Supplementary Evidence:
Economy, Energy & Tourism Committee Inquiry into the Scottish Government's Renewable Energy Targets

Scottish Renewables would like to take this opportunity to provide further evidence to the ongoing Economy, Energy and Tourism Committee Inquiry into the Scottish Government's Renewable Energy Targets.

Specifically we would like to highlight some relevant statistics published over the last few months, and to follow up on some of the criticisms of renewables by recent witnesses, especially around the issue of wind energy.

Please find our evidence broken down into relevant themes below.

Renewable electricity target

The Scottish Government released a statement¹ on 29 March confirming that Scotland had exceeded its interim target of generating 31 per cent of our electricity needs from renewable sources. The final figures showed renewable electricity generated in 2011 was equal to approximately 35 per cent of demand, based on consumption figures from 2010, showing the sector is a major part of our energy mix and our economy. Wind made up more than half of the total output of renewables. This clearly shows the progress that we are making towards the 2020 targets.

Employment

Scottish Renewables recently published ‘Delivering the Ambition: Employment in Renewable Energy in Scotland’². The report outlines employment in each renewable energy sector, and concludes that there are more than 11,000 jobs in the renewable energy sector in Scotland today, with onshore wind employing more people than any other generation type, and supporting the vast majority of the 3200 people employed by the transmission operators to make upgrades for renewables in Scotland. Whilst we appreciate that this report was published after the deadline for evidence, we hope that the committee will take the findings into consideration when looking at the current and future employment impacts of the renewable energy targets.

Public perception of wind power

The committee has heard a wide range of views on the visual impact of wind turbines. We would like to draw the committee’s attention to the recent poll commissioned by Scottish Renewables and carried out by YouGov³ which found that 71 per cent of people in Scotland support the continued development of wind power as part of our energy mix.

The poll surveyed 1041 people in Scotland, finding that 39 per cent strongly agreed with the statement ‘I support the continuing development of wind power as part of a mix of renewables and conventional forms of electricity generation’ and a further 33 per cent said they tended to agree. This was compared to just 7 per cent who strongly disagreed with the statement.

Young people were among the most favourable with half of 18 to 24 year-olds strongly supporting wind power and a third tending to support the continued development of this renewable energy source.

80 per cent of those polled indicated support for the Scottish Government’s target to meet 30 per cent of Scotland’s energy needs from renewable sources by 2020.

¹ http://www.scotland.gov.uk/News/Releases/2012/03/geenenergytargets29032012
² http://www.scottishrenewables.com/publications/employment-renewable-energy-scotland/
³ http://www.scottishrenewables.com/publications/yougov-poll-attitudes-wind-power-Scotland/
These results followed a Friends of the Earth poll, also carried out by YouGov⁴, which found that 88 per cent of those polled supported reducing Scotland’s reliance on imported gas and coal for the production of household electricity, and instead want to see an increase in the amount of electricity produced from domestic renewable sources, such as wave and tidal, wind and solar.

When respondents were asked which specific sources they would most like to see providing their household electricity in ten years’ time, the most popular first choice amongst those polled was wave and tidal (32 per cent of first choices), the most popular second choice was wind (37 per cent of second choices) and the most popular third choice was solar (27 per cent of third choices). Coal and gas received 2 per cent of first choices respectively.

**Effects of wind farms on tourism**

VisitScotland has published a report ‘Wind Farm Consumer Research’ which strongly suggests the vast majority (83 per cent) of Scots surveyed said a wind farm would not affect their decision about where to stay when on a holiday or short break in Britain, and more than half of those surveyed did not agree that turbines spoiled the look of the UK or Scottish countryside⁵.

Also:

- VisitScotland’s latest visitor statistics⁶ showed that the number of visits to Scotland last year increased as did the amount of spending by visitors.
- VisitScotland’s ‘Scotland Visitor Survey 2011’⁷ made no mention of the issue of wind farms affecting tourism in Scotland. Indeed, in the visitors’ feedback there is no mention anywhere of wind farms as an area for improvement. The main issues identified were: the weather, poor accommodation, lack of information, expense and poor transport links.
- The Scottish Government commissioned report ‘The economic impacts of wind farms on Scottish tourism’ in 2008⁸ found “three-quarters of people felt wind farms had a positive or neutral impact on the landscape” and that; “Importantly, respondents that had seen a wind farm were less hostile than those who had not.”
- The 2008 report used “nearly 400 direct interviews of visitor intentions at tourist spots located close to existing or proposed wind farms”.

Europe’s largest onshore wind farm Whitelee operated by ScottishPower Renewables attracted 120,000 visitors to its visitor centre in the first 12 months of opening with many thousands more visiting the trails around the wind farm site⁹.

**Effect of wind turbines on bird populations**

A recent study on the effect of wind turbine construction and operation on bird species was published in the *Journal of Applied Ecology*. This study monitored data from wind farms located on unenclosed upland habitats in the UK and tested whether breeding densities of upland birds reduced as a result of wind farm construction and operation. The study found that while densities of some birds “declined on wind farms during construction” it concluded that “there was little evidence for consistent post-construction population declines in any species”¹⁰.

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⁵ [http://www.visitscotland.org/research_and_statistics/tourism_topics/wind_farms.aspx](http://www.visitscotland.org/research_and_statistics/tourism_topics/wind_farms.aspx)
⁹ [http://www.whiteleewindfarm.co.uk/news/more_12000_visitors_blow_in_whitelee_windfarm](http://www.whiteleewindfarm.co.uk/news/more_12000_visitors_blow_in_whitelee_windfarm)
Furthermore, on 20 April the RSPB unveiled plans to install a wind turbine at its Bedfordshire headquarters as part of efforts to reduce its carbon emissions. They plan to install a wind turbine in autumn 2013 with a view to generating around 2.36 million kWh a year, equivalent to two thirds of the RSPB’s electricity requirements across all its UK operations\textsuperscript{11}.

**Noise of wind turbines and effects on health**

It is often claimed that wind turbines create a level of infrasound or low frequency noise that is harmful to human beings and critics of wind farms often cite the British Medical Journal editorial of 8 March 2012 on ‘health effects of the distance of wind turbines to houses and its lessons for his policies’.

However, in a parliamentary answer on 27 March the UK Energy Minister, Charles Hendry said:

“A number of independent peer reviewed research studies commissioned by DECC and its predecessor Departments have looked at the impacts of noise from wind farms and concluded that there is no evidence of direct health effects arising from infrasound or low frequency noise generated by wind turbines.”

And that,

“in our assessment the British Medical Journal editorial article of 8 March 2012 on wind turbine noise does not change the conclusion that appropriately sited wind turbines do not have a direct effect on public health.”\textsuperscript{12}

In relation to wind farms and alleged instances of ill health, on 21 March 2012 Charles Hendry said:

“We are aware of one specific report of illness allegedly related to the operation of wind turbines, of which there are over 3,500 in operation in the UK. There is however no scientific evidence that demonstrates a link between wind turbines and direct adverse health impacts in people living in proximity to them.”\textsuperscript{13}

**Wind turbine life-cycle**

It was claimed in the oral evidence session of 25 April 2012 that turbines have a lifespan of somewhere between 4 and 10 years. This is incorrect for both onshore and offshore wind

Windy Standard onshore wind farm opened in November 1996 – 16 and a half years ago – and is still operating and producing electricity to this day\textsuperscript{14}.

North Hoyle Wind Farm was the first offshore in the UK, having started operating in 2003. The turbines are still in place and generating electricity some 8 years and 9 months since its commissioning\textsuperscript{15}.

The design and quality of turbine manufacturing is improving all the time with innovation with turbines built to last 20-25 years. According to RenewableUK:

“A wind turbine typically lasts around 20-25 years. During this time, as with a car, some parts may need replacing. The very first of the mass-produced turbines celebrated its 20th birthday in May 2000. The Vestas 30kW machine has operated steadily throughout its lifetime, with none of the major components needing to be replaced.”\textsuperscript{16}

\textsuperscript{11} http://www.businessgreen.com/bg/news/2169124/rspb-flies-wind-turbine-plan
\textsuperscript{12} http://www.publications.parliament.uk/pa/cm201212/cmhansrd/cm120327/text/120327w0003.htm#12032766000087
\textsuperscript{13} http://www.publications.parliament.uk/pa/cm201212/cmhansrd/cm120321/text/120321w0003.htm#12032191000087
\textsuperscript{16} http://www.bwea.com/ref/faq.html#how-long
Other countries' investment in wind energy

Scottish Renewables is unaware of other countries deciding to stop using wind power as part of their renewable energy mix. Indeed, according to global rankings featured in a report by the Pew Charitable Trust, the USA has regained top spot from China as the largest investor in clean energy in 2011\(^{17}\). The report *Who’s winning the clean energy race?* showed that there was almost 80 billion dollars invested in wind energy in 2011, with over 239 GigaWatts (GW) of installed wind energy capacity worldwide.

This report also showed that the USA has 47 GW of installed wind energy and installed 6.7 GW of wind energy in 2011 alone – more than the sum total of installed wind capacity in the UK and placing it second in the league of international investors in wind power.

Additionally:

- Some 25 per cent of Denmark’s electricity is now provided by wind, with the country aiming to meet 50 per cent by 2020\(^{18}\).
- Wind met 18 per cent of the Republic of Ireland’s electricity demand in 2011, one of the world’s highest penetrations in the world\(^{19}\).
- Northern Ireland also has plans to meet over 40 per cent of its power needs from renewables in 2020 with the vast bulk of this electricity coming from onshore and offshore wind\(^{20}\).

Number and origin of wind turbines in Scotland

Scottish Renewables estimates that there are around 1400-1800 currently operating in Scotland, and estimates that we will need far fewer turbines to hit the target than has been claimed by some witnesses. We estimate that we will need a total of some 4000 to 5000 onshore and offshore turbines, less than half the total suggested in oral evidence.

We are unaware of any wind turbines manufactured in China currently operating in Scotland. Indeed Samsung and Mitsubishi have potential manufacturing sites in Scotland, and Gamesa already has significant numbers working in R&D in Bellshill and is committed to manufacturing in Leith.

Existing suppliers such as Siemens, Vestas, Enercon, Nordex and Repower already employ hundreds of people across the country in installation and operation and maintenance, with Siemens employing some 150 personnel in its service centre in Wishaw.

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\(^{17}\) [http://www.bbc.co.uk/news/science-environment-17662973]


\(^{19}\) [http://www.rechargenews.com/energy/wind/article310836.ece?WT.mc_id=rechargenews_rss]