

Changing Scotland: Growing Scotland's Economy Discussion Paper – The Future of Energy in Scotland

Overview

On 24 January the Scottish Government launched its consultation on the **draft Scottish Energy Strategy**¹. The Strategy is the first of its kind, providing a full explanation of the energy system in Scotland - covering both supply and use – and sets a clear and bold vision for the future of that system.

The Scottish Government's vision for 2050 is for **a modern, efficient, integrated, low carbon energy system** that delivers reliable supplies of energy at affordable prices to consumers in all parts of Scotland - building upon the existing economic strengths of the energy sector in Scotland, whilst protecting energy security and tackling fuel poverty.

The draft Energy Strategy is consistent with the 2017 **draft Climate Change Plan** and in line with emissions reduction targets set out in the Climate Change (Scotland) Act 2009, which requires an 80% reduction in greenhouse gas emissions across the Scottish economy between 1990 and 2050.

A key aim of the draft Energy Strategy is to help shape energy policy over the longer term in a way that gives greater certainty to investors. Recognising that the energy sector is an important industrial investor, the Scottish Government wishes to maximise the benefits from new investment in our existing energy industries, and also from emerging low carbon sectors.

The draft Energy Strategy is **open for consultation until 30 May 2017**.

The draft Energy Strategy seeks views on a wide range of issues, including:

- **A renewed focus on energy efficiency and heat and low carbon buildings** – taking a targeted approach to improving energy efficiency and provision of low carbon heat for Scotland's homes and buildings through a mix of targeted regulatory and financial incentive tools through **Scotland's Energy Efficiency Programme**.
- **An ambitious but achievable new 2030 target of 50% of Scotland's energy consumption to be met by renewable energy** – demonstrating the Scottish Government's commitment to a renewable future.
- **Getting the market right for renewables as the costs continue to fall**, to ensure the continued growth of the sector, in particular:
 - A new policy statement to address the factors influencing the next phase of **Onshore wind**;

¹ The draft Energy Strategy is available here:
<http://www.gov.scot/Publications/2017/01/3414/downloads>

- Continued commitment to address the distinct barriers to the deployment of **remote island wind** projects that would underpin transmission links and unlock other forms of island generation.
- Continued support for innovation and cost reduction of **marine renewables and fixed and floating offshore wind**;
- Reinforce the Scottish Government's commitment to promote **hydro power and pumped hydro storage**.
- o The actions the Scottish Government is taking to support Scotland's oil and gas industry as a highly regulated and secure source of energy – working with industry to encourage new investment and **Maximise Economic Recovery** in the North Sea, while exploring the role for alternative forms of hydrocarbons such as **hydrogen**.
- o Continued support for the demonstration and commercialisation of **Carbon Capture and Storage** and CO₂ Utilisation in Scotland.
- o **A strategic, local approach to planning for energy** – working in partnership with Local Authorities and partners, building on existing Scottish Government support, and exploring the role of a **Government-Owned Energy Company** and the creation of a **Green Energy Bond** to support Scottish energy projects.

Economic opportunities

Scotland has long benefited from its substantial energy reserves. As a centre of the industrial revolution, Scotland was at the forefront of the development of the coal industry, and, since the 1970s, we have grown to become an international centre of expertise in offshore oil and gas and subsea engineering.

Oil and gas currently supplies the majority of Scotland's primary energy, it provides critical feedstock that enables the manufacturing of every day products used in the energy sector. The industry also makes a significant contribution to the economy – supporting around 125,000 jobs in Scotland.

Given a supportive fiscal and regulatory context, the North Sea has potential for further development, with as much as 20 billion remaining barrels of hydrocarbons to recover; offering stable energy supplies to Scottish consumers and a growing market in exports and decommissioning. Alongside this, the sector can play a positive role in shaping Scotland's future energy system, with existing skills and experience in Scotland supporting the development of low carbon technologies such as offshore renewables.

Advances in technology mean that new and innovative ways of using hydrocarbons are also emerging, which could have a transformative impact on the energy system and lead to lower net carbon emissions. Key opportunities for decarbonisation – such as Carbon Capture and Storage and hydrogen – can therefore benefit from the existing energy resources and infrastructure in Scotland.

Scotland is now a well-established knowledge hub for energy exploration, production and subsea technologies, for power system engineering and a host of modern, renewable energy technologies and systems – including the world's first tidal array and first floating offshore wind farm, Europe's largest fleet of fuel cell buses and the UK's first smart grid – placing Scotland at the forefront of the challenge to decarbonise the global economy.

Scotland has world-class research and innovation capacity and facilities to support the energy sector, including the Oil & Gas Technology Centre, European Marine Energy Centre and the Power Network Demonstration Centre.

And Scottish companies and community partners have pioneered the development of local energy systems – driving remarkable innovation in technology, systems, business and engineering models for local provision. This approach is not only helping to build new expertise in emerging technologies like energy storage and hydrogen but is also delivering better outcomes for energy consumers and boosting community participation and the growth of social enterprise.

There are now over 600 active installations of community and locally owned renewable energy schemes in Scotland which have been independently estimated to be worth up to £2.2bn over the operational lifetime of those projects.

Greater provision of renewable energy offers the opportunity for Scotland to capitalise upon our established expertise. Scotland already outperforms other parts of the UK in delivering renewables; in 2015, the low carbon and renewable energy economy supported 58,500 jobs in Scotland, generating a turnover of £10.5bn. This accounts for 13.5% of the total UK employment in this sector.²

The global market for low carbon goods and services, which was already worth \$5.5tn in 2014, is also growing, spurred in particular by major investments in low carbon technologies in rapidly developing economies such as China, India, Mexico and South Africa. Going forwards, analysis by the International Finance Corporation indicates that the Paris Agreement will help open up \$23tn worth of opportunities for climate-smart investments in emerging markets between 2016 and 2030.³ **Strengthening Scottish businesses' areas of competitive advantage in the low carbon economy will help ensure they are best placed to capitalise on these global opportunities.**

This draft Scottish Energy Strategy seeks to build on these strengths and identifies key strategic priorities and actions underpinning Scotland's future energy system which will contribute to the Scottish economy, including:

- a strong oil and gas sector that supplies a skilled workforce, investment, research and development, and critical infrastructure;
- the demonstration and subsequent commercialisation of Carbon Capture and Storage (CCS) facilities supporting the cost-effective decarbonisation of heat, power and industry;
- a vibrant investment climate for renewable and low carbon energy production, with increased network interconnection and energy storage, along with new, thermal electricity generation to deliver a balanced and resilient energy supply mix in Scotland;
- enhanced innovation and research and development to deliver cost reductions for emerging technologies and explore the role of new forms of hydrocarbons such as hydrogen as a low carbon energy carrier;

² Office for National Statistics (2017) [Low carbon and renewable energy economy survey, final estimates: 2015](#)

³ International Finance Corporation (2016) [Climate Investment Opportunities in Emerging Markets](#)

- support for shared ownership and community participation in the development of new energy assets, and new business models in the retail energy market which have the potential to reduce costs for consumers; and
- Scottish businesses competing globally, growing their share of international markets and boosting export growth.

Discussion Questions

What are your views about the Energy Strategy's objectives and how these can be delivered affordably?

What are your views on the challenges and opportunities facing the energy sector in Scotland today?

What are your views on the key benefits of local communities and social enterprise groups participating in the delivery of the future energy system?

Where do you feel that current strengths in areas such as oil and gas can be best used to develop the energy system of the future?

What do you see as the key potential growth and supply chain opportunities for Scottish energy businesses as Scotland and the world economy embark on a low carbon transition?

What are the key barriers standing in the way of Scottish businesses seizing growth opportunities at home and on global export markets?

How can Scottish Government and its enterprise agencies support and guidance help your business to overcome these barriers?