

Partial Business and Regulatory Impact Assessment:
Draft Energy Strategy and Just Transition Plan

1. Title of Proposal

Draft Energy Strategy and Just Transition Plan

2. Purpose and intended effect

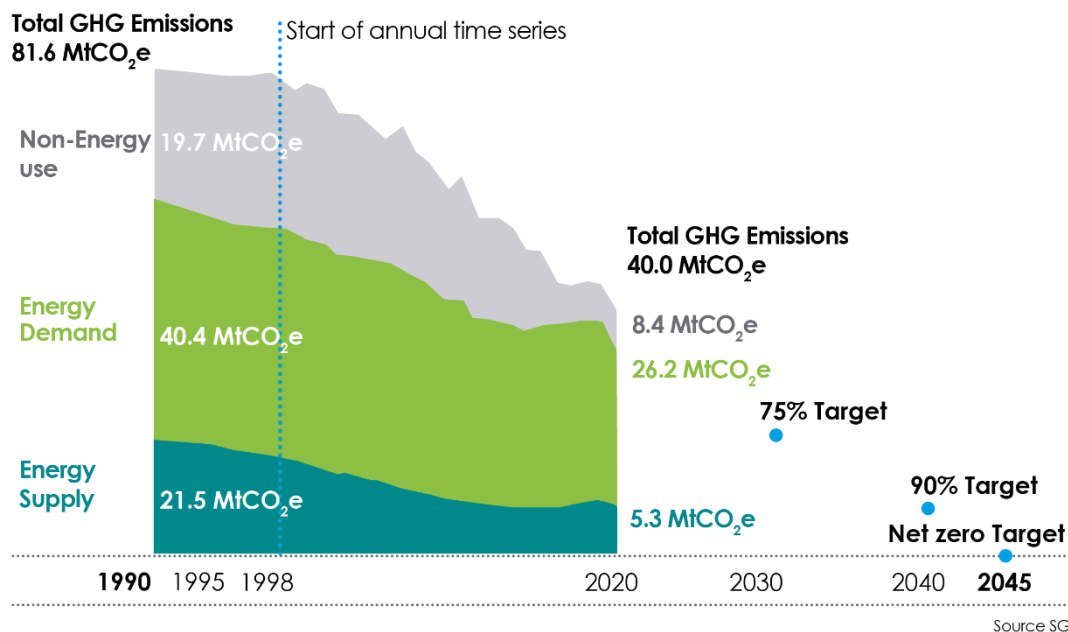
• **Background**

This partial Business and Regulatory Impact Assessment (BRIA) accompanies the Scottish Government's draft Energy Strategy and Just Transition Plan (ESJTP).

The ESJTP sets a path for a fair and secure net zero energy system for Scotland. This will give certainty to businesses, investors and consumers, and sets a clear direction for the future of Scotland's oil and gas sectors. The draft ESJTP provides a vision to 2045, and a route map of strategic decisions, milestones and actions that, coupled with detailed sectoral plans and the forthcoming Climate Change Plan, will guide decision-making and policy support over the course of this decade.

In 2019, in response to the Paris Agreement, the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 set new, more ambitious, legally binding emissions reduction targets that require Scotland to reach net zero greenhouse emissions across the economy by 2045, and a 75% reduction by 2030. Figure 1 outlines Scotland's emissions reductions to date, reducing from around 80MtCO₂e in 1990 to 40MtCO₂e in 2020, as well as the interim targets to reach net zero in 2045. The majority of these emissions can be attributed to energy supply (energy production, from a power plant or refinery) or energy demand (how we use energy, heating a home or powering a vehicle) with a smaller amount relating to non-energy use.

Figure 1: Emissions in Scotland 1990-2045

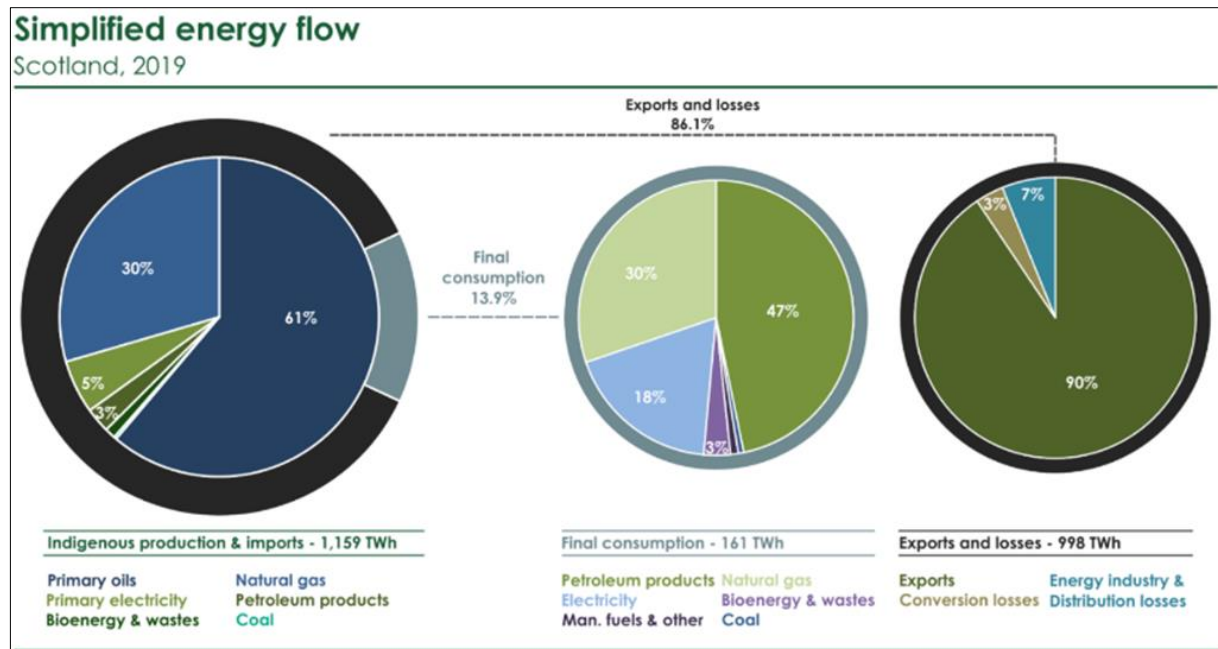


The 2020 updated Climate Change Plan (CCPu)¹ outlines a pathway to meeting Scotland's emissions reduction targets over the period to 2032, and the subsequent Climate Change Plan (CCP), a draft of which will be published in 2023, will set out the pathway to 2040.

Scotland is an energy rich nation, and at a macro level produces significantly more energy than it consumes. Figure 2 shows that most of the energy produced is derived from North Sea oil and natural gas, with these fuels also comprising most of the energy consumed in Scotland. However, low carbon and renewable energy supply and consumption are growing and the ESJTP will support coordinated acceleration of this process in order to meet Scotland's emissions reduction targets whilst maximising social and economic benefits from the low carbon transition.

¹ Scottish Government (2020). *Update to the Climate Change Plan 2018-2032: Securing a Green Recovery on a Path to Net Zero*. URL: <https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/documents/>

Figure 2: Energy in Scotland²



The ESJTP work will also draw on the National Just Transition Planning Framework and the National Strategy for Economic Transformation,³ which set out an ambitious approach to working with others on the economic and social impacts and opportunities of transition to net zero.

This document provides an indicative assessment of the impact of the ESJTP on various sectors and groups within the Scottish economy.

• Objective

The draft ESJTP is in the form of a consultation and therefore provides an opportunity for communities, citizens, and businesses to engage in the process of co-designing the energy transition. In consulting on the ESJTP, the objective is therefore two-fold:

- To seek views on the actions we are taking to remove emissions from our energy system; and,
- To understand how we can go even further to maximise the social and economic benefits of the transition to a decarbonised, secure and affordable energy system.

² [Scottish Energy Statistics Hub \(shinyapps.io\)](https://shinyapps.io/scottish-energy-statistics-hub/)

³ Scottish Government (2022). *Scotland's National Strategy for Economic Transformation*. URL: <https://www.gov.scot/publications/scotlands-national-strategy-economic-transformation/>

The overarching vision and associated aims of the ESJTP are summarised below:

Our vision is that by 2045:

Scotland will have a flourishing, climate friendly energy system that delivers affordable, resilient and clean energy supplies for Scotland's households, communities and business. This will deliver maximum benefit for Scotland, enabling us to achieve our wider climate and environmental ambitions, drive the development of a wellbeing economy and deliver a Just Transition for our workers, businesses, communities and regions.

- **Rationale for Government intervention**

The Scottish Government has developed the ESJTP to provide the necessary overarching strategic direction on energy in Scotland, to help the sector decarbonise at scale and at pace, and in an inclusive and fair way for households, businesses and communities across the country. The ESJTP also integrates individual sector plans and policies, ensuring they are part of a coordinated whole system approach to the energy transition. Without government intervention, the presence of market failures could put these aims at risk.

Negative Externalities

The wider societal costs of climate change are not fully factored into the costs of carbon intensive fuels used extensively across the Scottish energy system, resulting in a negative externality in the current make-up of the system. These wider societal costs, a direct result of global temperature rises, include increasing extreme weather events and biodiversity loss. Action must therefore be taken to align private incentives and decision-making with societal goals and intergenerational fairness.

Distributional Impacts

The energy system transition is likely to have distributional impacts, as households, businesses and communities move from fossil fuel technologies to low carbon alternatives. This transition requires high upfront and ongoing investment and has cost distribution implications driven by a range of factors, including the energy market framework, regulation, taxes and subsidies, the technologies deployed, and those displaced. It should be noted that many of the powers to influence these factors directly are reserved to UK Government.

Some form of government intervention may be required to mitigate negative distributional impacts and ensure fair access to the opportunities and benefits from the transition on groups that are particularly at-risk, including:

- Employees/workers in industries dependent on carbon intensive fuels. These individuals should be provided with support to retrain/upskill in order to find equivalent work in the low carbon sector.
- Low-income households, including those currently in, or vulnerable to, fuel poverty. Government intervention may be necessary to ensure those unable to pay to switch to low carbon technologies are not harmed or left behind in the energy transition, and benefit from advances in technology to have warm, energy efficient homes.
- Firms and industries reliant on fossil fuels for revenue generation and to power their activities. These firms should have the opportunity to reduce their reliance on fossil fuels and undertake viable, competitive business activities supported by low carbon alternative fuels.
- Regions and communities dependent on fossil fuels for employment and economic activity. These communities should see the benefit of renewables and low carbon energy in their region.

There are examples where Scottish Government is already taking action to mitigate some of these impacts, including through the development of a digital offshore energy skills passport, which empowers offshore workers to utilise their existing certification. Funding of £5m has been awarded to the Offshore Petroleum Industry Training Organisation (OPITO) through the Just Transition Fund for the passport, which will streamline the transfer of skills and address the lack of recognition of cross-sector skills. It will support oil and gas workers moving to another energy sector.

Immature markets for technologies and fuels needed for a net zero energy system

The markets for zero and low carbon technologies and fuels need to develop at pace in order to support the rapid transition required to meet Scotland's emissions reduction targets. Government action – including, crucially, by the UK Government – will be required to ensure the markets for zero and low carbon heating solutions, vehicles, and fuels such as hydrogen and electricity, as well as carbon capture technologies, are sufficiently developed, scaled up, and viable, to allow timely adoption throughout the economy.

Coordination

The transition to a net zero energy system requires coordinated action from a wide section of stakeholders across the country, including households, businesses, local authorities and the public sector, network operators, and energy generation/production facilities. Government intervention in the form of the ESJTP will provide coordination to support cohesive action and progress which markets in their current form are unable to deliver.

3. Consultation

- **Within Government**

A number of government agencies were involved during the summer 2022 engagement process for the ESJTP. These included: Scottish Environment Protection Agency (SEPA), Skills Development Scotland (SDS) Energy Saving Trust, Highland & Islands Enterprise, Scottish Enterprise, South of Scotland Enterprise, Scottish Water, Zero Waste Scotland and NatureScot.

- **Public Consultation**

Over the course of summer 2022, a range of engagement was undertaken, including a series of 'sprints' with representative stakeholders, surveys, digital dialogues with members of the public, and place and community focused events. Engagement took place with over 1,500 individuals. This included in-person events at 17 locations across Scotland from Caithness to Dumfries.

As part of the engagement, a series of sprints were organised, in partnership with professional facilitators ASPECT, with stakeholders representing workers, businesses, energy industry, enterprises, environmental organisations and communities. These sprints were split into 2 distinct sessions.

Sprint 1

The first of two 'sprints' comprised nine stakeholder workshops, each focused on one of the eight National Just Transition Outcomes and associated opportunities, dependencies and priorities. Discussions ranged from identifying key risks from climate change for our energy infrastructure to understanding how to deliver an energy transition that tackles new and existing inequity.

Sprint 2

The second sprint comprised two stakeholder workshops with a selection of representatives from Sprint 1. The purpose of these workshops was to take forward issues and insights identified during the first sprint and develop more detailed and specific input to inform the draft Energy Strategy and Just Transition Plan. In total, 120 participants were involved across the two sprints.

During the engagement process engagement was undertaken with communities and workers who are most likely to be impacted by the energy transition to net zero, as well as with those who are traditionally disengaged from Government consultations. The series of sprints was complemented with other strands of engagement like workshops (see Annex A for details of these workshops), an energy worker survey as well as more in-depth discussions with environmental NGO's and minority groups. Several of these workshops were run through partner organisations who were best positioned to reach out to priority communities and minority groups.

The draft ESJTP includes further information on the process behind the summer of engagement and will be accompanied by summary reports describing the outputs of this engagement.

- **Business**

The engagement throughout summer 2022 also included meeting with experts across the energy sector to gain their input on complex and technical issues, discussions with the Scottish Energy Advisory Board, related Strategic Leadership Groups and public organisations. Representatives from businesses in the energy sector, and wider, have been part of these conversations, as well as organisations representing the interests of their members. Feedback from this engagement has been built into the development of the draft ESJTP and ensured that the approach was consultative (more detail provided in this in Annex C of the draft ESJTP)

A full list of businesses that have been engaged with through the process can be found in Annex B.

4. Options

Option 1 - Business as Usual (Do nothing) - do not update the Energy Strategy

Under this option, the ESJTP would not be developed, and the latest Energy Strategy from the Scottish Government would be from 2017, prior to the revision of the emissions targets to reflect Net Zero, the Just Transition commitments, the shifts in global energy markets, the significant investment underway in the GB energy system, and the energy price crisis. Individual sector policies would continue to progress, however, there would be no coordinated, whole-systems approach, and the integration of a Just Transition Plan for Energy would not be achieved.

Option 2 – Update the Energy Strategy

Under this option, the Energy Strategy would be refreshed and a coordinated, whole systems approach would be taken, alongside the integration of a Just Transition Plan, to achieve the ESJTP vision that by 2045: **Scotland will have a flourishing, climate friendly energy system that delivers affordable, resilient and clean energy supplies for Scotland's households, communities and business.** This will deliver maximum benefit for Scotland, enabling us to achieve our wider climate and environmental ambitions, drive the development of a wellbeing economy and deliver a Just Transition for our workers, businesses, communities and regions.

By updating the energy strategy, a coherent package of delivery actions will be developed across the sectors within the energy system, to produce a roadmap to 2045. This package will cover:

Preparing Scotland for a Just Energy Transition By 2030, Scotland will have an energy system that provides maximum community and economic benefits. We will have seen investment in green energy that delivers economic opportunities. Workers will have the training, skills and opportunities to access the good, green jobs that come with this. The energy market will be fairer, and costs will be distributed equitably. Home-grown clean energy provision will be maximised, limiting our exposure to the effects of global energy price shocks.

Scotland will become a renewable powerhouse - By 2030, domestic production of renewable electricity and renewable hydrogen will have increased significantly, helping to address climate change by substantially reducing the emissions of our energy sector. By 2030, the total electricity produced in Scotland over the course of a year will allow us to continue to benefit from exporting electricity and open up the huge opportunities of vast renewable hydrogen production for use in Scotland and for export. This will contribute to economic growth, jobs and investment. Scotland will become a renewable powerhouse, exporting renewable hydrogen and electricity to support decarbonisation in Europe and jobs at home. There will be an additional 20 GW of renewable electricity capacity and 5 GW hydrogen production, as well as substantial growth in the marine and solar capacity. Oil and gas in the North Sea is becoming less plentiful and harder to extract. There will be no nuclear power, coal extraction or use of unconventional oil and gas or exploration of onshore conventional oil and gas. We will realise the potential to export clean electricity and renewable hydrogen as part of an integrated system with the rest of Europe, supporting decarbonisation across the continent.

Our future energy use will be climate friendly - By 2030, Scotland's main energy-using sectors - heat in buildings, transport, industry and agriculture - will be using energy more efficiently, and the energy they do use will be largely decarbonised, helping to deliver against our economy-wide statutory climate change targets. We will see significantly reduced demand for energy overall and at least 1 million homes decarbonised. Car kilometres will have reduced by 20% and Carbon Capture Utilisation and Storage will be on its way to being an established technology in Scotland. At least the equivalent of 50% of our energy across heat, transport and electricity demand comes from renewable sources. By 2032, industrial emissions will have decreased 43% from 2018 levels, and industry remains globally competitive.

Creating the conditions for a net zero energy system - By 2030, Scotland's energy supplies will be secure, reliable and affordable for people and businesses across the country. The total electricity produced in Scotland will contribute to increasing energy security and limit the impacts of global energy shocks.

The specific actions to achieve this vision are clearly set out in the draft ESJTP alongside key dependencies including the required UK Government actions.

In addition, the Just Transition Planning Framework in Scotland⁴ sets out eight national Just Transition outcomes, with the purpose of Just Transition plans to:

- maximise the economic benefits of Scotland's transition to net zero, including ensuring a pipeline of skills for net zero jobs;
- ensure fair distribution of opportunities, benefits and risks, including consideration of community benefits, and how to adapt to the impacts of climate change; and
- ensure an inclusive and fair process via co-design with stakeholders, trade unions and the public.

5. Sectors and groups affected

The net zero energy transition, underpinned by the route map and actions within the ESJTP, will have an impact on people across Scotland. It will require large scale switching from fossil fuelled to zero and low carbon fuelled electricity, heating and transport technologies in homes, businesses and communities across the country.

This section looks in more detail at the sectors and groups affected by the transition to a net zero energy system.

- **Building Owners/Occupiers (households and non-domestic building owner/occupiers)**⁵

The transition to net zero will require extensive upgrading of heating systems and the energy efficiency of buildings across the country. This will have widespread impacts on all types of building owners/occupiers, though the scale and nature of these impacts will vary across different buildings and different zero emissions heat options.

Fabric and heating system upgrades may be disruptive to households as insulation, and installation or reconfiguration of replacement of heating, cooling and cooking appliances takes place. The ESJTP highlights key actions, including: investment of over £1.8bn in decarbonising homes and buildings through Heat and Energy Efficient Scotland; the Heat in Buildings Strategy's (HiBS)⁶ identified the need for over a million homes to adopt zero

⁴ [National Just Transition Planning Framework - Just Transition - A Fairer, Greener Scotland: Scottish Government response - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/just-transition-planning-framework-in-scotland/documents/achieving-net-zero-emissions-scotlands-buildings/documents/)

⁵ More details on impacts of the net zero transition on building owners/occupiers can be found in the BRIA for the Heat in Buildings Strategy: [Heat in buildings strategy: business and regulatory impact assessment - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/heat-buildings-strategy-business-and-regulatory-impact-assessment/documents/)

⁶ Scottish Government (2021). *Heat in Buildings Strategy: Achieving Net Zero Emissions in Scotland's Buildings*. URL: <https://www.gov.scot/publications/heat-buildings-strategy-achieving-net-zero-emissions-scotlands-buildings/documents/>

across the zero-emissions heating supply chain activities above, as well as others that may be identified.

The Supply Chain Delivery Plan has been co-produced with industry, and reviews existing supply chain sector support, sets out how the public sector and industry will address barriers, and fills gaps identified to deliver targets, identifies global opportunities and mechanisms for supporting export potential, and includes a focus on developing local supply chains, specifically those in remote rural and island areas.

Transport – transport modes and systems are highly sensitive to fluctuations in the price of fuel as it impacts the affordability of these for vehicle owners and users. The cost of transporting goods is also passed on to consumers through the total price of those products. This is expected to have a higher impact on people who are not able to change to active travel, and organisations and businesses in the transport sector, particularly those transporting large volumes of goods and those operating large vehicle fleets.

The wide scale up-take of low and zero-emission vehicles across all modes of transport could create jobs across a number of sectors and supply chain businesses, including:

- Installation of EV charging and Hydrogen refuelling sites.
- Development of infrastructure and making necessary grid upgrades.
- Vehicle battery reuse (e.g., as energy storage) and vehicle-to-x.

Energy Networks/Infrastructure - electricity and gas networks in Scotland are owned and managed by companies regulated by Ofgem. The networks will require significant levels of investment over the next decade and beyond, in order to scale up for the transition to net zero. The network companies will consequently be required to expand their activities and grow their businesses in line with this increased level of investment.

The transmission and distribution businesses for gas and electricity have published ambitious business plans to reflect the scale and pace of delivery required to meet Scottish Government ambitions.

Hydrogen/CCUS

The finalised Hydrogen Action Plan, published in December 2022, details the actions which will be taken from 2022 to 2026 to support the development of the hydrogen economy in Scotland and the Scottish Government's efforts to reduce greenhouse gas emissions from Scotland's energy system, while ensuring a just transition.

Alongside the finalised Action Plan, a full Business Regulatory Impact Assessment was published detailing the potential impacts of the Hydrogen Action Plan on various parties and sectors within the Scottish economy.

- **Communities**

The ESJTP aims to maximise community benefits from the future energy system, and as such, communities will be affected in a variety of ways (aside from the community elements of the household and business impacts outlined above).

- The role for local and community ownership of energy systems is likely to evolve as the energy system evolves. The ESJTP aims to increase the volume of shared ownership projects in Scotland.
- The Community and Renewable Energy Scheme⁸ (CARES) project is providing a tailored package of support to remote and rural off-grid communities, helping them to upgrade their energy systems. This could support increased security of supply and reduced costs, and provide opportunities for education, training and employment.
- The structure and location of the current industries in Scotland, currently powered by fossil fuels, may change as the energy system changes, affecting communities where these are located.
- New and emerging energy supply chain businesses will locate in communities across Scotland, encouraging economic activity and opportunities in communities.

- **Local Authorities and the Public Sector**

Local authorities and the public sector will be affected in various ways beyond their role as building owners/occupants and owners/operators of fossil fuelled vehicles for transport.

- Implementation of Local Heat and Energy Efficiency Strategies (LHEES).
- Potential role in enforcement of regulations: as Scotland strengthens its framework for heat and energy efficiency regulation, work will be undertaken with local government to identify where responsibility for enforcing standards should lie.
- Role in supporting deployment, including building on the Area Based Schemes and the developing approach to heat network support, which will facilitate local authorities to achieve their own fuel poverty and net zero ambitions.

Transport - The Scottish public sector collectively spends around £ 700m per year (resource and capital) on public sector fleet purchase and maintenance, plus a significant sum on fuelling the vehicles with petrol/diesel (costs of which are likely to continue rising). The Public Sector fleet consists of around 30,000 vehicles, of which about 50% are vans, 35% cars, and the remainder lorries, ambulances, bin lorries etc.

Transitioning the public sector fleet to zero-emission vehicles will further reduce maintenance spend and could result in a substantial lowering of fuel costs (electricity is cheaper than petrol/diesel, and battery-electric vehicles require less maintenance). There is significant scope for public sector fleets to

⁸ [Funding advice for renewable energy projects in Scotland \(localenergy.scot\)](https://www.localenergy.scot/)

reduce emissions and fuel costs through more economical use of vehicles, such as via improved job scheduling and process improvements to their activities & procedures. Further significant opportunities may arise from fleet rationalisation. This transformation will likely provide significant opportunities for private sector businesses.

6. Costs and Benefits

The ESJTP sets out a route map of actions covering a range of areas in relation to the net zero transition including Just Transition, energy supply, energy demand, and creating the conditions for a net zero energy system. These actions are from both new and existing Scottish Government policies, and incorporate actions that the UK Government must take, particularly in areas of reserved responsibility. However, as the draft ESJTP is a consultation the precise actions and route map will be subject to change and developed further in the final ESJTP, following the outcome of the consultation.

This section pulls together evidence and analysis from various sources to provide a high-level assessment of the costs and benefits of the ESJTP, and the energy transition more broadly, which will be wide ranging and experienced across all sectors of the Scottish economy. More detailed quantitative and qualitative impacts and analysis will be picked up by individual policy level assessments, and by the full ESJTP BRIA.

• Energy System Costs of the Net Zero Transition

Future energy system modelling was undertaken by the Energy Systems Catapult, on behalf of the Scottish Government, in 2022.⁹ This work developed three scenarios to provide examples of how the future energy system might look in Scotland, with all three meeting our annual statutory greenhouse gas targets¹⁰.

The scenarios developed were intended to showcase two extreme cases – on the one hand a scenario which relied heavily on technological deployment (TEC), and on the other hand a scenario which relied more on societal change (SOC) - as well as a balanced pathway (BOP), to meet the emissions reduction targets. The scenario development within this project did not specify a specific future pathway for Scotland, but was instead used to set out a range, and inform understanding of the trade-offs associated with different future directions.

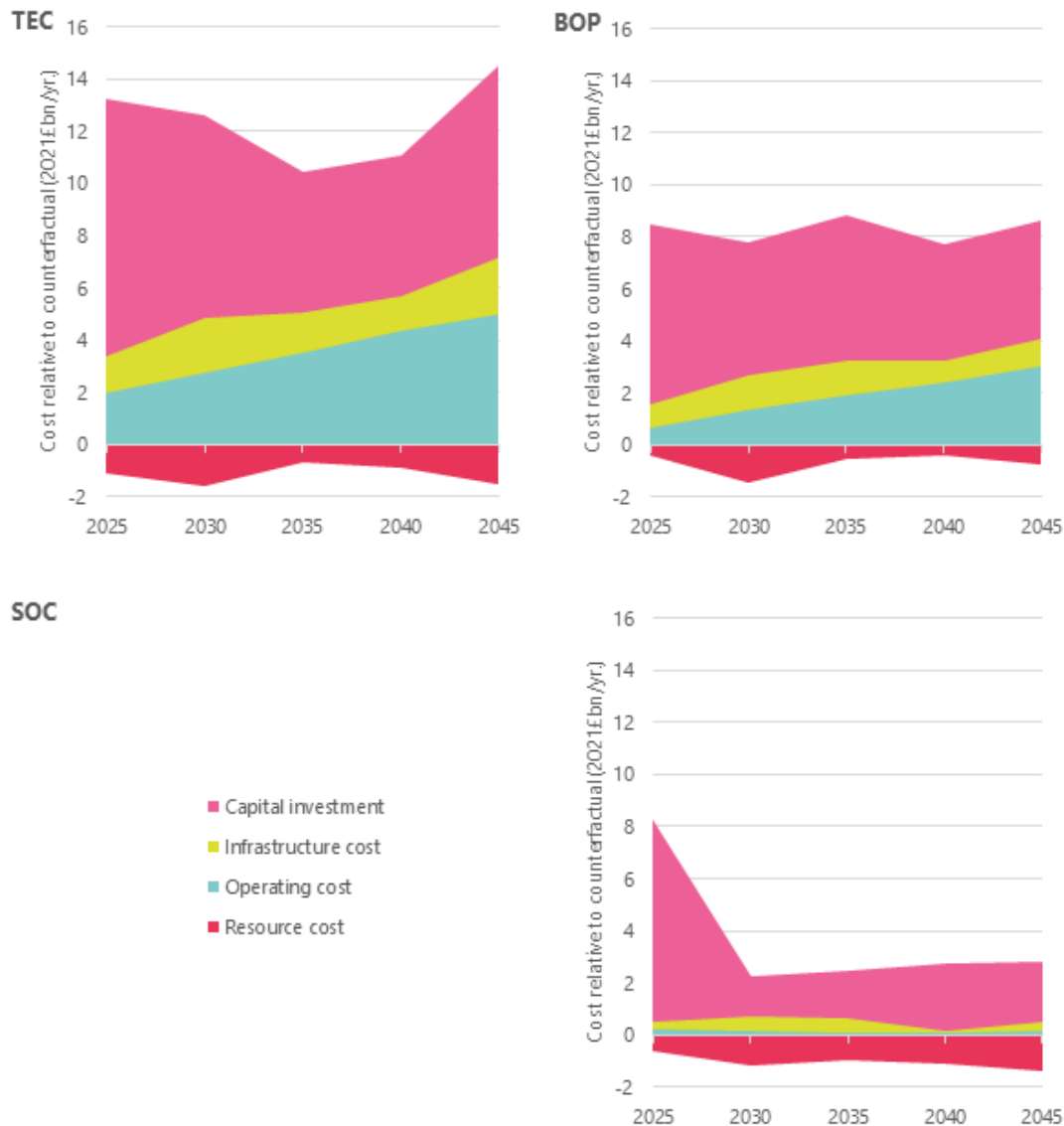
As well as technological and societal developments, the project also evaluated potential (additional) system costs (and savings) of each of the scenarios, covering capital, infrastructure, operating and resource costs,

⁹ ClimateXChange (2022). *Scottish whole energy system scenarios*. URL: <https://www.climateexchange.org.uk/research/projects/scottish-whole-energy-system-scenarios/>

¹⁰ Based on the 2019 GHG inventory: [Scottish Greenhouse Gas Emissions 2019 - gov.scot](http://www.gov.scot) (www.gov.scot)

compared with a counterfactual (a scenario that is not subject to GHG targets – more detail on which can be found in the full ESC report, linked below). Figure 3 below outlines the costs of each of the scenarios relative to the counterfactual, showing that potential system costs could be wide ranging depending on the scenario.

Figure 3: Energy System Costs 2025-2045



TEC: Cost differentials, relative to the counterfactual, are highest in the TEC scenario. This is primarily driven by greater investment in capital intensive technologies, including onshore and offshore wind, hydrogen, and CCS. Infrastructure costs and Operating costs, which include energy network costs, CO2 pipelines and storage costs, and maintenance costs, are also highest in this scenario, reflecting higher technology deployment levels. Cost in this scenario, relative to the counterfactual, reach approximately £10-13bn per year out to 2045.

SOC: Costs in the SOC scenario are characterised by lower levels of technology investment, leading to lower capital, infrastructure, and operating costs. The lower level of costs achievable in this scenario reflect the fact that lower energy demand is prevalent, and that it is assumed that no excess renewable capacity will be located in Scotland, thus making Scotland less able to export energy, and more reliant on energy imports. Costs in this scenario, relative to the counterfactual, drop significantly after 2025 then remain steady at approximately £1-2 billion per year out to 2045.

BOP: Costs in the BOP scenario reflect a balance between TEC and SOC and thus lie in between the two, and range between £6-8 billion per year out to 2045.

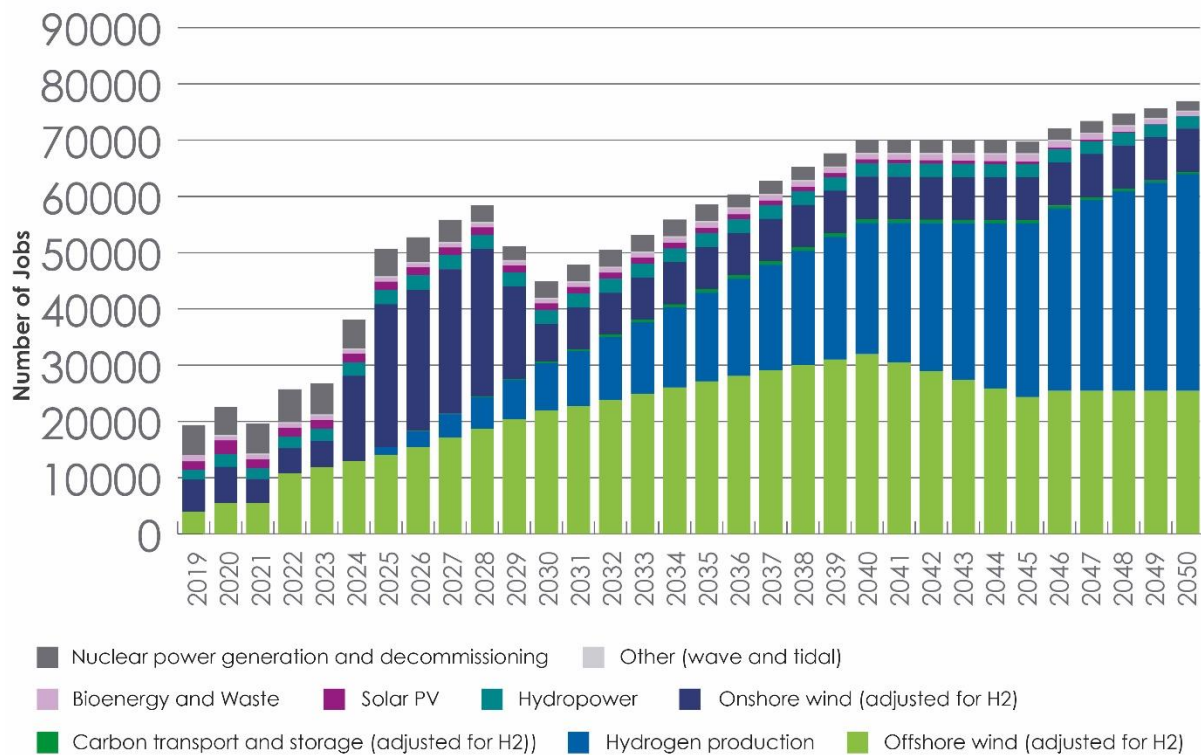
The following points should be noted when interpreting these results:

1. **Gas prices:** at the time of modelling, gas prices (and expectations of future gas prices) were substantially lower than they are today. BEIS 2019 gas price assumptions were used (£0.3-0.6/therm) 2019-2040¹¹, versus a 2022 price ranging from £1.5-8.0/therm)¹². The impact of this on these cost estimates is that the resource cost savings could be 5-10 times greater than they are in the above charts. This would significantly alter the net costs of each scenario.
2. **Economic growth:** scenarios such as SOC, where emissions targets are partially met by reducing demand, and with lower levels of investment, are more likely to be futures with lower levels of economic growth being driven by the energy sector.
3. **Renewables deployment:** expectations on the future level of renewable capacity in Scotland is highly uncertain and variations here could have a large impact on cost estimates. It is likely the capacity deployed (due to ScotWind, for example) will result in production or volumes which are in excess to Scotland's electricity demand and needs for net zero, but which would contribute substantially to the zero carbon electricity requirements of the rest of the UK.
4. **Hydrogen:** TEC and BOP deployed high volumes of blue Hydrogen, and therefore higher continued use of natural gas, due to relatively low gas prices. As gas prices have now increased considerably, it is our expectation that less blue Hydrogen will be deployed, being instead replaced by green Hydrogen. The impact on the above costs estimates is that the resource cost savings in these scenarios would be significantly higher, lowering the overall net cost estimates, due to lower future use of natural gas.
5. **Types of costs:** the costs outlined here are limited to those associated with designing an energy system compatible with the policy assumptions underpinning each scenario. Costs associated with not meeting GHG targets are not included as part of the assessment –

¹¹ [Energy and emissions projections - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/90424/energy-emissions-projections-2019-2040.pdf)

¹² UK NBP Natural Gas Futures | ICE (theice.com)

Figure 4: Low Carbon Energy Production Jobs (2010-2050)



Source: EY analysis using Energy Systems Catapult Balanced Options Scenario

Figure 4 shows the estimated increases in low carbon energy production sector jobs that could be achieved from the BOP scenario of the Energy Systems catapult work discussed above. It shows that strong growth in low carbon energy sources such as onshore wind, offshore wind and hydrogen production have the potential to drive employment growth across Scotland out to 2045, mitigating the impacts of reduction in O&G employment. Current estimates of around 20,000 low carbon energy production jobs in Scotland grow to over 40,000 by 2030 and 70,000 by 2045.

Analysis undertaken by Robert Gordon University¹⁷¹⁸ provides some insight into transferability of skills in oil and gas to other energy sectors. This looks at specific implications for the offshore workforce in the North East of Scotland, and a managed, fair and just transition.

The jobs numbers from Figure 4 are specific to analysis of the BOP scenario, are only focused on low carbon energy production jobs (i.e. do not include jobs in low carbon heat or transport) and do not take account of broader, sector-specific estimates or studies on low carbon employment. In addition to these estimates, there are numerous examples of sector specific studies that

¹⁷ Making-the-switch-images.pdf (rgueti.com)

¹⁸ UK Offshore Energy Workforce Transferability Review (rgueti.com)

demonstrate significant potential for employment growth as a result of the net zero transition.

In **energy supply**, two of the primary sectors for growth are renewables and hydrogen. Jobs supported by onshore wind could grow to 17,000 by 2030¹⁹ and the development of a Hydrogen economy in Scotland could result in 70,000-300,000 jobs created or protected by 2045²⁰. Broader estimates show that up to 95,000 jobs could be supported by a zero-carbon energy in the next 15+ years²¹.

In **energy demand**, employment is anticipated to grow in low carbon heat and low carbon transport. Recent research commissioned by the Scottish Government suggests the additional jobs supported in 2030 will exceed those displaced by an estimated 16,400 as a result of investment in the deployment of zero emissions heat²².

Many of the jobs created in the net zero transition will displace jobs which already exist in the current energy system. The above examples are not intended to demonstrate a growth in total employment in Scotland as a result of the transition, but to demonstrate that there is the potential for jobs displaced to be replaced or exceeded by new, low and zero carbon alternatives. The job numbers above come from various studies using a variety of methodologies, some of which include direct, indirect and induced job estimates. The numbers cannot therefore be added together as the estimates will be overlapping and this could lead to double counting.

- **Economic Growth**

Economic growth in Scotland, as measured by increases in Gross Value Added (GVA) or gross Domestic Product (GDP) to the economy, will be affected by the transition to net zero. Economic growth in key energy supply sectors such as onshore wind, offshore wind, hydrogen and carbon capture, as well as demand sectors such as transport, heat in buildings and industry will be critical in providing economic stimulus, and offsetting reduced economic activity in firms and industries currently associated with the production of oil and gas.

In line with the previous section on skills and jobs, there are numerous pieces of research and analysis which highlight the potential for economic growth from the transition to net zero. This includes estimates of economic contributions in hydrogen, carbon capture utilisation and storage (CCUS) and renewables.

¹⁹ [RenewableUK Onshore Wind Prospectus - RenewableUK](#)

²⁰ [Supporting documents - Scottish hydrogen: assessment report - gov.scot \(www.gov.scot\)](#)

²¹ [STUC_Green_Jobs.pdf \(transitioneconomics.net\)](#)

²² <https://www.gov.scot/publications/economic-impact-decarbonising-heating-scotland/>

A more comprehensive assessment, examining the expected reduction in GVA from the transition away from fossil fuel industries and the increase in GVA achieved through the transition to net zero, will be conducted for the final BRIA. The below provides a summary of the potential economic opportunities of transitioning to net zero, and the scale of these opportunities.

There are commitments from offshore wind developers to invest over £28bn in the Scottish supply chain across the ScotWind projects²³, with the majority of this expenditure expected to take place in the late 2020s and into the 2030s. In Hydrogen, GVA contributions of between £5bn and £25bn per year by 2045 could be achieved²⁴, and CCUS scenario analysis produced for the Scottish Government shows that Scottish GDP could be 1-2% higher in scenarios with CCUS²⁵.

In addition to the above, there are other opportunities for sector-specific economic growth outlined in the ESJTP, such as expanding the datacentre industry in Scotland and our low carbon manufacturing base, and linking these with low cost, zero carbon renewable generation.

7. Scottish Firms Impact Test

Annex C of the ESJTP document ("Engagement and Co-design") has details of engagement undertaken with businesses and sector representatives.

8. Competition Assessment

- The revision of the Energy strategy will not directly or indirectly limit the number and range of suppliers across the energy market. The energy market will change as a result of the transition, with some businesses and supply chain companies changing scope and scale of their operations, and diversifying, however these changes will occur as a result of individual sector level policies.

Also, the revision of the Energy Strategy will not limit the ability of suppliers to compete, nor will it reduce suppliers' incentives to compete vigorously, as per the reasons outlined above.

9. Test run of business forms

No new business forms will be introduced as part of the ESJTP.

²³ [ScotWind developers set out multi-billion-pound supply chain commitments - News - Crown Estate Scotland](#)

²⁴ [Scottish hydrogen: assessment report - gov.scot \(www.gov.scot\)](#)

²⁵ <https://www.scottish-enterprise.com/media/4319/ccus-economic-impact-assessment-report.pdf>

10. Legal Aid Impact Test

No impact identified. The ESJTP will not create a new procedure or right of appeal to a court or tribunal, any change in such a procedure or right of appeal, or any change of policy or practice which may lead people to consult a solicitor.

11. Enforcement, sanctions and monitoring

A draft monitoring and evaluation plan for the ESJTP is included in Annex F of the draft ESJTP document, alongside consultation questions on this area. These plans will be developed and refined throughout the process of finalising the ESJTP.

12. Implementation and delivery plan

The draft ESJTP consults on a range of actions to be implemented out to 2030, and the consultation responses will be reviewed and incorporated into a final ESJTP in 2023.

13. Summary and recommendation

This partial BRIA lays out the rationale behind the draft Energy Strategy and Just Transition Plan. The consultation will be used to shape and finalise the strategy. The final BRIA will be informed by the consultation responses.

14. Declaration and publication

I have read the partial Business and Regulatory Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options. I am satisfied that business impact has been assessed with the support of businesses in Scotland.

Signed:



Date: 20 December 2022

MICHAEL MATHESON
Cabinet Secretary for Net Zero, Energy and Transport

Scottish Government Contact point:

energystrategy@gov.scot

Energy & Climate Change Directorate
Scottish Government
Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

Annex A – Just Transition Workshops

Participatory Futures Workshops

In partnership with the Royal Society of Arts, we undertook two ‘participatory futures’ workshops in Levenmouth and Dumfries, designed to involve members of the public directly in conversations on the energy transition. We sought to understand how the transition might impact local communities and learn from residents’ lived experiences. The workshops were held in different parts of the country to reflect the fact that this transition will be felt differently across Scotland and are only indicative of the regional variation we anticipate.

CEMVO Workshop

In partnership with CEMVO, we held a workshop with representatives from 15 organisations to further explore how minority groups might be affected by the transition. Participants considered how the transition can be harnessed to promote equity and remove barriers to energy access.

Regen Workshop

In partnership with Regen, we ran an online workshop to examine the role of community energy in a just transition. This included discussion of the state of community energy today; the barriers and opportunities faced; and identifying key, tangible recommendations for mechanisms to support the future of community energy within a wider just transition.

Nuclear Workshops

For each of Scotland’s nuclear sites (Chapelcross, Hunterston & Dounreay), we held online and in-person workshops with workers and the local community via the official site stakeholder groups. The workshops sought to identify the opportunities and risks presented by the transition in those areas, in addition to potential courses of action.

Transport Scotland Workshop

In partnership with Transport Scotland, we held a workshop attended by 38 organisational representatives from across transport, energy and finance to discuss the just transition. Key themes included transport decarbonisation, infrastructure, and funding and investment for low-carbon energy alternatives.

eNGO Roundtable

Scottish Environment LINK, Stop Climate Chaos Scotland and Friends of the Earth Scotland organised a half-day online event for environmental NGOs to discuss the energy transition and priorities for action. The event comprised of a series of roundtables covering key areas of the ESJTP including the energy supply, high-carbon sectors and environmental implications of the transition.

Energy Workers Survey

An online survey was distributed (via partner organisations such as trade unions and energy companies) to people currently working in Scotland's energy sector to understand what the transition to net zero means for them. It was designed to capture the opinions and experiences of workers across the energy sector to enable us to better understand the opportunities and challenges presented to them by the transition. We received almost 1,000 responses to the survey.

Public Online Workshop

We held an open online information session on the energy transition for the general public. This included several speakers from a range of organisations to help improve understanding and enable a discussion on the impact of the energy transition. Key themes included jobs, communities, homes, and the way we travel. This was attended by over 50 members of the public.

Digital Dialogue Platform

An online dialogue challenge was open for three weeks to enable people throughout Scotland to voice their ideas and priorities for the energy transition. Following our online workshops, participants were encouraged to continue the conversation and engage via the digital dialogue platform. We promoted this on social media and through our stakeholder channels to encourage as many people as possible to share their perspectives on the transition. We received 75 ideas in total.

Annex B – Business Engagement List

- Aberdeen and Grampian Chamber of Commerce
- Aker Offshore Wind
- BP
- Business in the Community
- Clyde Blowers
- Dunelm Energy
- East Lothian Hydrogen
- EDF Energy
- Edinburgh Chamber of Commerce
- Energy Industries Council
- E-on
- EY
- Forth Ports
- Falk Renewables
- Hassendean Farm
- INEOS
- Institute of Directors
- National Grid
- NECCUS
- Net Zero Technology Centre
- Ricardo
- Scottish Business Climate Confederation
- Scottish Council for Development and Industry
- Scottish Development International
- Scottish Power
- Scottish Renewables
- SGN
- Shell
- South of Scotland Enterprise
- SPEN
- SSE
- SSEN
- Star Refrigeration
- The Business Partnership
- University of Strathclyde
- Woodend Farm