Environmental Discretionary Reward

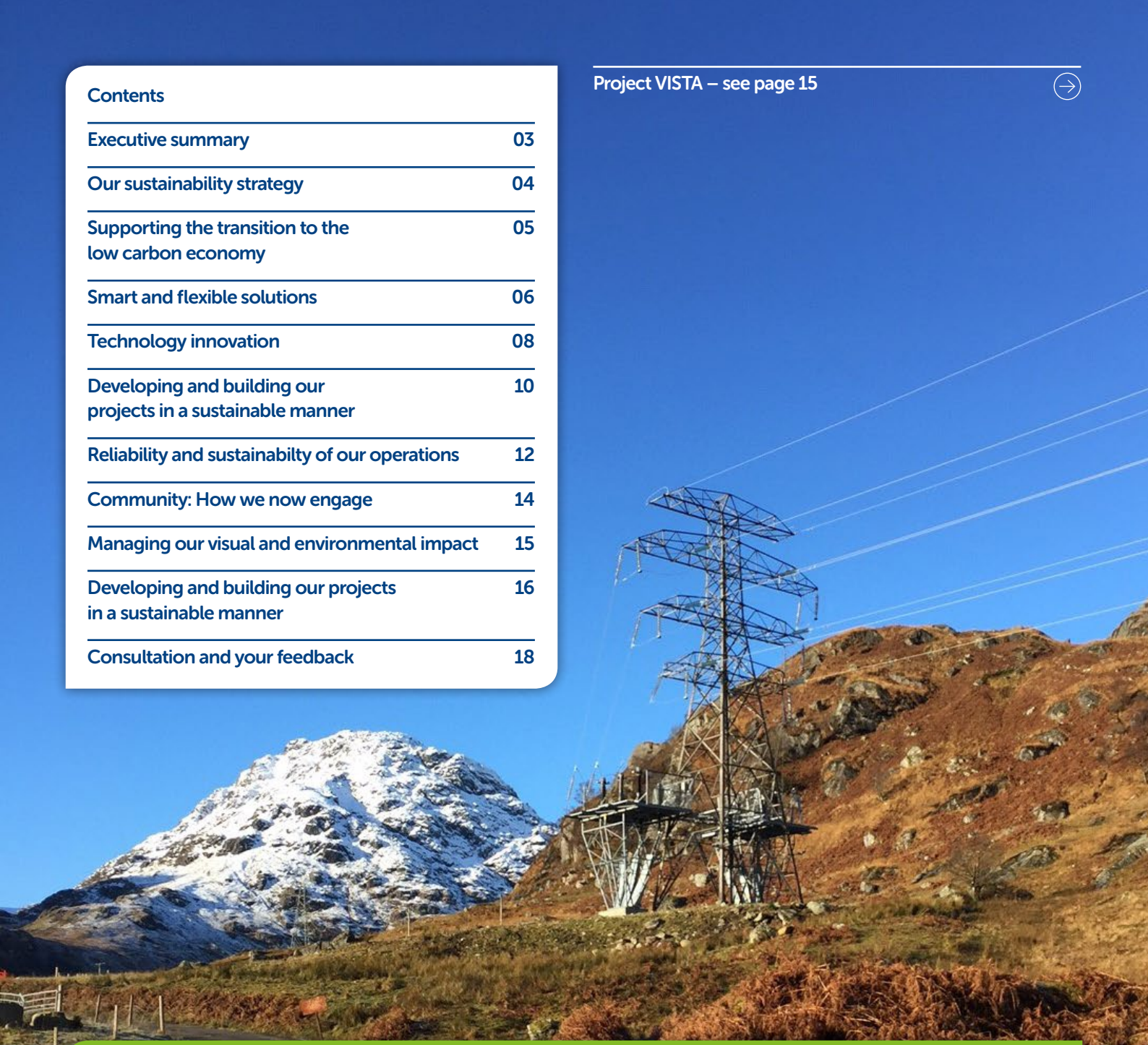
Executive Level Annual Statement

2016/17

Scottish & Southern Electricity Networks

Contents

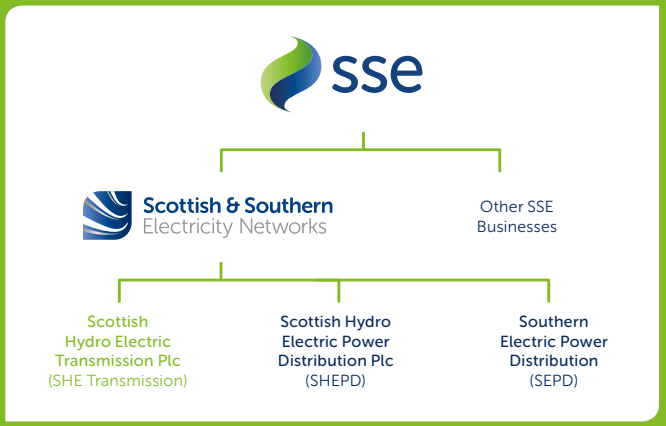
Project VISTA – see page 15



About us

Scottish and Southern Electricity Networks forms part of the FTSE-50 energy company, SSE. Our electricity distribution and transmission networks carry electricity to over 3.7 million homes and businesses across the North of Scotland and also Central Southern England. We own one electricity transmission network and two electricity distribution networks, comprising 106,000 substations and 130,000 km of overhead lines and underground cables across one third of the UK.

This Annual Statement relates to the activity of our transmission business, Scottish Hydro Electric Transmission Plc. In total we maintain about 5,000km of overhead lines and underground cables in the north of Scotland. Our network crosses some of the UK's most challenging terrain – including circuits that are buried under the seabed, are located over 750m above sea level and are up to 250km long.



This document was written by SHE Transmission's low carbon team.
Any questions or feedback you have on this statement please contact us on: **lowcarbonteam@sse.com.**

For further information on the work we do in the transmission network, please refer to our website: **www.ssen-transmission.co.uk**

Find us on Facebook: SSEN Community **Follow us on Twitter:** @ssencommunity

Executive summary

2016/17 has been an incredible year for Scottish Hydro Electric Transmission plc (SHE Transmission) with over 500MW of renewable electricity successfully connected to the north of Scotland transmission network, the highest combined capacity that has connected to our network in a single year since privatisation.

Achieving this milestone is no mean feat. The dedicated efforts of our teams, focussed on delivering the needs of our customers, have supported a major leap forward in providing the supporting infrastructure for the low carbon economy. The delivery of new renewable connections and capacity improvements mean our network is now capable of transmitting a generation capacity of 5GW of electricity, with over 4.5GW of this from low carbon, renewable sources. Our strategic initiatives have used innovative system solutions and new technologies to deliver this infrastructure at lower cost, faster and with reduced visual impact.

Working collaboratively with stakeholders, we have ensured that these projects have been delivered sustainably, with reduced environmental impact and promotion of biodiversity. Our implementation of CARE, a new environmental programme for staff and contractors, has increased awareness of environmental values and ensured that our processes and procedures consistently embed these values throughout every level of our supply chain.

During this period of rapid growth we have also continued to maintain a reliable network, supporting the communities that we live, work, and operate in by achieving an impressive reliability factor of 99.9996%.

The Environmental Discretionary Reward is a key benchmark within the RIIO T1 price control for our environmental and low carbon performance. The hard work that our teams have put in to our strategic environmental initiatives in 2016 has made a significant contribution in providing supporting infrastructure for the low carbon economy and addressing the concerns of our stakeholders on visual and environmental impact. We need to ensure an accurate representation of all the great things we do, being clear in setting out our strategy, our initiatives, our collaboration and engagement, and the value delivered so far in this price control.

In this year's EDR annual statement we have adopted a new approach which is:

- clearer on our strategy and our initiatives;
- clearer on how the initiatives relate to our strategic drivers;
- clearer on how the initiatives have been delivered during 2016/17; and,
- clearer on the value they have delivered in terms of cost, timing, and visual and environmental impact.

We are now at the halfway point of this eight year price control and recognise that changes in government policy on renewable energy and flexible energy systems are driving changes in our industry. Our business is also transforming, with an increasing focus on operations and maintenance for our expanded network which will require new environmental initiatives tailored to these activities. As our industry and our business change, our engagement with our stakeholders shows that their concerns and expectations are also changing.

In this context, we believe that this is the right time to review and refine our strategic drivers and to use these to realign our sustainability strategy to ensure that it will drive value throughout the remainder of this price control and into the next.

As our customer, we need your help to do this. Help to identify how we should engage with you on what is important to you and what should shape our key drivers for the next four years. There are still many questions that we need to answer and your views as customers provide a unique perspective on where we can play a role in the transition to a low carbon economy together.

To ensure that our new drivers focus on the issues that really matter we will pro-actively engage with stakeholders during April and May. I would encourage our customers and other stakeholders to use this annual statement as an opportunity to review our current strategy and delivery and to provide feedback to us on our future direction.

David Gardner
Director of Transmission

Our sustainability strategy

Our role in delivering national infrastructure that is essential to the transition to a low carbon economy poses challenges to many aspects of sustainability. This includes being a responsible developer and employer; affordability and considering the financial impact of our activities on energy consumers and generators; and the environmental impact of our work on the environment in which we operate.

SHE Transmission's low carbon plan is designed to implement our sustainability strategy, ensuring we consider the environmental expectations of stakeholders while efficiently developing, maintaining and operating a secure electricity network in the north of Scotland for the benefit of society.

Regular engagement with stakeholders helps us understand their key drivers for our network. From our last stakeholder sustainability survey, our stakeholders told us they were keen for SHE Transmission to focus on the following drivers, as ranked by our stakeholders.

The drivers for our strategic initiatives are:

1. Co-ordinating low-carbon technology innovation
2. Providing the supporting infrastructure for a low carbon economy
3. Informing low-carbon decision making
4. Supporting the communities we live, work and operate in
5. Renewable energy, nurturing the growth green technology
6. Developing & building our projects in a sustainable manner
7. High-voltage direct current (HVDC) technology
8. Protecting, restoring and enhancing biodiversity
9. Reducing whole-life carbon of infrastructure
10. Minimising our carbon footprint
11. Preserving our visual amenity

These drivers form the basis of our sustainability strategy for the short, medium and long term as summarised below. This Environmental Discretionary Reward Annual Statement provides a snapshot of the range of initiatives implemented to deliver our low carbon plan in 2016. In this annual statement we have highlighted how each initiative relates to the 11 drivers to better demonstrate their strategic importance and justification of why we have undertaken them this year.

Short term (1–2 years)

Facilitating connections, both directly and through enabling and wider strategic works, has been our main focus in 2016 and will continue to be in the immediate years ahead. We are increasingly seeking out innovative ways to nurture the growth of low carbon renewable generators by applying new technologies and providing new flexible solutions for connections in areas with transmission capacity constraints.

In line with these drivers, we continue to develop and build our projects in a sustainable manner: minimising the environmental and visual impact of our projects; and protecting, restoring and enhancing biodiversity around these projects to benefit society as a whole.

Medium Term (2–4 years)

The programme of major projects delivered and under development will result in our network expanding to over nine times the size it was when we started the current price control in April 2013. Our larger network requires an expanded Operation and Maintenance (O&M) programme to ensure we maintain reliability and availability of our network. This will be an increasing focus of our low carbon action plan during the remainder of RIIO-T1.Supporting the communities that we live, work and operate in is vital and we will continue to maintain the high standards that we have set, seeking to further improve network reliability and develop ways to manage the carbon footprint of our operations.

Long term (+4 years)

With the ratification of the Paris Agreement in 2016, the ambition to keep global temperatures "well below" 2.0°C above pre-industrial levels and to "endeavour to limit" them to 1.5°C is a global reality. We will lead our industry towards overcoming some of the greatest challenges the electricity industry faces and our focus on carbon emissions will continue to increase throughout the RIIO T1 price control.

Supporting the transition to the low carbon economy

Government policy supporting the development of low carbon energy generation, combined with the abundance of renewable energy resources in the north of Scotland, has driven a requirement to substantially increase capacity on our transmission network to allow this generation to reach demand centres across our network and beyond.

These needs have driven the focus of our current price control on connection projects and wider network reinforcement that increases the whole system capacity.

SHE Transmission's strategy to provide connections and capacity in a timely and cost effective way, while seeking to develop projects sustainably, includes an increasing focus on innovation and collaboration. In addition, due to changes in the government support schemes for low carbon generation projects, the last year has seen increased pressure on transmission owners to accelerate connections to meet the demand of customers.

This has driven SHE Transmission to innovate to meet these expectations while delivering sustainability in the projects.

This innovation has focused in particular on two areas:

Smart & flexible solutions

New Technologies

SHE Transmission has developed several initiatives in these two areas in collaboration with key stakeholders, the supply chain and distribution network owners to develop new approaches that will meet the needs of our customers now and in the future.

List of Acronyms

ACCC
Aluminium Conductor Composite Core

CM
Caithness Moray

CARE
Commitment Awareness Rigour Engagement

DLR
Dynamic Line Rating

DNO
Distribution Network Operator

GB
Great Britain

GSP
Grid Supply Point

GW
Gigawatt

HVDC
High Voltage Direct Current

kV
Kilovolt

MW
Megawatt

NERC
Natural Environment Research Council

Ofgem
The Office of Gas and Electricity Markets

OFTO
Offshore Transmission Owner

RIIO-T1
Revenue = Incentives + Innovation + Outputs (Transmission period 1)

SHE Transmission
Scottish Hydro Electric Transmission Plc

SO
System Operator

SSEN
Scottish and Southern Electricity Networks

TO
Transmission Owner

VISTA
Visual Impact of Scottish Transmission Assets

Smart and flexible solutions

A flexible energy system can deliver substantial benefits for the low carbon transition including:

- Releasing additional capacity for connections – allowing more generators to connect, or allowing generators to connect sooner; and,
- Avoiding upgrades to existing networks or addition of new lines – reducing the visual and environmental impact of transmission infrastructure as well as deferring or in some cases removing the need for conventional reinforcement, helping keep costs down for customers.

SHE Transmission continues to include flexible solutions in its planning designs to support the high volume of low carbon generators requesting connection to our network. In 2016/17 three approaches were adopted: active network management, intertrips and dynamic line rating studies.

Active network management for low carbon innovation

In areas where there is currently a transmission capacity constraint, we are collaborating with the Distribution Network Operator (DNO) in our region to provide active network management solutions to allow generators to connect to the distribution network.

Project: Speyside

1. Co-ordinating low-carbon technology innovation
2. Providing the supporting infrastructure for a low carbon economy
5. Renewable energy, nurturing the growth green technology

A customer applied to extend the capacity of their waste-heat steam generator from 9.9MW to 15MW in 2016. As a result of capacity constraints on the network the request would normally not be possible without substantial network reinforcement at a cost unlikely to be viable to the customer. However, a solution was identified that would mitigate overall costs and environmental impacts providing the required network capacity by identifying an existing connection that could be shared. This required additional stakeholder relationship management with a local windfarm that was already connected giving a combined generation capacity of 58.2MW that could be exported to our network.

This kind of process and connection is made possible by the DNO monitoring the export limit of the shared network connection to ensure that it is not exceeded. The innovative arrangement has optimised the available transmission capacity by allowing two low carbon generators to use the intermittent generation pattern of the windfarm.

Project: Coire Na Cloiche

1. Co-ordinating low-carbon technology innovation
2. Providing the supporting infrastructure for a low carbon economy
11. Preserving our visual amenity

In 2016 a new generation connection request was received for a connection that would traditionally require a new Grid Supply Point (GSP). SHE Transmission is currently working with the System Operator (SO) and DNO to develop an alternative solution that will allow the generator to connect without overloading the current transformers at the existing GSP. In this solution SHE Transmission will provide the export signals and outage requirements to the DNO who will then coordinate the low carbon generation output response. This collaborative working relationship has avoided the reinforcement costs and the visual and environmental impact of building a new GSP. If this solution is agreed the financial cost avoided will be around £9million.

Intertrips: Providing a simple solution for earlier connection

An intertrip will automatically disconnect a generator or demand from the transmission network following a planned or unplanned outage in order to relieve localised network overloads, maintain system stability, manage system voltages and/or ensure quick restoration of the electricity transmission network.

Project: Edintore

1. Co-ordinating low-carbon technology innovation
2. Providing the supporting infrastructure for a low carbon economy
4. Supporting the communities we live, work and operate in

SHE Transmission applied intertrip technology for a generator on the distribution network at Edintore to advance their connection date. This arrangement allowed the generator to connect five years earlier than waiting for the transmission network reinforcement that would normally be required under traditional circumstances. The outcome was that the low carbon generator qualified to receive a renewable energy subsidy that would otherwise have been lost.

Following the successful completion of the Edintore project in 2016, SHE Transmission has extended the use of intertrips as a connection solution. As a result, an additional three connections will be brought forward to next year instead of waiting for network reinforcement projects completing in 2021. Collectively, these three schemes will allow 19MW of capacity to connect three years ahead of their original connection date.

Dynamic Line Ratings (DLR) – providing additional capacity while avoiding new upgrades

A DLR project involves the installation of measurement equipment on the over head line and weather stations on the transmission towers; which monitors the live condition of the line. With this monitoring information, it is then possible for SHE Transmission staff to assess in real time if there is any additional capacity in the line beyond the standard line ratings. It is anticipated that DLR's could be an alternative in certain circumstances to overhead line re-conductoring, with an estimated annual savings of £8m, this estimate and the possible wider use of DLR will be re-evaluated prior to the closure of the Project, in April 2018.

Project: Angus

1. Co-ordinating low-carbon technology innovation
4. Supporting the communities we live, work and operate in
9. Reducing whole-life carbon of infrastructure

SHE Transmission has recently implemented a research project funded through the Network Innovation Allowance (NIA) which assessed the DLR of an overhead line from Arbroath to Brechin. This technology also has applications for enhancing the timely connections of low carbon generators under the present 'connect and manage' regime. The DLR data already received is already providing wider sustainability benefits as it has increased our ability to examine the health of the overhead line conductor, the seasonal weather effects and the extreme environment conditions such as high winds. This information will help us maintain the asset health of our overhead line network and therefore enable us to better serve the communities in which we operate.

Technology innovation

There are two main strands to SHE Transmission's approach to technology innovation: adoption of existing technologies in novel ways, and contributing to the deployment of new technologies – predominantly HVDC.

Initiative: Working with suppliers and contractors to deliver novel technology applications

1. Co-ordinating low-carbon technology innovation
6. Developing & building our projects in a sustainable manner
10. Minimising our carbon footprint

SHE Transmission is working with suppliers and contractors during project optioneering and design to identify new technologies, or new applications of existing technologies, which can improve project delivery.

Project: Bhlaraidh and Beinneun wind farm

In the combined Bhlaraidh and Beinneun wind farm connection completed in March 2017, SHE Transmission utilised an innovative ACCC (Aluminium Conductor Composite Core) Monte Carlo conductor to reduce the visual and environmental impact of the new connection. This was achieved by reconductoring and strengthening the existing 132kV network assets and avoiding the erection of new trident wood pole line. The use of this technology, the first of its kind on our overhead line network, also allowed SHE Transmission to reduce costs and deliver the connection two months ahead of programme, meeting the needs of the low carbon generator two years before the initial date proposed.

Initiative: Developing HVDC technology for the future energy system

HVDC is the most efficient way to transmit electricity over long distances (particularly subsea cables), with reduced losses and increased capacity. However, it brings a number of challenges with potential adverse interactions between HVDC schemes, low carbon generators; and the current lack of standardisation and interoperability. A number of offshore windfarms are expected to connect to the GB grid using HVDC cables before the end of the price control in 2021. It is also expected that HVDC technology will be applied on the main transmission network to increase efficient transfer of large volumes of electricity.

Based on the driver to be able to integrate HVDC technology into the GB grid, SHE Transmission has taken a leadership position and currently has two live HVDC projects: the HVDC Test centre and the Caithness Moray Project. Both projects will benefit our network in the north of Scotland and advance the knowledge more widely within the GB electricity industry through shared learning and collaboration.

Project: The National HVDC Centre – A new National facility to support and de-risk the deployment of High Voltage Direct Current

1. Co-ordinating low-carbon technology innovation
2. Providing the supporting infrastructure for a low carbon economy
7. High-voltage direct current (HVDC) technology

Supported by funding from Ofgem's Network Innovation Competition, SHE Transmission has built a collaborative National facility to support the feasibility, planning, specification, evaluation, testing and operation of a High Voltage Direct Current (HVDC) transmission network across GB. The centre will combine real-time simulation capability with replicas of the control systems from HVDC schemes and perform in-depth analysis of interactions across complex HVDC schemes. This will enable the centre to anticipate and resolve issues before deployment on the network, allowing timely connections of low carbon generators whilst ensuring the integrity and security of the GB transmission network.

The National HVDC Centre will open in April 2017, and will be a vehicle for cooperation with TO, TSO, Offshore Transmission Operators (OFTOs), interconnector owners, renewable developers, HVDC vendors and academic institutions and will be an invaluable tool for system planners, asset owners and operators.

Project: Caithness Moray (CM)

7. High-voltage direct current (HVDC) technology

10. Minimising our carbon footprint

11. Preserving our visual amenity

Next year, SHE Transmission will complete one of its biggest projects to date with its reinforcement between Caithness and Moray to provide additional capacity in the north of Scotland. Although commonly regarded as the HVDC Project, the whole programme is a combination of five major transmission projects including the HVDC submarine cable link to transmit power beneath the seabed between Spittal in Caithness and Blackhillock in Moray.

This use of HVDC allows the efficient transmission of large volumes of electricity across long distances and avoids the need for an over head line project, significantly reducing the visual impact of the project, one of the key drivers for stakeholders during consultation. Reinforcement of the onshore transmission network between Dounreay and Mybster in the north and between Loch Buidhe and Beauly further south also optimises the existing network and will lead to a reduction in the overall carbon footprint of the project.

As a result of the innovative nature of the whole Caithness Moray programme and the embodiment of a large number of new sustainability initiatives, the overall sustainability impact of the project was quantified as gross value added over £640 million to the UK economy. The key lessons were disseminated in 2016, for example the project is the largest living wage contract ever awarded to date,supporting local employers and employees through this commitment.

Developing and building our projects in a sustainable manner

During this price control SHE Transmission's capital investment is expected to exeed £2bn. This represents a substantial project delivery programme. As our asset lives span multiple decades, it is essential that we ensure this development expenditure is undertaken in a sustainable manner to protect our natural environment now and for the benefit of future generations. Two major natural environmental initiatives have been progressed by SHE Transmission during 2016: CARE and Improving biodiversity.

Initiative: CARE environmental framework

4. Supporting the communities we live, work and operate in

6. Developing & building our projects in a sustainable manner

8. Protecting, restoring and enhancing biodiversity

CARE is an SSE group initiative, that SHE Transmission is taking the lead on in 2016. The focus of the initiative is to embed the natural environment and sustainability values in project development and construction, and in day to day operations. CARE is about considering the natural environment in every aspect of our working lives, from looking into the feasibility of a new network project to ensuring we recycle the waste from our site offices. It gives this responsibility to all network employees, clearly setting expectations for Managers, Supervisors and all staff.

CARE stands for:

COMMMITMENT – to do the right thing and act responsibly

AWARENESS – of environmental issues relevant to our work

RIGOUR – of processes so we do what we say we will

ENGAGEMENT – with staff and contractors

CARE builds upon SHE Transmission's strongly embedded aim of being a responsible developer and provides a structure to deliver on stakeholder drivers, developing and building our projects in a sustainable manner

Within SHE transmission our interaction with the environment needs to consider:

1. Nature: Landscape, ecology, habitats

2. History: Heritage, culture, archaeology

3. People: Employment, quality of life, transportation

CARE makes all employees aware and committed to protecting the environment above and beyond standard regulations.

The first stage of developing CARE within SHE Transmission, was an in-depth survey conducted with over 450 staff and contractors. There were over 350 responses received which formed the baseline of how well we were currently performing on environmental issues and where we need to improve. Over the last nine months, the SHE Transmission Environment team, have revised our environmental standards and procedures; developed new relevant training resources specific to the jobs we undertake, and established 'on the ground best practice principles', raising the awareness of all staff (SHE Transmission employees and contractors) through the CARE acronym.

With CARE, the aim is to take the core principles and apply these to any procedure.

A key aspect of the work we undertake in SHE transmission is the construction of new assets and upgrading existing infrastructure. To support those undertaking the day to day work 'on the ground', a Construction Engagement work stream of CARE has been developing the following:

- **Project Environmental Ground Rules:** six key rules that we should all meet on our construction sites
- **Model Environmental Structure:** defines environmental responsibilities dependent on your role and how the Environment team can support
- **Construction Environmental Aspects Graphic:** The key considerations are necessary as the construction work progresses
- **Environmental Cartoons:** Good and bad practices for our key activities
- **Environmental Meetings:** Guidance on weekly and monthly discussion/ review points
- **Audit Protocol:** Updated Audit and site inspection guidance

These have been developed by representatives from across the SHE transmission division and are great resources for using on site to raise awareness of environmental issues both internally and with external contractors.

"The initial roll out of CARE during 2016/17 has been a great success. The continued embedding of CARE in the business through delivery of additional training to all staff, and joint delivery of training with contractors, during 2017. This financial year will also see adoption of the model by the wider SSE Group, testament to the success of this transmission led initiative in raising awareness of environment issues."

Richard Baldwin, Head of Environment – SHE Transmission

Collaborating with stakeholders to protect, restore and enhance biodiversity

Throughout 2016 SHE Transmission has continued to build and strengthen its positive working relationship with biodiversity stakeholders. This has included putting in place a new working agreement with Scottish Natural Heritage (SNH) that formalises how we will consult and interact with them throughout the project lifecycle. In addition to building sustainable relationships, the focus of biodiversity initiatives in 2016 has been on what contribution we can make to protect and promote the survival of protected and endangered species.

Initiative: Species Protection Plans (SPPs)

4. Supporting the communities we live, work and operate in

6. Developing & building our projects in a sustainable manner

8. Protecting, restoring and enhancing biodiversity

SHE Transmission continues to build on the successful development and deployment of tailored Species Protection Plans (SPPs). These SPPs, collaboratively developed with SNH, provide guidance and agreed procedures for protected species and their habitat during SHE Transmission construction works. The SPPs apply to all projects where a protected species may be present and are issued to our Contractors as part of the Construction Environmental Management Document (CEMD). In addition to outlining the responsibilities of SHE Transmission and the contractor regarding protection of each species, each SPP also details relevant legislation, survey requirements and mitigation measures to protect the species and its environment.

In December 2016 a new SPP was introduced for the Freshwater Pearl Mussel, one of the most endangered molluscs in the world. This provides further support to this ongoing initiative which is driving a greater focus on sustainable project development with a focus on biodiversity.

Initiative: Promoting bee habitat at our sites

4. Supporting the communities we live, work and operate in

6. Developing & building our projects in a sustainable manner

8. Protecting, restoring and enhancing biodiversity

The Great yellow bumblebee is a species which has been in decline. Once found across the UK, it is now confined to northern Scotland, principally Caithness, Orkney and the Western Isles.

As part of the Dounreay – Mybster project a new substation is currently being constructed at Thurso and an existing substation at Mybster is being extended. At both sites it was recognised that the landscaping, required to provide screening of the substation, presented an opportunity to provide a flower rich resource which could provide additional habitat for the bees. Discussions were held with local representatives of the Bumblebee Conservation Trust to discuss the most appropriate seed mixes and management practices.

This collaboration resulted in the landscaping plans being amended to incorporate a more bee friendly design including the provision of early flowering species such as willow which provide pollen at a crucial time in the bee's lifecycle. Initiatives to provide nesting sites for the bees are also being developed. Seeding will be completed in 2017 with tree planting to follow later in the year.

This approach will continue to be applied to other projects planned in 2018 in the north of Scotland including the Spittal substation project, as part of wider habitat plans.

Want to share your feedback? More questions?

Drop us an email at: **lowcarbonteam@sse.com**

Reliability and sustainability of our operations

As we expand our network, it is essential that we continue to provide the same high levels of reliability to support the communities that we work, live and operate in. We do this by maintaining our assets, such as overhead lines, towers and substations, replacing them when they reach the end of their operational life.

Our Operations and Maintenance teams are delivering a series of initiatives to avoid faults related to adverse weather, and to identify assets at risk of fault so that proactive repairs can be made.

Our expanded network also increases our carbon footprint and the operations and maintenance teams have launched new initiatives in 2016 to manage this sustainability impact.

Initiative: Western Isles inspection and tree cutting to reduce faults

4. Supporting the communities we live, work and operate in

6. Developing & building our projects in a sustainable manner

9. Reducing whole-life carbon of infrastructure

The Western Isles Taskforce was set up in 2016 to focus on fault avoidance for customers on this remote part of our network. The Taskforce has undertaken a proactive programme of identifying possible areas where faults occur and acting on these in periods where the weather system is calmer. As part of this process a new tree cutting approach has been developed following the success of an initial trial on the transmission circuits supplying the Western Isles.

The new process includes identifying trees that could pose a risk to the network, and engaging in tree cutting throughout periods of quieter weather to mitigate against the impact of tree related faults, also regular monitoring and inspection of the wind stays for the electricity poles, to prevent failure.

The justification and objective for this taskforce was creating a more reliable electricity supply for the local community, and enabling better local environmental management. The success of these initiatives can be seen in the reduction in the fault rate; the number of electricity faults on the system was 15 per year for 2015-16 and is now down to just two in 2016-17, a fantastic benefit to our customers and the communities we serve.

In 2017 a new approach to tree cutting based on the success of the taskforce will be adopted across all of SHE Transmission's network to improve reliability for all communities we operate in.

Interested in our projects?
Want to contact the community engagement team?

find us on our website:
www.ssen-transmission.co.uk

Initiative: Applying innovate inspection techniques to identify asset conditions and needs

4. Supporting the communities we live, work and operate in

6. Developing & building our projects in a sustainable manner

9. Reducing whole-life carbon of infrastructure

To monitor our network and keep it reliable for our stakeholders, innovation has been crucial. Last year for the first time we used a drone method called 'Cyber Hawk' to monitor and assess the condition of our infrastructure.

Cyber Hawk enables us to inspect our towers before faults occur with one of the key benefits being that it gives us more real time information, that wasn't available to us through the use of human based inspections. For example, crews sent up towers would struggle to capture detailed images due to the safety considerations that would need to be implemented. Cyber Hawk's high resolution photos provide better visibility for proactive asset management, enabling SHE Transmission to determine where to allocate resources, as we can see which assets need attention first. In turn, this reduces environmental impact by reducing unnecessary inspections. This initiative will continue to be used going forward.

Initiative: Adoption of lower carbon, lower cost alternative for fault identification

4. Supporting the communities we live, work and operate in

6. Developing & building our projects in a sustainable manner

10. Minimising our carbon footprint

Due to the remote location of our assets in the north of Scotland, we currently investigate faults on the transmission network using helicopters to identify fault locations. The use of new technology, such as Distance Fault Protectors, offers more clarity (down to a 1 km window) on where faults have occurred. This not only reduces costs, as outlay over their lifetime is significantly cheaper than the estimated helicopter trips, but also reduces the Carbon footprint of deploying the helicopter, justifying the initial cost outlay. This initiative is an excellent example of how efficiency, reliability and sustainability aims can be met through innovation.

Community: How we now engage

Supporting the communities we live, work and operate in is a key driver for SHE Transmission and was given significant priority by our stakeholders. This sentiment is central to our focus on improving reliability and availability for our customers, and it is also a vital aspect of our sustainable project development and delivery.

Community Engagement & Involvement

3. Informing low-carbon decision making
4. Supporting the communities we live, work and operate in
6. Developing & building our projects in a sustainable manner

To ensure that these drivers are applied to sustainable project development, SHE Transmission has a dedicated Community Engagement Team which coordinates all project events and early planning consultations. These engagement events provide opportunity for a dialogue with communities and local stakeholders, enabling their concerns and ideas to be considered and incorporated into our designs. This allows communities to help shape the final design of our projects.

In 2016 the Community Engagement Team organised 75 community meetings; a further 60 days of engagement events for 26 of our current live projects; and hosted 8 visits to live project sites to provide a deeper knowledge of how our projects are built.

The key initiatives implemented by SHE Transmission in 2016 were:

Helping communities identify and engage with our projects – The new website for SHE Transmission (www.ssen-transmission.co.uk) includes an interactive map which shows all of our projects currently completed or under construction. The map is searchable by area or postcode and provides details of the project including: a description of the works, current status, project timeline, a calendar of all project related material and documents, and contact details for the project liaison manager. This makes it easier for customers to find projects in their area and to contact us with any queries or concerns. The content of the website will continue to evolve as we hear further feedback from stakeholders about the type and format of information they find most useful.

Facilitating wider engagement of hard to reach and vulnerable customers – The Community Engagement Team is now using census data to assess vulnerable customer needs and preparing to meet these ahead of public engagements. This includes the use of tools provided by the Royal National Institute of Blind People (RNIB) to help customers with poor sight during our engagement events. This will be a standard process for future event in 2017.

Helping future customers understand our projects – During 2016 the Caithness Moray project has hosted site visits by Herriot Watt University students (now an annual visit) and a local school. The Loch Buidhe project also hosted site visits by local schools. These visits help our customers and communities understand the scale and challenges of delivering the infrastructure for the low carbon economy. The 2017 visits are currently being planned with more schools in our local project areas.

Supporting local suppliers in accessing procurement opportunities – In 2016 we expanded our "Meet the Buyer" initiative through a collaborative event, jointly hosted with our lead contractor, to help the local supply chain to understand opportunities of employment for the Stronelairg Project. We are currently looking for the next opportunities for projects which will be in construction in 2017.

Community Volunteering – Throughout 2016 SHE Transmission has also continued to provide wider support to communities through staff participation in the "Be the Difference" initiative, through which employees can volunteer to work in the community for a day. Over 100 days have been used so far this year to undertake projects including beach tidies, helping rescue dogs, giving Science Technology Engineering and Mathematics (STEM) talks in schools and universities , and renovating a hospital garden. It's an opportunity for staff to use a working day to give back to their community.

Managing our visual and environmental impact

SHE Transmission provides an essential part of everyday life through provision of transmission electricity infrastructure. The combination of over head lines, substations and associated infrastructure can however have an impact on some of the most beautiful and important landscapes in Scotland. This is why our stakeholders highlight visual amenity as a key driver for us to proactively engage on during this price control.

Initiative: VISTA

- 3. Informing low-carbon decision making
- 8. Protecting, restoring and enhancing biodiversity
- 11. Preserving our visual amenity

VISTA (Visual Impact of Scottish Transmission Assets) is an initiative that has been developed by SHE Transmission to reduce the visual impact of transmission infrastructure in National Parks and National Scenic Areas in the north of Scotland. Through this initiative, partnership groups made up of local and regional stakeholders, have worked with SHE Transmission to identify sections of our network that if mitigated would bring visual improvements to society. The project has held numerous consultation events over the last 12 months to seek views of stakeholders and in August 2016 Ofgem approved our VISTA governance policy: a publication that establishes our process for the next four years.

Over 100 stakeholders have engaged in our consultation which has informed a number of potential proposals, we are now undertaking detailed technical analysis to further develop and refine proposals. This process will continue for the next few months and result in more detailed mitigation plans being prepared for submission to Ofgem in late 2017 for funding. If funding for our proposals is granted by Ofgem, these projects would represent a significant reduction in the visual impact of our network in National Parks and National Scenic Areas in the north of Scotland and deliver on one of our key drivers identified by stakeholders.

Project: Fort Augustus

- 2. Providing the supporting infrastructure for a low carbon economy
- 8. Protecting, restoring and enhancing biodiversity
- 11. Preserving our visual amenity

As a result of the growth in energy generation, primarily from local low carbon renewable energy it has been identified that there is a need to reinforce the Fort Augustus substation. Due to early stakeholder engagement it was identified that visual amenity would be of particular concern for local stakeholders as a result of the existing substation footprint increasing and the requirement for additional transmission infrastructure.

Although the original designs which used underground cabling and screening for the substation were believed to be sympathetic to visual amenity, stakeholders identified that to be really sustainable, further adjustments were required. The project team have therefore enhanced the designs further with sections of mixed native tree planting which will be carried out at strategic locations on the site to address further visual impact concerns from the road and from nearby villages.

The next stage is that more detailed environmental studies will be undertaken prior to the second round of public consultation in Spring 2017. A final decision on design will be made later in 2017.

Project: Cairngorms National Park

- 8. Protecting, restoring and enhancing biodiversity
- 9. Reducing whole-life carbon of infrastructure
- 11. Preserving our visual amenity

Work is under way to remove the final steel transmission towers from part of the Cairngorms National Park, as part of the Beauly-Denny project. SHE Transmission started work to dismantle and remove the stretch of 40km of over head line in January 2017. Although normally this work would not be carried out in winter due to servere weather and environmental conditions, the decision to start the work earlier was made. This was done to minimise the potential for disruption to sensitive breeding birds, including capercaillie and ospreys later in the year, and bring a permanent improvement to one of Scotland's most important landscapes sooner.

This sustainable social and economic benefit of infrastructure removal has always been a key driver for stakeholders who rely on the natural capital of the environment and tourism to sustain their businesses.

Our plan to 2021, a four year journey

We are now at the half way point of our current price control (2013 to 2021) and we believe that this is an appropriate time to review our sustainability strategy and low carbon plan.

While we continue to embed successful initiatives, such as CARE, with staff and contractors, we will initiate a review of our strategic drivers, engaging again with stakeholders on:

- our role in the transition to a low carbon economy,
- the challenges of operating our expanded network, and
- thinking towards national long term carbon reduction goals.

From this engagement we will develop a new set of strategic drivers better aligned to the needs of our stakeholders today and for the future.

Our plan for the next four years

April 2017

Strategic Partnership with Natural Environment Research Council (NERC)

A strategic partnership opportunity to work with international academics to identify, quantify and mitigate the current and future environmental risk to our infrastructure in the north of Scotland.

May 2017

Publication of our new innovation strategy for consultation

Based on the feedback from stakeholders we are seeking to update and clarify our strategy on network innovation to facilitate greater productivity and sustainability of our network for the future.

June 2017

New contractor environmental specifications

Revised consenting and environmental specifications will be included in all new contracts to ensure environmental expectations are met.

July 2017

Impact of 1.5°C

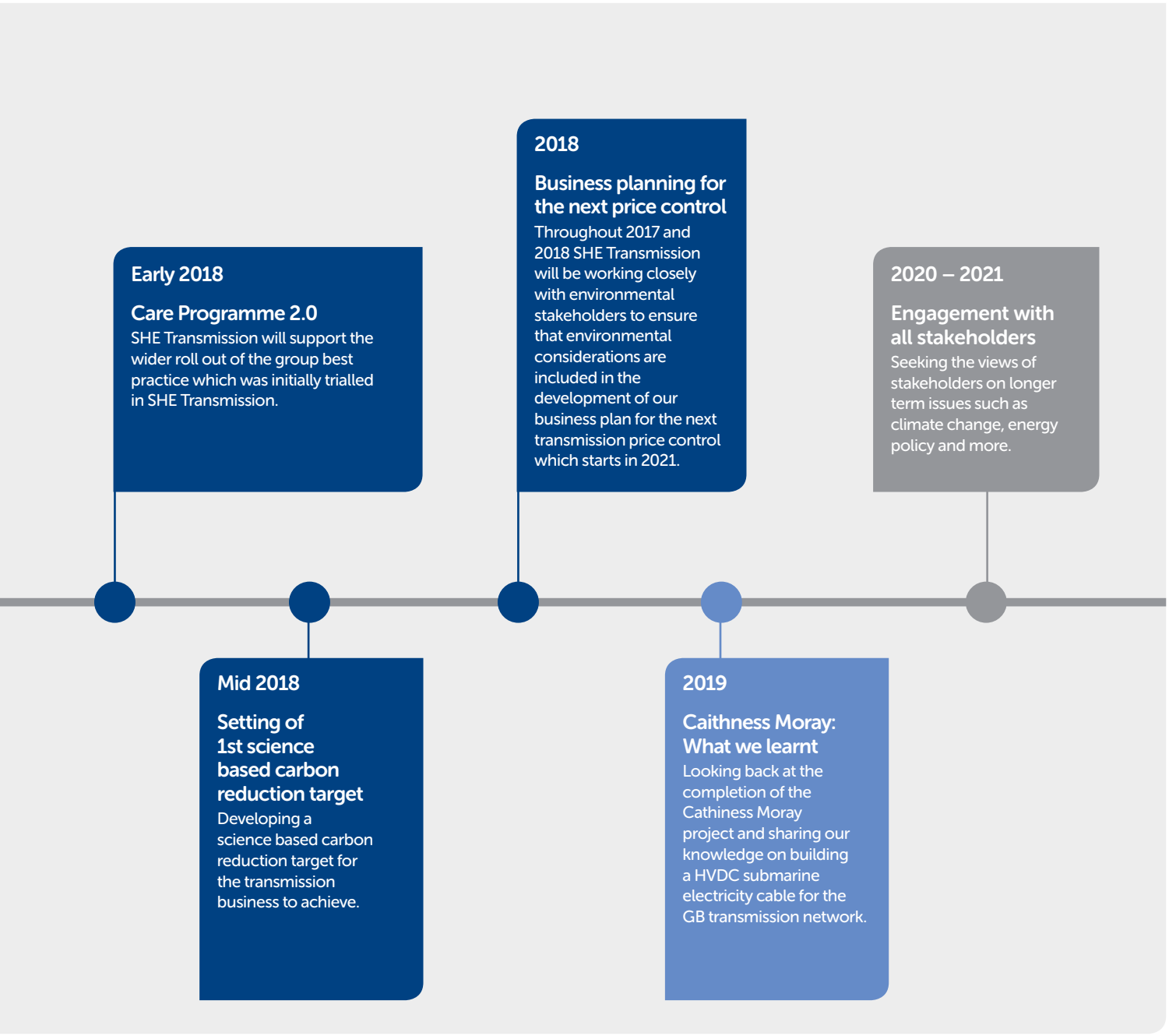
Resilience assessment of our network to government ambitions to limit climate change to 1.5°C or 2°C.

November 2017

Update to our network connections guide for low carbon generators

Working with our current and future customers to develop a plain English guide to connecting to our network in the north of Scotland.

With high levels of uncertainty in the electricity industry there is an increasing need for SHE Transmission to inform the debate regarding sustainable business processes and low carbon decision making, including for example, the effects of electricity decarbonisation on infrastructure, and the changing role of the system operator. As these developments progress, SHE Transmission will be speaking up, using working papers to share our current considerations with stakeholders, and to gather their input to inform the development of positions.



Consultation and your feedback

Consultation

SHE Transmission 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:

- Added time frames to the page 'Our Sustainability Strategy', allowing for stakeholders to track our progress.
- Added our contact email throughout the statement, making it easier to contact the Low Carbon Team.
- Added acronyms box to define the network terminology frequently used throughout the statement.
- Reduced the document's length by four pages due to concerns it was too long, and better use of our website for further examples.

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. As a guide:

1. How useful did you find this EDR Executive Statement?
2. Was information presented here in a clear and concise manner? Was it easy to read and understand?
3. What demonstrates SHE Transmission's commitment to a low carbon future? Did any particular project stand out that demonstrated our commitment to a low carbon future?
4. What demonstrates SHE Transmission's commitment to a low carbon future? Did any particular project stand out that demonstrated our commitment to environmental management?
5. Do you agree with our key drivers on page 4? Are there any you would add?
6. Do you have any comments you would like to add?

We will provide a more detailed summary of your feedback and how we have incorporated it into the development of our low carbon drivers, which will be published on our website (www.ssen-transmission.co.uk) in Summer 2017.

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**


Scottish Southern
Electricity Networks
SSE
MYHILL
ELECTRIC

To view our new site please
click on the following link:

ssen-transmission.co.uk

Registered in Scotland No SC213461
Scottish Hydro Electric Transmission plc is a member of the SSE Group.

Scottish & Southern
Electricity Networks