SSE plc submission to the Scottish Energy Strategy

Harnessing the right resources to reduce carbon emissions and put communities at the heart of Scotland's energy future

Introduction

The Scottish Government's emerging energy strategy is designed to ensure Scotland *'has the best policies in place to optimise its significant energy resources and expertise, de-carbonise our energy system, and put communities at the heart of new investment'.* The strategy needs to be enduring and robust if it is to meet its stated objective of plotting an energy course for Scotland out to 2050. In this short submission SSE has identified six proposals to inform the new strategy and help it meet its aims.

Firstly, SSE welcomes the decision to outline a Scottish energy strategy. It comes at a time when the energy system in GB is facing unprecedented changes. From smart metering in every home and Electric Vehicles reaching commercialisation, to the reducing costs of low-carbon technologies such as offshore wind, the GB energy market is already witnessing the potential of new technologies and innovations that will bring forth major improvements for the energy system and for energy consumers across Scotland.

Through its energy strategy the Scottish Government has an opportunity to ensure future policies support a more flexible electricity network, facilitate cost-effective, low-carbon energy generation, make headway towards the decarbonisation of heat and aide the transition to a low-carbon economy.

About SSE

SSE's core purpose is to provide the energy people need in a reliable and sustainable way. Based in Perth it is a UK-listed utility and the broadest-based energy company operating in the GB energy market today. SSE has interests in the generation, transmission, distribution and supply of electricity and the production, distribution and supply of gas. It employs over 7,000 people in Scotland and supports a further 10,000 Scottish jobs through its businesses operations.

Making a positive contribution to communities across Scotland

As a UK-based utility, and a provider of an essential service, SSE has responsibilities to the customers and communities it serves. It takes these responsibilities seriously and seeks to conduct its business in a way that creates value for wider society. We are making a positive contribution in Scotland by:

- **Investing in major infrastructure**: SSE has contributed more than £7billion to the Scottish economy over the past five years. A significant proportion of its future investment programme, of around £6billion across the period 2016-20, is allocated to large-scale Scottish infrastructure projects including the Caithness – Moray Electricity Transmission line, onshore wind farm projects across Scotland and the 588MW Beatrice offshore wind farm in the Moray Firth;

- **Decarbonising energy generation**: SSE is of the UK's largest generators of electricity from renewable sources. Our portfolio includes offshore wind, onshore wind and hydro power. SSE's onshore wind installed capacity is now over 1,000 MW[1] making a significant contribution to Scotland's overall 5,221 MW;

- **Ensuring the north of Scotland's electricity network is both resilient and exploiting opportunities from innovation**: Scottish and Southern Electricity Networks is developing a flexible, responsive, innovative and reliable electricity network fit to face the consumer and decarbonisation challenges ahead. Its activity has ranged from engaging with community-led energy projects on Mull and Shetland through to developing the National High Voltage Direct Current (HVDC) Centre near Cumbernauld to explore the most efficient way to transport electricity over long distances;

- **Working hard to better understand our environmental and social impacts**: Since 2014 SSE has been measuring and valuing the impacts of its major infrastructure projects. It has quantified the environmental, social, economic and tax impacts of projects such as the Caithness-Moray Transmission line, its district heating scheme at the Wyndford estate in Glasgow and the extension to the Clyde onshore wind farm. Quantification of impacts helps to inform decision making about future projects to ensure that SSE maximises the positive impacts of its infrastructure developments;

[1] Figure includes JV projects - Scotland only

— **Supporting Scotland's communities**: SSE was an early adopter of the Living Wage and is leading the way by championing the Living Wage throughout its supply chain. What's more over the past three years SSE's renewable energy projects have contributed almost £10million to community benefit funding across Scotland in addition to the substantial economic contribution made to the Scottish energy supply chain ranging from onshore wind turbines to offshore jacket substructures and project enabling works.

Visualisation: Beatrice Offshore Wind Farm

Harmonisation: Retention of the GB-wide energy system is in the best interests of Scottish and UK-wide consumers

This paper is underpinned by the clear and simple message that SSE has advocated consistently: the retention of a GB-wide energy system. Managing the electricity and gas networks and operating the market on a GB-wide basis ensures that the affordability, reliability and sustainability of energy can be maximised by spreading the cost and reward of energy provision over a much wider population base. This arrangement benefits all consumers in GB, and often more so those in Scotland where energy users are fewer and land mass proportionately rural. This means that homes and businesses in Scotland are comparatively more expensive and challenging to power than some other parts of GB.

The benefits of harmonised markets is demonstrated in Ireland. Wholesale electricity trading in Ireland and Northern Ireland has operated under a Single Electricity Market since 2007. This 'All-Island' arrangement has enabled efficiencies from a larger market. It has built and supported competition, ensured consumers have secure access to power in a country with an energy import dependency and facilitated the cost-effective construction of generation capacity to ensure security of supply.

The bulk of energy policies or market mechanisms that impact SSE's core functions remain reserved matters determined by UK Government, in consultation with stakeholders. It is therefore vital that the Scottish Government and the UK Government collaborate well if the best energy policy outcomes are to be achieved for all GB customers in the decades ahead, including those in Scotland. The erosion or dismantling of the GB-wide energy system through pursuit of a separate Scottish model could have significant negative consequences for energy generation, distribution, cost and usage in Scotland and across the rest of GB.

Upcoming transitions in the GB energy network are being considered by the UK Government and in the interests of best practice and cost effectiveness should be developed in collaboration with the Scottish Government (and the Welsh Government) to take account of the need to maximise efficiency and minimise expense for customers across GB.

Six proposals to help deliver Scotland's energy strategy

Decarbonising Scotland's energy system

1. Continue efforts to reduce carbon emissions from electricity and heat

Scotland has led the way in low-carbon energy generation, principally through onshore wind and hydro power. SSE has consistently supported efforts to reduce carbon emissions and played its part through investments that have made it the largest generator of electricity from renewable sources in Scotland. We operate in markets driven to decarbonise their energy generation and we continue to invest in low carbon sources of energy, and the network infrastructure to support it, throughout Scotland. The growth of low carbon energy in Scotland is a success story and this can be further boosted by the new Scottish energy strategy. It can also be supported by the retention of the UK's Carbon Price Support, which supports the transition to a secure, lower carbon electricity system.

Tackling the decarbonisation of heat

After considerable focus on decarbonising electricity, one of the industry's emerging challenges is tackling the decarbonising of heat, which represents almost half of the final energy consumption in the UK and is therefore and essential element in meeting decarbonisation targets.

SSE supports the Scottish Government's view that improving energy efficiency in existing infrastructure is the first step. The considerable volume of work already being done to improve the efficiency of buildings should be built on in years ahead as the Scottish Government strives to improve the energy efficiency ratings of Scotland's housing stock through targeted policies.

SSE has invested in district heating schemes in Scotland and sees great opportunities for both consumers and efforts to decarbonise. We own and operate heat networks across the UK and would urge the Scottish Government to look at specific ways to effectively incentivise more private sector involvement in district heating projects. A key to growing this sector will be the development of effective legal and commercial structures that encourage investment and attract private sector expertise, whilst giving public sector bodies the control and investment returns that they require.

CASE STUDY: The Wyndford district retrofit heating project in Maryhill is a pioneering joint venture with Cube Housing Association in one of Scotland's many areas of multiple deprivation. The project's purpose is to ensure the Glasgow housing estate meets Scottish Housing Quality Standards, helps to combat energy poverty and reduces carbon[2]. SSE has also developed Energy Service Company (ESCo) new build district heating projects in London where we take a number of project risks such as energy price fluctuation, load and debt risk. These are facilitated by the clear mandates embedded in the London planning framework which encourages new district heating systems. SSE is also closely involved in the emerging public sector-led heat networks development in England and Wales supported by over £320million of central government funding to "kick start" larger "city-wide" schemes

Options to stimulate the district heating sector in Scotland could include the introduction of an independent regulatory regime for heat infrastructure governed by a code of business conduct; considering business rates paid by such projects; and, a presumption in favour of district heating mechanisms in the Scottish planning and building frameworks.

Critically, the successful rollout of district heating on a commercially viable basis will require infrastructure installation to be completed irrespective of initial fuel source. Once the technology is fitted or retro-fitted then renewable and lower carbon sources of generation (such as ground or water source heat pumps) can be introduced in years ahead – potentially through additional policy incentives.

[2] SSE Sustainability Report 2016

As with the energy system generally, mass delivery of this new technology would best be achieved by leveraging the economics of scale and reflecting overarching fiscal and policy solutions across GB. This would spread the load of cost, enable the sharing of expertise and also harmonise planning measures to ensure incentives and industry experience can be shared.

2. Improving the stock of electric storage heaters, to aid in the decarbonisation of heat

As DECC's decarbonisation strategy *'The Future of Heating: a strategic framework for low carbon heat in the UK'* highlights: *'technologies that use electricity to generate heat...are well placed to become major low carbon heating technologies in the coming decades*'.

Electric storage heaters are often seen as an ineffective and costly method for heating a home, and have not been deployed significantly under the Energy Company Obligation. Yet modern high heat retention storage heaters bring many benefits as they are able to provide efficient heating and generate cost savings of 20% or more on an annual household heating bill.[1]

Given the higher proportion of electric heating in Scotland when compared to the rest of the UK (13% compared to 9%)[2], not only would the installation of new electric storage heaters contribute towards the decarbonisation of heat, but they would also provide an alternative means for consumers living in off-gas grid properties to heat their homes affordably. In addition, there is the potential for new generation storage heaters to contribute to the management of peak demand, through demand side response capabilities. We would welcome the installation of high heat retention electric storage heaters being incentivised as part of any new Scottish Government scheme.

Optimising Scotland's significant energy resources

3. Building on the success of onshore wind in Scotland

Scotland has led the way with onshore wind and the industry is a real Scottish success story, financially supported as it has been by electricity consumers across GB. Despite recent changes to the ROC regime SSE believes that onshore wind can continue to play an important role in GB-wide decarbonisation and we are positive about its future as:

- Scotland's early onshore wind farms are already starting to reach the end of their consented lives. This means there is great potential in repowering and extending sites to improve efficiency and utilise existing infrastructure. It also creates the opportunity for significantly increased activity in the Scottish supply chain – supporting a variety of industries from construction firms to accommodation providers both nationally and in remote parts of Scotland where economies are particularly fragile. The next generation of onshore wind through repowering and extension would be a major investment in rural Scotland over a sustained period of time.
- Onshore wind remains the cheapest form of low carbon electricity available in the UK today[3] and therefore plays a critical role in achieving cost-effective decarbonisation. As well as repowering existing sites, SSE believes there is scope for new onshore wind farm sites in Scotland.
- It should eventually be possible to develop onshore wind without public subsidy; this is ultimately what the ROCs-driven deployment of recent years has been designed to achieve. However, there remains a role for Government to work with the industry to reduce costs and maximise energy yield from developments.

Of critical importance in sustaining the ongoing economic and environmental benefits of onshore wind in Scotland is a favourable planning regime. The system to date has struck the right balance between protecting the most sensitive areas, and enabling build out of low-cost onshore projects. To ensure the industry has a viable future, SSE urges the Scottish Government to exercise powers at its disposal to create planning advice and guidance to include a 'presumption in favour' of extensions and redevelopment of existing sites. Supplementary to this is a need to resist potentially onerous additional policy layers being added to an already stringent planning system for onshore wind development – ensuring any guidance around 'wild land' and peatland mapping allows for objective site-by-site assessments. For repowering, it should be possible to streamline the consenting process, including the use of the existing sites as a baseline for assessing a new application.

[1] Ibid, p. 46.
[2] Energy in Scotland 2016, The Scottish Government, p. 75.
[3] Bloomberg New Energy Finance: https://about.bnef.com/landing-pages/future-cost-onshore-wind/

These supportive planning changes can continue to deliver new energy infrastructure and provide substantial societal, economic and community benefits.

4. Maximising opportunities from large scale pumped storage projects

SSE agrees with Scottish Government analysis that with the increased deployment of renewables and the decarbonisation of heat and transport, energy storage technologies – alongside other flexibility options such as demand side response, active network management and interconnectors – could greatly improve the flexibility, security, sustainability, and affordability of Scotland's energy system.

Bulk energy storage such as that provided by new pumped storage capacity could be an important part of this mix and can store and then flexibly generate a significant amount of electricity over a sustained period of time. A recent report published by Scottish Renewables[4] stated *"It is widely acknowledged that greater flexibility is required in the electricity system of Great Britain to decarbonise at acceptable cost to consumers"*. In its Smart Power report, the National Infrastructure Commission estimated that greater flexibility could save consumers up to £8bn annually by 2030."

For SSE the key requirement for unlocking investment in new pumped storage is overcoming the risks associated with revenue and policy uncertainty. The introduction of a cap and floor mechanism for all bulk flexibility provision could enable pumped storage to be developed. A cap and floor helps to balance the requirement to provide greater certainty of investment to developers whilst also affording protection to consumers.

We would encourage the Scottish Government to collaborate with the UK Government and make the clear case about the role of large scale storage for future energy system management. Coupled with onshore wind, delivery of new commercial scale pumped storage projects has the potential to take renewable energy to a new level in Scotland but SSE agrees with Scottish Renewables that fresh investment, market drivers, or a combination of these are needed to kick-start the industry[5].

Putting households and communities at the heart of new energy investment

5. Supporting community investment and ownership in energy projects

As one of the largest energy companies in the UK with a substantial portfolio of renewable developments, SSE contributes significant sums of money to rural Scotland through the community investment funds associated with our onshore wind. Across GB in 2015/16 £3.1million was contributed to support and reinvigorate communities through not-for-profit initiatives where grant decisions were made by local people, serving their communities[6].

SSE understands the Scottish Government is also committed to facilitating community involvement in renewable energy including increased levels of ownership stakes in commercial projects through direct investment and joint ventures. SSE sees great opportunity in this. The Scottish Government has indicated it supports Scottish Renewables' 2013 paper Onshore Wind Community Benefit Protocol which outlines a number of key commitments from Scotland's onshore wind sector, including a pledge to explore the potential for greater community ownership of onshore wind farms. The promotion of more community involvement in energy projects must also recognise the significant pressure on costs caused by the removal of a support mechanism for the onshore wind industry.

[4] Scottish Renewables, October 2016: The Benefits of Pumped Storage Hydro to the UK
[5] Ibid
[6] SSE Community Investment Annual Review 2015/16

CASE STUDY: SSE has a clear track record in the area of community ownership support. 10% of the revenue from our Spurness wind farm is shared with the local community in Orkney. The proposed Viking wind farm in Shetland for example would be the largest shared ownership wind project in Europe. We are also investigating how we could support shared ownership in our future onshore wind pipeline on a case by case basis, with significant commitments currently under way with local communities in Sutherland around part ownership of SSE's proposed Strathy South wind farm.

6. Helping tackle household fuel poverty through energy efficiency

SSE has invested significantly in energy efficiency improvements to Scotland's housing stock. In the past five years we have made improvements to over 37,000 homes across Scotland under the Energy Company Obligation. Following the Scotland Act, devolution of additional fuel poverty and energy efficiency powers provide the Scottish Government with the opportunity to better target assistance based on Scotland-specific needs and align previously GB-wide schemes with the aims of the Scottish Energy Efficiency Programme (SEEP) in the decades ahead. There are a number of principles SSE would recommend the Scottish Government considers when setting out the role that supplier obligations will play in Scotland's new energy strategy:

Designing obligations for Scotland, without distorting the market

SSE would support Scotland-specific obligations, specifically Warm Home Discount and ECO, designed to prevent any distortive impacts on the energy market. This will help spread the cost burden of measures more evenly. Scotland does face specific challenges around fuel poverty and administering energy efficiency measures effectively, due mainly to housing stock differences and the proportion of homes off the gas grid. Careful divergence of schemes in certain areas would therefore be welcomed – for example amending ECO deemed scores to reflect the Scottish housing stock.

Targeting those most in need, while maintaining cost effective delivery

SSE recognises the UK Government remains committed to raising money for energy efficiency schemes through customer bills for the foreseeable future. We consider this a regressive funding model, where those least able to pay may face disproportionate costs. We would prefer energy efficiency schemes should be targeted towards those most in need first and it is our view that bill-funded Scottish schemes specifically should take this approach.

In order to identify households most in need of energy efficiency measures, a 'whole system' approach to data sharing would make it easier and more cost-effective for providers to identify those in need and give assistance to the most vulnerable households. Any new energy efficiency measures should also be designed with simplicity in mind to ensure costs to bill-payers are kept to a minimum. To aid this, SSE believes that rules for Scottish obligations should be as similar to those for English and Welsh obligations as is practicable, and that the schemes should be administered by the same body, so as to remove the need for duplicated investment.

Conclusion

The Scottish Government's new energy strategy comes at the right time and can help enable Scotland to maximise benefits from innovation, cost reductions and new technologies. This could mean major improvements for the energy system and make a positive difference to energy consumers across Scotland.

In this short submission SSE has outlined six proposals that are intended to support the Scottish Government and devise a strategy that optimises energy resources, decarbonises Scotland's energy system, and puts customers and communities at the heart of new investment.

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