at end of service life

Developing our approach to the circular economy

Managing resource consumption and waste in our supply chains

Sustainable materials in construction



Measuring performance



Resource consumption

We will seek to understand and, where possible, reduce our consumption of finite non-renewable resources



Embodied carbon

we will seek to define our approach for embodied carbon assessment, reporting and management during RIIO-T2



Waste to landfill

we will target zero waste to landfill during RIIO-T2

*KPIs for resource use, embodied carbon and waste under development

Managing resources sustainably to extend maximum lifespan and facilitate re-use or recycling at end of service life

While transmission network growth is essential toward decarbonising the electricity supply and other sectors like heat and transport, we must ensure that the resources used to build new assets on the network are sourced sustainably, operated with a view to extracting their maximum full-life value and re-used or recycled appropriately at the end of their first life.

Developing our approach to the circular economy



Our approach to resource use has been significantly shaped by our stakeholders. Stakeholder feedback on our Sustainability Strategy indicated that there was a need for increased focus and targets on resource use. It was highlighted that there is significant opportunity for us to support the circular economy through the reuse, repurposing and remanufacturing of assets. As a result of feedback, we have built our Optimising Resources ambition around three focus areas:

- Minimising waste
- Resource efficiency
- Using sustainable materials

To further inform our approach, during 2018/19 we have reviewed policy trends (for example the Scottish Circular Economy Strategy), engaged with experts like Zero Waste Scotland and participated in forums like the Scottish Infrastructure Circular Economy Forum (SICEF). We will continue to seek stakeholder input as we develop and refine our approach.



Managing resource consumption and waste in our supply chains

As a first step in improving our understanding and analysis of the resources consumed and waste produced in our supply chain we have implemented a new mandatory resource and waste reporting requirement for contractors on new projects in our Consents & Environmental Specification works document. Through a standardised reporting template we will be better able to analyse our resource and waste streams and make targeted reductions in both resource consumptions and waste to landfill – using resources more efficiently and sustainably. This approach will allow us to report on performance for our next annual sustainability report.

Sustainable materials in construction

We seek to use construction materials that are as sustainable as possible which reduce environmental impacts associated with their manufacture or transport to site and/or their maintenance and operation. Examples such as the use of Aluminium Conductor Composite Core (ACCC) conductors or composite poles are now business-as-usual options in project development. Further development of our SSEN-led New Suite of Transmission Structures (NeSTS) project in 2018/19 also took place (see case study below).

We will continue to seek new and innovative solutions to reduce the need for resources and use alternative lower impact materials. We are developing our understanding of assessment, reporting and management methodologies for embodied carbon in our projects. Embodied carbon refers to greenhouse gases emitted during the manufacture, transport and construction of building materials. For example, the emissions associated with the production of concrete. Our intention is to work with other energy sector partners to define an industry approach towards embedded carbon by the end of the next price control.

During 2019/20, we are reviewing Life Cycle Assessment (LCAs) and responsible sourcing approaches across different industries to determine and inform our approach for assessing product sustainability during RIIO-T2.

Advancement of NeSTS Project

Timescales

Construction commencing in 2020

Impacts

Reduced environmental impacts through asset life cycle

Stakeholders involved

Regulator, suppliers



Overhead lines (OHL) built using transmission structures are the most visible element of the transmission network and are therefore of key interest to our stakeholders. Currently, the only alternatives to steel lattice towers are unsuited to areas with challenging terrain and propensity for severe weather events. This includes our network area in the north of Scotland.

Establishing new infrastructure in these areas is essential to connect renewable generation, so there is a need for a new type of structure to meet the needs of stakeholders.

The NeSTS project is aimed at developing innovative designs for OHL structures based on new technologies and techniques. The new structures aim to improve resource efficiency through reduced land, construction maintenance requirements in comparison to alternatives, thereby contributing to lower whole life environmental impacts. In addition, the reduced visual profile of the new structures will aid in the granting of planning approvals, thereby speeding up the connection of low carbon generation to the transmission network.

The NeSTS project has been in development for several years but reached a critical milestone in December 2018 when Ofgem approved the business case and release of funds for stage 2, including the construction of a trial OHL currently scheduled for completion in 2020.



Supporting Communities

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

Our ambition is to ensure we meet the needs of vulnerable customers and support local supply chains when developing, constructing and operating assets so that communities benefit from our investments. We can also provide additional support to our communities across our network through community support funds and our employees committing their time to support community projects.

Initiatives

Strategic focus

Maximising the local social and economic benefits of our investments

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



Around **£136,000**

Awarded through the Resilient Communities Fund in the north of Scotland in 2018/19



Over 80

community engagement events



27%

approved suppliers located in license area



Maximising the local social and economic benefits of our investments

One of the most significant impacts we have on the areas in which we operate, is the local economic benefits created through some of our major development projects. But 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.

Supporting local supply chains

Stakeholders consistently prioritise the need to ensure local businesses benefit from our construction projects. We want to support local supply chains when developing, constructing and developing our assets and 27% of our approved suppliers are registered on our licence area. We have two main initiatives in this area, the online platform, Open4Business (O4B) and our local "Meet the Buyer" events which aim to attract local businesses to tender for work on our large projects, enhancing the benefit to local communities.

In 2012, SSE created O4B as a way of providing local businesses with a simple and free way to express an interest in contractual opportunities on SSE sites. By the end of the last financial year, 2017/18, over £174m had been awarded to local contractors through the portal. In an effort to sustain the portal and promote its growth, measures were taken to transition O4B from SSE to Highlands and Islands Enterprise. This move enables other large companies and SMEs, including those not in the energy sector, to use the platform to advertise contract opportunities across the north of Scotland. In total, there will be around 1,000 suppliers registered on the portal. SSE has stated its commitment to continue supporting O4B and using it to post and award contracts for its projects across this area.



Meet the buyer events



Timescales

July 2018 and March 2019

Impacts

Local suppliers provided with opportunities to get involved in network projects

Stakeholders involved

Local suppliers, contractors



In July 2018 we held a “Supplier Engagement Day” event in Inverness for national and local supply chain contractors. The event was hosted by colleagues from across SHE Transmission (including our Corporate Procurement & Commercial team) and attended by 20 invited guests. The purpose of the event was to share with the sub-contractor community our future network investment plans so that they can consider getting involved in what we expected would be an exciting time for our business and the energy sector as a whole. On the day we provided information on the type and scale of the potential projects, their geographical location and the potential service requirements. By providing this information the contractors would be better placed to take advantage of any opportunity that arose in the future and in doing so provide valuable employment and socio-economic benefit. The feedback from delegates was extremely positive.

Another event was held in March 2019 in the village of Rothienorman specifically to allow local supply chain contractors the opportunity to meet the SHE Transmission project team and the contractors appointed to deliver the Rothienorman and New Deer substation projects. This event was organised following discussions with members of the local community and local councillors during the planning and development phase of these projects. The event was open to all however the following business areas were invited to attend the event; accommodation, security, catering, cleaning services, aggregate services, local labour services, road gritting, building and wholesaler merchants. On the day, 24 persons representing various local businesses attended.

This successful engagement means we can work with local contractors, which not only contributes to the local economy, but also provides opportunities for these businesses to bring their own local knowledge to the project. We are committed to running similar events in 2019 including in Peterhead for a new substation project.

Meeting the needs of vulnerable customers



In response to stakeholder feedback we have broadened our Supporting Communities ambition workstream to include focus and activities that support vulnerable customers. Whilst we agree the central provision of support should be provided by the most capable and directly relevant organisations, we believe we have a role to play in addressing consumer vulnerability and we want to do more going forward.

We have been actively engaging with stakeholders directly and via our Stakeholder Advisory Panel to understand where we can best contribute. We will be undertaking further consultation on our approach for vulnerable consumers in 2019/20 to inform our future plans.

Giving back to communities

Giving back to communities is about more than helping to sustain local businesses and jobs. We also have a number of initiatives designed to promote community engagement and support community projects, primarily our Resilient Communities Fund and our Be the Difference programme.

Through our Resilient Communities Fund we continue to support community projects that:

1. Protect the welfare of vulnerable community members through enhancing their resilience and improving community participation and effectiveness.
2. Enhance community facilities, services and communication specifically to support the local response in the event of a significant emergency event

In 2018/19 we awarded £136,000 to communities in the north of Scotland. This funding has been awarded to projects such as replacing a 4x4 ambulance based in Thurso, procuring or improving equipment (such as communications, generators and medical equipment), aiding community resilience planning and providing support for vulnerable members of the community.

We also value the importance of employees directly having the opportunity to give back to their local communities and offer them the opportunity to volunteer a working day each year through the 'Be the Difference' programme. We also match employee fundraising up to £150. In 2018/19 our employees volunteered over 1,185 hours with community groups and projects, providing £79,000 of community value. You can read about the Be the Difference programme:

www.sse.com/communities/bethedifference/

Placing stakeholders and customers at the heart of our business strategy

Communities represent one of our most important and valued stakeholder groups. In 2018/19, we scored 82% on our Stakeholder Satisfaction Survey, representing our fourth consecutive year of scoring above 80% and held over 80 community engagement events. We are continually seeking new ways to build upon this performance and improve how we engage with our stakeholders.

Throughout 2018/19 we have engaged with people and actively listened to their views and opinions on our approach to stakeholder engagement. This has informed the development of our new draft stakeholder engagement strategy that was published for consultation in June 2019. It includes why we engage, what our ambition is for stakeholder engagement, our proposed new strategic objectives and enhanced principles.

Furthermore, as part of the refresh of our operating model we established a new Directorate for Stakeholders & Customers position in March 2019. The creation of a stakeholder directorate recognises the importance of stakeholder engagement to the Transmission business, by having this function directly report to the Managing Director for Transmission. This will deliver an effective customer approach that enables simple and clear lines of communication, placing customer requirements at the centre of our strategy.



Growing Careers

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

Our long-term success as a business depends upon the people we can attract, retain and develop. The past decade has been a period of rapid change in the energy sector and, for SHE Transmission, huge growth. Our workforce has grown significantly to support this. With an aging workforce and set against a projected industry skills gap in the future, 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.

Central to addressing this challenge is our plan to become a more inclusive employer; attracting skilled employees from a wider pool of talent and helping to address the lack of diversity in our industry. We have a responsibility to reflect the customers and society we serve.

Initiatives

Strategic focus	Attracting, developing and retaining an appropriately skilled, diverse and sustainable workforce	Becoming a more inclusive employer
		Addressing gender diversity
		Living Wage and Living Hours



Measuring performance



32.4%

SHE Transmission gender pay gap for 2018/19



20%

of employees on SHE Transmission executive committee are women



Around **£1m**

invested in employee learning and development in 2017/18

Attracting, developing and retaining an appropriately skilled, diverse and sustainable workforce

Through the SSE Group Inclusion Strategy and the SSEN People Strategy, SHE Transmission has made a commitment to support an inclusive culture and ensure the diversity of our workforce reflects the communities and society we serve.

SSE believes that greater diversity leads to broader debate, which in turn leads to better decisions that result in better business delivery. We refer to this as the 4 D's of Diversity. To tackle the challenges that lie ahead in our industry we will require the broader range of thoughts, ideas and experiences that greater diversity brings.

Becoming a more inclusive employer

SHE Transmission, shares in and contributes towards our parent company's ambition to become a more inclusive employer. SSE believes that by building a more inclusive culture, greater diversity will come. To truly embed an inclusive culture, SSE believes there are three key drivers for change at the early stage: get the job description right and widen thinking around what kind of skills and experience are really required for the role; ensure all vacancies are openly advertised and open to all to apply; and challenge traditional thinking around an ability to work differently and flexibly – not offering agile working arrangements should be the exception rather than the rule.

SSE, including SHE Transmission, has made significant progress over 2018/19 in these areas. As well as a gender bias language review of all adverts and 'inclusive prompts' being built into SSE's role profile template as standard, inclusive hiring manager training and inclusion and diversity awareness training is now mandatory.

SSE has also increased governance around all roles being advertised openly, with 80% of roles across the Group advertised openly in the last four months of 2018/19, and has updated its AAA-rated accessible career site with a broader range of diverse case studies. In December 2018, SSE also began monitoring the proportion of job adverts across the Group that offer agile working arrangements, finding that 79% did.

Furthermore, SHE Transmission have created a Shadow Board to ensure we have more diversity in our decision making, as well as provide development experience for our team (see case study below).

Transmission Shadow Board

Timescales

Developed during 2018/19 with first meeting in July 2018

Impacts

New development path for SHE Transmission employees

Stakeholders involved

Employees

SHE Transmission have created a Shadow Board to ensure we have more diversity in our decision making, helping to provide the fresh innovative thinking for our business that's required to enable the low carbon transition as well as providing a development pathway for our Transmission and Corporate support team. The Shadow Board has a genuine voice on business situations and decisions and allows members to challenge the Transmission Executive Committee on culture centred discussion and the future investment decisions that are required to support our strategy.

Development of the Shadow Board took place during 2018/19 with the first Shadow Board meeting in July 2019. To ensure continuity, the Shadow Board will be a rolling panel with varied membership durations throughout. This approach allows us to maximise the opportunity for our employees, with a total of 15 individuals provided with exposure to the Shadow Board in the first year.

Addressing gender diversity

The energy industry remains male-dominated, a result of many years of far higher proportions of men in STEM education and going on into STEM-related careers. SSE has a well-established strategy to encourage greater equality of pay, opportunity and leadership for women. It calls this strategy 'IN, ON and UP': bring more women IN, encourage women to stay ON, and support women to move UP to the highest levels.

SHE Transmission's gender pay gap in 2018/19 was 32.4%, reflecting the need for more work in this area, and in particular the need to encourage a more equal spread of men and women across all four pay quartiles in SHE Transmission. This has increased from 31.7% in 2017/18 primarily because of an organisational restructure in Transmission. With the establishment of our new Transmission Executive Committee we now have a committee of directors comprising 20% women (2 out of 10 committee members). This is a step in the right direction, but we need to do more. To ensure this issue continues to receive attention from our leadership we have implemented new gender diversity KPIs in our business KPI reporting system.

Living Wage and Living Hours

At the heart of SHE Transmission's ambition to attract, develop and maintain a sustainable workforce is our commitment to the Living Wage through our parent company. In September 2018, SSE celebrated its fifth anniversary of being an accredited Living Wage employer. SSE has been a vocal advocate and champion for the Living Wage since its accreditation in 2013 and has been a member of the Living Wage Scotland Leadership Group since it was created in 2014. SSE remains committed for the long-term to paying its direct workforce and supply chain workers a wage they can live on.

The real Living Wage sets a minimum standard for pay that meet the real costs of living. However, a salary people can live on is also dependent on the number and security of hours they work – in other words, people need Living Hours to provide security alongside a real Living Wage.

As a champion for the Living Wage since 2013, SSE was keen to support the Living Wage Foundation's efforts to take action against insecure working arrangements such as exploitative use of zero-hour contracts which have become entrenched in some parts of the economy.

Therefore, in 2017, SSE joined the Living Hours Steering Group and, over 2018/19, contributed to the Steering Group meetings and also conducted a number of joint consultation sessions with the Foundation on this issue. Living Hours is a new accreditation which sets the standard on responsible working hour practices. It comprises two key commitments from employers for both their direct employees and sub-contracted workers:

1. A right to a contract with 'living hours': a guaranteed minimum of 16 hours a week (unless the worker opts out), with a right to switch to a contract that reflects accurate working hours for those regularly working above their contracted hours; and
2. Decent notice periods for shifts: of at least 4 weeks' notice, with guaranteed pay for cancelled or changed shifts.

At the launch of Living Hours in June 2019, SSE announced its intention to become one of the first organisations to gain Living Hours accreditation in the UK.



Sustainability Action Plan Review and looking ahead

Connecting for Society

	Connecting for Society Ambition Delivery Plan	By when	Status
Short term	Review previous Cost Benefit Analysis (CBA) work carried out on SSEN projects and best practice from other networks and wider industry	Q4 2018	Achieved
	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

Tackling Climate Change

	Mitigating Climate Change Ambition Delivery Plan	By when	Status
Short term	Science Based Target (SBT) methodologies reviewed and approach defined	Q4 2018	Achieved
	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	On track
	Sustainability subcommittee review and approval of SBT Target proposal	Q3 2019	On track
	Submit target proposal for approval by the SBT initiative	Q4 2019	On Track
	Annual update on climate science, policy and progress towards decarbonisation targets to inform strategy	Ongoing	On track

Promoting Natural Environment

	Promoting the Natural Environment Delivery Plan	By when	Status
Short term	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	On Track
	Integrate biodiversity net gain approach into environmental impact assessments and construction contracts	Q4 2019	On Track
	Engage regional biodiversity forums to identify partnership opportunities	Ongoing	On Track

Optimising Resources

	Optimising Resources Ambition Delivery Plan	By when	Status
Short term	Consult on performance expectation and focus priorities for our optimising resources ambition	Q4 2018	Achieved
	Complete gap analysis of existing waste and resource use data	Q1 2019	Achieved
	Consult contractors on waste and resource use reporting requirements at our contractor forum on the environment	Q1 2019	Achieved
	Inclusion of waste and resource use mandatory data reporting requirement in contracts for new projects	Q2 2019	Achieved
	Waste and resource use data request from contractors for past two financial years' (2017-19)	Q2 2019	Achieved
	Review approaches for asset life cycle assessments (LCAs) and industry responsible sourcing initiatives	Q3 2019	On track
	Waste and resource use data collection and reporting system established	Q3 2019	On track
	Annual waste and resource use data review to identify improvement initiatives and targets	Ongoing	On Track

Supporting Communities

	Supporting Thriving Communities Ambition Delivery Plan	By when	Status
Short term	Inclusion of local content spend reporting requirement in contracts for new projects	Q1 2019	Achieved
	Local content data request from contractors for past two financial years'	Q2 2019	Achieved
	Review the challenges and barriers of our connection process for local and community renewable energy connections	Q2 2019	Achieved
	Review local content data to define options for local content targets	Q3 2019	On Track
	Review the suitability of our community fund support	Q4 2019	On Track
	Monitoring local and community renewable energy connections in our network area annually	Ongoing	On Track

Growing Careers

	Growing Careers Ambition Delivery Plan	By when	Status
Short term	Pilot "job families" development pathways within our business planning and performance teams	Q1 2019	Achieved
	Inclusion of growing careers metrics and SSE Group targets within business KPI reporting system	Q1 2019	Achieved
	First annual resilience report prepared that reviews our staff training and development approach	Q4 2019	On track
	Support SSEN Diversity and Inclusion working group initiatives	Ongoing	On track

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	Response
The narrative was thought to be clear and balanced with technical detail except the Connecting for Society ambition which had too much information for several initiatives. Some initiatives in this section were also thought to be business as usual.	We reduced the content and the level of detail provided in the narrative of the Connecting for Society ambition for ease of reading.
The feedback indicated that the report is very comprehensive, clear and informative. However, it was noted the report could be strengthened by including further information on project benefits to consumers and society.	Where possible, we have included further information on the benefits of several projects such as the Caithness-Moray HVDC link. The development of our new Cost benefit analysis (CBA) framework will allow wider project benefits to be assessed going forward.
Further clarity was requested on the SF ₆ emissions in the Business Carbon Footprint (BCF) table.	We have clearly noted that SF ₆ is the fugitive emissions in the BCF table. It is explained that the carbon footprint increase was primarily the result of an increase in transmission losses on the network during the last financial year and the addition of new SF ₆ assets due to the growth of the network.
Stakeholders' expect further data reporting for the optimising resources ambition.	The focus over the last year has been the establishment of the systems and processes for collecting further data for the optimising resources ambition. For example, we introduced mandatory resource and waste reporting requirement for contractors on new projects. Next year's report will include further reporting.
It was suggested that the use of weblinks to key initiative would allow stakeholders to access further information.	Where possible we have included relevant weblinks to reports/projects within the report.
It is unclear why the gender pay gap increased during the 2018/19 financial year.	It is explained that the SHE Transmission has had an organisational restructure at the end of 2018/19.
Need to add further information on the resilient communities' fund.	We added information on the grants awarded through the resilient communities' fund during 2018/19.
Further information was requested on our role in supporting EV charging infrastructure and advocacy in the industry.	The SSE group has a 2030 goal to help accommodate 10m electric vehicles; our role in supporting EV charging will be documented in next year's report. Our approach to advocacy is noted in our new RIIO-T2 Commercial and Connection policy.
It was suggested that a roadmap infographic showing previous achievements, current performance and future targets could help explain the sustainability ambitions and progress to stakeholders.	We will aim to include these ambition roadmap infographics within our final RIIO-T2 business plan.

Feedback

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

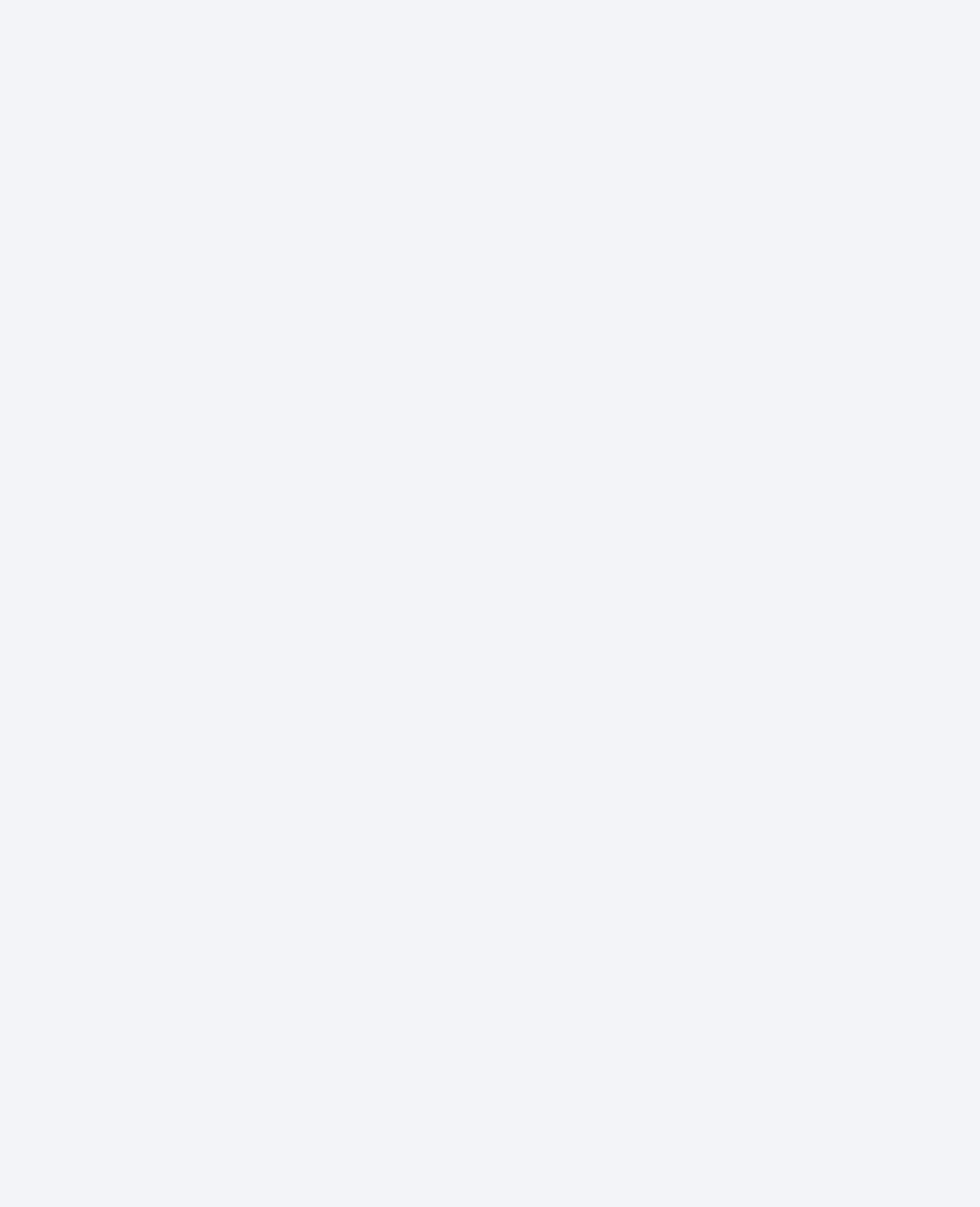
Should you have any further questions, please contact us at lowcarbonteam@sse.com

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

Glossary of acronyms

ANM	Active Network Management
AST	SSEN Active Solution Team
BCF	Business Carbon Footprint
CBA	Cost Benefit Analysis
CCC	Committee on Climate Change
DNO	Distribution Network Operator
DSO	Distribution System Operator
EMS	Environmental Management System
ESO	Electricity System Operator
ETYS	Electricity Ten Year Statement
FES	Future Energy Scenarios
GHG	Greenhouse Gas
GSP	Grid Supply Point
GVA	Gross Value Added
GW	Gigawatt
HVDC	High Voltage Direct Current
IPCC	Intergovernmental Panel on Climate Change
kV	Kilovolt
LCA	Life Cycle Assessment
MW	Megawatt
NeSTS	New Suite of Transmission Structures
NOA	Network Options Assessment
O4B	Open4Business
OHL	Overhead lines
RIIO-T2	Revenue = Incentives + Innovation + Outputs (Transmission period 2)
SBT	Science Based Target
SDGs	United Nations Sustainable Development Goals
SF6	Sulphur Hexafluoride
SHE Transmission	Scottish Hydro Electric Transmission
SHEPD	Scottish Hydro Electric Power Distribution
SSEN	Scottish and Southern Electricity Networks
STEM	Science, technology, engineering and mathematics
SWW	Strategic Wider Works
TO	Transmission Owner
TWh	Terawatt hour
VISTA	Visual Impact of Scottish Transmission Assets
WSDF	Whole System Development Forum

Notes





Scottish & Southern
Electricity Networks

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