

SUBMISSION FROM SCOTTISH ENTERPRISE

Introduction

Scottish Enterprise (SE) welcomes the invitation to contribute our views on the Draft Second Report on Proposals and Policies (RPP2). In our response we have concentrated on those areas we are best placed to answer – supporting the development of renewable energy, reducing energy demand and emissions, measures for assessing the energy performance and energy efficiency of existing non-domestic buildings.

The Scottish Government has outlined a set of challenging and ambitious targets for renewables by 2020. The draft second report on proposals and policies provides a summary of all the policies in place and planned in order to meet Scotland's climate change targets. It updates the previous RPP1 (to 2022) and extends this to 2027.

It reaffirms existing commitments and **strengthens** some:

- a largely decarbonised electricity generation sector by 2030;
- a largely decarbonised heat sector by 2050, with significant progress by 2030 through **a massive increase** in the use of renewable or low carbon heating;
- almost complete decarbonisation of road transport by 2050;
- **a step change** in provision of energy efficient homes to 2030;
- significant progress in **transforming** energy use in industry and business by 2027 through energy efficiency, and the decarbonisation of heating and cooling;
- recycle 70% of waste by 2025 and **design out waste** from our economy by 2050.

The RPP2 indicates that for Scotland to meet each annual target to 2027 a) all policies need to be implemented, b) all proposals, or their equivalent, need to be implemented, and c) the EU must increase its ambition to a 30% CO2 reduction (currently 20%).

It sets a clear direction without being prescriptive. The proposals for the 2020's remain flexible.

SE welcomes the recent finding of the Economy, Energy and Tourism (EE&T) Committee that the renewable energy target for electricity generation is achievable, subject to a number of issues being addressed. Some of these issues were set out in SE's submission to the EE&T inquiry into the achievability of the 2020 renewable energy targets¹.

¹http://www.scottish.parliament.uk/S4_EconomyEnergyandTourismCommittee/Inquiries/se_for_ren_inq.pdf

SE recognises the interdependence of the energy and climate change targets and that achieving these targets will require significant support from public, private and academic partners. Only by addressing the supply of renewable energy, demand reduction and resource efficiency, the development of associated Emerging Low Carbon Technologies (ECT), and behaviour change by individuals and organisations, simultaneously, and in a concerted way, will the 2020 renewables targets be achieved.

SE's contribution to this will be through our support for Scotland's growth sectors and companies to respond positively to the opportunities and challenges of the low carbon transition, including across a wide range of renewables technologies². While all of the sub-sectors that make up the renewable energy sector are growing, offshore renewables (marine wave, tidal and wind) have the greatest potential for economic impact and supporting these is our principal focus at present.

We understand through our foresighting work that the balance and mix of support for other renewables technologies will change over time and we will continue to monitor this and adapt our activities accordingly. We continue to support renewables technologies such as biofuels, small scale biomass and hydrogen fuel cells, largely through our innovation and Research and Development (R&D) programmes where appropriate. This is, of course, in addition to our focus on low carbon technologies which supports both renewable technologies and energy demand reduction. Scotland has the potential to reap major economic benefits through the development of new low carbon energy resources such as Carbon Capture and Storage (CCS), offshore renewables, smart grids, offshore grids and interconnection to markets outside Scotland.

SE's work is characterised by strong collaboration and this is especially critical in this sector. Without intensive collaboration across all parts of the public and private sectors across all areas – from the development of the National Renewables Infrastructure Plan (NRIP) through to the development of a strong supply chain, impact will be limited.

Reducing Energy Demand and Emissions

The Scottish Government has set a target to reduce energy consumption by 12% in absolute terms by 2020 compared with a baseline averaged over the years 2005-07.

Demand reduction is the most cost-effective means of delivering emissions reduction targets. It is right therefore that it is a central focus of the RPP2, working in tandem with other measures to help decarbonise the economy and stimulate renewable energy generation and it will be important for the Scottish Government to communicate that the 12% reduction in overall demand is very much an *initial* step if the transformational outcomes for 2027/2030 are to be achieved.

We support the approach in RPP2 to broaden the set of transformational outcomes originally published in the *Climate Change Delivery Plan*. This acknowledges the key

² Support is given to companies across the range of technologies provided that they meet the growth ambition criteria required. All companies are able to access SE's wide range of products and services. Support has also been given to demonstration projects such as the Hydrogen Office, the Energy Park in Fife, which will support a range of energy technologies etc.

contributions that householders; industry, business and the public sector; and resource management can play in meeting emissions targets and in reducing energy demand in particular.

While progress is being made the RPP2 also acknowledges that electricity demand is likely to increase over time as users switch to more efficient forms of heat and transport.

The RPP2 correctly identifies a range of interventions that could help reduce energy demand and overall emissions. The sections on the key roles played by regulations (e.g. building standards), financial incentives (e.g. Green Deal, Green Investment Bank, various loan schemes for SMEs and public organisations) and improved information (e.g. smart meters) are well covered.

However, we would draw particular attention to the **critical importance of encouraging behaviour change** to reduce energy demand. Drawing on the Scottish Government's research in this area, there may be potential to place a stronger focus on measures that will directly target individuals' and business behaviours. In particular, we would highlight:

- active marketing campaigns: the case study from Durham in Canada (RPP2 p61) demonstrates the value of adopting a 'packaged' approach to highlighting the tangible benefits of behaviour choices;
- the role for organisations to engage in the 'choice editing' of products, services or technologies: a good example would be Ikea stating that it will only sell LED lighting from 2016; and
- the crucial importance of effective public and private sector leadership that demonstrates the 'right' behaviours to other individuals, organisations and businesses. The 2020 Climate Group's approach, such as its recent pledges on transport-related measures, is an excellent example.

Domestic Energy Efficiency

The Scottish Government's ambition is to achieve a "step change" in provision for energy efficient homes to 2030, particularly through retrofit of existing properties and improved building regulations for new homes. Greater efficiency will not only reduce overall energy consumption, alleviate fuel poverty but provide a much-needed stimulus to the Scottish construction and timber industries. Research by Scottish Enterprise suggests that **sales of low carbon building technologies in Scotland are projected to increase from £1.1bn to around £1.9bn in 2020³**. It is estimated that this sector alone could support 12,000 low carbon jobs in Scotland in areas like insulation and smart meter installation. Innovation in construction methods, materials and technologies must remain a priority in order to develop economies of scale and help drive down costs, making energy efficiency investments more affordable and increasing take-up.

³ SE research report (in progress) on low carbon opportunities in construction. To be published March 2013

SE is currently working on a number of projects with academia and other partners that seek to assist companies to access low-carbon market opportunities.

Resource Efficiency

Scottish Enterprise has actively helped shape the introduction of the Resource Efficient Scotland programme from April 2013. It will play an important role in encouraging more firms to reduce material resource use, energy and water, through simplifying and strengthening the support offered to companies.

We will continue to offer **resource efficiency support to companies**, both through our specialist sustainability advisers as well as through the Scottish Manufacturing Advisory Service. We aim to position resource efficiency not only as an 'operational' issue (to reduce costs) but, increasingly, as a strategic business issue. Therefore, where we offer support to our portfolio of account-managed growth companies our assistance is directly linked to the company's growth plans. Business (resource) efficiency can often provide a means of broadening a company's focus to also include exploiting low carbon market opportunities and adopting sustainable business practices (e.g. sustainable procurement).

While not specifically mentioned in the RPP2, the adoption of **circular economy practices** provides an opportunity to move beyond the current focus on resource efficiency. By creating 'closed loop' supply chains, the waste from one process forming the input for another, we can radically reduce material and energy use. The circular economy opens up opportunities for innovation, new business models and the elimination of waste. This is a good example of an approach to re-thinking business that while small-scale at present, could deliver significant economic and environmental benefits over the next decade and beyond.

Measures for Assessing the Energy Performance and Energy Efficiency of Existing Non-Domestic Buildings

Companies stand to benefit from support on how best to cost effectively upgrade their buildings. In particular, the capital cost can be a significant outlay which some companies may find difficult. The Green Deal aims to help overcome this particular barrier to capital investments.

Energy Performance Certificates (EPC) have the potential to drive performance improvement activity. However, the scale of the challenge is enormous and effects (including the potential for some negative side effects as there could be varying impact across sectors) will require to be closely monitored.

Our Business Efficiency specialist advisers work closely with the separate bodies that are proposed to be merged (as per section 6.6 of the draft RPP2). Their guidance and support schemes have been useful and a carefully merged service should facilitate even greater effectiveness. Simplification of the number of channels offering advice may improve effectiveness as long as operational / implementation budgets remain adequate.

Renewable Energy

Renewable energy and the low carbon transition are two of the key priorities in SE's 2012-15 Business Plan and this has been reflected in a significant allocation of both financial and people resource, working closely with the industry and developing projects. SE is firmly committed to making a strong and active contribution to the delivery of the 2020 targets and helping the Scottish economy take full advantage of the wider low carbon opportunities within the global context.

As our previous submission highlighted, the targets are strongly interrelated and they must be viewed as a collective rather than in isolation for example, achieving reductions in energy consumption will directly make it easier to achieve the other targets

The renewables sector, along with CCS will contribute to the following targets:

- Renewable generation should account for the equivalent of 50% of Scottish electricity demand by 2015
- 100% of Scotland's electricity demand should be met from renewable sources by 2020
- Electricity generation emissions of 50gCO₂/kWh by 2030

Offshore Wind

As we have stated previously there is a very significant opportunity offered by offshore wind, as set out in the Offshore Wind Routemap⁴

The vision in the Offshore Wind Routemap stated that offshore wind could create 28,000 full-time equivalent jobs in the sector, supporting an additional 20,000 jobs in the wider Scottish economy by 2020. These projections are based on decisive action being taken to deliver 10.6GW of capacity installed in Scottish waters and Scottish companies playing an active role in the UK, European and international offshore wind supply chain.

The Routemap highlights the key areas for intervention to deliver these ambitions:

- Development of an appropriate supply chain
- Innovation of technologies and practices to drive down the levelised cost of energy of offshore wind developments
- Regulation of, and access to, the electricity grid: Electricity Market Reform (EMR) highlighted as a key issue to ensure investor confidence is maintained

⁴ Offshore Wind Industry Group: Offshore Wind Routemap 2010, updated 2013. Members comprise Scottish Government, Scottish Enterprise, HIE, EDPR, SSE, SPR, Mainstream Renewable Power, Repsol Nuevas Energias UK, Fuor, Gamesa, Areva, Repower, MHI, Petrofac, BiFab, The Crown Estate, Marine Scotland, Scottish Renewables, Renewable UK, Scotland's colleges, Mitsui global, SDS, SDI, Tymor Marine Ltd, National Grid, SeaEnergy, ABB, Fife council, SNH, RSPB, ETP, ORE Catapult, Vattenfall, The Carbon Trust

- Managing the marine environment to ensure marine spatial planning and offshore licensing is undertaken through an efficient and streamlined process
- Necessary and available skills to enable growth of the sector
- Finance: ensuring innovative funding solutions to attract the significant levels of private sector investment required
- Securing support of local communities

To respond to this opportunity, SE has developed and implemented an **integrated suite of interventions in offshore wind** reflecting the priorities of the Routemap and focused on meeting the needs for the different stages of offshore wind industry growth:

- Development of a full, globally competitive, offshore wind supply chain through the attraction of inward investors to fill key gaps in the supply chain and supporting the development of the indigenous supply chain through growth and diversification
- Development of key sites for manufacture, assembly, installation and operations and maintenance (O&M) and for onshore and offshore test and demonstration
- Support for targeted R&D, innovation and prototype development to support reductions in levelised cost of energy for offshore wind
- Utilising the skills, expertise and best practice from the oil & gas sector to assist the development of the offshore wind sector

SE also supports industry-based innovation at a sector level through projects such as ITREZ, Offshore Renewable Energy Catapult and Power Networks Demonstration Centre.

SE investments, including N-RIF, POWERS and Hunterston Test Centre have been designed to stimulate the investment required by the private sector to realise the significant economic potential of the industry. Recent research by Scottish Renewables has shown that, as of January 2013, £164.5m has already been invested in the Scottish economy by offshore wind developers across a wide range of project development activities, from the value of contracts awarded in the preparation of Environmental Impact Assessments to establishing new project development teams across Scotland. This is before any consents have been awarded.

We are also working to ensure that the supply chain benefits of all of this investment are retained in Scotland through programmes like SE's Expert Support Programme, Scottish Manufacturing Advisory Service (SMAS), Export development, Operations and Maintenance Events. Company Growth Support, and the Supply Chain Database

There are many organisations contributing to the overall Routemap, each in line with their own role and strengths. These include the Scottish Government, universities and research councils, Energy Technology Partnership, Energy Technologies

Institute, Carbon Trust and Technology Strategy Board in relation to innovation for cost reduction. Marine Scotland lead on planning and consenting issues and Skills Development Scotland on the skills challenges. SE continues to work closely with all partners to ensure integrated and effective delivery across all areas.

Marine, Wave and Tidal

The presence of many of the world's leading marine technology companies in Scotland, coupled with the fact that the industry is at an early stage, provides a highly significant opportunity for future Scottish economic growth.

The industry is at a critical point in its development and progress needs to continue from proving and demonstrating individual devices through to deployment of pre-commercial arrays during 2014-17, creating the opportunity for installation and operation of major arrays in Pentland Firth and Orkney Waters, and other prime locations, from 2017 onwards.

This will require significant public sector investment and ongoing commitment to unlock the large-scale private sector investment required to realise industry ambitions. However, the significance of the potential investors justifies continued public sector investment in innovation and early deployment to help reduce costs and risks. Support mechanisms such as Renewable Energy Investment Fund (REIF) are vital as is the Marine Energy Array Demonstrator fund (MEAD) and Marine Renewables Commercialisation Fund (MRCF). We are working closely with companies such as Aquamarine, Pelamis and Scotrenewables Tidal Power Ltd. and we are now starting to see investment of multinationals in this sector e.g. Rolls Royce, Siemens and Alstom.

SE is in the process of updating its Marine Energy Strategy and our focus will be on:-

1. Industry development: enable Scotland to lead the world in creating a successful marine energy industry:
 - continuing to stimulate investment in innovation R,D&D to reduce costs and improve durability
 - stimulate investment in Scottish marine energy projects and companies
 - enable connections between marine energy sector and other relevant academic and technology sectors such as O&G and Materials Science
 - support development of competitive marine industry infrastructure in Scotland.
2. Scottish sector growth: maximise the economic value from building a full, globally competitive marine energy sector in Scotland:
 - enable more Scottish companies to get involved, and be successful, in the emerging marine energy industry
 - secure appropriate inward investors across the supply chain
 - enable Scottish marine energy companies to access overseas markets.

3. Stakeholder engagement: enabling maximum potential from marine energy opportunity.

Heat Target

The growing significance that heat can play in the energy mix and delivery of low carbon targets has been recently recognized by the EU, UK and Scottish Government. District Heating Networks (DHN) with centralised low carbon fuel sources can provide the benefits of being environmentally friendly and energy efficient – reducing fuel poverty and energy bills for businesses and consumers. District Heating can deliver these benefits particularly at scale in dense urban areas including a mix of public sector buildings such as hospitals and homes and businesses, and for off gas grid properties and also in some rural hinterlands.

SE is aware that there is the potential for rapid growth in alternative heating systems, including replacing inefficient boilers, renewable heat and district heating. Our initial focus is to understand the nature and scale of the market opportunities and to share best practice with Scottish companies with a view to building a Scottish supply chain. The following activities will help to inform and focus our approach:

- SE Innovation call on ‘distributed heat and power’.
- Foresighting work on the opportunities from smart heat and research on heat technologies including District Heating
- Learning Journey to Sweden, May 2013.

There is a role for Innovation and R&D in the Heat Technology Sector. TINA (Technology Innovation Needs Assessment) ⁵ reports that innovation in heat pumps, heat networks and heat storage could reduce UK energy system costs between £14-66bn to 2050 (cumulative 2010-2050). Innovation can also help create a UK industry with the potential to add £2-12bn to UK GDP to 2050.

RPP2 introduces a welcome new emphasis on heat (50% of total energy use). Decarbonising heat is proposed to cut emissions by 609,000t in 2027 for domestic and 1,334,000t for the business sector. We are aware that the Scottish Government will publish a Heat Generation Policy Statement later in 2013.

SE led a learning journey to Copenhagen in November 2012 to learn from Denmark, the world leaders in district heating; to accelerate understanding of the opportunities and to facilitate networking amongst Scottish developers and the supply chain. District heating is a flexible form of heating that can be used with Combined Heat and Power (CHP) to reduce carbon emissions even if the fuel source is not renewable.

The conclusions from this learning journey are that District Heating can only be rapidly implemented if there is political, economic and community support. Without all 3, any developments will be small and piecemeal.

Interconnection, Grid Updates, and Transmission Charges

⁵ TINA – Technology Innovation Needs Assessment: Heat (September 2012)

As stated above, the public sector in Scotland takes a collaborative approach to these issues. On the issue of interconnection, grid updates, and transmission charges Highlands and Islands Enterprise (HIE) has taken the lead for the development agencies in Scotland with support from SE. HIE will cover these sections in detail in their submission to the Committee.

On transmission charging we would endorse the submission made by HIE and await with interest the findings of the study commissioned by the Inter-Governmental Group to assess the potential benefits of connecting the Scottish Islands to the national transmission grid and to consider the need for further action to bring forward anticipated levels of generation from the islands. We note the critical timing of this study particularly in relation to the planned October 2013 delivery of the Western Isles Interconnector.

Investment in transmission upgrades is essential if Scotland is to maintain its world lead in offshore renewables. In order to enable this investment, which is critical to the delivery of 2020 carbon reduction targets, project developers need certainty over transmission costs and use of system charges. Indeed without key interconnector investment we will be unable to meet our export, and ultimately economic, ambitions.

Conclusion

Scotland's mix of natural assets, industrial heritage and collaborative culture contribute to a unique, world leading economic proposition in low carbon technology and resources. SE's focus is on maximising the attractiveness of our infrastructure to international and supply chain investment; working with the supply chain to maximise long-term economic benefit to Scottish companies; and innovation, to ensure that our companies are more than fit for purpose, that technology is both world leading and contributes to cutting energy costs. Finally, we are focused on maximising private investment into this sector

SE welcomes the RPP2, and its emphasis on both reaffirming and strengthening targets. The targets give a strong focus to the industry and the clear signal of the determination of the Scottish Government to support the sector. They represent a call to action, and this together with strong collaborative action, for example on the Renewables Routemap, is widely regarded nationally and internationally as sending out a strong signal to industry that Scotland means business.

That signal is reinforced by the recently announced Scottish Government 2030 decarbonisation target and Scotland has seen significant interest in developing manufacturing facilities from a number of international companies. It is clear that industry is looking to see such commitment in the post 2020 period to encourage such investment and it is important that similar support is forthcoming in the UK government electricity market reforms, bringing forward policy which will support a sustainable, long term offshore wind industry in Scotland.

We trust this submission is of interest to the committee and will be helpful in this inquiry.

Scottish Enterprise
February 2013