SUBMISSION FROM SCOTTISH POWER

Targets

1. Are the 2020 renewables targets (for electricity and heat) achievable? If not, why not?

Electricity Target

We consider that with strong political commitment by the UK and Scottish Governments and subject to the provisos below, it is entirely credible to see Scotland producing the equivalent of 100% of its own electricity requirements from renewable sources by 2020, as well as continuing to produce power from a range of other sources.

Meeting the target would however depend on:

- Clear commitments from both the Scottish and UK Governments to provide supportive policies are essential to maintain investor confidence and the momentum within the industry to deliver new capacity at the pace required. Work is already underway on Electricity Market Reform (EMR) and it is vital that the Scottish Government and UK Government work closely together to ensure we have a robust GB electricity market with an effective support mechanism for low carbon generation to attract investment.

- Significant investment in grid infrastructure to ensure Scotland has sufficient capability for exporting electricity to the rest of the UK.

- An appropriate framework for transmission charging policy (as being considered by Ofgem under Project TransmiT).

- Having in place joined up planning policies to ensure local planning authorities have the capacity and scope to make decisions in line with national policies.

Such a growth in renewable electricity generation is not without challenges. Currently renewable electricity generated in Scotland accounts for approximately one third of electricity consumption in Scotland (around 11TWh)\(^1\), therefore, renewable generation would need to increase substantially over the next eight years in order to meet the target. Other challenges to ensure that Scotland gets the best advantage from this opportunity include developing and maintaining an appropriate skills base and ideally a suitable supply chain for renewables based in Scotland, or at least the UK.

Heat Target

\(^1\) Source DECC statistics
We consider that in principle Scotland is well placed to make progress towards the renewable heat target given the large potential. However, reaching the target could be challenging in practice given the low starting point and short time frame.

Supportive policies such as the Renewable Heat Incentive (RHI) will be essential to drive forward investment in this area.

ScottishPower (along with SEPA) is currently supporting the development of a report by Element Energy and the Energy Savings Trust for WWF - “Scotland’s Renewable Heat Future” – that will be available later in the year. This report studies in particular the potential impact of an RHI on the domestic Scottish heating market and how policy can best be shaped to achieve the Scottish Government’s renewable heat target.

Initial findings indicate that:

- Uptake of renewable heat in Scottish dwellings falls well short of the levels required to meet ambitions for decarbonising heat supply.

- Continued intervention and significant transformation of the Scottish heating market over the next two decades is required to support renewable heating technologies to beyond 2030.

- High ambitions for renewable heat are unlikely to be met without a substantial contribution from district heating. However, there are significant barriers to delivering schemes under current market conditions.

- Given a sustained growth in demand for renewable heat technologies, supply chain expansion will also be crucial to meet renewable heat targets. A knowledge and skills gap also exists that could continue to restrict the development of district heating in Scotland.

Further information in regard to the study can be made available to the Committee.

2. 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?

From a technical point of view, the development of renewables by the generation industry will have no impact on the 2020 CO₂ emissions targets because such renewables are in the traded sector under the EU Emissions Trading Scheme. This sector assesses a reduction in EU, UK and Scottish emissions at 1.74% per annum. This forms a component of the 42% target, but is calculated at an EU-wide level rather than for Scottish electricity generation alone.
However, renewables are critical for the longer term development of a low carbon future in Scotland and very substantial deployment is of course required under the EU Renewables Directive.

It is difficult to precisely predict a Scottish electricity generation mix for 2020, as this will be dependent upon a range of factors, including the Electricity Market Reform process. It is important that all future electricity scenarios include a balanced portfolio of generation that involves a mix of thermal generation, renewable electricity generation, increased interconnection and ancillary services. At a GB level, that portfolio is likely to continue to require a significant role for nuclear power, though whether new nuclear is built in Scotland is a matter for political decision by the Scottish people and their representatives. However, under all scenarios, a large expansion in renewables is projected.

3. Will increase in demand from electric heat and transport be offset by efficiencies elsewhere?

There are numerous studies which suggest that electricity demand will increase substantially up to 2020 and beyond, particularly if transport and heating sectors decarbonise. The precise impact, however, is not clear at this stage as it will depend on the uptake of the various technologies including electric vehicles and electrical heat.

It is important to recognise that these new developments can be complementary to renewables investment in that the latter can help to decarbonise the power sector. Moreover, these developments might assist with the provision of storage capacity or energy balancing opportunities, and further work should be done to support practical applications in this area.

Efficiencies elsewhere, such as through electricity appliance standards and smart meters, could offset to some extent any increased demand from transport and heat, particularly if these efficiencies move at a faster pace than demand from electric transport and heating.

Initial findings from the Element Energy and EST report into Renewable Heat in Scotland indicate that the additional demands for electricity (in terms of average annual demands and national peak demands) due to heat pump uptake in the domestic sector under the RHI are expected to be manageable in the period to 2030. However, local clusters of high heat pump penetration could strain local distribution networks and so further research in this area would be helpful.

4. Has the Scottish Government made any estimation of the overall costs of achieving the targets, and identified which parties will bear them?
It is difficult to estimate with any precision the lifetime costs of renewable energy deployment as the costs, if any, are dependent on the assumed cost of the fossil fuels that are displaced. The overwhelming majority of any such costs currently falls under the renewables obligation, which is paid for by substantially all users of electricity throughout GB and Northern Ireland. The UK Government’s proposals for Electricity Market Reform (EMR) continue this pattern.

In this context, we have responded in detail to the UK and Scottish Governments on recent proposals for support levels under the Renewables Obligation. In particular, we have highlighted the relative cost effectiveness of onshore wind and the need to ensure that the full potential of this technology is maximised in order to minimise costs to the consumer whilst making progress towards the 2020 renewables target.

The cost of the RHI is currently met by public spending and therefore paid by taxpayers.

**Challenges**

**a) Technology**

5. **Is the technology to meet these targets available and affordable? If not, what needs to be done?**

There is an array of renewable technologies available which could help to meet the targets. It is however crucial to focus on cost-effective delivery in terms of the potential mixes of technology.

**Electricity**

For renewable electricity generation we would comment as follows on a number of core technologies:

Onshore Wind – There is tremendous scope for onshore wind within Scotland. The technology is immediately available and Scotland has significant wind resource, making this a relatively cost-effective renewable technology. Accordingly, it is vital that the full potential in Scotland is realised. This means not taking undue risks with RO support rates – work by Oxera for ScottishPower shows that cutting onshore RO banding is likely to increase costs for consumers by driving renewables deployment to more expensive technologies.

Offshore Wind – This has a huge role to play in helping Scotland meet its renewable electricity target and the industry is rising to the challenge of increasing delivery in a way that provides a foundation for future cost reductions. We believe that costs can be reduced; to facilitate this, momentum must be maintained to grow the industry further so as to benefit from learning and experience, as well as economies of scale. To build the industry there need to be
strong and consistent investment signals in terms of RO support rates and support under a Contract for Differences (CfD) mechanism under EMR.

Marine – Wave and tidal technology has progressed substantially over the last few years with Scotland leading the way with the help of enhanced ROC support and grant funding (introducing the WATES and WATERS schemes for example). We expect marine technologies will contribute to the 2020 target. However, it is expected that large scale deployment will contribute more significantly to longer term targets. Support in this area could produce a vibrant marine industry with globally leading test and demonstration projects in Scotland; this could bring significant economic benefits over the years to 2020 and beyond, including the associated export potential.

Hydro – Whilst this is a well established technology within Scotland we believe that there is still potential for further development. However, we note the potential reduction in support proposed in the recent RO banding review and we do not consider this to be conducive to achieving the full potential of this technology. Furthermore, pumped storage schemes could be particularly helpful to complement more variable technologies, however, projects of this scale face significant challenges in terms of environmental and construction hurdles.

Biomass – we consider that biomass has a significant role to play in helping to meet the 2020 target. Biomass has potential not only in contributing to the renewable electricity target but also to meeting ambitions on renewable heat. Biomass is also a technical option for the future of Longannet power station. However, the use of biomass is not without challenges. The UK domestic supply chain is currently limited so that large scale projects need to rely on long-term contracts for imported fuel.

Demand side response (DSR) and storage - Other technological solutions should continue to be explored such as demand side management, smart metering, smart grids, storage heating and electric vehicles all of which could facilitate greater penetration of renewable generation.

Heat

Renewable Heat – Initial findings from the Element Energy and EST report into Renewable Heat in Scotland indicate that uptake of dwelling-scale technologies is likely to be dominated by Air Source Heat Pumps. However, these have relatively low output and, unless this is improved, the use of this technology in Scotland’s domestic heating market may depend on improving home insulation standards. In terms of affordability, the single largest barrier to renewable heat uptake has to date been the lack of an economic case and we are looking to the RHI to help stimulate this.
6. Are electricity generating or heat producing technologies compatible with the need for security of supplies?

Renewable generation can help with some aspects of security of supply by reducing the dependence on imported fossil fuels. However, with current technologies, intermittent renewable generation does require back-up from flexible fossil plant. The planned Capacity Mechanism under EMR will be important in ensuring that the right investment framework is maintained for such plant.

With adequate interconnection (which is also needed for export purposes when renewable generation is high) back-up plant can be located in Scotland, or England & Wales, or both. We are pleased to see progress being made on the recently announced subsea link from Ayrshire to North Wales as an example of a modern approach to infrastructure upgrades that will enable renewable deployment and improve security of supply.

As mentioned above, widespread use of heat pumps could eventually lead to localised issues on electricity distribution networks and further research would help in understanding this potential challenge.

7. Are our universities and research institutes fully geared up to the need for technological development, innovation and commercialisation?

The universities and colleges in Scotland are amongst the leaders in their field insofar as renewables and low carbon technology are concerned.

Globally recognised research is being carried out by a range of institutions such as Edinburgh, Strathclyde, Heriot Watt and Aberdeen universities. ScottishPower is involved in smart grid development, wind, marine, CCS and energy demand research across such institutions. We are supporters of the Technology and Innovation Centre (TIC) that has recently been established at the University of Strathclyde.

Scotland is also well placed to capitalise upon research via the Energy Technology Partnership (ETP) that is able to provide a mechanism for collaboration to accelerate academic and industrial research activity. We are pleased to note the award of the Catapult Centre for marine technologies being made to Glasgow and hope this can make a substantial contribution to bring innovation from universities and industry into full commercialisation.

That said, Scotland could face significant skills challenges in energy and low carbon technologies in the future, partly as a result of an aging workforce but also due to the requirement for new skills. Universities and colleges across Scotland have a huge role to play in working with industry to increase the skills available to capitalise on new market opportunities.
b) Supply chain and infrastructure

8. Is the supply chain in Scotland in place to meet the targets?

Electricity

The supply chain is in existence globally to help meet the targets in Scotland. However, we would like to see a competitive, secure and efficient Scottish supply chain developing. This could increase competition and help drive down costs, thus minimising the cost to consumers. A larger Scottish or UK based supply chain could also help to generate wider economic benefits such as jobs in manufacturing and operations and maintenance.

Heat

We have no observations to offer at this early stage of the development of the renewable heat market.

9. What further improvements are needed to the grid infrastructure or heat supply networks both at a national and a local level? Additionally, are we confident that the necessary infrastructure can be developed and financed so that Scotland can export any excess electricity generated to the rest of the UK and/or the EU? What is the role for the Scottish Government here?

Electricity

Increased investment in infrastructure will be required at both a local and national level to ensure the required targets can be met. In order for Scotland to achieve renewable generation equivalent to 100% of its annual consumption, it will require the means to export significant amounts of electricity to the rest of the UK and possibly Europe. Plans are therefore in place to increase Scotland’s export capacity to England from around 3.3GW to around 7GW.

A key part of that upgrade involves work by ScottishPower's transmission business, SP Transmission (SPT) and SPT recently reached agreement with the energy regulator Ofgem (as part of the RIIO-T1 price control review) to fund an investment plan totalling £2.6 billion over the period 2013-2021.

We have carefully calibrated our plans to mitigate the impact on our stakeholders and customers throughout Scotland and the UK. Ofgem have estimated that the total cost of upgrades in Scotland will add 35 pence a year to consumer bills over the eight year period of the RIIO-T1 price control (2013-2021).

However, this plan is not without significant challenges in respect of deliverability; for example, in the areas of outage planning, resourcing, financing
and especially planning and consenting. We will therefore seek to engage with the Scottish Government to help reconcile national priorities and local interests in this area. Throughout the RIIO-T1 period and beyond, we are committed to engaging with all stakeholders to help us overcome these challenges and ensure we can deliver this investment plan to achieve renewable targets.

Heat

No comment at this stage.

c) Planning and consents

10. Is the planning system adequately resourced and fit for purpose?

We recognise that the Scottish Government has already made significant reforms to the planning system in order to deliver the renewable targets and, in comparison with other UK countries, we find the planning system for nationally significant projects to be relatively favourable and easy to negotiate. There are still barriers to be overcome at a local level (and to some degree with statutory consultees), such as ensuring that there are the necessary resources and expertise to take effective and timely decisions on planning applications.

Furthermore, it is essential that local policy is tied to national policy to ensure decisions at the local level are in line with national requirements. We welcome the national overview that the Scottish Government’s Energy Consents Unit provides to onshore renewables delivery with its determination of windfarms over 50MW. We feel this threshold allows a strategic approach to the deployment of renewables and we would not want to see this 50MW threshold increased.

In terms of planning and consenting for offshore and marine renewables, we welcome the recent recommendations from the Scottish Government’s taskforce on streamlining the consents process. We recognise that the resourcing of Marine Scotland and statutory consultees to deal with an increasing volume of applications is an issue, but we are assured that steps will be taken to address this. The UK Marine Policy Statement is a welcome start to the marine planning process but the detail of the National Marine Plan and regional marine plans must demonstrate a commitment to enshrining renewables targets at those levels of planning. It would be helpful to ensure that marine planning partnerships and the formulation of regional plans are taken forward as soon as possible, as an uncertain policy framework is a barrier to marine development, particularly at a time when a new suite of marine protected areas are being developed.
11. How can national priorities be reconciled with local interests?

Clearly, it would be beneficial to see more employment from the development, manufacturing, construction, operation and maintenance of renewable build in Scotland. More could be done to improve skills at a local level to provide employment opportunities, particularly within the offshore and marine industries. Within the onshore industry, construction and maintenance skills will be required to work on local assets. While there is a strong role for developers to enable this to happen, there is also a need for national co-ordination and delivery of such skills and training opportunities. We believe that such opportunities, combined with community policy around renewables, could create a significant contribution to improving local interest in renewable developments.

We also note the UK Government’s commitment to exploring the localisation of business rates from renewable developments to local authorities, as is often done in Continental Europe. This could make a significant difference to improving local interest in renewable developments.

As with planning policy, it is important that community policy is reflective of national policies whilst recognising that communities need to see some benefits from developments within their locality. ScottishPower Renewables provide community benefits of over £1m per annum in relation to renewable developments. That said, we would like to highlight that community benefits can take many forms - both direct and indirect - and defining the “community” that should benefit is not without challenges, particularly in cases where projects span large areas. Additionally, we expect identifying any “community” applicable to offshore wind and marine projects may be more challenging.

(d) Access to finance

12. Will sufficient funds be available to allow investment in both the installation and the development of relevant technologies? What can Scottish Government do to influence this?

With the substantial growth in renewables, particularly offshore wind, more sources of finance will be required in the longer term. Investors will require confidence in the market and therefore the Scottish Government should continue to work with the UK Government, Ofgem and local authorities to reduce barriers associated with grid charging and access, planning and supply constraints. Confidence in the support mechanism will also be fundamental to ensuring sufficient investment, a smooth transition between the RO and the proposed FiT CfD will therefore be essential.

Finance for renewable heat can be facilitated through the RHI, Green Deal and Energy Company Obligation (ECO) mechanisms. A mechanism for ECO to
provide an uplift for heat pumps delivered to homes off the gas grid could be helpful.

In terms of investment to develop technologies, momentum needs to be maintained on innovation and development in new technologies (such as through the TIC at Strathclyde University) and there needs to be adequate grant funding and support to allow new technologies to progress to small scale test devices and then onto commercial scale deployment. Initiatives such as WATES and WATERS have been key to developing the marine industry within Scotland and we would like to see schemes such as these continue.

13. What will the impacts be on consumers and their bills?

The significant investment required in order to meet the 2020 renewables targets will require returns that must ultimately be paid for by consumers. Developers, suppliers and Government all have a role to play to ensure costs are minimised. However, support levels must be sufficient to maintain momentum within the industry and increase capacity to such a level that experience and learning can help to reduce costs as quickly as possible.

The cost of the renewables obligation is shared by all UK electricity consumers, whether the renewable electricity is consumed in Scotland or exported to England and Wales. At present the cost on a typical dual fuel domestic energy bill of £1200 is around £21 – i.e 1.75% of the whole bill.

As mentioned above, ScottishPower Transmission have agreed a carefully calibrated package of grid investment plans with Ofgem that should allow significantly more exports from Scotland, while mitigating the impact on customers throughout Scotland.

(e) Skills and workforce development

14. 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 school and universities? Is the skills transfer from the oil and gas sectors being realised?

Scotland has a very rich talent pool to continue development of renewable technologies although we believe that further work is needed to partner skills from outside Scotland, as well as internally, in order to benefit from as wide a range of experience as possible. Uptake of scientific subjects within schools must be encouraged to ensure sufficient availability of skills in the future. We are heavily involved in STEM (Science, Technology, Engineering and Maths)
promotion and believe this work is key in securing the supply of potential future talent.

Transfers from the oil and gas sector are at an early stage at present with only a few having the confidence to transfer fully to the renewables sector. Although there are similarities between the industries, there are significant differences in terms of risk. Further work is therefore required to align these industries and benefit from experience. We believe that developing the alignment, and the ability to transfer skills, between the two industries would offer potential benefits to the oil and gas industry as well as to the renewables industry.

Changes in the workforce requirements of the UK armed forces also present a potential talent pool for the energy sector and SP Energy Networks has already successfully recruited a number of former service personnel with engineering skills who will follow an internal up-skilling programme.

(f) Energy market reform and the subsidy regime

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

The Renewables Obligation (RO) and Renewables Obligation (Scotland) (ROS) have been very successful to date in bringing forward renewable deployment and any market reform necessarily brings significant uncertainty for investors. Any such uncertainty needs to be minimised. Whilst development of the new CfD support mechanism is continuing to progress in the right direction there is still much detail to be finalised and we are continuing to work with DECC and the Scottish Government on this.

It is vital that there is a smooth transition from the existing RO mechanism to the new CfDs under the EMR programme. This will be particularly important for the growth of the marine sector in Scotland and the further development of offshore wind, both of which will be at important stages of development at the time that the RO and ROS are scheduled to close.

Crucial to a smooth transition will be ensuring that the institutional design underpinning the CfDs delivers full confidence to investors in the long-term security of a CfD. This will be essential to ensuring continuity in investment plans in the lead up to the closure of the RO/ROS and beyond. Industry requires significant progress on the development of the CfD mechanism before it will be confident about the proposed ending of the RO and ROS in 2017, so as to ensure continued development up to that point. Moreover, continuity in the attractiveness of the support arrangements will be important during the transition
as the CfD mechanism will take time to be established with the necessary credibility.

In this context, the proposed step down in the support rate for offshore wind signalled by DECC in the RO Banding Review Consultation as we near the closure of the RO/ROS is unhelpful and is exacerbated by indications in the DECC Consultation document that the new CfDs “are expected to be set at a lower level of support than the RO”. We consider that this stance, if not fully justified by differences in cost of capital between the support regimes, could risk deterring investment under the CfD thereby threatening the achievement of the 2020 renewables target and failing to capture the benefits of developing a domestic supply chain.

Scottish Power
March 2012