BEATRICE

BUILDING FOR THE FUTURE

Socio-economic benefits and learnings

sse Renewables

ABOUT BEATRICE

Situated 13km off the Caithness coast, at the time of its completion, Beatrice was the world's fourth largest offshore wind farm.

The project is a joint venture partnership between SSE Renewables (40%), Copenhagen Infrastructure Partners (35%) and Red Rock Power Limited (25%) with development, construction and now operation led by SSE Renewables on behalf of the partnership.

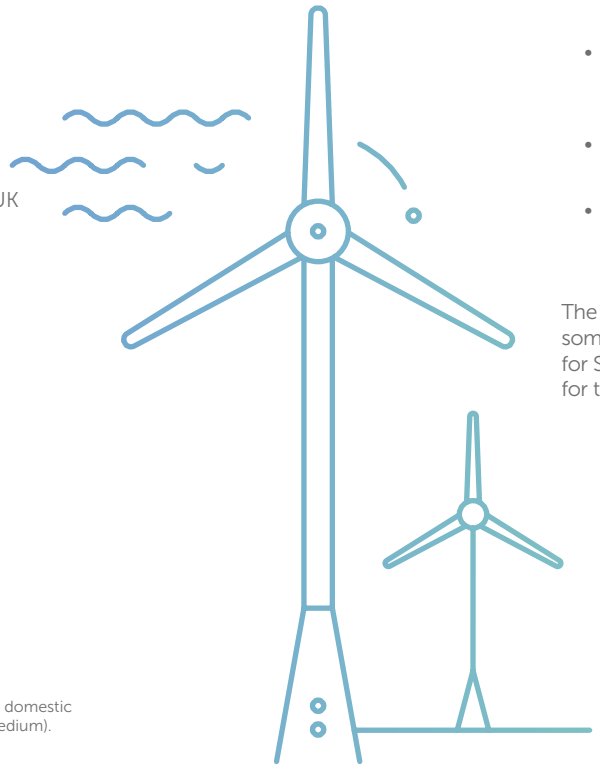
Final investment decision on the £2.6bn project was made in May 2016 and the project was completed on time and under budget by around £100m in June 2019.

Beatrice is made up of 84, 7MW Siemens Gamesa turbines, capable of powering up to 450,000 homes each year.

ABOUT THIS REPORT

This report describes the socio-economic benefits of Beatrice as a result of its development, onshore construction, offshore construction and operations and maintenance, with analysis undertaken by BiGGAR Economics. Further detail is provided on each of these phases, including a number of case studies and key learnings for the future.

CONTENTS



*Calculated using typical annual generation output, divided by the average annual domestic electricity consumption, 1 according to Ofgem TDCV Electricity Profile Class 1 (medium).

FOREWORD

By Paul Cooley, Director of Capital Projects, SSE Renewables

The Beatrice offshore wind farm is remarkable. Its scale is awe-inspiring and its successful completion, on time and under budget, represents a commendable effort from thousands of different people. It captures one of the most plentiful natural resources, North Sea wind, and transforms it into clean, renewable energy to power up to 450,000 homes per year in Scotland and beyond.

While it is important to celebrate the success of the project, it is equally important to look to the future. In order to achieve its target of net zero emissions by 2050, the UK is going to have to fulfil the huge potential of offshore wind around its coastline. In parallel, renewable energy companies are going to have to demonstrate that they will deliver offshore wind farms in a way that is environmentally and socially responsible, and yields sustainable economic benefits.

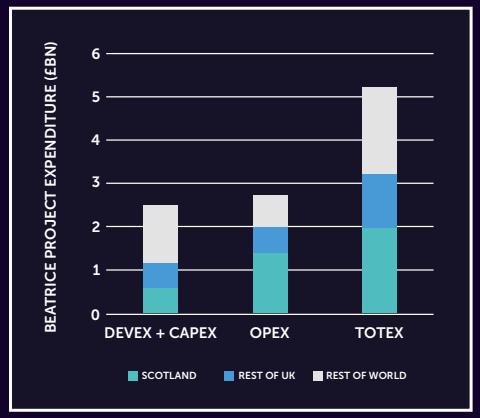
This short report highlights five key things about socio-economic value that SSE Renewables has learned from Beatrice and will apply to future offshore wind farm developments. These are:

- The power of partnership. It took a leap of faith for partners from across the private and public sectors to envisage a model for deep-water, offshore wind generation at an affordable price.
- The value of flexibility. Key stakeholders like communities must have their say, and developers need to be prepared to be flexible in responding to what they have said.
- The importance of the long term. Effective offshore wind farm development must involve decisions that look beyond immediate considerations and take account of social and economic value over decades.
- The willingness to learn hard lessons. When things do go wrong, such as a breach of minimum wage legislation, decisive action must be taken to set right the wrong.
- The need to maximise value. Although the project has made a significant contribution to the economy of Scotland and of the UK as a whole, there remains room to work with the industry and governments to maximise this value.

The spirit of this report is to learn from Beatrice. The world's fourth largest offshore wind farm is something to be proud of, but it is always possible to do things even better. And that's the objective for SSE Renewables: the relentless pursuit of improvement in this hugely important growth industry for the future.

INVESTING IN SCOTLAND AND THE UK

Around £2.5bn was invested in the development and construction of Beatrice, making it the largest private sector investment in Scottish history. Companies based in Scotland and elsewhere in the UK benefited from the opportunities this investment created. Around £610m spent in Scotland during these phases, equivalent to 24% of the combined development expenditure (DEVEX) and capital expenditure (CAPEX). In total around £1.2bn, 49%, of DEVEX and CAPEX was spent with companies across the UK.



62%
UK lifetime content

39%
Scottish lifetime content

Over the 25-year operational life of Beatrice, an estimated £2.7bn will be spent on the operation and maintenance of the wind farm. The Scottish content of this £2.7bn is expected to be around £1.4bn, equivalent to 53% of the total. With content from other UK companies expected to be around £600m, the total UK content of the money spent on the operation and maintenance of Beatrice is expected to be around £2bn, which is 73% of the total investment in this phase.

Taking total spend on development, construction and operations and maintenance into account, it is expected that UK companies will secure contracts worth £3.2bn, of which around £2bn will be with companies in Scotland. This is equal to 62% content for the UK as a whole, and 39% content for Scotland.

MEASURING UK CONTENT

As part of the Offshore Wind Sector Deal, the sector has set a 2030 target to achieve 60% lifetime UK content. For Beatrice this has been estimated at an encouraging 62%. However, more work is needed to improve the accuracy of how project expenditure is attributed to the UK as a whole and, within that, Scotland or other local geographies. For example, encouraging suppliers at all levels to measure and report the UK and local content of their contracts. The Beatrice analysis will contribute to the work underway through the Offshore Wind Industry Council and the Scottish Offshore Wind Energy Council to update the sector's UK content methodology and increase transparency in the longer term. Most importantly, it supports a sophisticated evaluation of the opportunities and risks to increasing that content in the future, which in turn supports the development of a mature domestic supply chain.

CULTIVATING HOME GROWN SUPPLY CHAINS

The UK's offshore wind sector is one of the largest and fastest growing in the world, creating ample economic development opportunities throughout the country. SSE Renewables has helped cultivate a home-grown supply chain in offshore wind by:

- Creating a simple and free-to-use online portal, Open4Business, in 2012 for local suppliers to register for contractual opportunities on SSE projects. This portal facilitated a supply chain investment of £50m in local businesses and has now transitioned to Highlands and Islands Enterprise, making it available to wider businesses.
- Placing contractual obligations on all project suppliers to consider and provide opportunities for local content, particularly for SMEs. As a result, supply contracts were awarded to a variety of suppliers in Scotland and elsewhere in the UK, many of which feature in this report.
- Investing directly in Scottish manufacturing companies, CS Wind (formerly WindTowers) and BiFab. As a past shareholder in both, SSE Renewables also provided expertise and in-kind support to further develop the competencies and capabilities needed to maintain competitiveness as a potential supplier.

SSE Renewables strongly supports the ambitions of the UK and Scottish Governments to target higher local content of offshore wind projects, within the parameters of European Union procurement law, and is playing its part in delivering the Offshore Wind Sector Deal commitments through its involvement in the Offshore Wind Industry Council and the Scottish Offshore Wind Energy Council. However, the Beatrice project learned that the challenge for local companies to compete within a rapidly growing global supply chain in component manufacturing where costs are significantly less than those in the UK cannot be underestimated. Moreover, the highly competitive nature of the CfD auction process, which provides the financial stability needed for offshore projects to proceed, compels developers to reduce costs as much as possible.

This means finding the answers for optimising locally manufactured components and associated jobs is not immediately straightforward, therefore wider opportunities for fostering a home-grown supply chain must also be pursued. SSE Renewables is committed to:

- seeking to fully understand which areas of the offshore supply chain will maximise value-add to Scotland and the rest of the UK and focusing efforts accordingly;
- exploring solutions to address the financial robustness of suppliers;
- encouraging revenue from seabed lease payments made to The Crown Estate and Crown Estate Scotland to be reinvested in the infrastructure that supports the domestic supply chain; and
- providing an outlook of its current and future portfolio to provide clarity to supply chain companies of the scale and timing of goods and services required.

ECONOMIC CONTRIBUTION TO SCOTLAND AND THE UK

The development and construction of Beatrice has generated a significant level of economic activity in Scotland and elsewhere in the UK, and its operation will continue to do so over the next 25 years.

To understand the scale of this contribution, SSE Renewables and its project partners, Copenhagen Infrastructure Partners and Red Rock Power Limited, commissioned BiGGAR Economics to calculate the economic impact of Beatrice[1].

Investment in Beatrice drives economic activity through the value it adds to the economy (referred to as Gross Value Added (GVA)) and the years of employment it supports. To fully capture the impacts of this spending, the BiGGAR Economics analysis includes activity further down the supply chain (indirect impacts) and activity that results from the spending of salaries (induced impacts), as well as direct impacts.

A LONG-TERM SOURCE OF ECONOMIC VALUE

Over the full lifetime of the project, from initial development to the end of its operational life, Beatrice is expected to generate £2.4bn of value for the UK economy, of which £1.0bn GVA is expected to be in Scotland[2].

During the development and construction phases, Beatrice contributed £460m to the Scottish economy as part of a total £1.3bn contribution to the UK economy. The largest industry impacted in Scotland was engineering. Across the UK, the industry most impacted was the offshore support industry, which included companies that have previously worked in the oil and gas sector providing support activities for oil and natural gas extraction. The GVA from Beatrice is expected to be even greater during the operation and maintenance phase, with a higher level of overall investment as well as a greater proportion of spend within Scotland and the UK as a whole. Over the 25-year operational life of Beatrice, it is expected that £72m of value will be added to the UK economy on average every year, of which £34m will be in Scotland.

AN IMPORTANT SOURCE OF SKILLED JOBS

Beatrice supported 19,110 years of employment in the UK during the development and construction phases, of which 7,180 were in Scotland. This included workers directly employed on site, those employed because of Beatrice's supply chain contracts, as well as the employment supported as a result of these workers spending their salaries. As an indication of scale of this employment impact, the fishing and aquaculture sectors in Scotland directly employed 6,000 people in Scotland in 2018, as did the manufacturing of textiles. At a UK level, in 2018 the forestry and logging sector employed 16,000 people and mining support activities employed around 20,000 people.

While the investment and economic activity during the development and construction phases generated a high amount of employment in Scotland and elsewhere in the UK over a short period of time, there will also be significant long-term employment impacts as a result of the operation of Beatrice. The high level of investment across the UK, including within Scotland, during this period is expected to result in 800 jobs in the UK on average each year for the 25-year operational life of the wind farm, of which 370 are expected to be in Scotland.

UK BENEFITS

LIFETIME	DEVELOPMENT AND CONSTRUCTION		OPERATIONS*	
CREATING **£2.4BN** OF VALUE	CREATED **£1.3BN** OF VALUE	SUPPORTED **19,110** YEARS OF EMPLOYMENT	CREATING **£72M** OF VALUE EACH YEAR	SUPPORTING **800** JOBS EACH YEAR

SCOTLAND BENEFITS**

LIFETIME	DEVELOPMENT AND CONSTRUCTION		OPERATIONS*	
CREATING **£1BN** OF VALUE	CREATED **£460M** OF VALUE	SUPPORTED **7,180** YEARS OF EMPLOYMENT	CREATING **£34M** OF VALUE EACH YEAR	SUPPORTING **370** JOBS EACH YEAR

1 The full BiGGAR Economics report can be found on sse.com/sustainability/reporting-and-policy.
2 Future expected impacts have been discounted to net present value.
* On average over Beatrice's 25-year life.

**The Scotland benefits are included in the UK benefits.

DEVELOPMENT

Beatrice has been a project ten years in the making.

In 2009 The Crown Estate awarded the partnership that evolved to become BOWL exclusive rights to develop a large-scale wind farm. Between 2009 and 2016, detailed plans for the wind farm were prepared, based on the need for safe operations, respect for stakeholders' perspectives, including those of local communities, care for the local environment and the maximum amount of clean energy.

Designers, engineers, fabricators, local service providers and many more were involved in the early stages of developing this mammoth project to deliver Beatrice on time and under budget and problem solve challenges like marine mammal mitigation strategies and building in deep water.

Through the development phase, engagement with stakeholders and effective working partnerships to achieve mutually-positive outcomes were key. This helped to yield some of the positive benefits for the supply chain in Scotland and elsewhere in the UK described earlier in this report, and other benefits as well.

Photo credit: University of Aberdeen

PARTNERING FOR SUCCESS

Partnerships have been critical throughout every stage of Beatrice and played an especially important role in the development phase. In 2014, with two major milestones fulfilled – planning consent and award of a UK Government investment contract – a key challenge remained: achieving a positive final investment decision.

INNOVATION

With what was, at the time, an ambitious Contracts for Difference (CfD)strike price to meet and the wider offshore industry driving towards a cost of energy below £100/MWh by 2020, intensive work was undertaken to reduce costs for Beatrice through innovation.

At the time, the UK had only seven operational offshore wind farms, all of which used 3.6MW turbines or smaller. Beatrice was targeting turbines nearly twice this capacity, with the added challenge of its deep water and the prevailing weather and environmental conditions within the Moray Firth. In 2014, Beatrice received much needed innovation-focused financial support totalling £440,000 from Scottish Enterprise and a further £750,000, through the Offshore Wind Accelerator, from the Scottish Government. The funding was aimed at progressing state of the art design in installation techniques and substructures for the new generation of 6MW+ turbines as well as an optimised electrical transmission system.

Specifically, the £750,000 grant investment from the Scottish Government supported the development of the novel Offshore Transformer Module by Siemens. At one third the size and weight of the conventional Offshore Substation Platform alternative, the pioneering application of this solution played an important role in reducing the costs of offshore wind at Beatrice. This technology is now being deployed as standard in a number of offshore wind farms currently under construction.

Innovations in these areas would lead to significant reductions in cost and risk and, ultimately, help attain a return on investment at a level that enabled Beatrice investors to proceed with construction. This early collaboration between the public and private sectors was fundamental to the success of the project and will serve to benefit not only Beatrice but future offshore wind projects.

FINANCING

At £2.6bn, the sheer size of the investment meant that BOWL shareholders needed to secure an unprecedented level of private funding. In 2015, MUFG was appointed as financial adviser, tasked with delivering a satisfactory financing structure. Bringing together BOWL shareholders and a consortium of lenders and advisers, a bespoke financing structure was created in time to reach financial close on schedule. Beatrice represents the largest project financing for any UK offshore wind farm – and one of the largest worldwide – and financial partnering was critical to making it possible.

In July 2019, BOWL achieved a financial close on the refinancing of its senior debt facilities, a testament to the track record built up by the project through the successful delivery of the construction phase.

A FLEXIBLE APPROACH WITH COMMUNITIES

With a value of £6m administered over a five-year period, the Beatrice community funds represent a significant investment for communities in the north of Scotland. It was therefore important that the framework of the funds allowed for the benefits to be spread widely.

Drawing on SSE Renewables' existing experience of administering community benefit funds for onshore wind farms, it was decided to establish two different funds – a local fund and a regional fund. Before the structure of the funds was created, and in line with the Scottish Government's Good Practice Principles, local stakeholders were consulted and given the opportunity to comment on how the fund might evolve and which communities might benefit. This consultation was mainly targeted at local politicians, communities and the local authorities.

Replicating some tried and tested practices, including the establishment of local decision-making panels, proposals were taken to the communities which had been identified through the consultation process as being most impacted by construction. With much of the construction activity taking place in the Highlands, £4m of funding was ringfenced for communities in this region, with the remaining £2m for Moray communities in recognition of the works associated with the connection to the National Grid.

Following the first round of applications to the Beatrice regional fund (named the BOWL Partnership Fund), and well after the start of construction, it became clear that there were communities which had not originally been included in the fund reach but were impacted by the wind farm construction activities. On discussion with the communities it was agreed that they would be eligible to apply to future rounds of the regional fund.

In developing a project of this size and scale, it is often not possible to foresee the full impacts in the planning stages, even while undertaking extensive consultation, so retaining a flexible approach and an open mind is crucial.

ONSHORE CONSTRUCTION

Onshore construction work started immediately after reaching final investment decision in May 2016. The main onshore construction activities included: preparing the export cable landing point and the 20km cable route between Portgordon and the Beatrice substation; redeveloping two 200-year-old buildings to become home to the operations and maintenance (O&M) base in Wick; and the construction of the onshore substation at Blackhillock in Moray.

The electricity generated by Beatrice travels along subsea and underground cables to reach Blackhillock substation. The substation then transforms the energy from 220,000 volts up to 400,000 volts before being exported to the adjacent Scottish and Southern Electricity Networks substation for onward transmission to the national electricity network to where it is needed. Work on the substation was undertaken by RJ McLeod on behalf of Siemens Energy Management.

Construction of the O&M base has returned two harbour front buildings to maritime use. Originally designed by renowned Scottish architect Thomas Telford for use in the herring industry, the buildings were in a state of disrepair and required significant renovation in order to house the 'home' of Beatrice for the next 25 years.

CASE STUDY:
BLACKHILLOCK SUBSTATION

The electricity produced by Beatrice travels a total distance of around 90km along a subsea cable and then underground cables to Blackhillock substation.

The civil engineering elements of the substation were constructed by Scottish based contractor, RJ McLeod, who have over 50 years in the construction industry. The scope of the works included reinforced concrete for AIS/SVC equipment foundations and bunds, buildings, drainage, ducting, draw-pits, concrete roads, security fencing, oil interceptor tank, access road and SUDS ponds. Work began in April 2016 with the substation construction completed on February 2018, ready for Beatrice's first power in July 2018.

"RJ McLeod has a strong track record of helping deliver renewables projects across Scotland. We worked on the hydro schemes built by SSE Renewables predecessors in the 1950s and 60s and it's been a great opportunity for us to work on Scotland's largest offshore wind farm.

"As a Highland contractor we aim to employ as many people as we can from the local area. For Blackhillock substation we had over 50 employees working on the project from the local area and north of Scotland, as well as numerous local suppliers, helping to do their part in building Beatrice."

– Bruce Clark, Joint Managing Director of RJ McLeod

CREATING A SOCIAL LEGACY

Once one of the busiest herring ports in Europe, Wick was conceived as a self-contained fishing community by renowned civil engineer and architect Thomas Telford. However, as the herring industry went in to decline many local buildings fell into disrepair.

In 2014, a decision was taken to locate the long-term operations and maintenance (O&M) base in Wick. From that moment, plans were developed to construct a new building on the Telford Jetty of Wick Harbour to house the base. However, an opportunity arose in 2016 to purchase two 200-year old derelict buildings at the more sheltered end of the harbour, providing for better vessel access.

The project chose to sympathetically redevelop these buildings at the same time as entering in to a long-term lease of harbour facilities to bring a part of the harbour back into operational use, and with minimal impact to other harbour users. Over £20m was invested in redeveloping Wick's harbour front, bringing direct and indirect economic benefit to the local area with over 75% of the workforce involved in the O&M construction from the local community.

With the building sensitively restored, the base in Wick Harbour is now the long-term legacy of the Beatrice project. It will host the O&M base for 25 years, supporting up to 90 full time personnel, and further support staff on occasion. The Wick Harbour Authority is guaranteed 25 years of rental and harbour fees, supporting its further development in the long run. Local businesses continue to benefit from the increased employment and economic activity in the area.

"The signing of the lease with BOWL was the best news Wick Harbour had in a 'hundred' years. Our youth of today and the children coming through school will have the opportunity to join this exciting new industry based in Caithness and benefit from long term careers.

"In addition, the choice taken by BOWL to refurbish the buildings that served Wick Harbour throughout the fishing era will deliver a splash of colour to the Harbour façade plus add to the exciting and positive atmosphere we enjoy around the port."

- Willie Watt, former Chairman of Wick Harbour Authority

This investment demonstrates how nationally important infrastructure projects can be developed sustainably with significant long-lasting positive impacts for the communities in which they operate.

CASE STUDY:

OPERATIONS AND MAINTENANCE BASE

The two Thomas Telford buildings on Wick's harbour front have been part of the Wick community for centuries. To help turn these buildings into the project's operations and maintenance base, Beatrice looked to their Wick neighbour, local contractor GMR Henderson.

For over 30 months, GMR Henderson worked on the site, first helping to demolish some parts of the building before starting their work to construct the new base whilst retaining as much of the building's heritage as possible.

During the demolition and build, a position was made available for an apprentice bricklayer and apprentice joiner due to the workload of the project. They joined four other apprentices who worked on the project along with the main GMR Henderson team.

"We're very proud, as a local contractor, to have worked on the Beatrice project.

"The redevelopment of these buildings was great for the community as this part of lower Pulteney was an eye sore for years, with no investor willing to take the plunge and save it due to the estimated costs.

"It's so important for local companies to get a chance to play a part in projects of this scale, they bring huge opportunities that can really help the social and economic development of the surrounding areas.

"When you choose to employ local people and local businesses you are choosing to work with people who truly care about the end result. When it's on your doorstep, and for us Beatrice really was, you want the opportunity to showcase your company's ability and take great pride in what you deliver."

- Kyle Henderson, Construction Manager of GMR Henderson

OFFSHORE CONSTRUCTION

Beatrice was constructed 13km off the Caithness coast, in water depths of up to 56m.

Offshore construction started in April 2017 with the installation of 344 piles into the seabed. On top of clusters of four piles, 86 yellow offshore jacket substructures were installed, the deepest water fixed foundations of any offshore wind farm. These yellow jackets provide the platforms for the 84, 7MW Siemens Gamesa wind turbines and two offshore transformer modules.

Some of the turbine tower components were manufactured by CS Wind at their Kintyre manufacturing yard. These turbine towers, standing at around 88m, were assembled at Global Energy Group's Nigg Energy Park. They were then transported and installed by the Pacific Orca, the biggest wind farm installation vessel in the world.

At 75m in length the blades are almost the same length as a Boeing 747-8, and the majority were manufactured at Siemens Gamesa's Hull factory.

Each turbine has a rotor diameter of 154m, 30m larger than the diameter of the London Eye. Taking the height of the piles, jacket, tower, and blades together, one Beatrice turbine measures 288m, just 36m shy of the height of the Eiffel Tower.

CASE STUDY:
NIGG ENERGY PARK

Global Energy Group's Nigg Energy Park has demonstrated the transition of skills from oil and gas to offshore wind with is role in building Beatrice.

Located on the Cromarty Firth, Nigg Energy Park was used for the marshalling construction and pre-commissioning of Beatrice's 84 Siemens Gamesa turbines. The multi-million-pound contract allowed the energy park to retain and create in excess of 100 direct and indirect jobs. This included investing in an additional 30 skilled people from the local area.

"At Global Energy's Port of Nigg, we are very proud to have played our part in the delivery of Scotland's largest offshore wind farm, which is situated in the deepest water yet, for this type of development.

"Beatrice justifies the huge investment we have made into our facilities and we are proud of our professional workforce who fully embraced the technical and operational challenge of successfully delivering our first major offshore wind project.

"We are pleased that our client Siemens Gamesa and the project owners have widely endorsed our good performance."

- Roy MacGregor, Chairman Global Energy Group

WHEN THINGS GO WRONG, WHAT MATTERS IS SETTING IT RIGHT

In the construction phase of offshore wind farms, a variety of offshore services are required. The Beatrice project contracted Subsea7 Ltd, to provide heavy lift vessels as part of an Engineering, Procurement, Construction and Installation (EPCI) Contract. These vessels were utilised to install the foundation piles and jacket sub-structures which support the offshore wind turbines. The crew of one of the vessels used between 2017 and 2018 included non-European Economic Area nationals, who had received a temporary permit from the UK Home Office, to work offshore on the UK coast. A newspaper investigation, published in October 2018, highlighted the fact that the workers on this vessel were receiving a rate of pay less that the UK national minimum wage.

While any contractor, and subcontractor, has a contractual obligation to comply with all applicable laws and regulations, SSE Renewables and its project partners were deeply concerned that those working on the vessel were earning a rate of pay, significantly less than, not only the real Living Wage to which SSE is a vocal proponent, but the national minimum wage too. As soon as the issue came to light, the Project Director worked with Subsea7 and its sub-contractor to ensure that all the workers concerned received an uplift to their hourly rate to ensure this complied with the national minimum wage, backdated for the duration they worked on Beatrice.

In late 2018, SSE undertook a review of the way in which the Modern Slavery Act 2015 is implemented across all its operations and subsidiaries. SSE's Chief Financial Officer wrote to the Boards of all SSE's joint ventures covered by the Act to highlight the requirements of the Act and seek reassurance of compliance. Joint ventures were asked either to formally 'opt-in' to SSE's Modern Slavery Statement, and meet the policy actions contained within it, or 'opt-out' and publish their own Modern Slavery Statement.

In February 2019, the BOWL Board agreed to 'opt-in' to the SSE Modern Slavery Statement. It has agreed to implement the key areas of action that are designed to mitigate the risk of modern slavery or human rights abuses in its business and its supply chain. As part of this, BOWL will seek formal Living Wage accreditation before the end of 2020.

"Learning that people working for our contractors on the Beatrice project were being paid less than the UK national minimum wage was the low point of the entire project. It required a response that was decisive, founded on respect not just for the law but for the people working hard on behalf of our project. I believe our response was decisive and we have a clear ongoing commitment to fair pay."

-Steve Wilson, Project Director, BOWL

MODERN SLAVERY STATEMENT: SUPPORTING HUMAN RIGHTS

SSE publishes a Modern Slavery Statement each year, as is required by the Modern Slavery Act 2015. SSE's statement outlines key areas of action that supports its efforts to ensure no enforced or bonded labour exists within its business or its supply chain. The areas of commitment include:

1. **Payment of the real Living Wage to direct employees and supply chain workers working regularly on SSE sites**
2. **Robust recruitment processes**
3. **Training on modern slavery**
4. **Modern slavery due diligence in the vendor selection process**
5. **Inclusion of modern slavery clauses within supplier contracts**
6. **Independent channel for whistleblowing**
7. **Implement audits and spot checks**
8. **Annual risk assessment of expenditure**

These actions and policies within the Modern Slavery Statement also support the human rights of people working on behalf of SSE. As stated opposite, BOWL opted in to the SSE Modern Slavery Statement in 2019.

OPERATIONS AND MAINTENANCE

In July 2018 Beatrice was handed over to SSE Renewables O&M team, marking the official completion of the project, but Beatrice's operational journey is only just beginning. Now operational, the project will provide enough clean, renewable energy to power up to 450,000 homes every year.

The O&M building on Wick Harbour is the project's official 'home' for the operational lifetime of the wind farm, around 25 years. Up to 90 people, the majority from the local area, will be based in the Wick O&M building, helping to keep Beatrice turning in the years ahead. This will range from office administrators to offshore technicians.

Across from the building new pontoons have been installed at the adjacent quayside to provide berthing for the Beatrice Crew Transfer Vessels (CTVs). These CTVs transport up to 40 people daily, depending on season, out of Wick Harbour and to the offshore site to perform routine maintenance on turbines.

In addition to the future economic activity at the harbour, the £6m Beatrice Community Fund is providing opportunities for many local groups and organisations to realise their ambitions for the benefit of many. Projects in Moray and the Highlands have received grants from the Beatrice funds across a broad spectrum, including for local facilities, arts, education, wellbeing and sport. Employment and training opportunities have also been created, along with support for community broadband projects.

Alan Paul was born in Wick and has always lived in the coastal town. With almost 30 years in the oil and gas industry before moving into renewables, he is based at the Wick O&M base.

"The chance to join such a large, technically advanced project at an early stage in the O&M phase was a great opportunity. The fact that the O&M facilities have been developed in Wick is a great revival and boost to an area of old town heritage which was becoming run down. We're really pleased the facility will be here for the life of the windfarm, allowing much needed local employment and opportunities for long term training and employment for school leavers is great.

"The vast majority of the staff recruited to work in the base have been local with many having a great deal of experience from other industries that have been very transferrable to the offshore industry. The operation of Beatrice will also continue to provide opportunity for other local businesses to benefit from supply chain openings is also great for the local area.

"There are very few locals who have anything negative to say about BOWL and this is a testament to the way the company have endeavoured to go about business in the local area."

- Alan Paul, Control Room Lead

CONCLUSION

By Jim Smith, Managing Director, SSE Renewables

The successful commissioning of Beatrice marks the end of a 10-year journey. In that time thousands of people have, directly and indirectly, contributed to the development and construction of this world-class renewable generation site, so that today Beatrice is now Scotland's largest offshore wind farm, and the fourth largest in the world.

Beatrice breaks new ground in the offshore wind industry, nationally and globally. It is the largest wind farm in the world built using jacket foundations, fixed in the deepest water of any offshore site. And it is pioneering in its use of new and inventive development and construction techniques and strategies.

As this report demonstrates, Beatrice delivers transformative socio-economic benefits to the UK, Scotland and to the regions, not just during construction but for decades to come. It is helping regenerate the coastal economies of Wick and Caithness, is sustaining the creation of long-term skilled jobs, and is providing progressive and significant funding support to local communities. Most importantly, as Scotland's single largest source of renewable energy, Beatrice is making a major contribution towards offsetting harmful carbon emissions, combating climate change and meeting our net zero ambitions.

Beatrice also provides new learnings which will inform how future offshore wind farms are developed and built. SSE Renewables will apply these learnings to maximise the socio-economic benefits of our next offshore wind projects, including Seagreen off Scotland's Angus Coast, Dogger Bank off England's East Yorkshire Coast, the Greater Gabbard extension off the Suffolk Coast, and Arklow Bank Phase II off Ireland's Co. Wicklow Coast.

As a leading developer involved in every phase of an offshore wind project, from early development through construction and to long-term operations, we will use our unique opportunity to apply these learnings so we are continually building for the future. This means we will:

- collaborate with partners with complementary skills and experience to overcome the inevitable challenges that come with these enormous endeavours;
- listen to the voices of host communities in the design of our community funds, being adaptable in our approach and recognising each project and community is different;
- pursue ways to make our large-scale infrastructure projects contribute a long-term social legacy;
- use our influence to encourage future joint ventures to adopt best international standards to protect the rights of people working in our supply chains; and
- work with governments, other developers and supply chain companies to identify and encourage the domestic opportunities that will deliver the most value to the UK and Scotland.

The challenge of reaching net zero emissions for the UK and Ireland in the next 30 years is upon us, and we're ready to build on our experience to deliver the offshore wind we'll need to get there.

PARTNERS

Beatrice Offshore Windfarm Limited is a joint venture partnership between SSE Renewables (40%), Copenhagen Infrastructure Partners (35%) and Red Rock Power Limited (25%) with development, construction and now operation led by SSE Renewables on behalf of the partnership.

ABOUT SSE RENEWABLES (40%)

SSE Renewables is a leading developer and operator of renewable energy and has a diverse portfolio of assets and projects including onshore wind; offshore wind; flexible hydro; run-of-river hydro and pumped storage. At over 4GW, SSE Renewables has the largest operational renewables portfolio by capacity across the UK and Ireland. SSE Renewables has the largest offshore wind pipeline of any UK company at over 7GW.

ABOUT COPENHAGEN INFRASTRUCTURE PARTNERS (35%)

Copenhagen Infrastructure Partners P/S (CIP) is a fund management company focused on energy infrastructure including offshore wind, onshore wind, solar PV, biomass an energy-from-waste, transmission, and other energy assets like reserve capacity and storage.

It has five funds and ~€7.5bn under management and employs approximately 95 employees. Together with its projects CIP has offices in Copenhagen, the US, the UK, Germany, and Taiwan. CIP was founded in 2012 by senior executives from the energy industry in cooperation with PensionDanmark.

ABOUT RED ROCK POWER LIMITED (25%)

Red Rock Power Limited is a growing, Scotland based energy company owned by global power generation company, SDIC Power headquartered in Beijing, China. In addition to Beatrice, its project portfolio also includes 100% ownership of both Afton Onshore Wind Farm in East Ayrshire and the proposed Inch Cape Offshore Wind development off the Angus Coast. Red Rock Power is currently exploring new opportunities to expand into the wider European renewable and sustainable energy market.

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