



# PROTECTING RESTORING ENHANCING

SSE plc Biodiversity Report 2019

## ABOUT SSE

SSE plc is one of the UK and Ireland's leading energy companies, involved in the generation, transportation and supply of electricity and in the extraction, storage, transportation and supply of gas. Its purpose is to provide the energy needed today while building a better world of energy for tomorrow.

Its vision is to be a leading energy company in a low-carbon world. Its strategy is to create value for shareholders and society from developing, operating and owning energy and related infrastructure in a sustainable way.

## ABOUT THIS REPORT

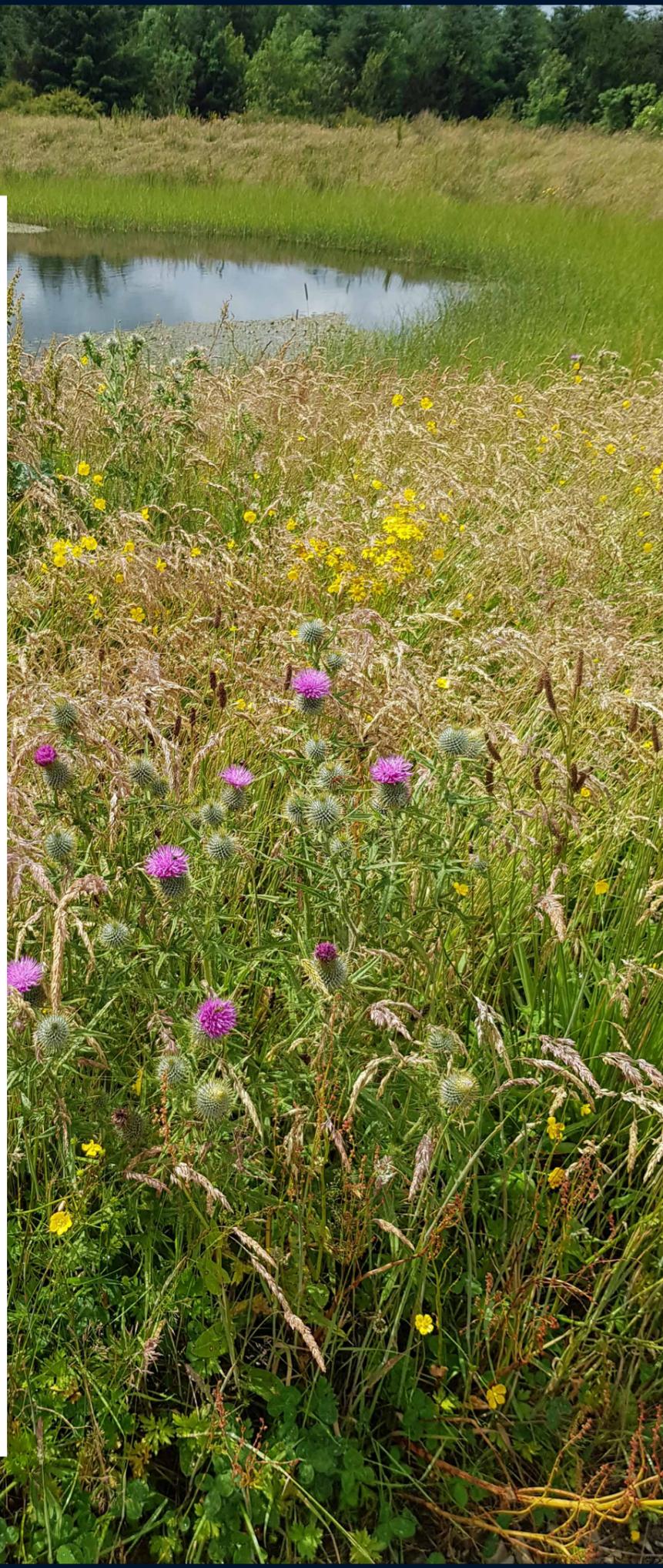
In 2019, SSE set a new Group Environment Strategy which outlines Group-wide goals across three priority areas which represent the most material areas of environmental impact for SSE's activities. The Environment Strategy in part supports SSE's 2030 Goals and, like them, is linked to the United Nations Sustainable Development Goals (SDGs). This report sets out the steps SSE has taken across its business to work towards the aims set out in its Environment Strategy, in particular the 'Natural Environment' priority area of the strategy.

The scope of this report is focused on activities for the 2019 calendar year, however, some data presented covers the financial year 2018/19 in line with the SSE Group reporting calendar.

Feedback is encouraged and is very welcome. Please get in touch by emailing [sustainability@sse.com](mailto:sustainability@sse.com) if you have any comments or queries relating to any of the initiatives mentioned within this report.

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## FOREWORD

SSE's 2019 biodiversity report is being published in the middle of the global coronavirus crisis. Most of the work to complete the report was undertaken before the coronavirus outbreak in the UK and Ireland. SSE is committed to playing its full part in supporting the response to coronavirus, without losing sight of the fact that the climate and natural environment emergencies remain and must be dealt with to safeguard well-being for the long term.

The purpose of the report is to disclose the most significant developments, from the SSE Group, in relation to biodiversity and the natural environment. The significance of this report, amongst the suite of sustainability-related reports, is increasing because our stakeholders are seeking evidence of SSE's impact on the natural world and because the scale of the nature emergency globally is ever-more apparent.

SSE's strategy review in 2018 hardwired the transition to a zero-carbon world front and centre of our business and our businesses are focussed on delivering climate change solutions:

- **Renewables** – is at the heart of the wind revolution in the UK and Ireland with ambitions for further afield too;
- **Thermal** – is vital in providing flexibility enabling more renewables to be connected. And in the longer term, it's working out how to remove carbon from thermal generation altogether;
- **Transmission** – will create a high voltage network in the north that transmits enough renewable energy for 10 million homes in the south;
- **Distribution** – will pave the way for an active, distributed system operator that will enable the electrification of transport and potentially heat too.

It is now well understood that the emergency in the natural environment is as important as the climate one. Water shortages, over-harvesting, and habitat destruction mean that ecosystems and the biodiversity they support is declining faster today than at any time in human history. And environmental degradation is bad for societies, it's bad for economies and it's bad for business.

That is why our environment strategy is important. The strategy sets goals to:

1. tackle climate change;
2. be responsible in our use of resources; and
3. protect and enhance the natural environment in the places we operate.

The strategy provides a framework to guide the decisions we make on a day-to-day basis. We know we must develop our business and our assets in a wholly sustainable way. That means, we must make evidence-based decisions that balance social, economic and environmental impacts – at the same time as being open and transparent with our stakeholders whilst doing so. This report is one way we can achieve that transparency.

Finally, it is true that we are living in truly unprecedented times, and we are all acutely concerned about the human, social and economic impact of coronavirus, there is an argument that we may emerge from the coronavirus

with a greater appreciation of the natural world. While it is too early to know with confidence, there will be lasting consequences of the pandemic and SSE will play its part in helping to ensure the most positive lessons are learnt: for the benefit of both society and the natural environment.

**Rachel McEwen**  
Chief Sustainability Officer



# SSE'S APPROACH TO BIODIVERSITY

Core to SSE's business strategy is developing, operating and owning energy and related infrastructure. This means that, in delivering its strategy, SSE interacts with the environment in a number of ways and impacts on a wide range of issues from global climate change down to local habitats.

These impacts need to be actively managed, especially at the local level but SSE also understands it has a role to play in helping reduce global declines in biodiversity.

While managing its environmental impacts represents a challenge to SSE, there are also opportunities that arise from working with the natural environment.

Whether it's the opportunity to enhance or create new habitats or harnessing natural resources such as water and wind for renewable energy generation, SSE seeks to realise these benefits in a sustainable way.

As part of its responsible approach, SSE works to: build partnerships and work constructively with stakeholders; assess its impacts on key biodiversity issues and; make decisions which take account of these impacts.

SSE is also committed to being open and transparent with its stakeholders around its approach, which is why it publishes this report and includes detail on SSE Group's environmental governance and performance on pages 30 to 32.

## SSE'S ENVIRONMENT STRATEGY

SSE's Environment Strategy is a core element of how it manages its impacts on biodiversity. The strategy outlines Group-wide goals across three priority areas which represent the most material areas of environmental impact for SSE's activities. Like SSE's business strategy, the Environment Strategy is linked to the United Nation's Sustainable Development Goals (SDGs), which help SSE focus its efforts for environmental improvement on the areas that have been identified as key for sustainable development.

SSE's Group Environment Strategy guides SSE's individual business units when undertaking their daily activities. As each of these businesses has different interactions and impacts on the environment, they all have their own detailed environment plan and goals specific to their activities that supplement the Group Environment Strategy. This means their efforts are focused on the areas in which their most material environmental risks and opportunities arise, and they have greatest potential to influence. SSE's Environment Strategy is underpinned by an ethos of compliance. SSE is committed to complying with all relevant legal and regulatory obligations and seeks to go above and beyond this and meet additional relevant voluntary standards where possible and feasible.



## UN'S SUSTAINABLE DEVELOPMENT GOALS

The UN's SDGs are 17 global goals aimed at solving humanity's greatest problems by 2030. They have been adopted by all countries of the UN providing a blueprint for peace and prosperity for people and planet. SSE has aligned its business to the SDGs in its 2030 Goals and Environment Strategy.

## ENVIRONMENT STRATEGY: PRIORITIES AND GOALS



### CLIMATE ACTION

Providing **solutions** to the climate challenge by owning, developing and operating low-carbon energy infrastructure and related services; **reducing** carbon emissions; whilst **adapting** to the impact of climate change.

- Reduce carbon intensity from electricity generation by 50% by 2030 based on 2018 levels
- Achieve EV100 commitment of 100% of vehicles up to 3.5t and 50% of vehicles between 3.5t and 7.5t to be electric by 2030
- Reduce non-generation greenhouse gas emissions.
- Grow low carbon infrastructure development
- Adapt to climate change



### RESPONSIBLE CONSUMPTION AND PRODUCTION

**Promoting** resource efficiency, environmental quality and **managing** waste in a sustainable way.

- Substantially reduce waste by delivering a waste minimisation strategy, developing a baseline by the end of 2020 and set targets in 2021 onwards
- Use resources sustainably by assessing and reducing the life cycle impacts in decision making



### NATURAL ENVIRONMENT

**Supporting** the conservation, restoration and sustainable use of the world's land and water resources; and **promoting** the integration of amenity, ecosystem and biodiversity **improvement** into business activities.

- Develop a target that positively contributes to the UN and Scottish Government Biodiversity strategies: overall 'No Net Loss' on new infrastructure projects gaining consent in 2020 onwards for Transmission and 2023 for Renewables and achieving 'Net Gain' on projects gaining consent in 2025 onwards for Transmission and Renewables.
- Develop broader commitments based on ISO 14001.



# CLIMATE ACTION

In May 2019, a special report by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) found that around one million animal and plant species are now threatened with extinction, many within decades, which is more than ever before in human history. The report stressed the interconnectedness between biodiversity loss and climate change.

It is widely understood that climate change can have negative impacts on biodiversity, resulting in the loss of species and habitats. Biodiversity makes an important contribution to both climate change mitigation and adaptation through the ecosystem services it supports, so any negative impacts on it further compound the effects of climate change. Consequently, conserving and sustainably managing biodiversity is critical to limiting the impacts of climate change.

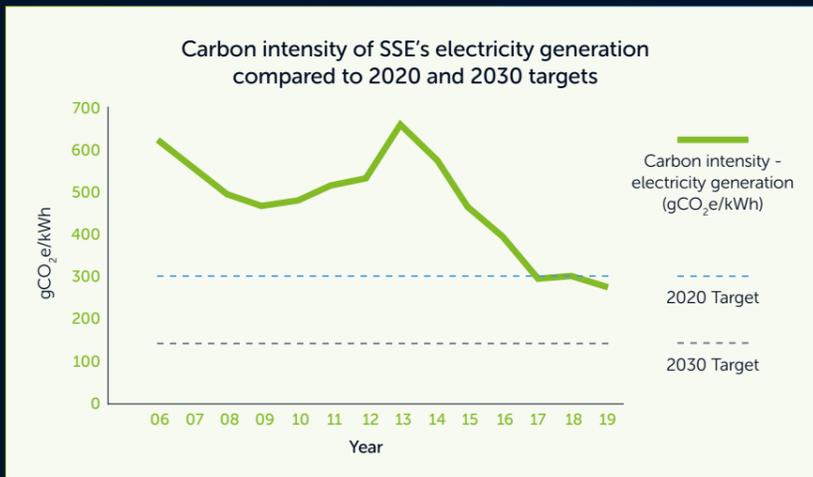
## REDUCING SSE'S CARBON IMPACT

As a large energy company, SSE recognises it contributes to global carbon emissions, and it must take steps to reduce its emissions in order to limit impacts of climate change on biodiversity. Addressing the challenge of climate change is at the core of SSE's business strategy, and its renewables portfolio and electricity networks provide the core infrastructure to support the transition to a low-carbon energy system. SSE also has a well established strategy to shift to a less fossil fuel intensive portfolio of coal- and gas-fired generation, to renewables supported by flexible gas-fired generation.

During 2019, SSE took significant steps

in support of this strategy, including: the delivery of the 588MW Beatrice offshore wind farm (SSE share 40%) in May; announcing in June the closure of its last remaining coal-fired station, Fiddlers Ferry, by 31 March 2020; and successfully securing Contracts for Difference for 2.2GW (net) of offshore wind generation capacity in September.

SSE also has a target to reduce the carbon intensity of the electricity it generates by 50% by 2030, based on 2018 levels, to around 150gCO<sub>2</sub>e/kWh. At March 2019, the carbon intensity of SSE's electricity generation was 284gCO<sub>2</sub>e/kWh, down from 305gCO<sub>2</sub>e/kWh the previous year.



Picture By Graham Baldock



# RESPONSIBLE CONSUMPTION AND PRODUCTION

SSE relies on various natural resources during construction and operation of its assets, meaning it must use these resources efficiently to minimise waste and adverse environmental impacts. SSE responds annually to CDP Climate Change, Water and Forest programmes in which it outlines how it manages natural resources, such as water passing through its hydro-electric assets. In accordance with its Group Environment Strategy, SSE will develop a waste baseline in 2020 and set targets for waste minimisation the following year which will be outlined in its Sustainability Report.



# NATURAL ENVIRONMENT

SSE recognises that the natural environment and biodiversity loss crises must be addressed with the increasingly urgency that is being given to climate change. The ecosystem services upon which society depends derive from the natural environment, these services help regulate our weather, offering protection from extreme weather events, and support vital food and water systems. Given its purpose, this report will predominantly focus on the Natural Environment priority of the SSE Group Environment Strategy and the following pages outline the actions of SSE's businesses that have the most material impacts on this priority, particularly emphasising the strategy and actions of SSE Renewables in implementing the Group Environment Strategy.

SSE's networks business, Scottish and Southern Electricity Networks (SSEN), is responsible for maintaining the electricity networks supplying over 3.8 million homes and businesses across central southern England and Scotland. It owns and operates electricity distribution networks in the north of Scotland and central southern England, and the electricity transmission network in the north of Scotland.

SSEN's regions  
of operations



## TRANSMISSION

SSEN's transmission business is responsible for maintaining and investing in the high voltage electricity transmission system in the north of Scotland and remote islands. It is at the forefront of supporting the transition to a low-carbon economy in the UK, investing in the network to enable renewable energy generated in the north of Scotland to be transported south to areas of higher demand.

The transmission 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, and is some of Scotland's most precious rural landscapes. Working in environments such as these, SSEN Transmission recognises it has a responsibility to protect and promote the natural environment and is committed to positively managing the impact of its activities on the local areas in which it works.

One of the six stretching ambitions of SSEN Transmission's Sustainability Strategy is 'Promoting natural environment' through which it seeks to deliver biodiversity net-gain and drive environmental stewardship best practice.

"SSEN plays an essential role in supporting the transition to a low-carbon future through operating electricity networks that will enable the connection of renewable energy and provide the flexibility required to support the increasing demand for decarbonised heat and transport. We are clear that, where feasible, this must be done in a way that contributes positively to local biodiversity and the natural environments in which we operate."

Colin Nicol, Managing Director, SSEN

**£2.7bn**

capital investment in  
Transmission since the beginning  
of the current price control in 2013

**Over 6GW**

of clean, renewable electricity  
generation now connected to the  
transmission network

**4.6 million tCO<sub>2</sub>**

displaced by the total generation  
connected to SSEN's electricity  
transmission networks in 2018/19

**Four**

national biodiversity awards in 2019

### Developing a Biodiversity Net Gain (BNG) approach

In December 2019, SSEN Transmission business published its approach to implementing Biodiversity Net Gain (BNG) on projects from 2025 and achieving No Net Loss on projects from 2020. This new approach was developed through an extensive consultation process and will be delivered by incorporating biodiversity considerations into project optioneering, design, consenting and ongoing operational activities. A methodology has been created which will calculate BNG, enabling performance to be measured against targets and communicated to stakeholders. More information on this can be

found at [ssen-transmission.co.uk](http://ssen-transmission.co.uk). BNG is an evolving discipline in the UK and Scotland. SSEN Transmission will therefore work with stakeholders to share its experience in implementing this approach, participate in wider industry forums and where necessary, update its approach to implement evolving best practice and lessons learned.

#### 2020 onwards

No Net Loss of biodiversity on projects

#### 2025 onwards

Biodiversity Net Gain on projects

## IMPLEMENTING AN AWARD-WINNING APPROACH

In 2019, SSEN Transmission's BNG approach received recognition as industry leading. It won the 'Best Practice Award' at The Scottish Green Energy Awards, which showcases the very best in the renewables sector and recognises the people, organisations and communities going above and beyond to shape the industry's future.

In addition to this, it was recognised as Winner and shortlisted in two categories at the BIG Biodiversity Challenge Awards, which celebrates the contributions of the construction industry towards biodiversity and environmental best practice.



The winning projects which demonstrated the business' BNG approach were a collection of initiatives implemented at two of SSEN's Caithness-Moray convertor stations. Both sites at Spittal and Blackhillock substations were considered to be of low ecological value as work began.

#### Spittal substation

At Spittal substation in Caithness large areas of scrub habitats were created and wildflower seeding for butterflies and bees took place. The Great Yellow Bumblebee was identified as a species which would particularly benefit from the wildflower habitats as well as ground-nesting birds, pollinators and reptiles. A second aspect at Spittal was to increase the wetland and aquatic habitats surrounding the site. There was a small area of wetland which was expanded through the addition of a wetland and pond design. This work is predicted to have achieved a 34% net gain in biodiversity which will be monitored in subsequent years to assess the results.

#### Blackhillock substation

At Blackhillock substation in Morayshire a small biodiversity focus area was identified around a newly created fire-pond. A range of features were installed here incorporating amphibian log piles and root plates, standing logs for invertebrates, butterfly scrapes, bee bank, native hedgerow planting and wildflower seeding. Bird and bat boxes were also installed in the adjacent woodland which was previously scheduled to be felled. Further survey work will be carried out in 2020 to assess the success of the project.

These projects demonstrated low cost, low maintenance enhancements by reusing on-site materials which would otherwise be redundant or of less biodiversity value. Learnings from these projects are being assessed and utilised on subsequent projects.

Work at Spittal substation is predicted to achieve a

**34% net gain**

in biodiversity



## INTERNATIONAL RECOGNITION

In December 2019, SSEN Transmission won international recognition at the International Green Apple Awards for achievements in protecting and promoting the natural environment, in line with its commitment to delivering biodiversity net gain on its major capital investment projects.

After receiving two Scottish Green Apple Awards in March this year, the winning projects were shortlisted for the International Green Apple Awards. SSEN Transmission beat tough competition to win two Bronze International Green Apple Awards for its efforts to improve habitats for the Great Yellow Bumblebee at Thurso South substation and its work to erect a new home for local Osprey to mitigate the impacts of construction activity at Alyth substation.

## PARTNERING TO CREATE HABITATS FOR INSECTS AND POLLINATORS



In 2019, the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) published a landmark Global Assessment Report which stated accelerating rates of species extinction and an unprecedented decline in nature around the world. The decline in insects and pollinators were highlighted as particularly dangerous due to the role they play in the fundamental health of ecosystems. A tentative estimate suggested that more than 75% of global food crop types rely on animal pollination, the vast majority of which are insects, and that ca. 10% of insect species are threatened with extinction.

At its Tomatin and Thurso South substations, SSEN's BNG approach found that amendments to landscape design could deliver positive outcomes for insects and pollinators. In collaboration with the Bumblebee Conservation Trust, changes to the seed mix used on both sites were made to create habitats that were more suitable for native species of pollinators and insects.

In 2019, a survey of Thurso South site recorded 10 bees of four different species, whereas in 2018, only one common species was recorded. By providing a different mix of flowers, including early flowering plants and nesting and hibernation places, surveys in late 2019 suggested that other species have also benefitted from this biodiversity enhancement.



At Tomatin, further enhancements were undertaken via collaboration with the British Dragonfly Society who provided tailored advice to create better habitat for dragonfly and damselfly. The work carried out on this site was part of wider solutions which aimed to enhance peatland habitats whilst creating opportunities for a net gain in biodiversity.

"With the unprecedented global decline in biodiversity, SSEN Transmission has an important role to play in enhancing the natural environment as part of our project and operational works. Our commitment to deliver Biodiversity Net Gain on new projects from 2025 is both sector leading and award winning in Scotland, and testament to the value we place on the environment in which we work."

Rob McDonald, Managing Director, Transmission

## DELIVERING ECOLOGICAL TRAINING TO COLLEAGUES

Throughout 2019, SSEN Transmission colleagues were given training in ecology from the business' internal Environmental Managers.

The sessions were conducted in the classroom and on site on various topics such as: botanical surveys, habitat classification and evaluation, amphibians and freshwater reptile habitats.

The training was delivered to a range of colleagues from different roles across the business. Further in-depth training is planned for 2020 with the aim to have this rolled out to a wider range of colleagues.





# DISTRIBUTION

SSEN, operating under licence as Scottish Hydro Electric Power Distribution plc (SHEPD) and Southern Electric Power Distribution plc (SEPD), is responsible for maintaining the electricity distribution networks supplying over 3.8 million homes and businesses across central southern England and north of the central belt of Scotland.

SSEN's distribution networks cover some of the most scenic terrain within the UK, including the Cairngorms National Park and Isle of Skye. It is also one of the most challenging areas to reliably deliver electricity due to the vast distances that must be covered to supply remote rural and island locations. SSEN therefore has a duty to not only efficiently supply electricity to our customers but to also maintain and protect the environment

we operate in. It does this in various ways, including: deliberate environmental planning during the design and construction phases of projects; reducing the amount of overhead line in designated areas e.g. areas of outstanding natural beauty and special scientific interest; reducing the amount of oil leakage caused by its assets; reducing its business carbon footprint; and continuously innovating to reduce its environmental impact.

## 15 LIFE ON LAND UNDERSTANDING STAKEHOLDER VIEWS ON THE ENVIRONMENT

In September 2019, SSEN Distribution undertook a series of stakeholder engagement workshops to understand the views of its stakeholders across a number of issues, including sustainability. Stakeholders from a range of different groups attended the sessions, from local authorities and community councillors to business and domestic customer representatives. Overall results from the sessions highlighted that one of the key areas of concern for SSEN's stakeholders was the environment.

'Decarbonisation and environmental sustainability' was recorded as the number one issue in an open book exercise that asked stakeholders to outline what they thought were key priorities for SSEN. In another exercise, attendees were asked to prioritise the UN's Sustainable Development Goals (SDGs), 17 global goals aimed at achieving sustainable development by 2030, that they considered most important to SSEN as a network operator. This provided SSEN Distribution with a prioritised list of eight SDGs, one of which was SDG 15 'Life on land' aimed at protecting and restoring the natural environment and halting biodiversity loss.

Environmental issues are a clear concern for stakeholders and their views and feedback will be a key driver in the development of SSEN's business plan for the next price control period, RII0-ED2.

## CONSIDERING THE ENVIRONMENT IN THE NEXT PRICE CONTROL

As outlined, the engagement workshops in September 2019 highlighted the importance of the environment to SSEN's stakeholders, and the sessions provided key insights into what they want to see SSEN deliver during the next price control between 2023 and 2028.

As part of its business plan for RII0-ED2, SSEN Distribution is developing a Sustainability Strategy that will be linked to the UN's SDGs. The eight SDGs prioritised by stakeholders in the engagement workshops will inform this Sustainability Strategy and the targets that sit alongside it. This means that SDG 15 Life on land will be a key area of focus for SSEN in ED2.

SSEN Distribution is also working with the electricity networks regulator, Ofgem, to ensure that the environment is appropriately considered in the RII0-ED2 framework methodologies. SSEN is part of the Ofgem ED2 'Decarbonisation and Environment working group' that aims to inform the approach to setting framework, outputs and incentives for this issue.



## WORKING RESPONSIBLY IN SENSITIVE AREAS

SSEN Distribution's '5Hug' project will see the undergrounding of 500km of overhead lines that are poorly performing due to their close proximity to trees and will result in a number of benefits including decreasing unplanned outages, a better performing network, and a reduction in SSEN's tree cutting commitment and associated environmental issues.

As part of the project, it is proposed to install approximately 1km of new underground 11kV cable within a Site of Special Scientific Interest (SSSI) in Berkshire. The SSSI is managed by the Wildlife Trusts and supports a species-rich mixture of woodland, heathland, wetland and grassland habitats.

The cable route follows an existing overhead line comprising of species-rich grassland and localised flushes around which wetland communities are present. To avoid or reduce impacts to this sensitive site, work was done in 2019 so that cable installation will be achieved using a specialised cable plough which avoids the need for open cut trenching and topsoil stripping, reduces vehicle movements, and increases the speed of installation.

Surveys for great crested newt were undertaken at three nearby ponds using eDNA techniques – the results of which confirmed the absence of this legally protected species. However, surveys confirmed the presence of common lizard, another protected species, and so a mitigation strategy was implemented involving the careful removal of reptile habitat to encourage these animals to disperse into undisturbed parts of the site before cable installation works commence. Other mitigation included measures to prevent the spreading of invasive non-native species of plant, pollution prevention, and the protection of sensitive wetland soils.

Opportunities to deliver biodiversity enhancements were also identified which include the installation of raptor boxes on redundant electricity poles, habitat improvement works on SSSIs and increasing species diversity when reinstating hedgerows.

**130,000km**  
of overhead lines and underground cables

**100+**  
subsea cables, powering island communities

**over 3.8m**  
customers served by SSEN's electricity distribution networks

**38.3TWh**  
Electricity distributed in 2018/19



# THERMAL

SSE Thermal is focused on providing flexible and efficient gas-fired generation which plays a critical role in the transition to a net zero future, complementing the increasing levels of variable renewable generation on the system and maintaining security of supply in the UK and Ireland. Its portfolio also comprises energy-from-waste generation and it is involved in energy storage.

SSE Thermal currently owns and operates five of the most flexible and efficient gas-fired power stations in the UK and Ireland. Through new projects like the new 840MW Keadby 2 Combined Cycle Gas Turbine (CCGT) plant in North Lincolnshire, which when complete is expected to be the cleanest and most efficient gas-fired power station in Europe, it's displacing older, less-efficient generation, and playing a key role in the energy transition. It also operates two of the UK's most efficient energy-from-waste facilities\* in Ferrybridge, West Yorkshire which are capable of diverting over 1.3 million tonnes of waste from landfill annually and play a key role in the UK's sustainable waste management.

SSE Thermal recognises it impacts biodiversity through the carbon emitted from generation and it is now actively exploring opportunities in emerging carbon capture, usage and storage (CCUS) and hydrogen solutions to fully decarbonise its energy generation in the years ahead. At a more local level, it also recognises that there are ways in which it can have a positive environmental impact and the business actively works to enhance biodiversity at operational, decommissioning and development sites, and improve access to it sites for local communities.



### Considering biodiversity during development of Keadby 2

At SSE's proposed Keadby 2 power station site, established colonies of southern marsh orchid (*Dactylorhiza praetermissa*) were identified in 2019. While there is currently no specific legal protection of southern marsh orchid, the local environmental biodiversity of the former industrial site was considered to be unique and the colonies important enough to translocate them. The translocation site was selected due to its proximity to other actively managed habitat areas created as part of the adjacent SSE asset, Keadby Wind Farm, thereby providing a more holistic and integrated approach to habitat management across the two different developments.

The management of the Keadby wind farm site has involved the creation of new habitats, including ponds and wildflower areas delivering benefits for marsh harriers, water voles, bats, owls and other species.

**"At SSE Thermal we understand the urgent need to address the interconnected challenges of climate change and biodiversity loss. As a business we have committed to protecting and enhancing biodiversity at our power stations and energy storage facilities. This includes working closely with local communities and providing them with improved access to our sites. We believe these efforts, coupled with decarbonising our energy generation, will contribute positive solutions to these challenges."**

Stephen Wheeler,  
Managing Director, SSE Thermal



**3.9GW**  
installed gas- and oil-fired generation capacity

Operates  
**c. 140MW**  
of energy-from-waste facilities\*  
capable of diverting over  
**1.3 million tonnes**  
of waste from landfill a year.

**840MW**  
Capacity of the new Keadby 2 project,  
which is expected to be the cleanest  
and most efficient CCGT in Europe

### Improving salt marshes at Fiddler's Ferry

A large stretch of land at SSE's Fiddler's Ferry power station, situated along the banks of the River Mersey, is an important salt marsh habitat and part of the Cuerdley Marsh local wildlife site which is home to various species of bird of conservation importance including skylarks, starlings and lapwings.

During 2019 Fiddler's Ferry have continued to support the 'Beyond Our Bridges' project led by The Mersey Gateway Environmental Trust as it was extended beyond the initial 2015 to 2018 period. The aims were to re-create a functioning, dynamic estuarine ecosystem in the Upper Mersey Estuary for the benefit of UK Biodiversity Action Plan (BAP) priority bird species.

#### A summary of key aspects and successes during 2019, included:

- another nine new badminton court sized areas of reedbed (approx. 4,500m<sup>2</sup>) brought into management under a cutting regime;
- modifications were made to creeks and shuttering system, to become more efficient;
- two new wader scrapes at Cuerdley Marsh;
- continued monitoring of wintering and breeding birds with a further 12 monthly reports and a specific Common Bird Census (CBC) report; and
- monitoring results indicate there have been benefits to priority bird species such as lapwing and redshank.

\*Ferrybridge Multifuel 1 and Ferrybridge Multifuel 2 are 50:50 joint ventures with Wheelabrator Technologies



# SSE RENEWABLES

SSE Renewables (SSER) is a leading developer and operator of renewable energy across the UK and Ireland, with a portfolio of around 4GW of installed renewable energy capacity. Its strategy is to drive the transition to a zero-carbon future through the world class development, construction and operation of renewable energy assets.

## BUILDING ON A RICH HERITAGE

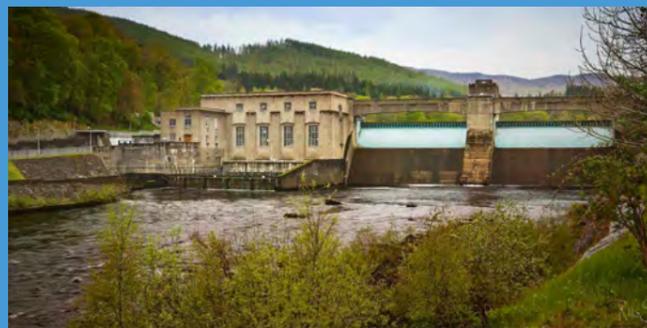
SSER's heritage has its foundations in the hydro-electric revolution that took place in the north of Scotland shortly after the Second World War, transforming the lives of those who lived there. SSER has built on these decades of skills and knowledge, and today has sector-leading expertise in renewable energy, with a portfolio including onshore and offshore wind, as well as hydro.

SSER's 4GW of installed renewable generation capacity is made up of 1,450MW of hydro, 1,950MW of onshore wind and 579MW of offshore wind. SSER also has an onshore wind pipeline of 1GW and the largest offshore wind development pipeline in the UK and Ireland at over 7GW.

### Preserving SSE's hydro-heritage

The social history that was created by the hydro-electric revolution in the north of Scotland is something that does not simply belong to SSE and there is a responsibility to preserve and promote that heritage for future generations. SSE's Pitlochry Dam Visitor Centre (PDVC) showcases this unique history, telling the story of remarkable feats of engineering and demonstrating how the introduction of electricity to these areas greatly improved people's lives. The centre also allows visitors to learn more about what SSE is doing to protect, restore and enhance biodiversity local to its assets, particularly the Atlantic salmon.

At the end of 2019, PDVC celebrated three years of operation. The free to enter visitor centre is open all year and in 2018/19, it welcomed almost 134,000 visitors – its highest annual footfall yet, with visitor numbers expected to exceed this in 2019/20.



"At SSE Renewables, we understand that in order to effectively combat climate change, we must do so in a way that protects, restores and enhances biodiversity. We are committed to delivering the energy needed for a low-carbon future in a sustainable way, utilising our greatest climate change mitigation assets – our natural environment and the biodiversity which it supports."

Jim Smith, Managing Director,  
SSE Renewables

**4GW**

installed renewable energy capacity



1.5GW  
hydro



2GW  
onshore  
wind



0.5GW  
offshore  
wind

**9.8TWh**

Renewable generation output  
in 2018/19



**7GW**

Offshore wind pipeline

**1GW**

Onshore wind pipeline



Ambitions to treble annual renewable  
energy output by 2030 to

**30TWh**

## A HOLISTIC ENVIRONMENTAL APPROACH

The scale of SSER's interactions with various terrestrial, inter-tidal and aquatic ecosystems means that it must work with a range of stakeholders to carefully manage environmental issues throughout the development, construction and operational stages of assets.

### Environmental considerations throughout project lifecycles

SSER is proud to employ a highly qualified and skilled team of environmental specialists to ensure that each renewable project receives dedicated environmental support and that any identified environmental impacts are avoided, off-set or compensated for during the development and construction phases.

SSER's commitment to the environment extends to the duration of the operation life of its assets with environmental specialists overseeing operational monitoring campaigns and site-specific environmental management plans delivering tangible benefits to the environments in which it operates as well as identifying best practice for future developments. See pages 18 to 21 for more information on the steps SSER takes to manage species and habitats.

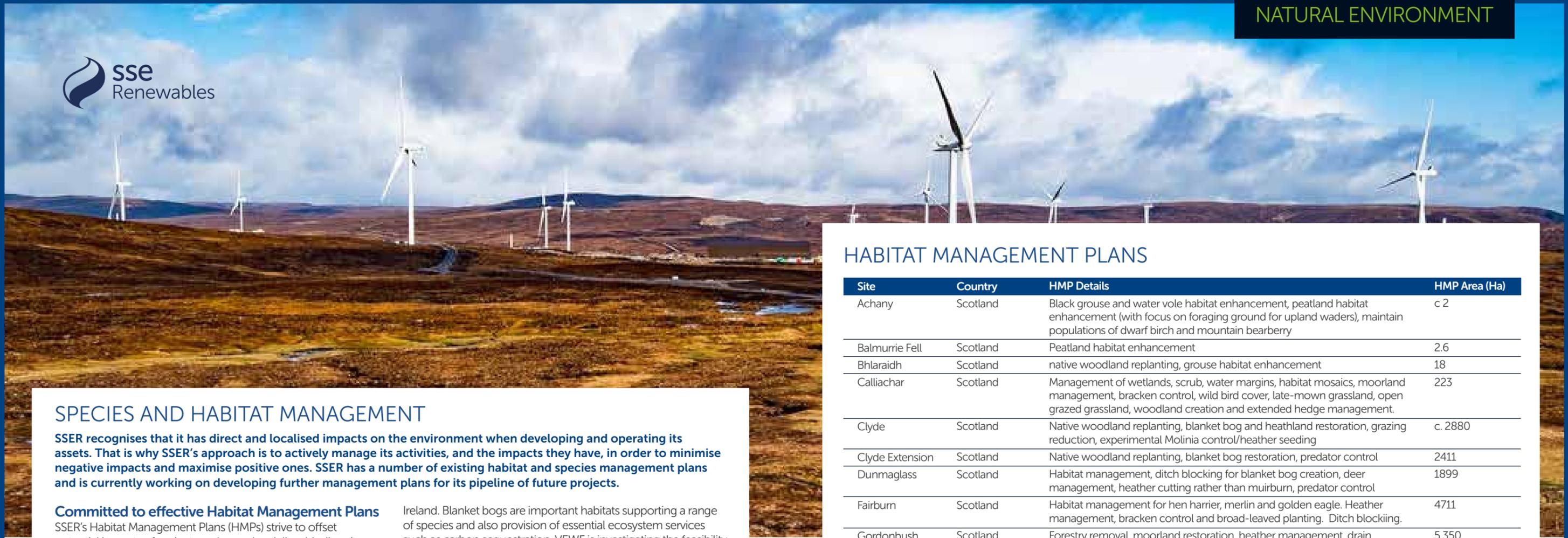
### Embedding environment into decision-making

Embedding environmental considerations into its business management decisions ensures that protecting the environment is at the forefront of SSER's operations. To that effect, its wholly owned operational assets operate to an externally accredited ISO 14001 Environmental Management System. More information on ISO 14001 can be found on page 30. Plans are underway to align SSER's construction activities to ISO 14001.

In addition to this, SSER works with academics and research groups to advance understanding of how its assets interact with the environment, sometimes even contributing to gaps in scientific knowledge, which informs future decision-making, see page 22.

### Providing natural amenities for communities

Many of the sites that SSER develops and operates provide educational or recreational amenity for communities, and it seeks to take this into consideration in its activities. SSER facilitates public access in accordance with the relevant national countryside access codes and, at selected sites, it provides facilities for visitors and welcomes educational groups by arrangement. See page 23 for more information on how SSER engages with communities to raise awareness of biodiversity.



## SPECIES AND HABITAT MANAGEMENT

SSER recognises that it has direct and localised impacts on the environment when developing and operating its assets. That is why SSER's approach is to actively manage its activities, and the impacts they have, in order to minimise negative impacts and maximise positive ones. SSER has a number of existing habitat and species management plans and is currently working on developing further management plans for its pipeline of future projects.

### Committed to effective Habitat Management Plans

SSER's Habitat Management Plans (HMPs) strive to offset potential impacts of projects and may also deliver biodiversity enhancement. HMPs are developed and agreed with relevant stakeholders during the development phases of projects and aim to provide a positive impact on habitats and species in the long-term. SSER currently has around 21,150 hectares of habitat under management plans. For detail of where these HMPs are and their main activities, see page 19.

SSER is striving to achieve net-gain on all new developments from 2025 onwards however recognises that there are challenges to delivering this considering the range of environments in which its assets are situated. SSER is committed to working with external partners and agencies in order to progress towards successful realisation of this goal in the coming years.

Ireland. Blanket bogs are important habitats supporting a range of species and also provision of essential ecosystem services such as carbon sequestration. VEWf is investigating the feasibility of utilising technology and local measures to improving blanket bog condition in a holistic way.

### Protecting iconic species in the Scottish Highlands

At Dunmaglass and Stronelairg wind farms - both JVs between SSER and Greencoat UK Wind Plc in which SSER has a 50.1% share - the business is contributing to conservation efforts and improving understanding of the golden eagle. Remote cameras have been installed at Stronelairg Wind Farm to monitor golden eagle activity. The photograph to the left is one of many taken from monitoring undertaken to date.



A conservation management plan at Dunmaglass which was established in 2015 has enabled intensive monitoring of active and vacant golden eagle ranges to improve the knowledge base and document the status of golden eagle activity and breeding success in this area. To date 19 juvenile golden eagles have been fitted with satellite tags as part of the research programme which has been undertaken in collaboration with the Scottish Raptor Study Group. In 2019, monitoring found that there were 25 territories occupied by golden eagles within the study area, up from 19 in 2015, making this area one of the most rapidly increasing populations of golden eagle in Scotland.

2015                      2019

19 → 25

Increase in number of territories occupied by golden eagles in the study area.

## HABITAT MANAGEMENT PLANS

Site	Country	HMP Details	HMP Area (Ha)
Achany	Scotland	Black grouse and water vole habitat enhancement, peatland habitat enhancement (with focus on foraging ground for upland waders), maintain populations of dwarf birch and mountain bearberry	c 2
Balmurrie Fell	Scotland	Peatland habitat enhancement	2.6
Bhlaraidh	Scotland	native woodland replanting, grouse habitat enhancement	18
Calliachar	Scotland	Management of wetlands, scrub, water margins, habitat mosaics, moorland management, bracken control, wild bird cover, late-mown grassland, open grazed grassland, woodland creation and extended hedge management.	223
Clyde	Scotland	Native woodland replanting, blanket bog and heathland restoration, grazing reduction, experimental Molinia control/heather seeding	c. 2880
Clyde Extension	Scotland	Native woodland replanting, blanket bog restoration, predator control	2411
Dunmaglass	Scotland	Habitat management, ditch blocking for blanket bog creation, deer management, heather cutting rather than muirburn, predator control	1899
Fairburn	Scotland	Habitat management for hen harrier, merlin and golden eagle. Heather management, bracken control and broad-leaved planting. Ditch blocking.	4711
Gordonbush	Scotland	Forestry removal, moorland restoration, heather management, drain blocking, native woodland restoration, small scale agricultural activities, deer management	5,350
Griffin	Scotland	Native woodland planting, black grouse habitat enhancement, enhance habitat for mammal species.	892
Strathy North	Scotland	Hen harrier enhancement, peat restoration, riparian native woodland, short sward	1,020
Stronelairg	Scotland	management for eagles	481
Toddleburn	Scotland	Enhancement of existing woodland SSSI, native woodland planting in other areas, create mix of wetland areas and tussocky grassland.	c. 70
Glenconway	Northern Ireland	Peatland management, drain blocking, invasive species removal. Habitat and bird monitoring. Bat monitoring.	21.62
Slieve Divena 2	Northern Ireland	Habitat and bird surveys. Red grouse, peat and snipe management	17
Slieve Kirk	Northern Ireland	Peatland and bird monitoring, grazing management, invasive species removal, aquatic habitat creation, watercourse protection,	580
Tievenameenta	Northern Ireland	Habitat and bird surveys. Habitat restoration, ditch blocking, peat management	42
Athea	Ireland	Extensive habitat, bird and amphibian monitoring over the wind farm area with habitat restoration and invasive species management.	250
Coomatalin	Ireland	Breeding bird monitoring and the waterbird monitoring of the nearby lakes.	N/A
Corneen	Ireland	N/A	N/A
Curragh	Ireland	Peatland restoration, heather and grassland management, hen harrier and hydrological monitoring.	24
Dromada	Ireland	Forestry removal, peatland restoration, drain blocking and hen harrier monitoring.	3.3
Galway Wind Park - Cloosh	Ireland	Conifer felling, replanting offsite, drainage blocking, bog reinstatement and monitoring	59
Galway Wind Park - Seecon	Ireland	Conifer felling, replanting offsite, drainage blocking, bog reinstatement and monitoring	174
Galway Wind Park - Uggool	Ireland	Fencing, grazing management and quadrat vegetation monitoring	16



**Managing coastal ecosystems**

In 2019, SSER was successful in winning contracts for 4GW (SSE share 2.2GW) of offshore wind projects from its Dogger Bank, the world's largest offshore windfarm which is a JV with Equinor in which SSER has a 50% stake, and Seagreen – wholly owned by SSER – projects in the North Sea. When completed these projects will generate over 20TWh annually, or nearly 7% of the UK's current energy demand.

The onshore cable routes for these projects have been assessed over several years to identify potential impacts of the cable installation works on habitats and species.

**Dogger Bank**

In 2019, ecological work was undertaken for to ensure existing species and habitats are protected, maintained and where possible enhanced throughout the project period. This included the trapping and releasing of great crested newts and removal of hedge rows to prevent impacts on birds and common lizards – which will be replanted following completion of works. Further mitigation measures in respect of water voles, grass snakes and badgers are scheduled for 2020.

SSER undertook a water quality monitoring programme on rivers and surface water channels along the entire onshore cable route. This best-practice measure will ensure that water quality during the construction phase can be compared with baseline conditions to maintain existing water quality and associated habitats. This work was carried out with the Drainage Board and the Environment Agency.

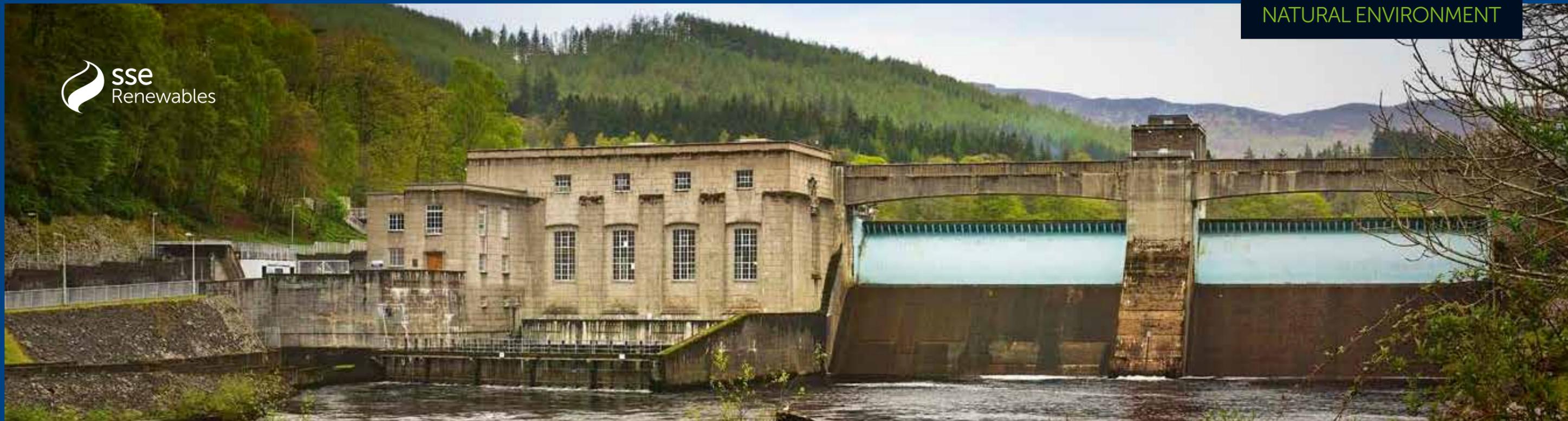


**Seagreen**

Following environmental assessments in 2019, it was discovered that Sea Pea, a nationally scarce plant is present in small numbers off the Angus coastline at Carnoustie.

This small population is near SSE's proposed Seagreen Offshore wind farms where the export cables are proposed to reach land. In 2019, the Seagreen onshore HMP committed to enhancing this species by several measures including local seed collections and translocations, in conjunction with Dundee Botanical Gardens. The success and spread of this plant will be monitored in Year 1, 3 and 5 after translocation.





## CONTRIBUTING TO RESEARCH

Plans to manage biodiversity must be evidence-based to be effective and research plays a valuable role in informing SSER's decision-making. SSER collects ecological data itself and also supports and funds others to collect necessary data which inform proposed management activities and ensure SSER's projects deliver value

### Contributing new knowledge to an old challenge in hydro

SSER has a duty of care dating back to an Act of Parliament in 1943 to minimise its impacts on the fish stocks in the waters affected by its activities. While many of SSER's hydro assets have been in operation for over 70 years, it continues to take significant steps in collaboration with stakeholders to monitor and manage fish stocks, in particular the atlantic salmon, and even contributes to new scientific knowledge in this area.

SSER has been involved in developing the means to assess the numbers of fish passing through its hydro-electric assets for over 25 years. SSER considers the collection of this data and the collaboration with external partners to be vital in assessing both the impacts of its operations and in informing wider management prescriptions to protect one of Scotland's most iconic species. Prior to this, visual counts were made and SSE has fish count records dating back 60 years in some areas.

Monitoring and measuring the success of adult salmon returning from sea to their spawning grounds is only half the story for SSER. In conjunction with Cromarty Firth DSFB, SSER maintain one of the UK's largest wild fish hatchery facility outside Contin, Ross-shire. Each year approximately one million salmon eggs were incubated and brought on to maturity before being deposited around the Conon scheme to secure viable populations of Atlantic salmon into the future.

### 1.5GW OF CAPACITY ACROSS THE THREE HYDRO TECHNOLOGIES

HYDRO	750MW FLEXIBLE HYDRO	400MW RUN OF RIVER	750MW PUMPED STORAGE
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### Monitoring biodiversity in marine environments

SSER is diversifying its portfolio by expanding into offshore wind which brings an additional range of environmental challenges and monitoring requirements. Monitoring is important to understand biodiversity around offshore wind assets in marine environments. Monitoring activities help SSE ensure that any work undertaken has minimal impacts on these environments and also helps contribute to knowledge gaps concerning species and habitats

In August 2019, for only the second time ever in Scottish waters, a swordfish was identified through aerial wildlife surveys commissioned by SSE Renewables at its Seagreen offshore wind farm site. The work was part of a wider surveying exercise carried out by SSE Renewables, EDF Renewables and Red Rock Power Limited at the site which is 27km off the east coast of Scotland in the western North Sea.



SSE Renewables worked with the Centre for Environment, Fisheries and Aquaculture Science and the University of Maine School of Marine Science to confirm that the initial identification was correct. Although it is not thought that this species is typically present in these waters, findings such as this demonstrate the value in delivering on commitments to monitor and assess the environments associated with SSER's offshore assets.



### CONNECTING PEOPLE WITH THE NATURAL WORLD

SSER recognises the important role it can play in helping to connect both employees and the communities it works in with the natural environment. Encouraging people to engage with biodiversity and conservation or to simply enjoy the nature around them through leisure activities can help to improve the quality of people's lives.

### Supporting environmental education

As the result of partnerships with education authorities in the UK and Ireland, SSER staff have contributed to initiatives that are educating school pupils about climate change, biodiversity and the natural world. In Ireland, SSER colleagues created and managed the "Eco Ed 4 All" initiative, educational modules aimed to connect schools, communities and businesses with nature through tuition and practical exercises.

In 2019, the modules were delivered at selected colleges and education centres with a national rollout planned for 2020. In Scotland, SSER colleagues have been engaging with Perthshire schools through guided tours of the company's onshore wind farms or classroom sessions helping to educate pupils on the challenges of climate change and the benefits of renewable energy.

### Creating environmental career opportunities

SSE Renewables recognise that in order to secure a sustainable future for the business, it needs to attract the brightest talent to work on securing its environment performance into the future. In 2019, SSER commenced its first ever Environmental Graduate Programme with the successful applicant now working in conjunction with the SSER Environment Team across its assets.

### Legend

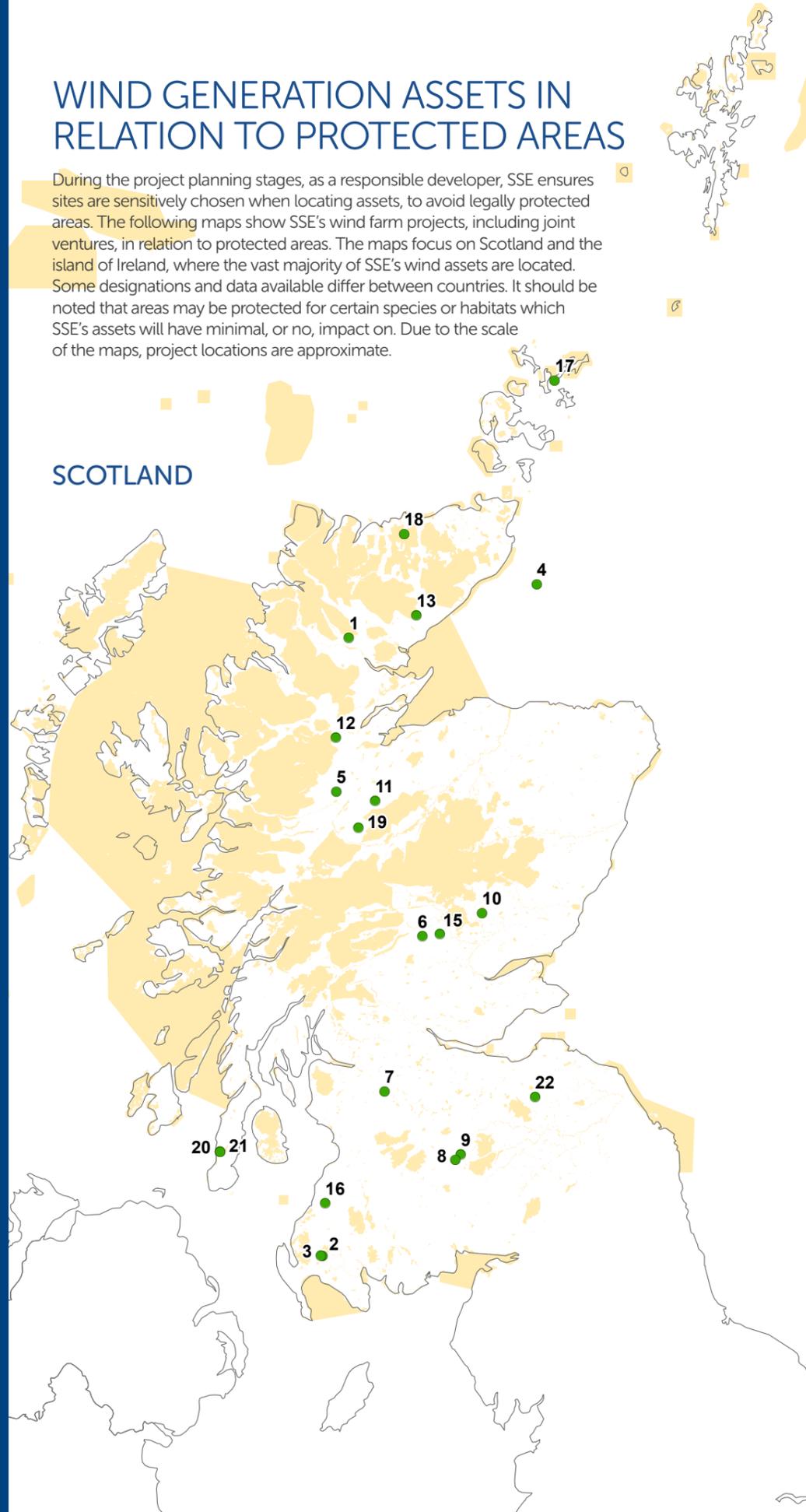
- Wind Farms - Operational
- Natural Heritage Constraints (SNH)

■ NNR, RAMSAR, SAC, SPA, SSSI, WILDLAND

- | ID | Construction Project |
|----|----------------------|
| 1  | Achany               |
| 2  | Artfield             |
| 3  | Balmurrie Fell       |
| 4  | Beatrice             |
| 5  | Bhlaraidh            |
| 6  | Calliachar           |
| 7  | Cathkin Braes        |
| 8  | Clyde                |
| 9  | Clyde Extension      |
| 10 | Drumderg             |
| 11 | Dunmaglass           |
| 12 | Fairburn             |
| 13 | Gordonbush           |
| 14 | Greater Gabbard      |
| 15 | Griffin              |
| 16 | Hadyard Hill         |
| 17 | Spurness             |
| 18 | Strathy North        |
| 19 | Stronelaig           |
| 20 | Tangy                |
| 21 | Tangy II             |
| 22 | Toddleburn           |

## WIND GENERATION ASSETS IN RELATION TO PROTECTED AREAS

During the project planning stages, as a responsible developer, SSE ensures sites are sensitively chosen when locating assets, to avoid legally protected areas. The following maps show SSE's wind farm projects, including joint ventures, in relation to protected areas. The maps focus on Scotland and the island of Ireland, where the vast majority of SSE's wind assets are located. Some designations and data available differ between countries. It should be noted that areas may be protected for certain species or habitats which SSE's assets will have minimal, or no, impact on. Due to the scale of the maps, project locations are approximate.



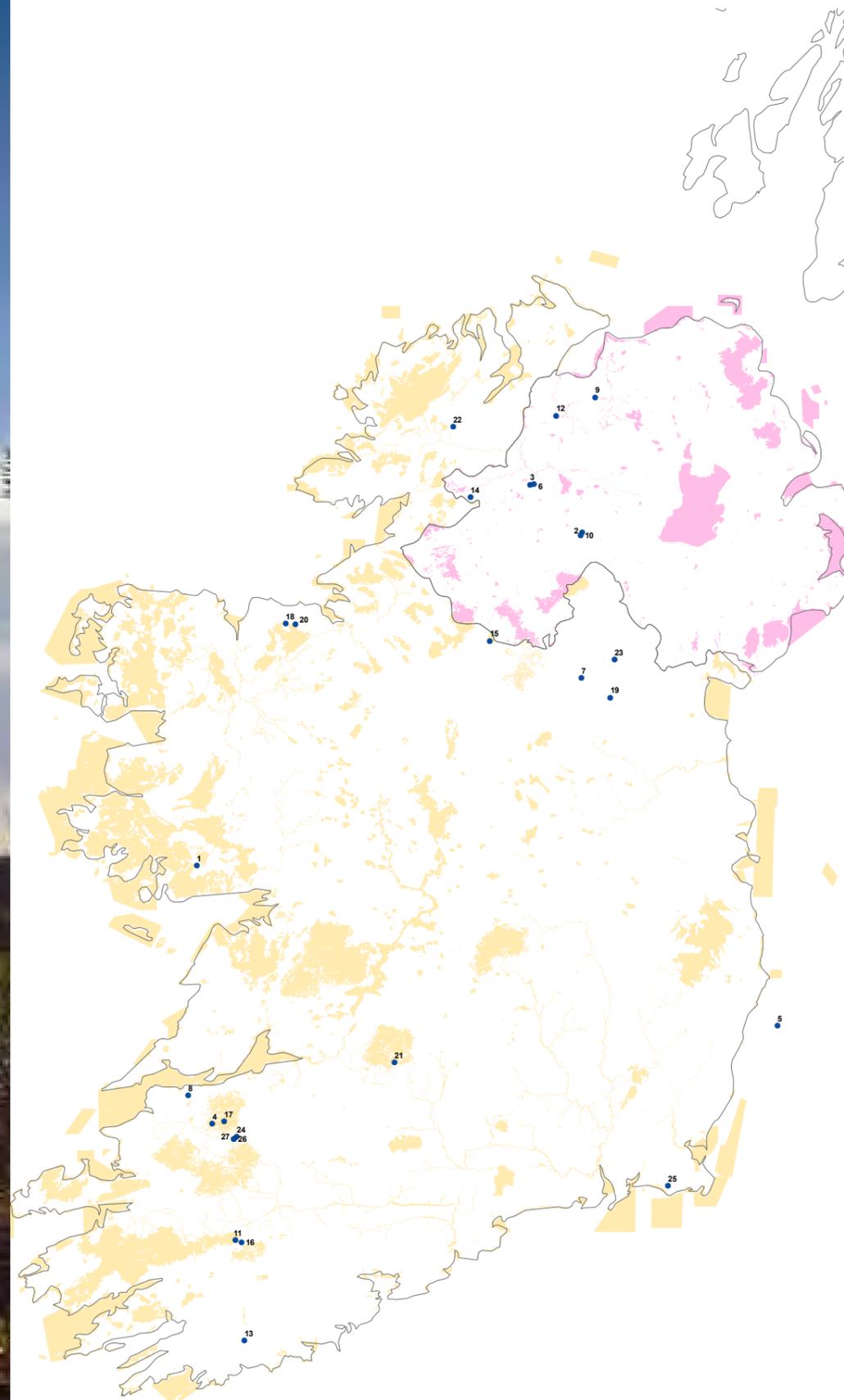
### Protected area key

ASSI	Areas of Special Scientific Interest
NHA	National Heritage Areas
NNR	National Nature Reserves
RAMSAR	Wetlands of international importance designated under the Ramsar Convention
SAC	Special Areas of Conservation
SPA	Special Protection Areas
SSSI	Site of Special Scientific Interest
Wild Land Areas	Areas considered to represent the most extensive areas of high wildness and given national importance in Scottish Planning Policy





## ISLAND OF IRELAND



### Legend

- Wind Farms - Operational
- Natural Heritage Constraints

Northern Ireland  
 ASSI, NNR, RAMSAR, SAC, SPA

Republic of Ireland  
 NHA, SAC, SPA

ID	Project
1	Galway Wind Park
2	Slieve Divena 2
3	BessyBell
4	Athea
5	Arklow I
6	BessyBell2
7	Bindoo
8	Leanamore
9	Glenconway
10	Slieve Divena
11	Coomacheo
12	Slieve Kirk
13	Coomatalin
14	Tievenameenta
15	Corneen
16	Curragh
17	Dromada
18	Dunneill
19	Gartinaneane
20	Kingsmountain
21	Knockastanna
22	Meentycat Wind Park
23	Mullananalt
24	Rathcahill
25	Richfield
26	Tournafulla 1
27	Tournafulla 2

## HYDRO GENERATION ASSETS IN RELATION TO PROTECTED AREAS

The vast majority of SSE's hydro-electricity assets have been in place since the 1940s and 1950s - before protected designations were established. SSE works very closely with regulators, environmental organisations and local communities to ensure its hydro-electricity operations have minimal impacts on these stakeholders and the environment.

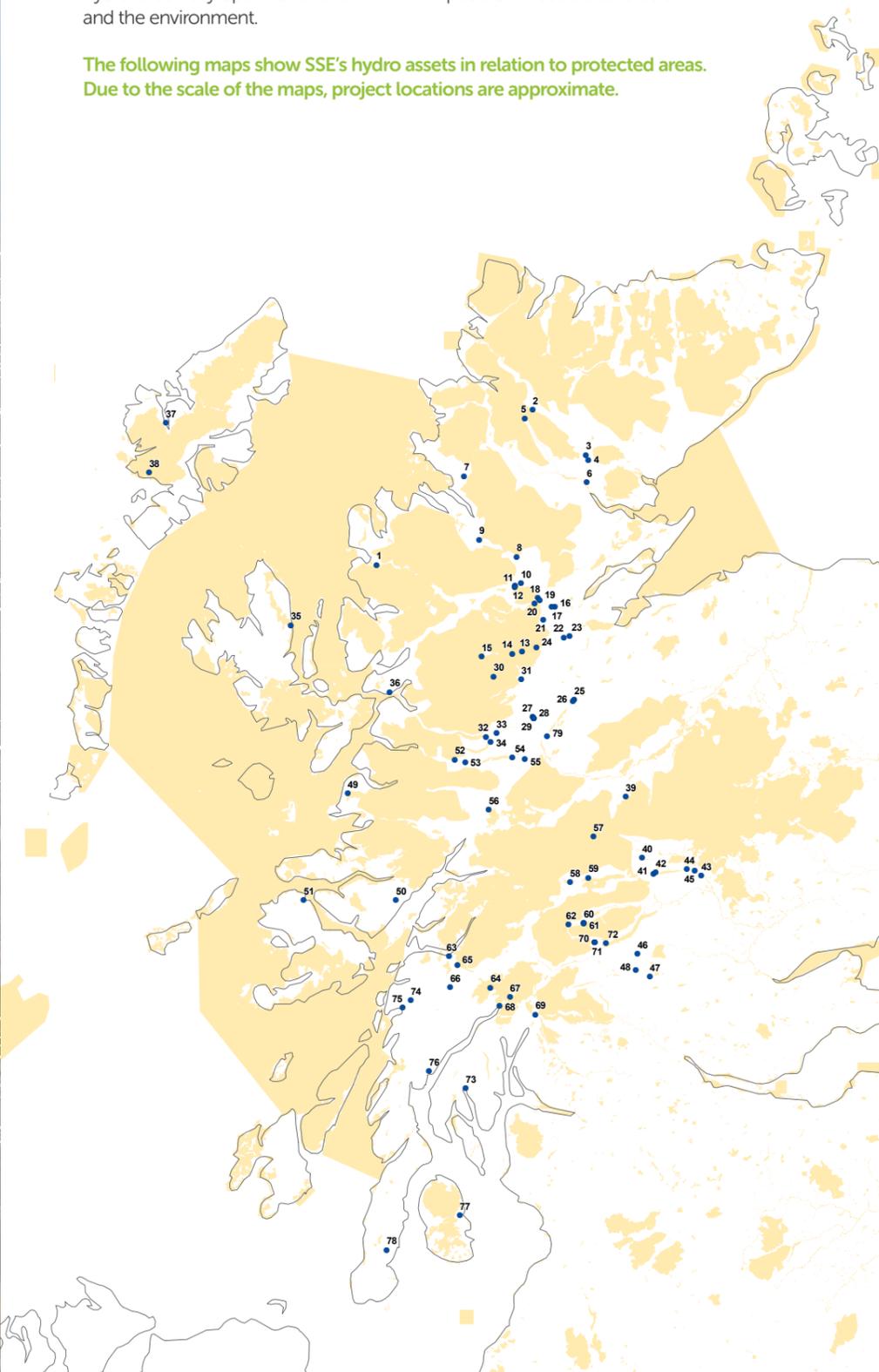
The following maps show SSE's hydro assets in relation to protected areas. Due to the scale of the maps, project locations are approximate.

### Legend

- Hydro Sites
- Natural Heritage Constraints (SNH)

■ NNR, RAMSAR, SAC, SPA, SSSI, WILDLAND

ID	Project	ID	Project
1	Kerry Falls	41	Tummel
2	Cassley	42	Errochty
3	Lairg	43	Pitlochry
4	Shin Diversion	44	Clunie Dam
5	Duchally	45	Clunie
6	Shin	46	Lednock
7	Loch Dubh	47	Dalchonzie
8	Vaich	48	St Fillians
9	Cuilleig	49	Morar
10	Mossford	50	Kingairloch
11	Grudie Bridge	51	Tobemory
12	Achanalt	52	Quoich Dam
13	Beannachran Dam	53	Quoich
14	Deanie	54	Invergarry Dam
15	Misgeach	55	Invergarry
16	Torr Achilty	56	Mucomir
17	Orrin	57	Ericht
18	Luichart Dam	58	Gaur
19	Luichart	59	Rannoch
20	Meig Dam	60	Cashlie
21	Orrin Dam	61	Stronuich Dam
22	Aigas	62	Lubbreoch
23	Kilmorack	63	Inverawe
24	Culligran	64	Sron Mor
25	Foyers	65	Awe Barrage
26	Foyers Falls	66	Nant
27	Livishe	67	Allt Na Lairige
28	Dundreggan Dam	68	Clachan
29	Glenmoriston	69	Sloy
30	Mullardoch	70	Lochay Fishpass
31	Fasnakyle	71	Lochay
32	Cluanie Dam	72	Finlarig
33	Ceannacroc	73	Striven
34	Loyne	74	Loch Tralaig
35	Storr Lochs	75	Kilmelford
36	Nostie Bridge	76	Loch Gair
37	Gisla	77	Claddoch
38	Chliostair	78	Lussa
39	Cuaich	79	Glendoe
40	Trinafour		



# SSE'S ENVIRONMENTAL GOVERNANCE



## Policy

SSE's Environment and Climate Change Policy sets out SSE's approach to managing its environmental impacts and activities. Through this policy, SSE commits to protecting the environment, preventing pollution, minimising adverse environmental impacts and bringing about environmental improvements where it can. SSE continues to engage with stakeholders, using their feedback on environmental issues to inform its activities. SSE's Environment and Climate Change Policy is publicly available on SSE's website and is signed-off by the Chief Executive.



## Accountability

SSE's Chief Executive, Alistair Phillips-Davies, has overall lead responsibility for environmental performance, including at Board-level. The Safety, Health and Environment Advisory Committee (SHEAC) advises the Board on matters relating to safety, health and environment (SHE). The work of the SHEAC is designed around SSE's eight SHE Enduring Goals, one of which is Environment: Protecting the environment and operating in a sustainable way. The SHEAC is responsible for setting SHE performance targets, which include environmental performance.

SSE's has an Environment Subgroup which advises the business on the Environment Enduring Goal. In 2019, the Environment Subgroup continued to: support the Group environment vision and creation of the new Group Environment Strategy; drive improved environmental performance through shared learning and working efficiently; and meet with external organisations to discuss best practice methods and knowledge sharing regarding environmental performance. At business level, the heads of individual business units are accountable for environmental performance and for managing environmental impacts by applying SSE's SHE Management System.



## Environmental Management

SSE's Thermal, Renewables, Enterprise Contracting and gas storage businesses completed the transition from ISO14001:2004 to the latest ISO14001:2015 in 2018. This is an international standard which specifies requirements for an effective environmental management system. SSE now has a single corporate certification for ISO14001:2015 where it used to have 20 local certificates. This means the company is now positioned to set objectives and action plans in a cohesive manner and has a system that can be extended to other SSE businesses.



## Training

All relevant employees are provided training in environmental management. Determination of which employees are relevant is undertaken on a local-level basis and training is relevant to the nature of the business they are involved with. A quarterly forum consisting of relevant individuals from each relevant business unit has also been established to drive improvement and share best practice.



## Reporting environmental performance

A monthly report of Group Safety, Health and Environment (SHE) incidents split by business unit is published internally, which is used to monitor SSE's environmental performance and highlight any issues as they arise so that action can be taken. Annual key performance indicators (KPIs) are reported externally in SSE's Annual Report and, in more detail, in its Sustainability Report. Selected environmental KPIs can also be found in this report on page 32. The breadth of SSE's operations means that its activities are subject to a number of environmental regulations. Therefore, where necessary, SSE regularly reports environmental performance to the environmental regulators in the countries it operates in.



## Creating a culture for employees to speak up

SSE's employees are encouraged to report incidents of wrongdoing, including environmental concerns, through both internal and external mechanisms. If employees are not comfortable raising incidents with their line managers, they can contact one of the five designated senior managers who have been trained to take calls for whistleblowing incidents. SSE also has an externally hosted 'Speak Up' phone line and email service, hosted by SafeCall, through which incidents can be reported anonymously. SSE put the SafeCall service in place to ensure that employees can be confident that there will be no recriminations if they report incidents of suspected wrongdoing. Whether speaking up through internal or external mechanisms, SSE's employees can remain anonymous if they choose.



# ENVIRONMENTAL PERFORMANCE

Disclosure of SSE's environmental impacts is an important way to increase transparency to stakeholders and to ensure the company is accountable for its actions and decisions. This section contains a number of key performance indicators (KPIs) relating to SSE's environmental performance. SSE has reported against a range of Global Reporting Index (GRI) indicators for a number of years. Where relevant, it is highlighted throughout this section where KPIs and information provided align with GRI Environmental indicators. Detailed narrative around performance can be found in SSE's Sustainability Report 2019.

## Environmental incidents

	GRI Indicator	2018/19	2017/18	2016/17
Number of major environmental incidents	GRI 307-1	1	0	0
Number of serious environmental incidents	GRI 307-1	9	11	8
Number of minor environmental incidents	GRI 307-1	22	44	57
Number of environmental prosecutions	GRI 307-1	0	0	0

## Water use

	GRI Indicator	2018/19	2017/18	2016/17
Total water abstracted (million m <sup>3</sup> )	GRI 303-1	25,131	24,044	22,658
Total water consumed (million m <sup>3</sup> )	GRI 303-1	5.6	7.6	5.0
Total water returned (million m <sup>3</sup> )	GRI 303-1	25,126	24,037	22,654

SSE has adopted an internal classification of environment related incidents, which reflects their scale and impact and are aligned with those used by SSE's principal regulators.

## Carbon performance

	GRI Indicator	2018/19	2017/18	2016/17
Scope 1 emissions <sup>1</sup> ('000s tCO <sub>2</sub> e)	GRI 305-1	8,810	10,155	8,004
Scope 2 emissions <sup>2</sup> ('000s tCO <sub>2</sub> e)	GRI 305-2	720	910	1,120
Scope 3 emissions <sup>3</sup> ('000s tCO <sub>2</sub> e)	GRI 305-3	9,290	10,621	10,357
Total carbon emissions (million tCO <sub>2</sub> e)		18,830	21,609	19,39
Carbon intensity of electricity generation (kgCO <sub>2</sub> e/MWh)	GRI 305-4	284	305	302

## Emissions to air

	GRI Indicator	2018/19	2017/18	2016/17
SO <sub>2</sub> (tonnes)	GRI 305-7	1,345	1,916	1,822
NO <sub>x</sub> (tonnes)	GRI 305-7	6,124	6,305	6,143
SF <sub>6</sub> (kg)	GRI 305-7	577	518.6	394.5

1. Scope 1 comprises emissions from operations owned or controlled by the organisation.  
 2. Scope 2 comprises emissions from the generation of purchased electricity, heating and cooling.  
 3. Scope 3 comprises emissions that occur outside of the organisation in support of its activities.





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