SUBMISSION FROM 4-CONSULTING LIMITED

I am a Director with 4-consulting a consultancy based in Scotland and have helped to complete a number of impact studies related to the current inquiry. These studies have included the economic impact of Severn Tidal Power projects which I presented to the Welsh Government's Economic Research Advisory Panel (whilst working for DTZ).

I have also completed an Experimental Environmental Satellite Account (ESA) for the Welsh Government (whilst working for DTZ) and reviewed several economic development projects associated with low carbon for a number of development agencies and private sector clients.

I co-authored the report "Worth The Candle? The Economic Impact of Renewable Energy Policy in Scotland and the UK" (March 2011). A copy of the report has been provided to the Scottish Parliament and summary points from this report are provided below in addressing the question:

Has the Scottish Government made any estimation of the overall costs of achieving the targets, and identified which parties will bear them?

The Scottish Government is keen to promote the renewables sector as an economic opportunity. Government at all levels in the UK use a broad range of mechanisms to reduce dependency on energy from carbon based fuels. The purpose of these is to lower overall carbon emissions in an effort to mitigate damaging climate change.

While acknowledging that wider scientific, technical and economic issues are still to be resolved, the report focuses on one aspect of the debate. Increasingly, claims are made that the shift to 'green' energy presents the country with an economic opportunity. The argument is that the development of a renewable energy industry will create jobs and economic growth. So regardless of the environmental merits of renewable technology, its development is beneficial in its own right.

The report uses the Scottish Government's own macroeconomic model for Scotland to assess the impact of identified costs on jobs. A similar model was used by the Scottish Government to measure the opportunity cost of the cut in VAT implemented in 2008-09. Based on this, policy to promote renewable energy in the UK has an opportunity cost of 10,000 direct jobs in 2009/10 and 1,200 jobs in Scotland.

The economic benefits that derive from the renewable energy sector are hard to assess because the industry is difficult to measure as a clearly-defined sector. However, employment figures cited by those promoting renewable energy are often greatly exaggerated, exceeding official employment figures covering the whole of the energy sector.

Extrapolating from wider energy industry data, and comparing this to estimates from government and industry bodies, total direct employment in renewable energy generation can be estimated at 2,700 in the UK and 1,100 in Scotland in 2009/10.

In Scotland, it should be recognised that the industry is reliant on UK wide support. Scottish policy making in isolation would be much more expensive. The Scottish Government, like its counterparts in the rest of the UK, should establish much more

accurate figures on the extent of the industry to engender a more rational debate on the subject.

The report's key finding is that for every job created in the UK in renewable energy, 3.7 jobs are lost. In Scotland there is no net benefit from government support for the sector, and probably a small net loss of jobs.

The lower level of job displacement in Scotland is because of the greater concentration of renewable energy generation in Scotland. However, in Scotland employment gains are usually overstated and therefore net costs are usually understated.

Potential employment in the Scottish offshore wind industry is estimated to be up to 48,600 by 2020 (Scottish Renewables, August 2010). This was summarised in the report as follows:

> *"In 2020, this creates more than 28,000 full-time equivalent jobs directly in the offshore wind sector. Indirect and induced effects could create another 20,000 jobs in 2020."*

Both the media and the Scottish Government cited the outcomes of the study as showing the potential to create nearly 50,000 jobs. Jim Mather, Minister for Enterprise, Energy and Tourism stated:

> *"It highlights the considerable economic opportunities for Scotland, supporting up to 48,000 Scottish jobs while delivering energy security and cutting emissions."*

The above statement is misleading because most of the jobs cited are generated through the installation of infrastructure. Overall demand for nearly 50,000 jobs may arise up to 2020 but most of this demand will be temporary and recede once infrastructure has been deployed in the North Sea. The report itself provides the best guide to the likely long term employment impacts from the offshore wind industry.

> *"Once the peak of offshore wind capacity development has passed, employment focus will turn towards O&M[1] of existing capacity. Major benefits for the Scottish economy in terms of long-term employment lie within the O&M sector. With full supply chain capabilities (skilled workforce, infrastructure, equipment and vessels), we assume that up to 100 jobs for each 500MW installed capacity could be available in 2020 in offshore wind O&M." (page 15)*

This suggests that for each 1GW installed capacity up to 200 jobs could be created by 2020. The table below shows the employment likely to be sustained through the operation and maintenance of offshore wind facilities by 2020 based on the above ratio of jobs to installed capacity. Four scenarios are outlined in the Scottish Renewables report with varying capacities installed. These estimates also assume

[1] O&M - Operation and Maintenance.

full supply chain capabilities with a skilled workforce, deployed infrastructure, equipment and vessels.

Scenario	Scottish Renewables Report	Offshore Wind Impact
Scenario A: Vision	48,600	2,200
Scenario B: Moderate	32,300	1,100
Scenario C:No change	11,100	2,200
Scenario D: Failure	1,600	300

SOURCE: Renewables Scotland and own calculations

The employment figures show that with moderate success the offshore wind industry could sustain "long-term employment" of around 1,100 full-time equivalent workers. Up to 2,200 jobs could be sustained if 'Scotland's vision' is achieved but just 300 jobs are sustained in the worst case scenario. These figures appear to be more consistent with our estimates for renewable energy (based on official statistics).

The disparity between estimates of 48,600 jobs and 1,100 jobs is mainly due to the treatment of temporary construction employment generated whilst infrastructure is installed and deployed. The report focuses extensively on the impact of the offshore wind industry in terms of its ability to support temporary construction and manufacturing jobs in Scotland. Whilst this may be helpful in terms of additional benefits it does not provide a compelling reason for government support.

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