



Research Brief

The next stage in the Centre for Energy Policy's work on investigating how the energy transition will impact Shetland's economy and people

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Overview

Plans to achieve clean power and transition to a low carbon economy are accelerating in many nations and regions, including Shetland, which is already rich in natural assets and existing infrastructure at Sullom Voe and Lerwick's port and harbour. To help respond to the challenge, the University of Strathclyde's Centre for Energy Policy (CEP) is developing a Shetland Economy Model (SEM) and linked User Tool to support decision making on how the transition can be planned to maximise the benefits for Shetland's economy and people.

Ahead of the CEP team's next visit to Shetland in early April 2025, this brief outlines how our research and the SEM User Tool can assist in addressing some of the most pressing public policy challenges presented in realising a transition that delivers sustainable and more equitable prosperity for Shetland, Scotland, and the wider UK.

Using evidence to inform and shape Shetland's energy transition

Through our conversations with stakeholders across local, devolved and national governments and with industry developers, we have identified two examples of central policy challenges in changing and growing economic activity that will need to be addressed if Shetland's energy transition is to deliver sustainable prosperity for those who live and work on the islands.

Our research approach involves focusing on policy challenges such as these to inform our 'what if' scenario development and economy-wide scenario simulation work using SEM. All of our results will be loaded into the linked User Tool for Shetland stakeholders to use, alongside other evidence, in informing decisions. To this end, we are keen to work with partners and local experts to further refine and expand our scenario set and ensure that the results available via the SEM User Tool are genuinely useful.

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Policy Challenge 1 How can green energy and low carbon developments in Shetland make best use of existing local supply chains and the skilled workforce to meet the challenge of retaining economic value and employment associated with existing oil and gas activity?

Nature of the challenge

The oil and gas industry has played a central role in Shetland's economy and society for over fifty years. A skilled workforce, strong local supply chains and supporting infrastructure, including the Sullom Voe oil and gas terminal (SVT), have developed and integrated deeply within the local economy. However, as oil and gas activity declines, a push to transition SVT to more sustainable activity intensifies. This means decisions urgently need to be made on how Shetland's valuable assets already contributing at this key industrial site can be repurposed to realise and maximise the economic benefits of supplying greener energy and supporting industrial decarbonisation in ways that deliver a just transition for Shetland and its people.

Research insights

To help inform understanding and decisions linked to this challenge, CEP is currently using SEM to run scenario simulations to investigate the impacts across the Shetland economy of the re-development of SVT to support decarbonisation and green energy production activity. Our initial results point to the potential for these activities to contribute extensively to the Shetland economy as long as SVT's existing employment and supply chain profiles can be largely retained and repurposed, crucially with the productive use of the SVT assets and infrastructure improving, through a shift to things like green hydrogen and derivative fuel production, alongside providing carbon storage services to other parts of the UK and beyond.

To move our analysis forward, we require more information on how new low carbon and green energy production activity at SVT– and at the Scatsta airport site (though that involves new/additional activity; see Policy Challenge 2) - would utilise existing workforce and supply chain capacity. Here, information on the potential/likely timelines for the replacement of existing activity will be essential in understanding this aspect of Shetland's transition as a retention challenge as well as one of accommodating new activity in ways that unlock sustainable economic growth. We also require industry and policy input to help us translate planned physical activity levels (e.g., megawatts of hydrogen) into monetary values for industry output, export and domestic demands, etc.

Informing policy decisions

As fuller information is gathered to allow us to finalise the scenarios we can simulate using our economywide modelling framework, we can then incorporate a more nuanced and focused set of results and emerging insights into the linked SEM User Tool. These can then inform decisions around critical policy questions such as where investments in workforce and skills development or decommissioning/repurposing infrastructure activities can be best targeted, including how they will be financed, by whom and when. We also need to understand what government interventions will be required in relation to establishing new green energy markets and supporting demand for new products and services.

Policy Challenge 2 What needs to happen in terms of public infrastructure and workforce development on Shetland to accommodate and get the best returns from new activities that could help further grow the local economy?

Nature of the challenge

With multiple green energy and clean power developments and investments in building capacity to support them in motion or planned for Shetland, new and additional demands will be placed on labour and public infrastructure. This poses opportunities in terms of job creation and economic expansion but

also complex challenges given the current labour supply and infrastructure (including but not limited to housing/accommodation) constraints on Shetland. The constraints in terms of skilled workforce echo findings emerging in CEP's wider researchⁱ and across the UK. However, they are particularly acute in Shetland.ⁱ

Research insights

One of the scenario simulations sets we are currently considering in the SEM framework is the planned £34 million investment in an ultra-deep-water port at Dales Voe. Our engagement suggests that this will support around £3 million per annum in additional activity in Shetland's Port and Harbour sector, which could involve a mix of support for offshore windfarm development and oil and gas decommissioning.

Initial results suggest strong net positive economic outcomes in terms of income generation in Shetland, with a Gross Regional Domestic Product (GRDP) uplift of around £2 million per annum even if the local labour supply constraint bites. However, this would be associated with some local labour cost pressures that would feed through to price impacts across all sectors of the economy, potentially displacing employment in more labour-intensive sectors, including fishing and aquaculture. However, our scenario simulations suggest that if around 30 additional workers could be attracted to and accommodated in Shetland, the GRDP uplift could increase by around 50% to just over £3 million per annum, including uplifts to local household real incomes and spending.

Informing policy decisions

The impact of inward migration in delivering this type of uplift in Shetland's regional income generation and community wealth creation, by limiting negative effects on local prices and other pressures, could potentially help make the case for any required investment in public infrastructure to absorb additional people. Of course, to get a full picture of impacts and requirements, it is important that we use SEM and the linked User Tool to look at the timing of outcomes across multiple transitional activities and projected changes in the settled population and transitory workforce. This is another key focus of our project at this stage.

Conclusions

This brief has illustrated how CEP's research to develop the Shetland Economy Model and linked User Tool can help inform critical decisions in relation to Shetland's energy transition and transitions in Scotland and the wider UK. It also pinpoints multiple areas where partners can work with us to refine our scenario simulation set and the SEM User Tool with the aim of empowering stakeholders to undertake their own economy-wide and community wealth building assessments. This all depends on an exchange of information and feedback to enhance usefulness and accessibility. We already have ongoing conversations and partnerships with Shetland Islands Council, Scottish Government, the Department for Energy Security Net Zero (DESNZ), the Lerwick Port Authority and a number of industry actors operating in Shetland, but we are keen to hear from others operating in this space.

Acknowledgements and contacts

CEP's Shetland economy project is being funded by the UK Engineering and Physical Sciences Research Council (EPSRC) as part of the Ocean-REFuel (Ocean Renewable Energy Fuels) Programme Grant EP/W005212/1 awarded to the University of Strathclyde, Newcastle University, University of Nottingham, Cardiff University and Imperial College London and running to the end of 2026. CEP's Director, Professor Karen Turner, leads our work on Shetland. For further information about the project, please contact her at karen.turner@strath.ac.uk or the CEP team at cep@strath.ac.uk

End-notes

i <https://strathprints.strath.ac.uk/89478/>

ii <https://www.shetlandpartnership.org/indicators/number-employees-shetland>