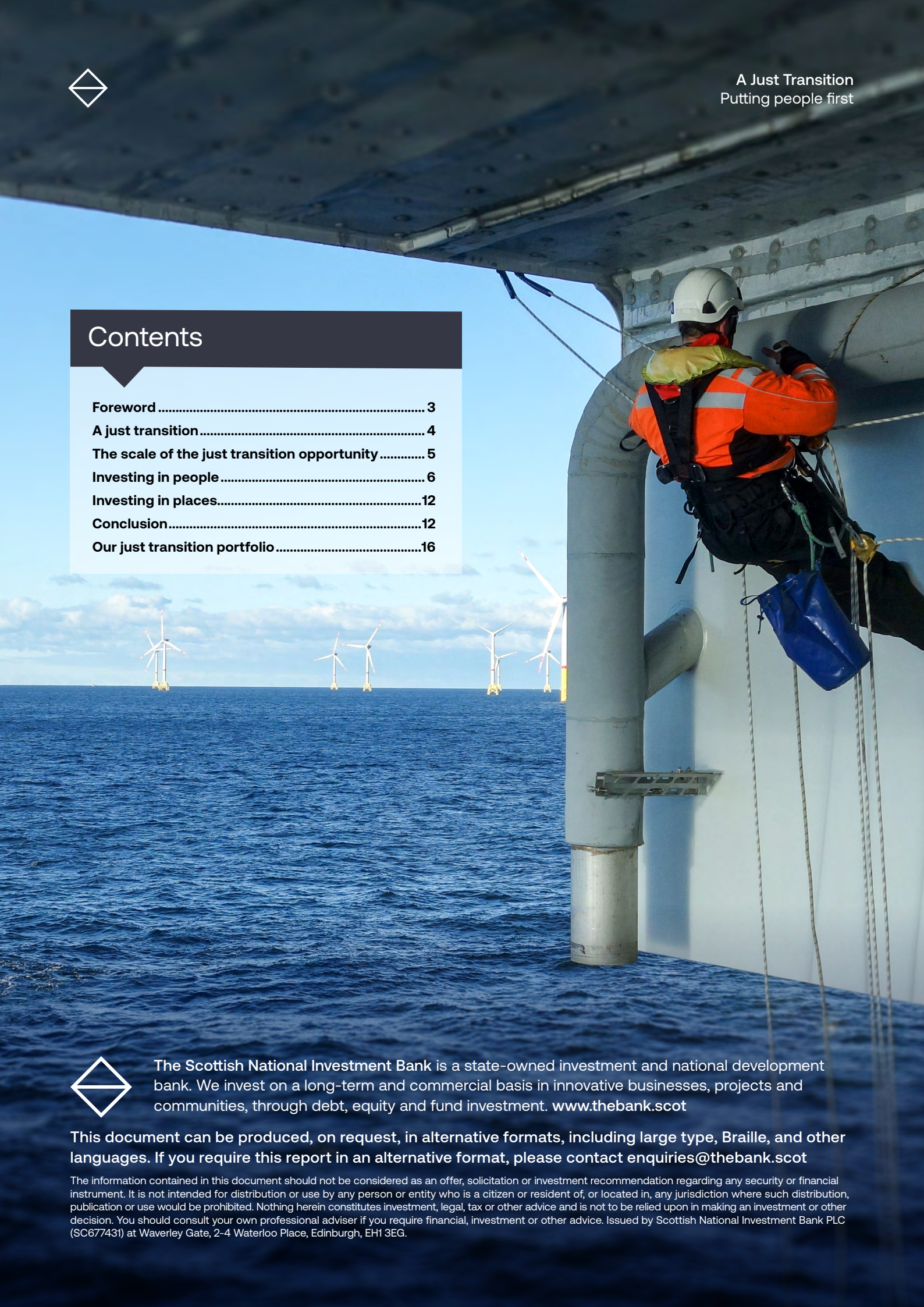
A Just Transition

Putting people first

The Scottish National Investment Bank

Contents



The Scottish National Investment Bank is a state-owned investment and national development bank. We invest on a long-term and commercial basis in innovative businesses, projects and communities, through debt, equity and fund investment. **www.thebank.scot**

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Foreword

As we move away from an energy sector that is dependent on fossil fuels to greener, renewable energies, a 'just transition' is one where we actively build opportunities to create a fairer, more prosperous economy that puts people and planet first, ensuring that no one is left behind.

At the Bank, our three missions - net zero, place and innovation – all come together to support the delivery of a just transition. It provides a perfect opportunity for investing with impact – we can support communities to thrive through new jobs and opportunities and support the innovations we need to transition away from fossil fuels, creating the net zero energy system of the future.

New technologies and ways of working are critical in our transition away from fossil fuels, but none of it is possible without the people and skills to make it happen. Our journey to net zero is enabled by, and realised by, the people of Scotland; and the places where we live and work.

The full potential of impact investing is vast, and will ultimately contribute to making Scotland a more productive nation. By supporting the scale up of Scotland's growing businesses within energy and other expanding sectors we can contribute not only to a just transition; but to a resilient and thriving economy.

One of the core challenges we work with at the Bank is how to maximise our impact through the finance we provide. Our last paper, Transition Finance, talked about the need for investors to support supply chain companies to realise the opportunity of offshore wind. We set out the need to ensure that the core skills and expertise of Scotland's oil and gas industry is preserved by ensuring that people transition to renewables and the industries of the future.

In this paper we spoke directly to the people impacted by our investments through the jobs created and the communities they serve. We hope that by sharing these stories it can demonstrate how a just transition can act as a force for positive change.

Many of the examples we use are in the North East, as our investments look to secure the economy there as it evolves from oil and gas. However, we also consider that a just transition creates opportunities across Scotland and in a range of sectors, as demonstrated by our diverse portfolio in the appendix an page 16.

We will continue to seek out ways to deploy and enable finance for a just transition, putting people and communities at the heart of what we do. It is a fascinating and exciting area for investment, to make a real difference in support of creating a fairer, greener and more prosperous Scotland.

Al Denholm
Chief Executive Officer

A just transition

Energy transition is a critical element in meeting the need for pressing global climate action. Scotland has a massive opportunity to respond to this call, capitalising on our natural resources, particularly our offshore wind capacity.

We believe the economic benefits of a net zero transition largely depend on the skills, workforce, and experience of many of the established businesses currently working in fossil fuel supply chains. They need support to achieve a just transition. We've already been working closely with some of them, have made investments to help them prepare, and are working hard to support more investment.

As Scotland's development bank, our role and three missions call on us to draw attention to these challenges and work with developers, business, government and other investors to solve them.

The Bank's missions and their role in a just transition

For **net zero** – address the climate crisis, through growing a fair and sustainable economy. A just transition is one that will enable us to expand renewable energy to speed our journey to net zero and create energy security, without leaving people or communities behind.

For **our places** – to transform communities, making them places where everyone thrives. A just transition is one that supports companies and communities to create positive change by realising opportunities and expanding green and diverse resilient jobs.

For **innovation** – to scale up innovation and technology, for a more competitive and productive economy. A just transition will support innovative business growth, whether in wholly new products, services and ideas, or the transitioning of existing businesses, skills and technologies into the industries of the future.

The scale of the just transition opportunity

Offshore wind and renewable energy

41GW offshore wind pipeline between 2025-2035, up to 40% of the UK 2030 target

£4.1bn investment requirement to establish a globally competitive floating wind supply chain in Scotland by 2030 –building on existing oil and gas skills

£28.3bn current developer spending commitments in Scotland with the potential to increase to £41 billion

Jobs and growth

3.3% Scotland currently leads the UK average in green jobs (3.3% vs 2.2% in all regions)[1]

1 in 30 With the offshore energy industry currently representing close to one in every 200 jobs in the UK and around one in every 30 jobs in Scotland, the sector has a critical role to play to lead the transition to a lower carbon future[2]

225,000 Up to 225,000 direct and indirect offshore energy jobs by 2030, compared to c.154,000 today

+25% The Scottish-based offshore energy workforce could increase by 25% from 79,000 to close to 100,000 if the energy transition and UK content ambitions are successfully attained. However, if Scotland is unsuccessful in capturing the full range of offshore energy and UK content opportunities, the offshore energy workforce could fall by around 40% to below 50,000 by 2030

1. Green Jobs Barometer, PwC UK (pwc.co.uk).
2. Powering up the Workforce – Robert Gordon University Available at: https://www.rgueti.com/wp-content/uploads/2023/09/powering-up-the-workforce.pdf (p21)

Investing in people: our most valuable resource

The key to a just transition is to take people on the journey. Harnessing the vital skills and expertise gained in oil and gas along with new learning and retraining opportunities are crucial to achieving Scotland's net zero targets.

The Bank's role is to support this journey through our key investments and support. Our current and future investees will always have a net zero plan; and our support will often be crucial in helping them get there. Our growing portfolio of ambitious and innovative companies focus on skills, training and retraining alongside their technological solutions.

Redeploying expertise

A recent investee, **Aurora Energy Services** have dedicated their substantial experience in oil and gas to drive the energy transition forward. Their services support every part of the journey to renewables; from construction to decommissioning. Crucially, with bases in Inverness, Aberdeen, Wick, Huntly and Houston, they are committed to creating opportunities and developing skills in local and rural communities.

Aurora recently opened its Renewable Energy Training Centre in Inverness to retrain those with expertise in the oil and gas sector into the Scottish renewables industry. It also offers development and upskilling opportunities for newer talent through its training courses. The Bank has provided a debt facility of up to £20 million, part-financed by capital from the Just Transition Fund, which will enable Aurora to further bolster and expand its network of regional training hubs and workshop facilities.

"Crucially, with bases in Inverness, Aberdeen, Wick, Huntly and Houston, they are committed to creating opportunities and developing skills in local and rural communities."

AURORA
ENERGY SERVICES

Investee profile: North Star

A rich heritage to support offshore wind

Tracing its roots back to 1886 with a business established to support the fisheries industry, Aberdeen-based **North Star** evolved into the UK's leading provider of offshore infrastructure support services in the North Sea. Its fleet of 42 emergency response and rescue vessels (ERRVs) provides critical safety support for oil and gas installations.

Recognising the need to pivot its business model into the renewable energy sector, in 2023 North Star took delivery of its first three of seven types of ship designed to service offshore wind farms: service operations vessels (SOVs). Powered by a hybrid-electric system, SOVs provide floating accommodation for wind technicians and access to equipment while working at sea, using 'dynamic positioning' to maintain the vessel in place while work is done. Spare parts are stored on board, while a 'walk to work' gangway connects the vessel to the floating wind turbines.

Essential service to keep the blades turning

SOVs will be increasingly important to support wind farms as these increase in size and distance from shore: many of the wind farms planned under the vast Scotwind project will be located up to 90km off the Scottish coast.

North Star received £35 million in Bank finance in December 2022 for the expansion of its SOV fleet, aiming to add 40 hybrid vessels by 2040. By investing early in critical supply chain companies like North Star, finance can support and enable the delivery of Scotland's offshore wind capacity. This supply chain infrastructure is critical to delivering Scotwind. It is estimated that Scotland could make up as much as 40% of the UK's 2030 target of having 50GW of offshore wind installation, with as much as 28GW generated by ScotWind alone by 2040.

Crucially, the skills that are needed to carry out the work required by regulation to maintain offshore wind platforms are closely correlated with the skills that have been used in decades of ERRVs in the oil and gas world. *"Oil and gas is one of the most entrepreneurial parts of our industrial heartland and heritage and what we're trying to do with supporting businesses in making that just transition is to ensure that we don't lose that DNA,"* says Jimmy Williamson, the Bank's Executive Director, Innovation.

Amount invested: £35 million to expand its fleet of SOVs

Pathway to career longevity

This means that retraining and job transfer is key to North Star's transition journey. Each SOV is crewed by 20 people at a time, rotating monthly with a replacement team of the same size, making up a total ongoing complement of 40. As many as 65% of the crew on the current three SOVs have been retrained from the existing fleet of ERRVs.

"Offshore wind creates a tremendous opportunity for us to not only sustain what we've got, but to grow it significantly. That's important for us because we want to demonstrate to people who work on our ERRVs that there is a long-term career working for North Star," explains Fraser Dobbie, Chief Strategy Officer at North Star. *"It's also about creating a pathway for development and longevity, involving the transition of skills from one industry to another."*

Once the 40 SOVs are in service, North Star's workforce will increase to 1,600, including onshore personnel as well as seafarers in offshore maintenance, meaning the company will have created additional 500 new net zero jobs. That's significant since a quarter of all jobs in the UK offshore wind sector – where Scotland has the largest share of the workforce — are in operations and maintenance, according to the Offshore Wind Industry Council[1].

1. https://www.owic.org.uk/news/over-100%2C000-offshore-wind-jobs-by-2030-with-decisive-action-on-skills

Investee profile: Verlume

Underwater Energy Storage

Aberdeen-based **Verlume**, founded in 2013 making underwater batteries that provide reliable power to challenging offshore locations through renewables integration.

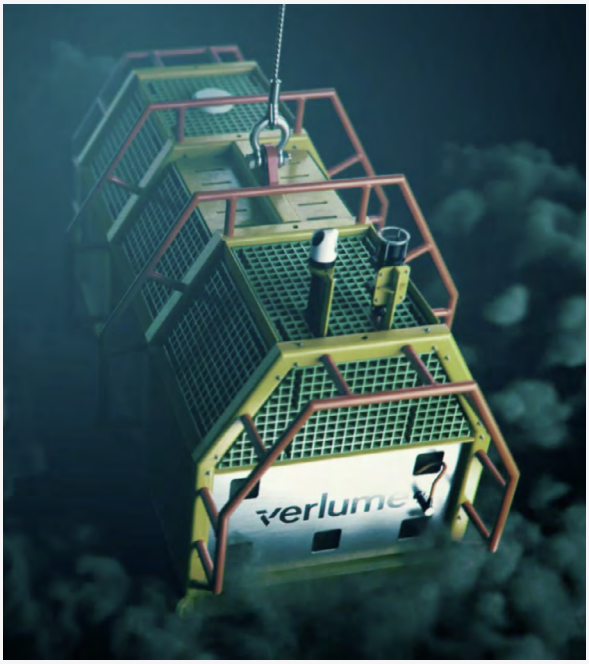
One of their products, Halo, is a lithium-ion rechargeable battery about the size of a Tesla Model S enclosed in a protective structure. This is lowered onto the seabed and can be used for a range of use cases across the offshore economy. Specifically designed for the harsh underwater environment, the battery uses intelligent energy management to autonomously store power and release it when it's needed, helping to overcome the intermittency associated with renewable power generation.

Transferring skills for the long term

Verlume has assembled a highly-skilled team, now numbering about 35 professionals, from a range of technical backgrounds from electrical, electronic, software and mechanical engineering to wider business functions such as project management and HR.

The company cast its hiring net into the existing community of engineers and technicians from the oil and gas sector, taking on individuals with relevant experience and skills that the company believed would be transferrable to the world of underwater batteries.

For example, one of Verlume's engineers is a former expert in valve mechanics in the oil and gas business. This individual had little knowledge of batteries before joining Verlume but, given that the skills needed to assess the mechanical integrity of a battery in various subsea settings are similar to what's need to assess subsea oil field equipment,



Amount invested: £6.6 million to expand their battery technology

there was an immediate relevance says Richard Knox, Verlume's CEO. ***"I often hear people speak about the just transition in terms of taking someone from the oil and gas industry and sending them off for three- to six-months of training, and then they are ready to work in renewables. That's not how it's working with us,"*** he explains.

"We can take someone, and, after some initial training, they can be immediately useful to us. That's because we're looking for a certain core skill set that's applicable across multiple sectors. It's too easy to write off people's skillsets because they look at the product, not the people."

People profiles

Name: Carol Wilson
Role: Lead Data Engineer
Investee: Trojan Energy

When Carol found herself on a street in the London borough of Brent in mid-2021 helping team-mates at Trojan Energy to install the company's electric vehicle (EV) charging hubs, it was a world away from what she'd been used to working in the North Sea's oil and gas industry. Brent Council was one of Aberdeen-based **Trojan Energy's** first customers and Carol, Lead Data Engineer with the company, was not only helping to commission the Trojan system there, including the data connectivity from the charge station software to the customer portal, but even helped with physical commissioning of the hubs.

"It was a very different world," she says. *"When I was working in oil, and gas I used to go offshore occasionally, but doing what I was doing in Brent I had a much better understanding of how it all hung together given that it was all on a much smaller scale."*

It wasn't until Carol started working on a 'digital twin' project towards the end of her time at Total that the possibility of moving to the renewables world, and specifically to Trojan Energy, came up. Carol explains her thinking in making the transition to renewables: *"I thought it would become harder and harder towards the end of my career to stay in oil and gas given the life span of it, bearing in mind the predicted end-of-life of fields.*

"I also fancied a change and when the opportunity came up, I was really interested because it was something completely different and getting involved in something from the start. I'd only ever worked for large companies so, it was interesting to join a start-up - and be employee number four, which I was at the time!"

Carol is currently applying the digital twin concept that was used in oil and gas to the EV charging hub equipment manufactured by Trojan Energy. She says that one of the positive aspects of working in a smaller, early-stage business in renewables has been the freedom from legacy systems and processes that are typical of the oil and gas industry.

"One of the things I really liked about joining Trojan was the fact you were less constrained in your approach to deliver systems. You could use your experience of the oil and gas industry to come up with custom solutions without having to compromise on functionality.

"Here, we are effectively setting our own technology, creating our own systems, creating our own views from the beginning. So, we have had more ability to investigate and develop better ways of doing things."

> "We are effectively setting our own technology, creating our own systems ... from the beginning."

People profiles

Name: Lewis McGougan

Role: Trainee Mariner, North Star Cadet Programme

Investee: North Star

Lewis, who used to study at Old Meldrum Academy and began a three year cadet traineeship in 2021, spoke to us about what the opportunity means to him.

"My dad used to come into school to bring awareness of what was going on with offshore wind through Ocean Winds," explains Lewis, now a 21-year old who's soon qualifying as a Deck Officer at North Star. *"I learned how the offshore industry was very much about oil and gas. That's changed now, and rightly so."*

For Lewis, it's the constant evolution of technology that's been part of the appeal of the training. *"A lot of the technology that we're using to access the turbines has been around since the 1980s but it's a lot more advanced now, and it will get more reliable. The fundamentals are the same but then tech is advancing all the time, and that's where the training comes in."*

Then there's the larger picture of how offshore wind will benefit people in Scotland. *"There are quite a lot of views out there but personally I like hard facts. And the hard fact is we need to do something about climate change and emissions reduction, and I believe that North Star is making the right transition and that it's going to be able to make a real impact in the long term.*

"It does give you a good feeling to know that homes are being powered at night by the effort you are putting in during the day. I'm proud to be part of it."

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People profiles

Name: Daniel Willoughby
Role: Lead System Engineer
Investee: Verlume Systems

Daniel Willoughby had been working as a mechanical engineer in the oil and gas industry for some years before a friend and ex-colleague suggested he try something different. Daniel, who was working as a product leader developing seabed 'Xmas trees' – structures attached to a wellhead to control the flow of hydrocarbons – was intrigued.

"The opportunity to work at a small but up-and-coming business focused on products and technology really appealed to me," says Daniel, who joined Verlume in 2018. "Moreover, I knew that there was a direction of travel towards renewables. You could see there were a lot of new companies coming up with innovative wind and tidal devices. At the time a lot of it was quite novel and interesting whereas the oil and gas is very mature and repetitive."

Today, Daniel is applying the mechanical engineering principles he learned in the early stage of his career in the fossil fuel industry to renewables, showing how such skills are transferrable to the net zero world.

"There are a lot of core fundamental principles that are transferrable," says Daniel, who graduated from Aberdeen's Robert Gordon University with a masters degree in mechanical engineering. *"As we've grown as a company and have won more customer orders I've taken my background in mechanical engineering along with me, determining customer requirements, working with the different engineering disciplines that we have – mechanical, electrical and software engineering - to deliver complex projects. There's a lot I have taken from my background into Verlume that has allowed me to perform in my current role."*

"The opportunity to work at a small but up-and-coming business focused on products and technology really appealed to me."

Investing in places: community benefits at the heart

Smart investments in the transition to net zero should support tangible benefits to communities and their environment. Ranging from access to new technologies, to increasing the growth of jobs and productivity and the wider spillover effects of investment in an area.

Investee profile: Trojan Energy

Trojan Energy's patented electric vehicle (EV) charging system allows people without home driveways to charge EVs from their home's electricity supply from on-street charge points that sit flush within the pavement, with no permanent raised street furniture.

The company's vision is to provide charging infrastructure that is accessible to all, given that millions of people in the UK do not live in homes with driveways, making the switch to EV driving more challenging.

"Most people who park on the street are getting left behind by the energy transition, because they don't have a driveway to charge," explains Ian Mackenzie, Trojan Energy's Chief Executive. *"You tend also to find that the people who don't have a drive are often slightly worse off financially than people with a driveway. So, there are segments of society that will get left behind by the energy transition unless we find ways in the energy transition to them. That's what our technology is all about."*

Amount invested: £28 million to expand its network of EV charging points which leave pavements free of clutter

Investee case study: Port of Aberdeen

Creating a home for the supply chain ecosystem

When **Port of Aberdeen** opened a £420 million expansion at its South Harbour location in September 2023, it not only made Aberdeen the largest berthage port in Scotland, it also demonstrated how the push to create a renewables industry in the North East is truly forging ahead.

This transformational project, which started construction in 2017 and received £35 million of Bank funding, will provide 1.5km of deepwater quays, ultra-heavy lift capacity and 125,000 square metres of flexible laydown area to support Scotland's growth in energy, trade and tourism, such as the assembly and integration of floating wind turbines. Importantly, it can accommodate the deep-water vessels needed to transport the assembled wind turbine platforms out to sea.

South Harbour was the biggest marine infrastructure project in the UK and is also part of a larger net zero ecosystem emerging on an adjacent 40-hectare site known as the Energy Transition Zone (ETZ). Backed by UK and Scottish Government funding and co-founded by Port of Aberdeen, Scottish Enterprise and Opportunity North East, the ETZ is destined to become the largest energy transition complex in Scotland, driving the transition and maintaining the North East's energy workforce – as a global centre of energy excellence.

An important element of South Harbour will be ensuring that the manufacturing supply chain for offshore wind is encouraged, supported and located close to the quayside, which is where the wind turbines are assembled. That's why South Harbour is part of the ETZ's 'Marine Gateway', a 15-hectare area of premium development sites for high-value manufacturing businesses in offshore renewables.

Accelerated development

The Marine Gateway is one of five zones within the ETZ that are each focused on leveraging the North East's critical mass of engineering experience, including specialised campuses focused on offshore wind, hydrogen, innovation and skills. The 'Wind Campus', for example, is hosting the world's first national floating offshore wind innovation centre, harnessing the North East's world-leading subsea engineering expertise to accelerate the development of the technology required to capitalise on offshore wind.

Amount invested: £35 million to create Scotland's largest port

The significance of offshore wind to Scottish jobs is highlighted by the fact that offshore wind in 2021 became the renewable energy technology supporting the most employment across the Scottish economy with 15,000 full time equivalent roles, according to the Fraser of Allander Institute[1].

Port of Aberdeen is currently engaged in efforts to bring in further supply chain businesses, specifically those specialising in the ancillary steel and metal parts that are used in the construction of a wind turbine tower. This would involve a workforce of around 100 people, some brought in from existing facilities in the North East and others retrained from scratch.

1. https://fraserofallander.org/economic-impact-of-scotlands-renewable-energy-sector/

Investee case study: Port of Aberdeen continued

New routes to market for food and drink

As work continues at Aberdeen's port to develop its new South Harbour, the investment that the Bank has made is also helping to fund the building of enhanced capacity for the port so that it is not only supporting the renewables industry but can also generate new types of opportunities for people in the North East.

Specifically, the port sees the potential to become a hub for the import and export of food and drinks, a sector that is one of the main engines of the Scottish economy, employing more people than any other private sector business area and generating £15 billion in revenues in 2022. The ambition is to exploit a railhead that already exists at the port to offer an alternative to road transport for goods destined for markets in England or overseas, as well as for handling imports.

It forms part of Port of Aberdeen's transition from being a support port for the offshore oil and gas industry to not only supporting the development of offshore wind but also 'new trading links', as Jon Oakey, Port of Aberdeen's Chief Financial Officer, explains. *"The investment that we have put in to the port in conjunction with Scottish National Investment Bank was designed to give an enhanced capability to the port and is a particularly important part of this transition, bringing new opportunities for Aberdeen and the region,"* he says.

"When we talk about a just transition, it's a concept that goes beyond moving from oil and gas and includes new opportunities that will support our overall response to climate change – something that's far broader and which has other advantages associated with it around people's standard of living, equality of opportunity, and equality of reward."

Protecting its vital role

Port of Aberdeen is a Trust Port , so all profits are pumped back into the organisation to maintain, operate and enhance the port for future generations. *"It's about maintaining the asset so that it's still delivering what it's been delivering for the last 900 years, which is that access point to trade, industry and careers that it always has been,"* according to Oakey.

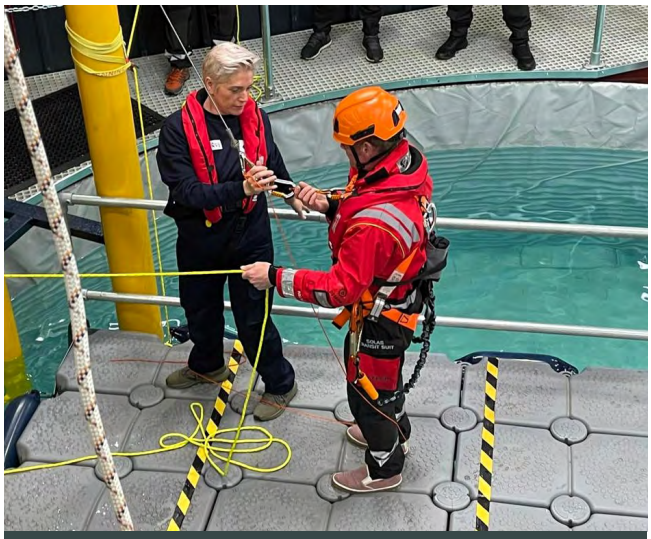
Conclusion

Implementing a just transition has an impact on job-creation and redeployment of skills alongside further benefits such as regeneration and inclusion. A successful approach to net zero recognises the important interplay between ‘Just’ and ‘Transition’ and prioritises both equally which is a principle underlining all of our investments at the Bank.

The critical skillsets from the oil and gas sector have a direct pathway to transition people into other key areas, such as the anticipated growth in grid services and offshore wind. But the application reaches far wider – across a range of sectors and industries throughout the country. Trojan is a great example of this; using the professional experience from oil and gas technology and using it to the rapidly expanding electric car charging network.

This smart redirection of skills; combined with a responsive approach to training and retraining has the potential to be provide opportunities for business growth well beyond the energy transition in the North East.

If we take the highly skilled people and businesses, and harness them to solve the other challenges we face in moving our economy away from fossil fuels, then this has the potential to super charge productivity and economic growth. More importantly; it provides the opportunity to take our most important asset – people; on the journey with us towards net zero.



“If we take the highly skilled people and businesses, and harness them to solve the other challenges we face in moving our economy away from fossil fuels, then this has the potential to super charge productivity and economic growth.”

Our just transition portfolio (as at February 2024)

A truly just transition creates opportunities across Scotland and in a range of sectors, as demonstrated by our diverse portfolio.

Aurora Energy Services
up to £20 million
(part-financed Just Transition Fund)
Inverness

Verlume Systems
£6.6 million
Inverness

Utopi
£5 million
Glasgow

North Star
£50 million
Aberdeen

Orbex
£17.8 million
Forres and Sutherland

Trojan Energy
£28 million
Aberdeen

Orbital Marine Power
£4 million
Orkney

Port of Aberdeen
£35 million
Aberdeen

Iona Wind Partnership
£13 million
Across Scotland

Sunamp
£16 million
East Lothian

Nova Innovation
£6.4 million
Edinburgh

Gresham House Forestry Fund
£50 million
Across Scotland

Indinature
£5 million
Edinburgh and Jedburgh

For:EV
£12 million
Across Scotland

Bank investment in the North East of Scotland
£123 million
Crowding in a further £112 million of private capital

Total £235 million

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SNIB070.0324