



Submission to
Scottish Affairs Committee
for Inquiry into Renewable
Energy Sector in Scotland
March 2016

Regarding the Terms of Reference

The John Muir Trust notes that five of the seven questions in the Inquiry's Terms of Reference (TOR) relate to **potential impacts on the renewable energy sector** - this somewhat skews the findings as only **one question queries another key aspect - the impact of renewables policy on businesses and households in Scotland (and presumably consumers through GB).**

The Inquiry TOR say - *"The (Committee) will also be looking at what the Scottish and UK governments have done to ensure that the aspirations of the sector are taken fully into account in the development of UK energy policy."* All the questions appear to be framed from the same assumption – the view from (most of) the renewables sector that the changes are all bad. Should governments and the Committee consider more the aspirations (and needs) of the Scottish and UK people than the aspirations of the private renewable sector?

The Trust response focuses on - *"What impact does renewable energy policy in Scotland have on the cost of energy to businesses and households in Scotland compared with the rest of the United Kingdom?"* We mainly discuss onshore wind developments, transmission and strategic energy policy, as these are the areas which we have particular knowledge. We include consideration of the costs to consumers and taxpayers of subsidies and taxes for transmission and large-scale onshore wind. We address potential impacts on those who live and work in Scotland, including communities who live with industrial energy developments and those whose businesses rely on tourism.

The Trust would ask the Committee to consider that, since not all renewable energy types are the same, it may not be helpful in policy discussions to lump all technologies together as "renewable energy" and then try to discuss the correct policy and planning, costs and benefits of "renewable energy" – as if wind, wave and solar can all be considered in the same way.

However, since the Inquiry is considering "renewables" within the context of strategic energy policy it is necessary to consider other generation types and impacts as well as energy saving. Otherwise, significant factors might be missed regarding whether the GB energy system is fit for purpose. So, in this response, energy reduction and non-renewable energy are referred to, where appropriate.

The need for a National Energy Commission

Do the UK and Scottish governments work together well, considering the full picture and what the environmental impacts of their policies are? The Trust has taken a keen interest and developed expertise in strategic energy policy because of the impacts which are occurring on wild land from onshore wind and transmission developments.

The Trust believes there is a need for a **National Energy Commission**, with independent experts covering disciplines from engineering to costs analysis to strategic environmental assessment professionals, should be established to recommend a **National Energy Strategy** to governments.

This should cover both UK and devolved remits. It would work alongside the Committee on Climate Change, considering the technical aspects of varying energy mix, including the electricity grid and security of supply issues.

Total Systems Cost (TSC) analysis is required to assess the value to the public of varying options. TSC is recommended by a number of engineering organisations (see Institute of Engineers and Shipbuilders In Scotland – IESIS - submission).

The Trust supports the actions taken by the UK government last June on onshore wind energy subsidies. However, we have significant concerns about the actions taken on energy conservation measures and wish to see a mechanism across government borders which ensures energy reduction gets priority in public support.

Energy costs in Scotland and the rest of the UK – has DECC got it right?

Are the UK and Scottish governments directing public subsidies and taxes in the most cost efficient way to achieve what is required from energy policy? That is -

- Delivering a secure, adequate and affordable energy supply
- Achieving government greenhouse gas (GHG) targets
- Protecting national, local and global environments

Total Systems Cost analysis – DECC’s evidence to the SAC is partial when considering the costs of subsidies to the consumer. Figures in DECC’s evidence have no reference to the costs of transmission, which are ultimately paid for by consumers in Scotland and throughout Great Britain. There has been much discussion about the increased costs of transmission to generators in Scotland, compared with that for generators in the south-east of England. There are two major points not routinely discussed in this matter.

Firstly, even in mainland Scotland, the costs of transmission are much less significant than the other subsidies, taxes or priority on the electricity grid which impact on a particular electricity station. For instance, the fact that Longannet was not financially sustainable was primarily due to the energy market - which is designed to give priority to the renewable producers. So it was always intended that coal stations would close. Although the direct transmission charges were highlighted in most discussions they were not the major financial driver. See Scottish Power evidence to a very relevant Scottish Parliament Economy Energy and Tourism Committee session on 11th March 2015 said **“we will pay £170 million this year in carbon taxation... we pay £40 million to £50 million a year in transmission”**. It cannot have been a surprise that Longannet is closing – in this case that was the intended consequence of governments’ policies. The cost of transmission **to the generators** for all onshore generating types, with the possible exception of island schemes, is generally not the most significant part of their cost-benefit analysis. It is for generators to work out their own financial parameters.

It is, however, for governments to look at the costs and benefits to the UK public as a whole of different methods of achieving our energy mix. This needs to be done using Total Systems Cost analysis and ignoring artificial divisions between government department remits or even between remits of governments. For too long, these divisions have been used to allow civil servants and politicians ignore some of the most glaring problems – thinking they are someone else’s responsibility. It is the responsibility of all in decision-making to ensure a safe, secure and affordable energy system which is truly sustainable for our environment. There is little evidence of this financial

and technical overview being done by UK and devolved governments – either separately or, as is essential, together.

Secondly, the costs paid by generators are only a proportion of the costs of new transmission build, less than 50%, with the rest being paid for ultimately by UK consumers. The extensive new build onshore grid which is currently proposed has rapidly rising estimated costs. The rationale for building so much infra-structure, some of which could rapidly become obsolete if communities move towards more decentralised energy grids, is that this would enable export of more of the renewable (wind) production south to the bulk of GB consumers, reducing constraint costs. However, the constraint costs which have been negotiated with the industry are unreasonably high, skewing this decision-making. Furthermore, to enable onshore wind energy to expand significantly further will require more fossil fuel back-up generation.

It is commonly said that with sufficient grid expansion, Scotland can manage to have even more than 100% theoretical renewables capacity. The reality is, as engineers say, many things are theoretically possible but are they sensible? The cost of this level of expansion needs to be included in a Total Systems Cost analysis. This might identify a level of wind production which is not sensible – due to the need for increased fossil-fuel back-up north or south of the border, excessive grid and the costs to consumers.

Ofgem’s record –have they got it right when assessing costs and benefits of schemes?

Of particular concern is the fact that Ofgem got its assessment badly wrong regarding the 220km long, 400kV, Beaulieu to Denny transmission line which now cuts through the Cairngorms National Park. **Ofgem approved the project based on a cost of about £350 million. It has cost slightly less than £900 million.** Ofgem should be asked to demonstrate why they can be trusted to sign off major transmission projects, as technically needed and economically reasonable. They also have an environmental duty which they made no attempt to fulfil for Beaulieu-Denny, relying on planning process. National Grid’s new role in taking an overview of planned upgrades within the grid is welcome but raises many questions about whether a public company should have this role.

Should Contracts for Difference be paid for large-scale island wind developments?

There can be no justification for giving greater subsidy – through either an increased strike price or through a CfD mechanism, as currently mooted, to large island wind developments. The rationale for putting such major schemes there in the first place was that the increased wind made these sites most cost-effective. To turn round and say we need to subsidise them more than mainland schemes is acknowledgement that the sums were wrong. To transfer the extra costs of that mistake to the UK consumers is unreasonable. As argued at the Muaitheabhal (Lewis) wind farm Inquiry, if the best sand is in the Sahara, that doesn’t mean that the UK should source its sand for construction from Africa. Cost of transmission must be included in assessing where development should go.

Does the Committee appreciate the difference in scale between wind generation schemes in Scotland and Wales compared with that in England?

The SAC Chair at the Orkney session (14 March 16) referred to having enjoyed visiting a wind farm, Hammers Hill. The Orkney renewable mix is absolutely unique and was no doubt interesting and informative. However, regarding wind developments, the Hammer Hill small wind development of only five turbines about 80 metres high is not typical of Scottish schemes and would not give any indication to the Committee of the scale and impacts of some developments on the Scottish

mainland which can result in groupings of 50-100 turbines, each 135 – 150 metres high. This is a scale not seen in England where the biggest windfarm is 26 turbines of 100 metres.

Onshore wind planning applications are still being brought forward in Scotland after June 2015 and the announcement of ROCs withdrawal

Turbines up to 200metres high are being proposed. Indeed, the removal of ROCs has led to the “justification” by the industry for such huge turbines. The Millenium wheel is 135metres high and no building in Scotland is as high as 135metres.

The Trust extends an invitation to the Committee to visit a site of one of the bigger developments - such as Crystal Rig and neighbouring developments in the Lammermuir hills, Borders - to speak to affected neighbours to get a better understanding of the impacts on many communities including housing being removed from the local pool due to noise impacts.

Are community concerns being fully listened to and addressed by politicians?

The Committee Chair, in Orkney (Q129), put the view that most people support “renewable energy” and so the planning process should be “streamlined” in a way which allows consents to be given more easily and quickly. This remit is under devolved policy. However, since the Committee is considering planning issues, consider, for instance, the community who can’t sleep in their houses around Scottish and Southern Energy’s Wester Balblair electricity substation near Beaully. Residents as far away as two miles can’t sleep because of the noise. Despite the siting, scale and design which was consented having been justified by developer’s assurances about noise impact, the Highland Council had to serve an abatement notice. The problem continues years later.

The John Muir Trust has worked with many community groups who have felt badly disenfranchised from both planning processes for policies on UK energy and also Scottish planning policy. Nearly all the planning concerns raised with the Trust are about industrial-scale wind developments and electricity transmission, rather than other renewable types. Many people feel the planning process has had unnecessarily negative impacts upon them and feel that their concerns, which were raised in the planning process and could have been addressed, were belittled and ignored - leaving communities and individuals to pick up the pieces.

The Trust is not against further renewable projects - having only objected to a small proportion of wind developments - but it wishes to see energy reduction prioritised, alongside a policy which produces a rational mix of generation. Policies to date have over-subsidised industrial-scale wind developments whilst other types of renewables which could provide different benefits to the grid (such as hydro and geothermal) have had less emphasis and support from public funds. The predominance of support for major energy companies has also had negative effects on communities.

All too often, a subsidy has been introduced for one particular type of development “because renewables are a good thing”, without fully thought through consequences. Consider the unintended consequence of regulations regarding which hydro schemes would receive subsidy. This led to several major old hydro schemes being upgraded but also down-rated in capacity - because the subsidy was available to schemes below a certain MW capacity. So after the upgrades, the capacity was less!

What impact is UK energy policy having on the Scottish environment?

Is it reasonable that “localism” and the devolution of decision-making on wind developments to local councils in England appears to have led to even more, even bigger schemes being brought forward in Scotland?

Since the Committee has already discussed planning matters and implied there might be unreasonable concern over environmental impacts from “the vociferous minority”, the question must be considered as to what height and size of development is acceptable in the types of landscapes we have in Scotland. Is 200metres – the height of the pillars on the new Queensferry road crossing – a reasonable height for multiple turbines in a rural landscape. Is there a height which is unreasonable in any circumstances?

The Trust is particularly concerned with protecting the UK’s best wild land and, whilst the Scottish Government brought in partial protection for Wild Land Areas in Scotland, the economic incentives from the UK government have led to continued pressure for industrial-scale development on our most special wild land. This is also an issue in Wales. Subsidies have led to some areas being inundated with industrial-scale applications. Some of rural Scotland - where there is a reliance on tourism - is being transformed into an industrial landscape of a scale never seen before. So, in a democracy and when the decisions have involved both Scottish and UK governments, these questions need to be asked:

- Who decides what is a reasonable impact for a community to bear?
- Who assesses whether the perceived public good from such developments is being delivered?

The outcome – of rural Scottish communities dealing with impacts which appear to be considered unacceptable elsewhere - might be considered to be somewhat “colonial”.

Fuel poverty – impacts from energy policy

The Committee discussed fuel poverty. It is important that the Committee consider this from the totality of impacts of energy policy rather than focusing on one aspect. Otherwise the wrong conclusions might be drawn.

Energy reduction would be the most effective in reducing fuel poverty and greenhouse gas emissions

Not only is energy reduction - by conservation and efficiency measures - the best value for the public pound spent on contributing to our energy needs, causing least damage to the environment, it would be of immense help in alleviating fuel poverty. Moreover, it would cost-effectively reduce GHG emissions and it would produce considerable number of jobs dispersed in the country. Heat and transport must be prioritised. But the numbers speak for themselves.

DECC’s submission states “**Scotland has seen around £6bn of investment in renewable electricity between 2010 and 2014.....As of 31 December 2015, the RHI (Renewable Heat Incentive) has made payments totalling £383.2m, of which £64.3m (17%) has been in Scotland**” Whilst these are not directly comparable periods, the difference in scale is obvious.

The Association for Decentralised Energy reported, “*Currently 54% of the energy used to produce electricity is lost by the time it arrives at a UK home or business, where further losses*

occur. This lost energy is worth £9.5 billion a year, the equivalent of £354 per household, more than half the average home's annual electricity bill. It also represents the annual carbon emissions equivalent to every car in the UK. While not all energy waste can be stopped, there are immediate, practical, cost-effective steps which could save over £3 billion a year".

The Green Deal was an excellent idea, if not effectively delivered. Perhaps it would be more cost-effective to install energy saving technology for free for a greater range of consumers rather than give major support to multi-national energy companies for a mature technology – onshore wind.

How can demand for energy be reduced in Scotland?"

All UK governments and local authorities should be using an “energy hierarchy” model whereby every decision, in whatever department, is considered against the model, to see which option is the most sustainable. The hierarchy starts with energy conservation and moves down through technologies to non-renewable electricity generation at the bottom. This should be the principle guiding spend of public subsidy or tax for energy projects.

Learning from recent history – evidence being ignored

Sadly, the merits of energy reduction have been discussed for decades but with little change in the focus of governments. **In 2005, a very unusual all-parliament Scottish Parliament Report into Climate Change**, which was unanimously endorsed, found that

“approximately 40% of energy could be saved, and half of the (then) 60% CO2 reduction target for 2050 could be achieved cost-effectively by improved energy efficiency. Energy efficiency measures have struggled to gain a high priority”

In 2008, the John Muir Trust made a parliamentary submission that ROCs *“has skewed the UK energy mix far too much towards large-scale onshore wind developments, connected by a hugely centralised grid system. It shows a poverty of imagination and thinking rooted in the early 20th Century. Community scale schemes should become the norm in remote, sensitive locations, and **decentralised grid systems** are one way forward, as is hydrogen storage to try and counter the intermittency of wind. (More R&D) into renewable energy methods such as ground source heat and tidal energy is required (tidal having the advantage that it is a **regularly** intermittent supply). Combined heat and power schemes are essential...*

...The original rationale for ROCs was to kickstart the renewable sector, not as a permanent prop, but the industry is now saying they cannot envisage the subsidy being removed.”

Almost all of these quotes are applicable today. It is tragic that so little progress has been made on prioritisation of energy conservation, possibly influenced by amount of lobbying for continuing subsidies.

Conclusion

How can UK and Scottish governments work better together for the good of all?

How can a joined-up energy strategy across the UK and Scotland be achieved, when the remit for energy conservation falls to the Scottish Government, whilst energy generation and transmission comes under the UK government? This division has been used by both UK and Scottish governments and officials to “slope shoulders” about problems with energy policy. The UK decision-makers

routinely blame Scottish planning policy if it is suggested that recent policy has had excessive impacts on the Scottish environment and some rural communities. Meanwhile, Scottish Government and officials do not have to take responsibility for, or consider the cost benefit balance of, mounting costs of the excessive grid developments under current electricity plans.

There is an urgent need for a National Energy Commission advising on energy strategy. If attention continues to be focused on increasing renewable energy targets, without any requirement for individual developments to be assessed with Total Systems Cost (including all aspects of the generation and transmission), we face a possible worst case scenario. This would be where we achieve renewable energy targets through inappropriate developments, at great cost to important environments, only to discover that our greenhouse gas emissions are up, along with our energy consumption, and our energy supply is not secure. Energy conservation measures must be prioritised immediately. They can bring about the most effective results, most quickly with most environmental gain. They will also have most social benefit, with regard to jobs and fuel poverty. It is only lack of political will which prevents this happening.

Note:

The John Muir Trust is the leading wild land conservation charity in the United Kingdom and its head office is in Highland Perthshire (www.johnmuirtrust.org).