SUBMISSION FROM HIGHLANDS & ISLANDS ENTERPRISE

As the Scottish Government’s economic and community development agency for the north and west of Scotland, Highlands and Islands Enterprise (HIE) welcomes this opportunity to respond to the Economy, Energy and Tourism Committee’s call for evidence in respect of its inquiry into the Scottish Government’s renewable energy targets. In line with the Scottish Government’s Economic Strategy, HIE is responsible for generating sustainable economic growth in every part of the Highlands and Islands. Energy, and in particular renewable energy, is a key priority for HIE, recognising the comparative advantages which the region possesses in terms of natural energy resources, particularly offshore – Scotland possesses around 25% of Europe’s potential offshore wind and tidal energy resources and 10% of its wave energy resource, with the bulk of these being located off the coasts of the Highlands and Islands.

HIE is committed to delivering lasting economic and social benefit to the people of the Highlands and Islands from the development of renewable energy, and in particular the development of a world leading marine (wave and tidal) energy industry, capitalising on the “first mover” advantage gained by Scotland through pioneering initiatives such as the European Marine Energy Centre (EMEC) and the Pentland Firth and Orkney Waters commercial leasing round. In order to achieve this, HIE is working in close partnership with colleagues in Scottish Government, Scottish Enterprise, Scottish Development International and Skills Development Scotland; as well as partners from industry, academia and wider UK agencies; to help deliver the priorities set out in the Scottish Government’s 2020 Routemap for Renewable Energy in Scotland, and its wider Low Carbon Economic Strategy.

In responding to the issues raised in the Committee’s call for evidence, we have offered comments from an economic development agency perspective against each of the broad headings below, without attempting to reply in detail to each individual question posed.

**Targets**

- Are the 2020 renewables targets (for electricity and heat) achievable? If not, why not?
- What contribution will achievement of the 2020 renewables targets make to meeting Scotland’s CO₂ emissions targets (a reduction of at least 42% by 2020 and an 80% reduction target for 2050) under the Climate Change (Scotland) Act 2009?
- Will increase in demand from electric heat and transport be offset by efficiencies elsewhere?
- Has the Scottish Government made any estimation of the overall costs of achieving the targets, and identified which parties will bear them?

HIE considers that the Scottish Government’s 2020 renewable energy targets, whilst ambitious, are achievable. It is recognised that there are many challenges to be overcome if the targets are to be met, but HIE is confident that the appropriate
public/private/academic governance structures are in place in Scotland to oversee the road to 2020.

The Government’s targets have been agreed with and through industry and the key steps which require to be taken to achieving them are clearly articulated in the Government’s 2020 Routemap, to which key industry players and government in its various forms are committed.

From an economic development perspective, having such an ambitious headline target for renewable energy generation is critical in that it acts as a clear differentiator within the international marketplace and helps to provide Scotland with a global lead in a number of key areas of activity. A clear demonstration of Scotland’s renewable energy ambitions; backed up by a supportive market regime and additional direct support in areas of research, development and demonstration; represents a substantial market opportunity, which is undoubtedly helping to attract interest from industry across the globe in developing renewable projects in Scotland. Within the Highlands and Islands there are clear demonstrations of this through:

a) The array of both home-grown and international technology developers attracted to EMEC’s test facilities in Orkney, including major utilities such as SSE, Scottish Power Renewables and Eon;
b) International interest in developing over 1.6GW of commercial scale wave and tidal energy projects, through the Pentland Firth and Orkney Waters Round 1 leasing process; and
c) Involvement of major overseas players such as EDPR and Repsol, alongside our own utilities in developing major offshore wind projects off the Scottish coast.

Actual projects such as those above, and others like them across the country, provide the basis through which Scotland is developing its indigenous supply chain and skills base and inward investment activities can be tailored to ensure that we achieve lasting economic benefit from the estimated £30bn of investment in renewable energy projects in Scotland between now and 2020.

Further the Community Renewables 500MW target provides added stimulus to HIE’s already active engagement in supporting community renewables. The target may represent a modest contribution to the overall target for fossil fuel replacement and carbon reduction, but in reaching this target, a significant contribution will be made to the development of more resilient and sustainable communities through income generation, addressing fuel poverty and heightened awareness of renewable energy. It represents a major opportunity for securing significant investment for Scotland’s more rural and fragile areas. HIE has long been committed to community renewables through the early establishment of the Highlands and Islands Community Energy Company, now Community Energy Scotland, and through our support along with SG, 14 projects (6.7MW) are now generating in the HIE area, with a further 12 projects (28MW) having planning consent and 29 projects (34MW) still at pre-planning stages. Reaching the target will require a number of challenges to be overcome, not least in distribution investment and available finance, but HIE will continue to work with partners to address these. It should be noted that the potential
scope for revenue generation from reaching the 500MW target is unprecedented in community development terms.

There is no doubt that achievement of the Scottish Government’s renewables targets would make a substantial and welcome contribution towards overall carbon reduction targets. Moreover, from HIE’s perspective, of equal or greater importance is the lasting economic and social benefit which would arise as a consequence of the actual delivery of renewable energy projects which would contribute towards achieving these targets, particularly in the offshore arena. The building of a new industry based upon the manufacture, assembly, deployment, operation and maintenance of offshore wind and wave/tidal energy projects represents a major economic opportunity for the region, with potential to create several thousand jobs, many in some of our more remote communities. The real economic and social impact of many of the early developments in relation to test and demonstration of prototype marine devices, and scoping/impact assessment activity associated with planned commercial offshore wind, wave and tidal projects is already being felt by businesses and communities throughout the HIE area, stretching from Shetland to Argyll; adding to existing benefits derived from longer established technologies such as onshore wind, biomass and hydro.

Whilst wave and tidal energy will make a meaningful contribution towards the 2020 targets, it is likely that it will become a much more important constituent of Scotland’s/the UK’s overall energy mix in the decades to follow. In the context therefore of building an industry which will endure for 50 years or so, the 2020 targets would be regarded as a milestone along the way, rather than an end in their own right.

**Challenges**

**a) Technology**

- *Is the technology to meet these targets available and affordable? If not, what needs to be done?*
- *Are electricity generating or heat producing technologies compatible with the need for security of energy supplies?*
- *Are our universities and research institutes fully geared up to the need for technological development, innovation and commercialisation?*

The Government’s overall targets will be met by a combination of established, mature technologies (onshore wind, hydro, biomass) and more emerging technologies such as (deep water) offshore wind, wave and tidal. With regard to the latter, the fundamentals of generating electricity from offshore wind, waves and tides have largely been proven at prototype level and the focus of much of the research effort is now being directed towards device design optimisation with a view to reducing the cost of energy generation and innovation linked to the most efficient methods of manufacturing, deploying and maintaining arrays of generators, firstly at demonstrator scale and then moving swiftly thereafter to fully commercial farms. HIE is working closely with Scottish Enterprise on the delivery of Scottish-wide offshore
energy R & D support programmes such as POWERS, WATERS (1 & 2) and a planned Marine Renewables Commercialisation Fund (MRCF) for array deployment. These multi-million R & D funds are helping to accelerate collaborative efforts by the industry to deliver affordable projects within the 2020 timeframe.

Scotland’s universities, almost without exception, are involved in aspects of research activity related to the renewable energy sector and many have also developed specific teaching programmes around the opportunities presented by the sector. In the Highlands & Islands, HIE has been active in supporting significant renewables related research programmes within our indigenous University of the Highlands and Islands (UHI), and at other institutions with a significant presence in the region such as Heriot-Watt ICIT. The funding of research in this area is a high priority for the Scottish Funding Council and many institutions are increasing their activities relative to the sector. Other recent developments, such as the securing for Scotland of the Technology Strategy Board-funded Offshore Renewable Energy “Catapult” offer further scope for increased linkages between industry and Scotland’s academic community.

b) Supply Chain and Infrastructure

Supply chain and infrastructure development are key areas of activity for Scotland’s Enterprise Agencies within the overall 2020 renewable energy Routemap. HIE, in conjunction with Scottish Enterprise and Scottish Development International, is working closely with developers of major offshore wind, wave and tidal projects in Scottish waters to gain a clear understanding of their deployment timeframes, procurement strategies and supply chain/skills requirements. Strong linkages with the Scottish supply chain are being formed and the enterprise agencies are working on an account managed basis with companies across the renewable energy supply chain, and investing in their development to equip them to meet emerging opportunities within the sector.

Obvious gaps, and therefore opportunities, remain within the Scottish supply chain, such as in the manufacture of turbines and key components for large offshore projects. HIE, SE and SDI have jointly produced the National Renewables Infrastructure Plan (N-RIP) which has identified the key investments that require to be made at Scotland’s leading port facilities to attract such manufacturing activity to this country (firstly for offshore wind, but latterly also for wave and tidal developments). On the back of this a £70m fund was established to assist the development of port facilities within the SE area with a view to attracting Original Equipment Manufacturers (OEM’s). Within the HIE area, over the past 18 months, almost £70m of public/private investment has been made/committed towards upgrading key manufacturing sites such as Nigg, Arnish, and Machrihanish as well
as those ports strategic to the development of wave and tidal in the PFOW area (Scrabster, Lyness and Hatston). The joint efforts of the Enterprise Agencies are producing positive results with some recent announcements of significant investments in Scotland by overseas OEM’s, and further strong interest being shown in many ports, including those highlighted above.

Wholesale re-development of Scotland’s grid network is key to the successful delivery of the large-scale renewable projects, both onshore and offshore, required to meet the Government’s 2020 targets. News recently that the UK grid regulator OfGem has approved for fast-tracking the business case for Scotland’s two grid operators to invest up to a total of c.£4bn to develop their infrastructure over the next 8 years, including new sub-sea transmission links to England, is therefore a welcome development. Delivery of this infrastructure is of course a major undertaking in itself, and subject to planning. HIE is working closely with the grid operator in the Highlands & Islands, SSE, to address the skills/supply chain needs associated with this major programme of infrastructure development. The issue of providing affordable transmission links from Scotland’s islands remains an issue to be resolved and HIE is working in partnership with our island authorities and others to convince the regulators of the case for socialising an element of island connection and use of system charges, to ensure that the substantial contribution which renewable generation in these resource-rich areas can make towards Scotland/the UK’s overall energy mix is fully realised.

In respect of heat networks, HIE recognises that with a significant proportion of the regions’ businesses and households being off the mains gas grid, alternative renewable heat solutions represent a distinct opportunity in addressing fuel poverty and developing local supply chains. Investment in Balcas, Invergordon, has contributed to addressing industrial and consumer biomass needs, and our support for further micro generation is further demonstrated by the investment in the Sustainable Energy and Microgeneration training facility in Inverness. HIE also very much welcomes investment by SSE on innovative smart metering and energy efficiency solutions such as the NINES project in Shetland, and would like to see more innovative solutions of this nature coming forward for communities throughout the region.

c) Planning and Consents

- Is the planning system adequately resourced and fit for purpose?
- How can national priorities be reconciled with local interests?

Whilst not in a position to comment directly on the legal and procedural operation of the planning system, HIE does work closely, positively and successfully with Local Authorities planning and development departments across the Highlands and Islands in the promotion and delivery of our joint renewables agenda. Good examples of collaborative work include the joint development of the Nigg Master plan between HIE and Highland Council, which paved the way for the development of the Nigg Energy Park by Global Energy. HIE also works closely with Highland Council and Orkney Islands Council through the Pentland Firth and Orkney Waters Leadership forum, in identifying issues and opportunities that need to be jointly addressed to
maximise the impact of the world’s first commercial scale wave and tidal leasing round.

We also welcome the recent findings of the Short Life Task Force – Streamlining Energy Developments and Consents, recognising that efficient and effective consenting is critical to stimulating the supply chain.

In reconciling national priorities with local interests, the Highlands and Islands has a long and positive history of national Energy priorities delivering real economic and social benefits for communities, businesses and supply chains across our region. The development of major energy projects - Hydro Electric power through the 50’s and 60’s, and Oil and Gas through the 70’s and 80’s – had a major and beneficial impact on both the major towns, and more fragile areas, of the Highlands and Islands.

HIE is firmly of the opinion that the development of a new, off-shore marine energy industry firmly based in the Highlands and Islands will both deliver a major element of the Governments 2020 national targets, whilst also delivering major beneficial local impact. Indeed, as the industry will require major fabrication and deployment infrastructure, the availability of existing underused fabrication facilities, identified under the NRIP programme, from the oil and gas sector, at Kishorn, Arnish, Nigg and Ardersier, as well as the ports of Argyll, Caithness, Orkney and Shetland, allows the industry to build, deploy and maintain their off-shore generation capacity in a way that maximises local interests.

d) Access to finance

- Will sufficient funds be available to allow investment in both the installation and the development of relevant technologies? What can the Scottish Government do to influence this?
- What will the impacts be on consumers and their bills?

Access to finance represents a major challenge to delivering new renewable generation on the scale required to meet the Government’s 2020 targets, particularly in the current global economic situation. Notwithstanding this, a number of major utilities and OEM’s are committed to developing large-scale projects within Scotland, and the market signals provided by Scotland’s ambitious renewable generation targets are one contributory factor to this healthy level of interest. HIE continues to work closely with Scottish Government, Scottish Enterprise and others to inform the global investment community as to the substantial opportunities in renewables in Scotland (most visibly through the annual Scottish Low Carbon Investment Conference) and, where possible, look to mitigate major areas of risk and uncertainty.

One key risk at present that is influencing investment flows is the uncertainty caused by the ongoing Electricity Markets Review (EMR) initiated by the UK Government. On the one hand, EMR has led to a dash to install onshore wind projects which can be completed prior to adjustments to ROC support rates in 2013; whilst projects with delivery dates into 2017 and beyond (including many offshore projects) are
experiencing something of an investment “hiatus”, until the EMR process is concluded and future levels of support can be factored in to investment decision making.

Others may perhaps better placed than HIE to comment upon the impacts on consumers and their energy bills, although we are aware of research recently carried out by the Committee on Climate Change which concludes that measures to support renewable generation will make up a relatively small proportion of any potential increase in costs to consumers, as opposed to movements in wholesale prices of gas.

e) Skills and Workforce

- **Will Scotland have sufficient home-grown skills to attract inward investment?** Are current policies producing the desired move towards Science Technology Engineering and Maths subjects at schools and universities? Is the skills transfer from the oil and gas sectors being realised?

Whilst the renewable skills challenge is considerable, it also presents a major opportunity for Scotland’s further and higher education sector. SDS is the lead body for delivery of skills provision and infrastructure and will no doubt comment in detail on initiatives to respond to the emerging needs of the sector. As part of our delivery of industry support in key areas of the renewable energy sector, HIE is working in partnership with SDS, colleges and other key players to support innovative skills projects that directly address specific supply chain problems – examples of these include the proposed establishment of a Skills Academy linked to the recently re-opened Nigg fabrication facility on the Cromarty Firth, and a multi-million pound centre for engineering excellence at North Highland College, Thurso.

Such activity is geared to support the development of an indigenous skilled workforce, but we recognise that potential inward investment and offshore development opportunities for the region are in or next to some of our more rural, less populated areas, thereby presenting significant challenges in securing an indigenous workforce. That said, the region as a whole has experience in mobilising significant labour for major construction projects (e.g. hydro, oil and gas) through inward migration, and HIE is actively engaging with the Local Authorities through master planning exercises to ensure that the impact in host communities is well considered and planned.

Taking a longer term perspective, with a view to increasing the number of school leavers who choose a career in renewables, HIE has been very active in alerting younger people to the opportunities presented by the renewables industry, through its primary and secondary schools engagement. Almost all primary schools throughout the region have received renewable energy toolkits, and combined with delivery of CPD sessions to teachers, well in excess of 10,000 P6/7 pupils in the Highlands and Islands have been introduced to the world of renewables. A significant proportion of our secondary schools have participated in the “Big Green Challenge” debating competition, with the last two Grand Finals being held in the Scottish Parliament. Such work has developed in line with the curriculum for
excellence. Our work with schools also extends to the STEM North of Scotland programme, delivered in partnership with the University of the Highlands and Islands, through which we have over 85% of secondary schools participating in science, technology, engineering and maths programmes, combined with almost 500 industry and academic ambassadors. Our collective efforts in this area have been heavily endorsed by industry, and indeed viewed as essential to ensuring that they have the available workforce as they move forward with construction of major infrastructure projects beyond 2015.

Transfer of skills from the oil & gas sector is readily apparent in the Highlands & Islands through the involvement of a number of leading oil fabricators and environmental consultancies in the many of the early stage offshore wind, wave and tidal projects in Scottish Waters. Oil service companies, such as Technip and Subsea 7, involved in the deployment and maintenance of offshore oil & gas structures are now also forming dedicated renewables operations, in direct response to emerging offshore wind and marine energy opportunities. For many fabrication companies, renewables merely represents another source of demand for their products and services, and therefore offers expansion opportunities, whilst the oil and gas sector opportunities also continue to grow.

f) Energy market reform and the subsidy regime

> Are the reforms of the energy markets and subsidy regimes at both UK and EU level sufficient to meet the challenge of the Scottish Government’s renewable targets?

Up until now, the levels of market support have been sufficient to attract international interest in developing renewable energy projects in Scotland on a scale which, if fully realised, would more than meet the Scottish Government’s targets. As indicated above however, until there is clarity from the EMR process, a degree of uncertainty will remain with regard to investor appetite to conclude projects currently in planning. Ongoing issues surrounding grid charging levels for generation in Scotland’s islands will also influence the pace of development in these areas, including the realisation of much of the commercial wave and tidal potential in the PFOW area. HIE continues to work in partnership with Scottish Government, local authorities industry and others to bring about a satisfactory resolution to these issues.

We trust that the submission above will make a helpful contribution to the committee’s inquiry. Should you require any further information please do not hesitate to contact us. HIE would also be more than happy to supplement our written responses here with contributions to the committee’s oral evidence gathering sessions, should the committee members feel this would be of additional benefit.

Alex Paterson
Chief Executive
Highlands and Islands Enterprise
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