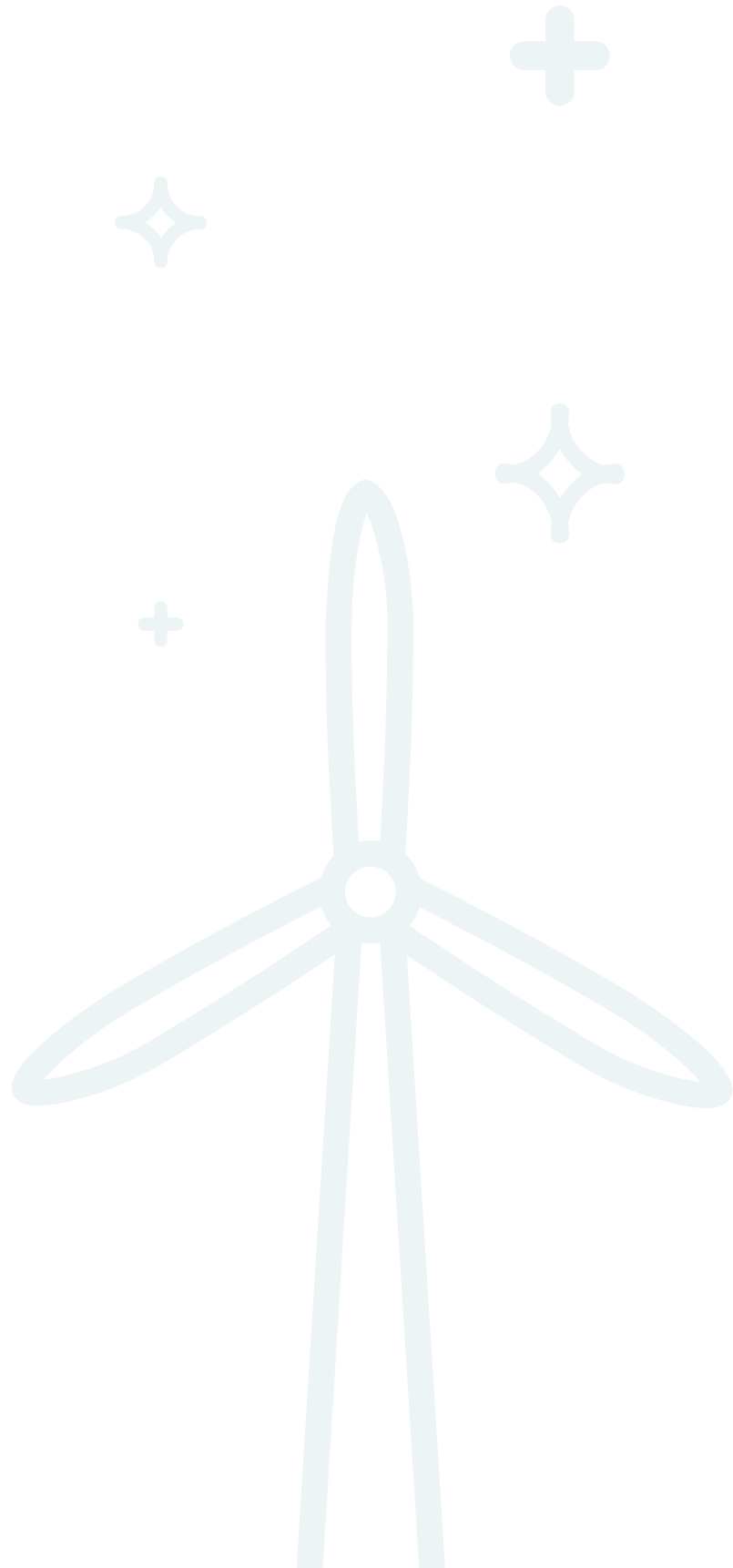


Scotland's Energy Strategy Position Statement



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1. Ministerial Foreword

MINISTERIAL FOREWORD



Paul Wheelhouse

Minister for Energy,
Connectivity and the Islands

The last year has been one of significant challenge for our country. The Covid-19 pandemic has been a health crisis which has created an economic one and all the while, the climate emergency has continued unabated. In this context, the need for a Just Transition to net zero greenhouse gas emissions by 2045, in a manner that supports sustainable economic growth and jobs in Scotland, is greater than ever. As we emerge from the grip of the Covid-19 pandemic, we have a chance to build a greener, fairer and more equal society and economy, ensuring that no one is left behind. We have already sought to embed a green recovery as part of our most recent [Programme for Government](#) which focused on the creation of good, green jobs.

Scotland's First Minister, Nicola Sturgeon was the first leader of any nation within the UK, and indeed among the first across the world, to declare the climate emergency and Scotland, now, has the most ambitious legislative framework for emissions reduction in the world and a particularly challenging interim target for 2030 – and this is underpinned by a legal commitment to deliver a just transition.

And the action we are taking to meet those targets is already having a significant impact. We have more than halved our greenhouse gas emissions since Scotland's 1990 baseline and, in their 2020 Scottish Progress Report, the Committee on Climate Change observed: *"the Scottish economy has decarbonised more quickly than rest of the UK & faster than any G20 economy since 2008. Emissions have fallen rapidly while the economy has grown"*.

We also recently published a Climate Change Plan Update (CCPu) which sets out our pathway to world-leading 2032 targets and includes over a hundred new policies, and boosts or accelerates more than 40 others, from the 2018 Climate Change Plan.

Given our ambition and progress, it is apt that Glasgow should host the crucially important United Nations Framework Convention on Climate Change's 26th Conference of Parties (COP26) in November this year. The Scottish Government looks forward to a successful COP26 which delivers increased global ambition to reach net zero in a way that is fair and just and to constrain global average temperature increases to less than 1.5 degree Celsius. Our ambitious targets of achieving net zero greenhouse gas emissions by 2045 and a 75% reduction by 2030 have reaffirmed Scotland's place as a global leader in climate action, and our commitment to working with friends across Europe and the rest of the world to raise climate ambition makes clear the important role the Scottish Government has to play in COP26. The COP will be a chance to demonstrate to the world how uniquely well placed Scotland is to contribute to tackling the global climate emergency including in areas such as developing and delivering nature based solutions, ensuring a just transition and, crucially, in addressing the energy quadrilemma through transition within our energy sector.

Scotland continues to make excellent progress in areas such as renewable electricity generation with, in 2019, Scotland's renewable electricity generation having grown to such an extent that it was able to meet the equivalent of 90% of Scotland's gross electricity consumption.

This tremendous progress reflects the huge strides we have taken over the past two decades in the development of onshore and, more recently, offshore wind, as well as our legacy in the production of hydro-electric power. The potential remains for much more renewable capacity and development across Scotland – not only from the sources mentioned above, but also from the large scale deployment of floating offshore wind, islands wind projects, wave and tidal technologies, and solar PV.

Last year also saw Scotland become the first country in the UK to publish a hydrogen strategy, through our Hydrogen Policy Statement, setting out our vision for Scotland to become a leading Hydrogen Nation in both deployment of hydrogen within our energy system and for generation of significant volumes of hydrogen for export to markets such as the rest of UK, and partner nations on the European mainland. In February, we published our draft Heat in Buildings Strategy setting out our vision for decarbonising heating in all Scotland's homes and non-domestic buildings, as well as near-term actions we are taking. The scale of the challenge is significant and will require action across sectors and in all parts of society. We remain committed to taking a whole systems approach to the heat transition, in line with our Energy Strategy.

All of this and more demonstrates the significant progress Scotland is making in decarbonisation and our ambitions to go far further. However if we are to achieve our net zero greenhouse emissions targets, and to successfully deliver a green economic recovery, there are significant barriers that must be overcome - not least the fact that Scotland does not have all the powers it needs to reach net zero. We continue to call on the UK Government to work with us and to take action in key energy policy areas, which remain reserved including aspects of the decarbonisation of heat, regulatory and financial instruments to accelerate the full deployment of Carbon Capture Utilisation and Storage (CCUS) in Scotland, support for the decarbonisation of Scotland's energy-intensive industries, and the substantial regional security of supply issues that have developed across the UK over the past decade.

Similarly, while we broadly welcome the content of the UK Government's Energy White Paper (2020), we continue to seek further clarity on the implications of measures set out in the White Paper, for Scotland.

I am delighted to publish our Energy Strategy Position Statement which aims to provide our stakeholders with a clear overview of our policies in relation to energy as we look forward to a successful COP26 in November 2021. It reinforces our commitment to remain guided by the key principles set out in Scotland's Energy Strategy in 2017 as we move forward and the importance the Scottish Government attaches to supporting the energy sector in our journey towards Net Zero, whilst ensuring a green, fair and resilient recovery for the Scottish economy.

2. Executive Summary

EXECUTIVE SUMMARY

This policy statement provides:

- An overview of our key priorities for the short to medium-term and then moves on to look at how we have continued to abide by the three key principles set out in Scotland's Energy Strategy published in 2017 in our policy design and delivery. Those principles are:
 - o a whole-system view;
 - o an inclusive energy transition; and
 - o a smarter local energy model.
- An overview of how we have committed to ensuring a green economic recovery, in respect of energy, while remaining aligned to our net zero ambitions. We have set these out under the following themes to align with our wider green recovery narrative in the [Programme for Government](#)
 - o Skills and Jobs;
 - o Supporting Local Communities;
 - o Investment; and
 - o Innovation

along with some specific policy examples.

Separate sections have been included on Maximising Scotland's International Potential in the lead up to the UN Framework Convention on Climate Change Conference of the Parties (COP26) and on Consumers to reflect the challenging economic climate we currently face and to highlight the action being taken by the Scottish Government to ensure the cost of our energy transition does not fall unequally.

This statement provides an overview of our approach to supporting the energy sector in the lead up to COP26 and as we embark on a green economic recovery from the COVID-19 pandemic. It summarises how our recent policy publications such as our [Hydrogen Policy Statement](#), [Local Energy Policy Statement](#) and [Offshore Wind Policy Statement](#) collectively support the delivery of the [Climate Change Plan update](#) along with the future findings from our currently live consultations including our draft [Heat in Buildings Strategy](#), our [Call for Evidence on the future development of the Low Carbon Infrastructure Transition Programme \(LCITP\)](#) and our consultation on [Scottish skills requirements for energy efficiency](#).

While this statement sets out our comprehensive programme of work across the energy sector, the current Energy Strategy (2017) remains in place until any further Energy Strategy refresh is adopted by Ministers. It is at the stage of refreshing Scotland's Energy Strategy where we will embark on a series of stakeholder engagements and carry out the relevant impact assessments to inform our thinking on future policy development.



3. Key Priorities for Energy

KEY PRIORITIES FOR ENERGY

The table below sets out our key priorities for the coming months as set out in our Programme for Government and Climate Change Plan update.

Decarbonisation of Heat and Energy Efficiency
Enhance existing energy efficiency and zero emissions heat support programmes by continuing with the roll out of our £1.6 billion Heat in Buildings capital funding over the next parliament
Develop a successor to the Low Carbon Infrastructure Transition Programme (LCITP) offering a comprehensive range of financial and enabling support to large-scale heat decarbonisation projects
Establish a new Green Heat Finance Taskforce in early 2021 to provide advice and recommendations to Scottish Government on potential new financing models and routes to market
Develop and begin implementing a bespoke public engagement strategy for heat in buildings, in 2021
Set up a Heat Electrification Partnership with Scotland's electricity network operators to ensure that the upgrades required are delivered when and where they are needed
Respond to the recommendations from the Heat Pump Sector Deal expert group
Implement both a public engagement strategy and new supply chain action plan on energy efficiency and zero emissions heat
Local Energy
Renew our focus on developing local energy projects and models, including through CARES, supporting the achievement of 2GW of renewable energy being in Local or Community ownership by 2030
Establish an Expert Panel to consider and identify the most appropriate and sustainable use of bioenergy resources within Scotland
Introduce a new framework of support for energy technology innovation, delivering a step change in emerging technologies funding to support the innovation and commercialisation of renewable energy generation, storage and supply
Energy Transition
Continue to deliver of our £62 million Energy Transition Fund to support our energy sector as it transitions to net zero emissions by 2045
Develop and publish a Hydrogen Action Plan during 2021 following the publication of our Hydrogen Policy Statement at the end of 2020
Renew our calls for urgent action by UK Government to unlock investment in new pumped storage hydro capacity
Prepare to invest in process energy efficiency and decarbonisation projects, match-funded with manufacturing industries, in the first wave of the Scottish Industrial Energy Transformation Fund
Following its establishment, advance the workplan of the Grangemouth Future Industry Board, coordinating public sector initiatives to unlock potential investment - that boosts the economic development, innovation, longevity and competitiveness of the Grangemouth site
Carry out detailed research, development and analysis during 2021 to improve our understanding of the potential to deliver negative emissions from the electricity sector
Renewables
Deliver the actions from our Offshore Wind Policy Statement, published in October 2020
Work on the refresh of our Onshore Wind Policy Statement
Press the UK Government to further reform and maintain the CfD mechanism in a manner which better captures the economic benefits and total value added for the Scottish and UK supply chains
Aim to create the necessary environment to ensure that consumer confidence in low carbon energy measures is strengthened and that there is fair access for all consumers
Continue to support the marine energy sector through the continuation of our internationally recognised Wave Energy Scotland programme, and leadership of the Scottish Marine Energy Industry Working Group
Consumers
Where possible under our existing powers we will work closely with consumer groups, including the independent Energy Consumers Commission, to gather and act on feedback from consumers on any arising issues
Strategy
Publishing a revised and updated Energy Strategy, reflecting our commitment to net zero and key decisions on the pathways to take us there

4. Scotland's Energy Strategy

SCOTLAND'S ENERGY STRATEGY

In 2017, we published Scotland's Energy Strategy: [The Future of Energy in Scotland](#) which set our vision for how the energy system in Scotland would look in 2050. That vision was that we would have:

"A flourishing, competitive, local and national energy sector, delivering secure, affordable, clean energy for Scotland's households, communities and businesses."

Since the publication of the 2017 strategy, the Scottish Government has committed to achieving our ambitious targets of net zero greenhouse gas emissions by 2045 and a 75% reduction by 2030. In light of the economic crisis created by the COVID-19 pandemic, the Scottish Government is now striving to deliver a green economic recovery aligned to those net zero ambitions. Our policy direction remains guided by the three core principles set out in the 2017 strategy. Those principles are that:

- we take a whole-system view;
- we deliver an inclusive energy transition; and
- we deliver a smarter local energy model.

Whole System View

In our recent Climate Change Plan Update (2020) we committed to lay out a coordinated vision for the whole energy system within Scotland's refreshed energy strategy, which the current government intend to publish later this year if re-elected. This vision will be based on our best understanding of the technologies and options available today, and focused on delivering our economy-wide emissions reduction targets in way that ensures we boost economic growth and deliver on wellbeing outcomes for wider society.

Action We Are Taking:

To inform a coordinated vision for the whole energy system we are currently developing a set of whole system scenarios for Scotland during 2021, which will explore the timelines and interdependencies in each of these options.



Inclusive Energy Transition

As we move forward in our journey to net zero greenhouse gas emissions, we are fully aware that achieving our ambitious climate change targets will require a national endeavour and we don't underestimate the importance of inclusivity. As we emerge from the health and economic crisis created by the Covid-19 pandemic, we want to ensure that we build a greener, fairer and more equal society and economy. As set out in our Programme for Government, the recommendations from the Just Transition Commission are already informing our policies designed to deliver a green economic recovery.

Our recently refreshed Scottish Energy Advisory Board and its Strategic Leadership Groups and supporting groups, such as the Scottish Offshore Wind Energy Council and the Scottish marine Energy Industry Working Group are in place to support the Scottish Government in the delivery of our current and any future energy strategy with a strong focus on ensuring an inclusive transition is a key component of the board's work.

Action We Are Taking:

We have committed £1.6 billion of public funding over the next five years to decarbonise Scotland's buildings, which will reduce emissions, address fuel poverty and create up to 5,000 jobs in delivery of projects and across the supporting supply chain.

Our draft Heat in Buildings Strategy commits us to publishing a set of guiding principles in the final version to jointly deliver our fuel poverty and heat decarbonisation objectives which will underpin our commitment to inclusivity.

Our Heat Networks (Scotland) Bill commits us to challenging new statutory targets for delivery of heat networks by 2027 and 2030, and to development of a longer term target for 2035 and we have committed to produce a Delivery Plan for heat networks by April 2022 in parallel with progressing the supporting secondary legislation required to complete the regulatory framework by the end of 2023.

The Oil and Gas and Energy Transition Strategic Leadership Group played an intrinsic role in the design of the £62 million Energy Transition Fund which will benefit the energy sector and supply chain across Scotland by working with local businesses to support sustainable jobs and maximise inclusive economic growth across the country.

A Smarter Local Energy Model

As the way we generate, supply and use our energy continues to change, we remain committed to ensuring that local energy solutions meet local energy needs.

Our recently published Local Energy Policy Statement and accompanying Delivery Framework, published in early 2021, sets out an approach we wish to see adopted by those participating in or developing projects. It is underpinned by ten key principles, that seek to support a just, inclusive energy transition - one that has people at its centre, supported by strong partnership of working and collaborating at a local level.

Action We Are Taking:

We are continuing to consider the principle of a smarter local energy model through our support for community-led local renewable energy projects in the form of our flagship Community and Renewable Energy Scheme (CARES) with a new four year contract period starting in April 2021.

5. A Green Economic Recovery

A GREEN ECONOMIC RECOVERY

Scotland is facing considerable challenges as we respond to the health and economic crises presented by the COVID-19 pandemic. As regards our economic recovery, although we remain aligned to the principles set out in our 2017 Energy Strategy, our objectives have been refocused to include delivery of a green economic recovery from the COVID-19 pandemic. This section therefore sets out our current work to support the energy sector and wider society in the transition to net zero underpinned by the key themes presented in the Programme for Government.

Skills and Jobs

Creating green jobs are at the heart of the Scottish Government's plans for a fair, resilient and green economic recovery. This year's Programme for Government set out a national mission to create:

- new jobs;
- good jobs; and
- green jobs.

The Climate Emergency Skills Action Plan, published alongside the Climate Change Plan update in December 2020 identifies energy as a key sector for future green jobs, including the just transition of those vulnerable to losing their jobs in the transition to net zero. The support we have provided for specific energy sectors in order to help maintain and create jobs is set out in the final section of this document on Support for Our Energy Sectors.

Action We Are Taking:

Our new Green Jobs Fund will invest £100 million to help businesses create new, green jobs. This includes making £50 million available to businesses who provide sustainable or low carbon products and services to help them develop, grow and create jobs. Our apprenticeship system and the National Transition Training Fund will help people to develop the skills required to move into sectors with the greatest potential for future growth and job opportunities.

The Climate Emergency Skills Action Plan set out short and long-term actions to help people to access green job opportunities.

Through the Climate Emergency Skills Action Plan we will establish a new Green Jobs Workforce Academy that will support existing employees, and those who are facing redundancy, to assess their existing skills and undertake the necessary upskilling and reskilling they need to secure green job opportunities as they emerge.

Supporting Local Economies

Along with creating jobs and helping our workforce to retrain and upskill, ensuring our local communities and economies reap the opportunities from a just transition to net zero is a priority for the Scottish Government.

Action We Are Taking:

We are taking a place based approach in our work to support Hydrogen projects in the North East. We hope that the Aberdeen Hydrogen Hub with its initial focus on hydrogen mobility projects in Aberdeen could, alongside other key projects, anchor the development of a place-based hydrogen industry in the North East and deliver a model which is replicable to support the development of hydrogen projects in other parts of Scotland.

We are continuing our work to support the Highlands and Islands economy through the £8.3 million of assistance provided by the Scottish Government through Highlands and Islands Enterprise (HIE) to support the development of the new East Quay at Nigg Energy Park. The investment will enable further investment at Nigg in manufacturing for offshore wind and also increase the amount of work staging and assembling offshore wind towers.

A further place-based approach can be found in our establishment of the Grangemouth Future Industry Board (GFIB) - in recognition of the economic strength of the cluster, and its role as Scotland's foremost concentration of industrial and manufacturing activity. GFIB will coordinate public sector initiatives to help futureproof this key industrial hub for net-zero, and help support a vibrant and sustainable future for the locality; one that can deliver a significant impact on Scotland's just transition to net zero.



Investment

Our Programme for Government set out the considerable investments we are making in low carbon infrastructure in areas such as the decarbonisation of heat and transport designed to bolster the supply chain, allow businesses to grow and support our citizens in the transition to net zero. Our ambitions for net zero present us with an opportunity to build long-term prosperity in Scotland based on new, net-zero investments, to maximise national and global opportunities.

The Scottish National Investment Bank was launched by the First Minister in November last year with a commitment of £2 billion funding over ten years. The bank has been tasked with driving a just transition to net zero emissions and promoting inclusive growth and innovation. It will help Scotland develop sustainable technology, services and industries, while investing in employment, housing, education and local regeneration.

At an international level, low carbon energy continues to be a priority in meeting our wider trade and investment opportunities. Our [Trade Vision](#) publication, published in January 2021, sets out our principles and values for the trading relationships we want Scotland to have in the future. It will also be used to influence the approach the UK Government takes in developing trade agreements with other countries and blocs while reflecting the Scottish Government's aim of a just transition to net zero.

Our recently published Inward Investment Plan and forthcoming Capital Investment Plan also underline the importance the Scottish Government attaches to the energy sector in achieving our international trade and investment opportunities.

Action We Are Taking:

We are investing to support businesses in Scotland's journey to net zero is through our £34 million Scottish Industrial Energy Transformation Fund (SIETF). The SIETF is designed to support manufacturing industries in their transition to a low carbon future and will enable match-funded co-investment to decarbonise processes, contributing to a more secure future.

Our new £180 million Emerging Energy Technologies Fund will support the development of the hydrogen economy, alongside development of CCUS and other Net Emissions Technologies (NETs).

On an international level, low carbon energy continues to be a priority in meeting our wider trade and investment opportunities. Our [Trade Vision](#) publication, published in January 2021, sets out our principles and our values for the trading relationships we want Scotland to have in the future. It will also be used to influence the approach the UK Government takes in developing trade agreements with other countries and blocs while reflecting the Scottish Government's aim of a just transition to net zero greenhouse gas emissions.

Our recently published Inward Investment Plan and forthcoming Capital Investment Plan also underline the importance the Scottish Government attaches to the energy sector in achieving our international trade and investment opportunities.

6. Maximising Scotland's International Potential

MAXIMISING SCOTLAND'S INTERNATIONAL POTENTIAL

The level of action and ambition needed to set the world on track to a net zero future will require us all to work in solidarity, promote collaboration and share expertise and knowledge. The Scottish Government is committed to working with friends across Europe and the world to raise climate ambition. The Scottish Government's overarching priority is to ensure that the UK's exit from the European Union does not significantly impact our transition to net zero or our ambition to build a fair and resilient wellbeing economy. The implications for Scotland caused by the "hard Brexit" reinforces why it is so important for people in Scotland to have the right to decide their own future and to regain the full benefits of EU membership as an independent country.

We have made clear our commitment to tackling the global climate emergency and to ending Scotland's contribution to climate change within a generation.

Global challenges require a global response, and ahead of COP26 in November we will continue to work extensively across our international network to support global efforts to reach net zero in way that is fair and just and leaves no-one behind

Scotland's Energy Strategy identifies internationalisation as a key area, recognising the importance of working with partners and the contribution this can make to sustainable economic growth as we transition to a net zero economy. Our priority areas for international engagement include: Hydrogen; CCUS; Wind; Marine Renewables and Marine Spatial Planning; Heat Decarbonisation and Energy Efficiency; and Local Energy.

Scotland has already established strong collaborative relationships with international partners, for example with the Government of Denmark on heat decarbonisation and energy efficiency, and with California and New Jersey in the USA on offshore wind. We will continue to develop and strengthen our international relationships, prioritising activity and collaborations that promote learning and policy exchange, build upon Scotland's reputation and increase our attractiveness to international partners and ensure a flow of new investment.

The Scottish Government, along with our Enterprise Agencies, will continue to engage with international partners – strengthening existing relationships and seeking out opportunities for our energy industries to flourish in the global market. This will include maximising opportunities for global growth in new innovations and emerging technologies, such as the development of a hydrogen economy. Scotland is well placed in terms of proximity and infrastructure connectivity to several European nations, such as Germany, the Netherlands, Belgium and Sweden, that are unlikely to be able to decarbonise wholly through their indigenous wind and solar renewable energy supply and will require the importation of hydrogen. As large demand for green hydrogen develops in Europe, our challenge is to ensure Scotland becomes a primary centre of production to meet this need.



7. Consumers

CONSUMERS

The Scottish Government has been very clear that we want the rights of individual consumers to be protected and while consumer protection policy remains reserved to the UK Government, we are committed to ensuring our ambitious climate change targets do not leave any group of individuals behind.

The current economic climate is challenging for consumers. Hence we cannot underestimate the importance of ensuring that the costs and benefits of our energy transition will not fall unequally on consumers in vulnerable circumstances, we must avoid increasing any gaps in access to the benefits of a well-functioning energy market and address the risks of those in, or at risk of, fuel poverty paying more for their energy. The Scottish Government is acutely aware of these risks and has extensively considered the impacts on consumers of upcoming changes in its draft Heat in Buildings Strategy, and Climate Change Plan Update (2020).

The Scottish Government also continues to engage with the UK Treasury on its Net Zero Cost Review to encourage consideration of distributional impacts in the designing of the UK Government's net zero policy.

Our Energy Consumer Action Plan was established in May 2019 and we have implemented an range of actions to enhance the consumer voice in the energy market. These include:

- Establishing an independent Energy Consumers Commission to engage in high level energy decision making and make use of the unique insights of grassroots energy organisations;
- Establishing an Improving Consumer Outcomes Fund to develop practical innovations that can be adopted, adapted and scaled up by service providers;
- Developing an interactive data hub to provide a comprehensive picture of the energy consumer landscape; and
- Research on consumer impacts of changes to the domestic heating and electric vehicles.

The consumer voice is now well represented on the Scottish Energy Advisory Board through the recently established Energy Consumers Commission and the Scottish Government has continued to work closely with energy companies as part of the COVID-19 pandemic response, pushing to ensure that energy consumers, particularly those in vulnerable circumstances, are supported.

We will remain in contact with Ofgem, Energy UK (the trade association for the energy industry) and other stakeholders to develop further measures to protect consumers as the situation develops.

We have funded Home Energy Scotland to provide wide-ranging energy advice and support for energy efficiency and renewable installations by householders.

This has included the ground-breaking Smart Meter Advice Programme which has helped consumers to get the most out of their smart meters, a key facilitator in the transition to decarbonised energy systems.

We are working to protect the consumer on a local level with our £7.5 million Strategic Partnership including Transport Scotland, Scottish and Southern Electricity Networks and SP Energy Networks which launched in August 2019. The Partnership is exploring new ways of coordinating the development and delivery of electric vehicle charging and electricity network infrastructure; to ensure efficient investment and a fair distribution of cost across electricity consumers.

With £5.3 million of Scottish Government funding, it is anticipated that by March 2021 up to 180 publicly available charge points will be installed across 44 sites in the Lanarkshire area through project PACE that is being delivered by Scottish Power Energy Networks (SPEN) through the Strategic Partnership. SPEN estimate that between £1.3 million to £2.6 million electricity grid connection savings have been realised through more efficient planning and coordination of EV and electricity network infrastructure in selection of the 44 sites.

As we move forward, we are extending this partnership model to encompass the heat in buildings transition, to help deliver positive consumer outcomes as we transition a large proportion of our heating demand to heat pumps.

8. Support for Industries and Sectors across the Energy Landscape

SUPPORT FOR INDUSTRIES AND SECTORS ACROSS THE ENERGY LANDSCAPE

This section will explore how the Scottish Government is supporting the specific industries and sectors across the energy landscape in responding to the economic crisis and as we continue in our journey towards net zero. While this chapter looks through a sectoral lens; our policy development, in collaboration with public and private sector partners, remains underpinned by both the previously mentioned principles in Scotland's Energy Strategy and the green recovery themes as per our Programme for Government.

Onshore and Offshore Renewables

The continued growth of Scotland's renewable energy industry is fundamental to enabling us to achieve our ambition of creating sustainable jobs as we transition to net zero.

The Scottish Government is committed to supporting the increase of onshore wind in the right places to help meet the target of Net Zero. In 2019, onshore wind investment in Scotland generated over £2 billion in turnover and directly supported approximately 2,900 full-time equivalent jobs across the country. We continued to make good progress last year, with Scotland's renewable electricity generation having grown to such an extent that it was able to meet the equivalent of 90% of Scotland's gross electricity consumption – making 2019 another record breaking year for the sector. In 2018, there were 23,100 FTE jobs in total across low carbon and renewable energy in Scotland.

In October 2020, we also described the importance of offshore wind to Scotland's economy when we published our Offshore Wind Policy Statement and Sectoral Marine Plan for Offshore Wind Energy in Scotland. These key documents set out how, using the powers available to us, we will grow our economy through green job creation by seeking to improve market outcomes for renewable activity.

We recognise that the supply chain in Scotland has been missing out on lucrative offshore wind manufacturing contracts. This has been a challenge for some time, but has reached a point that has led to great frustration within Government, Parliament and across civil Scotland. For our part, we have been clear that developers and their Tier 1 contractors have a responsibility to support domestic suppliers throughout the construction of projects. Though Scottish Ministers continue to have no control over the all-important Contracts for Difference auctions and the Supply Chain Plans within them, and have urged greater recognition of projects' ability to add value, we remain committed to using all the levers within our devolved competence to support companies across Scotland and to retain employment in the offshore wind sector. It is, for these reasons, why we announced last year that applicants to ScotWind Leasing Rounds will be required to submit a Supply Chain Development Statement that sets out the anticipated level and location of their supply chain commitments. This, if engaged with by industry in the correct spirit, will go a long way in providing Scottish suppliers with the clarity of a future pipeline of contracts, thereby enabling them to hire and train more people in good, green jobs. However action from the UK Government on reforming the Contracts for Difference mechanism is imperative to supporting the domestic supply chain and holding developers to their supply chain commitments.

It is evident that significant investment in our supply chain's infrastructure will be necessary if Scottish suppliers are to have the capacity and the capability to fabricate and service the offshore wind projects of the near future.

That is why the Scottish Offshore Wind Energy Council (SOWEC) has initiated a Strategic Investment Assessment of the offshore wind sector in Scotland which will identify the strengths and weaknesses of our entire supply chain, and allow the sector and government to target investment where it is needed most. The assessment is due to conclude in the coming months and Ministers are committed to considering all recommendations directed towards the Scottish Government.

We welcome the majority of BEIS' proposed changes to the Contracts for Difference mechanism, in particular the inclusion of onshore wind, the provision of a separate pot for floating offshore wind, and, indeed, the commitment to strengthen the Supply Chain Plans element of auctions. These changes are long overdue and their exclusion from previous rounds has undoubtedly harmed the Scottish supply chain. Scottish Ministers eagerly await the introduction of these changes later this year and are cautiously optimistic that a reformed auction will allow Scottish projects, and their related supply chains, to prosper.

The Scottish Government has been engaging closely with Ofgem over recent months to highlight the vital role that energy networks will play in meeting Scotland's more ambitious decarbonisation and net zero targets. We have highlighted that certainty over the availability of baseline funding during the next price control period (RIIO2) is going to be critical to maintaining confidence in the renewable sector – for example, to the progress of new onshore and offshore wind developments. We also need to know that the huge investments which will be coming through Ofgem's "uncertainty mechanisms" will be processed and responded to as quickly as possible.

Ensuring and enabling early progress and investment on the major and vital upgrades to the east coast interconnectors and onshore infrastructure – including new and upgraded connections across the Scottish border – will have a profound effect on developer confidence, as well as forming an essential component of our progress to net zero. These network investments and projects will also create huge challenges for our planning and consenting processes, which we must be ready to meet.

Network regulation as a whole faces huge and complex challenges. It needs to deliver infrastructure capable of delivering net zero, recognising and rewarding the impact of efficient, timely investment on our economy, on the development of skilled jobs, and the development of a dynamic supply chain, while ultimately providing a good deal for energy consumers. The Scottish Government's view remains that the regulator's remit and approach needs to explicitly incorporate and reflect the need to achieve net zero in this way – especially now that the UK Energy White Paper has come to the same welcome conclusion.

As we set out in our Climate Change Plan Update (December 2020), the transition of our energy system to net zero presents Scotland's businesses with many opportunities to create a competitive advantage whilst creating jobs. The Committee on Climate Change (CCC) has highlighted the importance of innovation in delivering our statutory targets and our recent inward investment plan identified energy transition and transport decarbonisation as two areas of strength in Scotland for attracting investment.

We continue to build on our reputation as home to the Deepwind supply chain cluster - the globally leading offshore wind supply chain cluster for deep water solutions for both fixed and floating offshore wind renewable technologies. Creating a hub of competitive companies who have embraced increased productivity, strong collaborative working and creative innovation is at the core of both DeepWind's and the Forth and Tay Offshore clusters' objectives. Supported by our enterprise agencies, these clusters have become a natural conduit for supply chain engagement for national forums such as the Scottish Offshore Wind Energy Council, the Floating Wind Centre of Excellence and the Offshore Wind Industry Council.

We also have a strong track record of support for innovative low carbon technologies which is illustrated by our marine energy sector maintaining its world-leading position in the development of technologies such as wave and tidal energy. We have invested nearly £50 million since 2014 through our internationally recognised Wave Energy Scotland programme

and, in 2019, we awarded £5 million to Scottish tidal energy projects through the Saltire Tidal Energy Challenge Fund.

In 2020, we announced eight winners of our 'Floating Wind Technology Acceleration Competition' and the eight technologies will receive a share of £1 million from the Scottish Government to address key industry challenge areas in the deployment of innovative floating offshore wind technology.

To date we have made over £85 million of commercial investments in the energy sector through our Energy Investment Fund. This has supported innovative technology companies to develop ideas and deliver projects, alongside support for community energy projects.

Oil and Gas Sector

The oil and gas industry contributes significantly to the Scottish Economy and currently provides for the majority of Scotland's and the UK's primary energy needs. and the sector and its supply chain will play a crucial role in the energy transition required to move our economy and society to net zero greenhouse gas emissions.

The scale of the challenge presented by the COVID-19 pandemic to our energy sector and its supply chain is significant, but there is an opportunity to build long-term prosperity in Scotland based on new, net-zero investments, to maximise national and global opportunities. We must harness the considerable skills and talent in the oil and gas industry to deliver a just transition to net zero and ensure everyone can access those opportunities and good, green jobs.

A focus on transitioning workers in high carbon areas, such as oil and gas, to activities consistent with delivering our net zero emissions target is fundamental to a Just Transition and, indeed, this is a key priority of the Scottish Government and the independent Just Transition Commission. The Scottish Government are fully aware of the key role the oil and gas sector has to play in Scotland's energy transition. The sector has a wealth of skills and expertise to offer in support of key aspects of decarbonisation including Carbon Capture, Utilisation and Storage, Hydrogen, floating wind and marine energy.

We know how important a sustainable future is for those who work in the oil and gas sector and its supply chain. That is why our £62 million Energy Transition Fund, announced in June 2020, was designed in partnership with industry, through the work of the Oil and Gas and Energy Strategic Leadership Group, to help protect existing jobs and create new jobs across Scotland by opening up opportunities through energy transition and harnessing private sector funding as companies transition from oil and gas to low carbon and renewable investments.

Scotland's 2017 Energy Strategy already identifies a crucial role for the oil and gas sector in the energy transition that is required to move to an economy and society that generates net zero greenhouse gas emissions and we are already working to maximise those benefits through private and public sector partnerships such as the Energy Skills Alliance, a newly created and cross energy collaborative group established to develop an integrated skills strategy for a vibrant, net zero energy industry.

The ESA brings together leaders from across oil and gas, renewables, nuclear and refining industries, as well as representation from regulators and trade unions, and has devised four key work programmes. These task and finish groups have been designed to create an integrated skills strategy for a net-zero UK energy industry:

- Future energy skills demand and supply
- Integrated STEM programme
- Delivery of an integrated all-energy apprenticeship scheme
- Development of a roadmap for aligning training and standards.

Hydrogen

Global interest in hydrogen as a future driver of decarbonisation and economic growth is developing rapidly. International partnerships are already being established with shared ambition, co-ordination, collaboration and pace. The role of hydrogen in our Energy Strategy refresh will recognise the momentum hydrogen is gathering domestically and internationally and the potential that Scotland has to be a leading Hydrogen Nation.

Hydrogen is not only key in our transition to net zero in terms of decarbonising industry, power generation, energy integration, heat, and transport; it also presents significant opportunities for the economy. This was made clear by our Scottish Hydrogen Assessment, carried out throughout 2020.

Scotland's abundant natural resources, skills and supply chain offer the potential for large-scale production of sustainable hydrogen from offshore wind to meet both domestic needs and for export. Global interest in the area of hydrogen is rapidly growing and the development of a hydrogen economy in Scotland, with a strong export focus, therefore offers the opportunity to support the creation and protection of jobs through the growth of a sustainable local supply chain as well as capture the benefits from the growth of a hydrogen export market.

Last year, we became the first country in the UK to publish a Hydrogen Policy Statement, informed by last year's assessment, which sets out our vision for Scotland to become a leading Hydrogen Nation in the production of reliable, competitive, sustainable hydrogen.

In it, we set out our ambition to achieve 5GW of installed capacity for the production of low carbon and renewable hydrogen, by 2030, and we committed to making hydrogen a key element of Scotland's decarbonisation plans. This scale of ambition is the same as the installed capacity target set by Germany, a much larger country with a much larger industrial base. Our analysis tells us that, thanks to our vast offshore wind resources, skills and company base, Scotland is in a strong position to not only produce enough hydrogen to meet our domestic needs, but to support an export market to the rest of the UK and mainland Europe.

The statement will be followed by our Hydrogen Action Plan later this year with input from our enterprise agencies, which will set out how we will implement our hydrogen policies and will be accompanied by £100 million investment, from within our new £180 million Emerging Energy Technologies Fund, to support its delivery over the next five years.

Carbon Capture Utilisation and Storage (CCUS)

The Scottish Government supports the development of a Carbon Capture and Storage (CCS) network that can utilise the vast storage potential presented by the geology of the North Sea. It is clear that CCUS will play an important role in helping us to reach net-zero emissions; advice from the Committee on Climate Change describes CCS as a "necessity, not an option" to achieve this goal.

CCS will play a central role across the decarbonisation strategies of key sectors such as heat, industry and power, underpinning the production of low-carbon hydrogen and developing negative emissions technologies, such as bioenergy with CCS (BECCS) and direct air capture and storage (DACs), that the committee for climate change that the Committee on Climate Change and our own Climate Change Plan describe as essential to meet net zero in 2045.

Last year, alongside publication of our Climate Change Plan update, we announced the aforementioned Emerging Energy Technologies Fund to support the development of hydrogen and CCS, and which will add new impetus to the development of NETs. Projects supporting the development of CCS and NETs can access £80 million of the overall total of £180 million in the fund, with the direction of funding being supported by work in 2021 to undertake a NETs feasibility study and a CCUS economic impact assessment.

Utilising legacy oil and gas infrastructure, skills and knowledge, CCUS projects have the potential to secure existing jobs as well as delivering new ones, in a developing supply chain. If successful, existing industries, which are currently some of Scotland's largest carbon emitters will be able to move to a sustainable business model actively supporting and reducing Scotland's emissions.

We will work with our agencies to develop projects and proposals for carbon capture and utilisation (CCU) through our £5 million Carbon Capture and Utilisation Challenge Fund, that will boost early stage work and innovation that will capture and create value in CO₂, reduce emissions and develop new income streams for Scottish businesses. Priming a utilisation market supports the acceleration of carbon capture in the industrial sector by supporting innovation and cost reduction as well as providing new carbon markets.

Highlands and Islands Enterprise is also supporting the creation of 143 high-value jobs at the Port of Cromarty Firth with funding of £7.75 million towards a £31 million project which will increase the Port's capacity to accommodate more work on renewables, oil and gas rig decommissioning and other shipping-related activity. The project, due to complete this year, is also expected to generate a £6 million increase in turnover for the Port.

A further place-based approach can be found in our establishment of the Grangemouth Future Industry Board (GFIB) - in recognition of the economic strength of the cluster, and its role as Scotland's foremost concentration of industrial and manufacturing activity. GFIB will coordinate public sector initiatives to help futureproof this key industrial hub for net zero, and help support a vibrant and sustainable future for the locality; one that can deliver a significant impact on Scotland's just transition to net zero.

Heat and energy efficiency in Buildings

Creating jobs is a key driver in our work to decarbonise our homes and buildings. We have committed to investing £1.6 billion of Scottish Government funding over the next 5 year term of the Scottish Parliament to transform our homes and buildings, tackle poor energy efficiency as a driver of fuel poverty and create new opportunities for jobs and growth. This investment is anticipated to support up to 5,000 jobs in each year by 2025-26, with further growth beyond that date. The scale of the challenge in improving the energy efficiency of Scotland's building stock and transitioning it to zero emissions heating

is unprecedented, with an estimated whole economy cost in the region of £33 billion by 2045. Clearly, the investment required to meet that challenge is huge and cannot be borne by the public purse alone. That investment presents very significant opportunities to develop both a highly-skilled workforce and a strong supply chain. Investment in heat and energy efficiency is a critical part of our green recovery, and we expect the wider heat and energy efficiency market to grow rapidly, building upon the direct job creation supported by our investment.

Our recently published Climate Change Plan update includes a commitment to double zero emissions heat installations each year with over 120,000 homes in Scotland converted to a zero emissions heating system by 2025. We expect the £1.6 billion investment to support at least 3,000 jobs in the first year and grow by a further 2,000 by 2025-26. It is also our aim to ensure these opportunities extend to people who have unfortunately lost their jobs as a result of the COVID-19 pandemic. We will support retraining and upskilling in heat and building efficiency through our £25 million National Transition Training Fund.

Transforming our buildings by making them more energy efficient and converting them to zero emissions has the potential to make a significant economic contribution and represents a sizeable opportunity for Scottish businesses over the next 24 years. The actions set out in the draft Heat in Buildings Strategy provide a clear set of signals to the market, helping to give confidence to companies to invest for the transition. Overall, we estimate that as investment in heat and energy efficiency ramps up towards the late 2020s, as many as 24,000 jobs could be supported each year in Scotland by the roll out of zero emissions heat. To underpin our investment and provide long-term certainty to the sector and home owners, landlords, owners of non-domestic premises and the public sector, we propose the introduction of new regulations to set standards for zero emissions heating and energy efficiency, where it is within our legal competence, between 2023 and 2025.

Heat pumps will be a strategically important technology in the decarbonisation of heat and we have established an expert advisory group to provide recommendations on the scope of a potential heat pump sector deal for Scotland. This will aim for the Scottish Government, its agencies and the private sector to work together to maximise the opportunities for deployment, employment, innovation and skills in Scotland's heat pump sector and help ensure that our economy benefits from the substantial investment required to decarbonise heat in our buildings.

We will use this to leverage wider investment in the transition including from the private sector. Alongside the £33 billion required to convert our building stock to net zero emissions by 2045, further investment will also be required to upgrade our energy networks and ensure sufficient energy generation capacity.

In addition to the significant public sector investment to kick start this transition Private investment will be critical to drive progress and the role of the regulator in creating an attractive investment environment cannot be overstated.

We will also establish a new Green Heat Finance Task Force and will work in partnership with the private sector to leverage the scale of investment needed for energy efficiency and heat, and to develop innovative approaches to financing the heat in buildings transition.

We want to see the right level of investment in our energy infrastructure over the coming decade, to enable delivery of the heat transition and ensure communities can access affordable zero-emissions heat.

That is why we are working with partners to develop and deliver a number of energy efficiency measures to support the acceleration of the shift to low carbon, local energy solutions within our £120 million Heat Transition Deal. This includes our £50 million Low Carbon Heat and Energy Systems Funding Call delivered by the highly regarded Low Carbon Infrastructure Transition Fund (LCITP), to accelerate the delivery of large scale low carbon heat infrastructure projects, including heat pumps and heat networks, and a £20 million Funding Call to support installation of

low carbon heat solutions in Social Housing, also delivered by the LCITP.

As the current LCITP programme draws to a close during 2021, we will consider how its successor will continue to support low carbon energy infrastructure projects including the deployment of low carbon heat at scale, coordinating our support for the roll out of heat networks and heat decarbonisation infrastructure.

As well as continuing to support householders to transition to renewable heating sources through our recently launched domestic cash back scheme and our Home Energy Scotland loan, we have now secured safe passage through Parliament of our vital Heat Networks (Scotland) Bill which provides a strong legislative framework for ensuring that heat networks are properly regulated, and supporting the heat network sector to grow and contribute to providing high-quality, local jobs. Regulation and guidance in support of the development of the comprehensive regulation and licensing required for heat networks will now be completed through secondary legislation over the period to the end of 2023 in parallel with development of Local Heat and Energy Efficiency Strategies for all Scotland's 32 Local Authority areas.

Preparing Scottish businesses for future growth and promoting collaborative working within industry as we move forward in our journey to net zero is a key priority for the Scottish Government and our enterprise agencies. An example of this is the Heat Supply Chain study currently being carried out by Scottish Enterprise, Highlands and Islands Enterprise and South of Scotland Enterprise which will result in the development of a framework for the three enterprise agencies to support the low carbon heat industry by promoting collaborative working and assisting in its growth.

9. Conclusion

CONCLUSION

As set out in the executive summary, this document provides a comprehensive summary of the extensive measures we are already taking with partners across the energy sector to build a green economic recovery from COVID-19 aligned to our ambitious net zero targets.

It is our intention, if re-elected, to refresh Scotland's Energy Strategy in 2021, after appropriate consultation with stakeholders and the Scottish Energy Advisory Board and Strategic Leadership Groups. As stated in the Executive Summary, this stakeholder engagement will inform our thinking on future policy development and enable us to carry out all of the relevant impact assessments.

There is, clearly, much that has already been achieved in just over 3 years, but our own ambition and the scale of the challenge to address the climate emergency mean there is much yet to do and this document lays down a marker as to actions that must be progressed.





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