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WWF for a living planet

Scottish Government
Robin Allison
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Scottish Government
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Wednesday 3rd December 2008

Dear Robin Allison

Please find attached a response from WWF Scotland to the Government consultation document 'Framework for the Development and Deployment of Renewables in Scotland'.

WWF Scotland regards climate change as the biggest threat facing humanity and campaigns at an international and national level for action to reduce our greenhouse gas emissions and prevent dangerous climate change. We very much welcome the opportunity to contribute to the Scottish Government's plan for releasing the huge renewable energy potential Scotland has to offer.

Yours faithfully

Sam Gardner

Dr Sam Gardner
Climate Change Policy Officer

WWF Scotland's Response to the Framework for the Development and Deployment of Renewables in Scotland.

Introduction

WWF welcomes the opportunity to contribute to the development of Scotland's renewable energy framework. Climate change is the most serious threat facing the planet and human development, and one which demands urgent global and national action. To prevent average global temperatures from increasing by more than 2°C above pre-industrial levels – a threshold above which the risk of severe and irreversible tipping points in the climate becomes increasingly likely – the world's emissions of greenhouse gases (GHGs) must peak and start to fall steeply within the next 5-10 years. For Scotland to play its part in this challenge it must reduce GHG emissions by at least 3% a year.

Scotland's energy future must be built around a decarbonised, flexible and decentralised, low demand system; only this way will we meet our 2050 target and provide security of supply.

1. Scotland's energy must be significantly decarbonised by 2050 in order to meet an 80% reduction in greenhouse gas emissions.
2. Scotland will require security of energy supply based on renewable sources, improved efficiencies and decentralised generation.
3. Scotland's future energy system must address the almost 25% of Scottish homes currently suffering from fuel poverty.

Despite Scotland's huge renewable energy potential our current level of renewable energy consumption lags behind many of our European neighbours. The table below compares share of renewables in 2005 and contribution in 2020[1].

Austria	23.3%	34%
Belgium	2.2%	13%
Bulgaria	9.4%	16%
Cyprus	2.9%	13%
Czech Republic	6.1%	13%
Denmark	17%	30%
Estonia	18%	25%
Finland	28.5%	38%
France	10.3%	23%
Germany	5.8%	18%
Greece	6.9%	18%
Hungary	4.3%	13%
Ireland	3.1%	16%
Italy	5.2%	17%
Latvia	34.9%	42%
Lithuania	15%	23%
Luxembourg	0.9%	11%
Scotland	**4.6% (2006)**	**20%**
Malta	0%	10%
The Netherlands	2.4%	14%
Poland	7.2%	15%
Portugal	20.5%	31%
Romania	17.8%	24%

1 See http://www.europedia.moussis.eu/discus/discus-1213172230-178310-22099.tkl for original table.

Slovak Republic	6.7%	14%
Slovenia	16%	25%
Spain	8.7%	20%
Sweden	39.8%	49%
United Kingdom	1.3%	15%

Priorities:

- The Renewable Energy Framework ought to start from an analysis of what contribution the energy sector must make in order to ensure Scotland is on the right track to meet an 80% target. The energy sector accounts for 89% of total greenhouse gas emissions in Scotland and therefore has a huge role to play in delivering a low carbon economy. The suggested targets provided by the consultation do not appear to be based on any analysis of what is required from the energy sector.
- Renewable energy is essential to meet the Scottish Government's climate change targets and this reason should provide the driving argument for its support. The economic return from investing in a growing industry ought to be a benefit of this support not the reason for it; otherwise the economic case can prioritise renewables that deliver poor greenhouse gas savings, such as ethanol for fuel.
- In order to meet an 80% greenhouse gas reduction target the electricity sector must be decarbonised shortly after 2030[2]. It is an often quoted fact that Scotland has "sufficient **renewable electricity** resource to provide up to 75% of UK's electricity needs[3]"; if this potential is to be fulfilled Scotland needs a clear strategy providing a route map to a decarbonised power sector. The consultation falls short of providing that route map.
- **Energy efficiency and demand management** must be the first step in any strategy to decarbonise our energy sector. The business as usual path is clearly not sufficient to achieve either the necessary level of energy demand reduction or improvements in efficiency.
- Given that annual **heat** usage in Scotland is estimated to be 57% of our total energy demand, support for renewable heat must be a priority in the immediate future. The FREDS report[4] described a renewable heat target of at least 20% as being achievable and identifies the potential contribution from across the different sectors. The calculation of an 11% renewable heat target in the consultation appears to be based on subtracting existing renewable electricity and renewable transport targets from a 20% total rather than what is actually needed.
- **Decentralised energy** (DE) can meet Scotland's future electricity demand at lower cost than traditional centralised generation. A move towards more decentralised energy generation is possible now and would have the combined effect of reducing emissions and raising public awareness of the link between electricity and energy generation.
- **Transport** is almost wholly dependent on crude oil for its energy source, this reliance on a fossil fuel and the continued growth in car miles means both costs and emissions from this sector continue to increase. We must switch the current level of investment so it incentivises alternatives to the petrol fuelled car and in particular supports active travel.

In the response below we provide our comments on each of the sections set out in the consultation document. Our comments are framed by the questions posed and should be seen as our contribution to the debate they are designed to encourage. The sections below follow the numbering used in the consultation document.

3. Energy Efficiency

2 WWF's report 80% Challenge Delivering a low-carbon UK applies the same two models as used for the UK Energy White Paper and the Stern Review to show that in order to meet an 80% target the electricity sector must be decarbonised by 2030.

3 See http://www.scottishrenewables.com/MultimediaGallery/55859f4e-a909-4f2b-b0b4-9c740c5346c3.pdf

4 See http://cci.scot.nhs.uk/Resource/Doc/215382/0057632.pdf

Energy efficiency and demand management must be the first step in any strategy to decarbonise our energy sector. This section of the Framework is noticeable for its absence of questions or description of new policies targeted at energy efficiency. The business as usual path is clearly not sufficient to achieve either the necessary level of energy demand reduction or improvements in efficiency. The forthcoming Energy Efficiency and Microgeneration Action Plan provides a clear opportunity to accelerate energy efficiency and use of micorgeneration. It is important that the final renewable energy framework brings together this Action Plan and the results of the consultations on domestic and non - domestic buildings to provide a comprehensive account of policy.

The WWF recently published report, *Carbon Countdown for Homes,*[5] sets out how the existing domestic housing sector could deliver an 80% cut in its emissions by 2050. The challenges of meeting the economy wide 80% cut means that the huge potential from the existing housing sector must be realised as it offer 'easy wins' that deliver savings and tackle fuel poverty. A successful retrofit package must go far beyond the government's current approach which relies on the voluntary uptake of short payback energy efficiency measures. In addition to basic insulation measures, a radical uplift in installations of measures such as solid wall insulation and microgeneration technologies is required. Implementation of the recommendations in this report will require approximately a doubling of current investment for energy efficiency – between £500-600 million per year, a level of investment that could see a five fold increase in jobs related to retro fitting existing housing. Given the right balance of standards, regulation and incentives, it is suggested that a significant portion of this investment could be levered in from private householders. This strategy would also make Scotland a more attractive environment for CERT through an area-based approach, thus attracting more funding from the private sector.

The key components of an effective retrofit strategy should be:

- Residential emissions targets – this is critical to secure actual emissions reduction and address the risk of the rebound effect from within the domestic sector.
- Minimum energy efficiency standards at point of sale, rent or extension.
- Financial support package based on need.
- Area based 'low carbon zones'.
- Increased support for Community Heating schemes.
- Balance trading - ensure new developments do not add to an area's carbon footprint by investing in retrofit of existing homes.
- Effective monitoring and review.

These tools should be complemented by a package of fiscal incentives including a reduction on Council Tax for households who install energy efficiency and microgeneration measures and an equivalent reduction in business.

It is disappointing that the recommendation set out in the Sullivan Report have yet to be responded to. The delay in response leads to uncertainty in the building sector and a growing gap between the English target of net zero carbon homes by 2016 and the position in Scotland. The route plan set out in the Sullivan Report provides a clear pathway to reducing the emissions associated with new buildings and as such ought to be implemented in full.

4. Achieving 20% of energy consumption from renewable resources

WWF welcomes the commitment by the Scottish Government to aim for a figure of 20% renewable energy use. However, we would ask that this figure does not describe a cap and that it be expressed as a clear policy target rather than an aspiration as is currently the case.

5 See Hhttp://assets.wwf.org.uk/downloads/carbon_homes_2.pdfH

There must be shared confidence that this target is meaningful and that it has the full commitment of the Scottish Government. The current 'aspiration' of meeting a 20% target does not give the necessary confidence to business, industry and wider civic Scotland to ensure the target has the breadth of support it needs.

It is critical that progress across all three energy sectors is made concurrently. WWF's report on global climate solutions[6] demonstrates that the key to achieving the necessary energy revolution is the need for all acceptable technological solutions to be pursued concurrently; there is inadequate industrial development time to allow for consecutive development

The breakdown of effort across the electricity, heat and transport sectors appears to be framed by existing commitments, such as the 50% renewable electricity target, rather than by the GHGs saving that Scotland must make if it is to reduce its emissions at the necessary rate to make a fair contribution to tackling climate change. The consultation does not provide any explanation as to how the targets of 50%, 11% and 10% deliver the emissions reductions required by the proposed Scottish Climate Change Bill and therefore, it is not possible to say if this is the most appropriate mix from the different sectors.

5. Renewable Electricity

In order to meet an 80% GHG emissions reduction target the electricity sector must be decarbonised shortly after 2030[7]. Recent statements from the Scottish Government suggest that a combination of consented renewables and existing capacity means we have met the 2011 target of 31% renewable electricity[8] at least three years in advance of the deadline. Although this is to be welcomed it is important to acknowledge that our targets are out of step with the timeline needed to decarbonise the power sector, and indeed with our renewable electricity generating potential.

WWF does not promote the use of co-firing with biomass and would not like to see this as part of the Framework. This approach risks diverting supply away from the combine heat and power (CHP) and heat industry and acts to simply prolong the use of inefficient centralised fossil fuel power stations.

6. Renewable Heat

Annual heat usage in Scotland is estimated to be 57% of our total energy demand and of this approximately 4% is from renewable sources, including electricity. Of this total half our heat demand comes from the domestic sector and under a quarter from the service and public sector. If Scotland is to meet its 80% GHG target it is hugely important to develop and implement a coherent package of policies that target the biggest opportunities for renewable heat.

Target: The FREDS report[9] described a renewable heat target of at least 20% as being achievable and identifies the potential contribution from across the different sectors. The calculation of an 11% renewable heat target in the consultation appears to be based on subtracting existing renewable electricity and renewable transport targets from a 20% total. As

6 See WWF Climate Solutions WWF's vision for 2050(2007) http://www.wwf.org.uk/filelibrary/pdf/climatesolutionreport.pdf

7 See http://assets.wwf.org.uk/downloads/80summary.pdf

8 "Scottish Government targets are to meet at least 50 per cent of electricity demand from renewables by 2020, and an interim target of at least 31 per cent by 2011. The interim target is equivalent to around 5GW of installed capacity. Adding in all the potential energy from already consented renewable projects to those already operating brings the total to around 5.5 GW, meaning the Scottish Government is set to surpass the 2011 target". Taken from Editors Notes in Scottish Government Press release on the 14/11/2008, Reports on Energy and Climate Change.

9 See http://cci.scot.nhs.uk/Resource/Doc/215382/0057632.pdf

stated above this approach offer no assessment of what is needed from each sector nor the potential for sectors to deliver more than has been identified.

Both the planning system and building regulations provide significant opportunities to accelerate the take up of renewable heat technologies. Local authorities must be supported and monitored in their application of SPP6 if it is to fulfil its potential and contribute to the renewable heat target. In particular Scottish Government must remove the 500 sq m threshold in SPP6 and introduce an annual or bi-annual escalator to deliver an effective 100% CO_2 reduction in 2016.

The establishment of renewable heat requires a comprehensive policy that drives change across sectors rather than reliance on extension on existing policies such as the Scottish Biomass Support Scheme and the SCHRI. Although both provide welcome support, on their own they are not sufficient to divert us from the current incremental growth in renewable heat. Based on their current application the consultation should describe the impact these two programmes could have on an 11% target and identify the shortfall.

Germany provides an example of how to drive the much needed transformation to renewable heat. The German 'Heat Act' stipulates that by 2020 14% of Germany's heat must come from renewable energies. Its aim is both to conserve resources and to ensure a secure and sustainable energy supply. There are three aspects to the Act and we ask the Scottish Government to investigate their possible application in Scotland.

An obligation to use renewables for heat requirements: From 1 January 2009 owners of newly erected buildings must use renewable energies for their heat requirements. All owners are subject to this obligation, whether private individuals, the state or businesses. All forms of renewables, or combinations of them, can be used. Renewable energies include solar radiation geothermal energy, ambient heat and biomass. (Those who do not wish to use renewable energies can take other climate protection measures: improve the insulation of their buildings, obtain heat from district heating systems or use heat from CHP).

Financial support: The use of renewable energies will continue to be financially supported. The German government will inject more money into the existing market incentive programme, increasing funding for this support instrument to as much as 500 million Euro per year. This means better planning certainty for investors.

Heat grids: The Act makes it easier for heat grids to be extended for the benefit of renewables. It makes provision for local authorities to prescribe connection to and use of such a grid in the interests of climate protection.

Role of CHP: WWF welcomes the recognition given to CHP technology in the consultation but notes that beyond the proposed changes to the RO there is a lack of incentives or regulations to encourage the roll out of CHP. CHP is a critical technology in the transition towards a more decentralised, highly efficient energy system that has been proven to be as much as 95% efficient. A conventional power plant is on average only 38% efficient.
Although Scotland is performing better on the introduction of CHP than the UK average, work commissioned by the Combined Heat and Power Association shows that out of all the members of the European Union the UK's current CHP capacity is the fourth lowest.[10]

Installed CHP capacity in Scotland is currently around 743 MWe (around 16% of UK CHP capacity) but much of this capacity is purely industrial and further measures are required to

10 See Hhttp://www.chpa.co.ukH

expand low carbon heat supply to the residential properties. This will require an approach that combines:

- Support through land-use planning with positive encouragement for heat mapping by local authorities.
- Financial support for the up-front costs of District Heating schemes.
- Revenue support through mechanisms such as a low carbon heat obligation or a low carbon feed in tariff.
- Direct support to Local Authorities in establishing ESCOs to carry forward the development of CHP /District Heating Schemes.
- Major new developments should be required to fit either a CHP or District Energy System depending on the size of the proposal.

7. Distributed Energy

Scotland's future energy distribution will have to be able to support a geographically dispersed generation base and have the flexibility to accommodate multiple sources of energy. It will provide for decentralised energy that is close to the point of use and facilitate the large scale up take of micro renewable and the potential this offers for private energy sale to the grid. A move towards more decentralised energy generation is possible now and would have the combined effect of reducing emissions and raising public awareness of the link between electricity and energy generation.

In 2006 WWF Scotland and Greenpeace carried out a study for Edinburgh City Council that concluded the heat and electricity needs of all buildings in Edinburgh could be met with a 28% reduction in emissions by 2025 with a decentralised energy approach[11]. A second report by Greenpeace and WADE highlighted the benefits of pursuing a decentralised energy system across Scotland[12]. Key findings from this work included:

- Decentralised energy (DE) can meet Scotland's future electricity demand at lower cost than traditional centralised generation.
- DE systems reduce gas consumption and dependency on imported gas
- DE and renewables buffer the impact of possible fossil fuel price rises on electricity costs for consumers.

8. Bio-energy

Although bio-energy has real potential to make a contribution towards Scotland's renewable energy targets it is very unlikely that it will ever actually be carbon neutral as the consultation suggests. The cultivation and processing of material has associated energy demands and emissions that must be counted in any analysis of the contribution from bio-energy. WWF welcomes the fact that the Scottish Government intend to give emphasis to the role of biomass for heat only or CHP applications as this where efficiencies are greatest.

WWF does not support total tree harvesting and in particular stump extraction as it increases soil disturbance associated emissions and removes important habitat for biodiversity. The sustainable harvesting of forest timber should be follow the FSC standard and incorporate a lifecycle GHG sustainability measure and methodology. Current EU sustainability criteria are inadequate and must be strengthened if they are to be a credible means of ensuring sustainability.

Energy from waste

In the majority of circumstances energy from waste cannot be considered to be 'renewable' as it relies on burning finite resources and as such should not form part of Scotland's renewable

11. Hhttp://www.wwf.org.uk/filelibrary/pdf/pb_power_.pdfH

12 See Hhttp://www.greenpeace.org.uk/files/pdfs/climate/wade_scotland.pdfH

energy framework. The Renewables Obligations (Scotland) 2007 (Section 8, i) rightly excluded waste from being eligible (unless the waste is biomass, has been converted to liquid or gaseous fuel or is a CHP plant).

To operate efficiently an energy from waste facility requires materials of a high calorific value – i.e. paper/plastics – which are exactly the ones we should, and can, recycle. Capturing materials for recycling from residual waste has a more positive impact in energy terms than recovering energy from burning waste. In energy terms a report for Friends of the Earth found that typical UK incinerators, generating only electricity, are unlikely to be emitting a lower quantity of greenhouse gases, expressed in CO_2 equivalents, per kWh electricity generated than the average gas-fired power station in the UK.

We do support a role for anaerobic digestion and believe that there is considerable opportunity, particularly at a community scale, to recover gas from organic waste from farm and food sources and help reduce the volumes of organic waste that end up in landfill.

9. Sustainable Transport

A sustainable transport system must start by removing the need for travel though strategic planning, be based around an integrated public transport system and high levels of active travel through walking and cycling while pursuing sustainable fuel alternatives at the same time. The current balance of investment in the Scottish Budget for active travel compared to road infrastructure will do little to increase the cycling modal share above its current 1% and bring it into line with our European neighbours. WWF call on the Scottish Government to meet the recommendation of the Association of Directors of Public Health in their document 'Take Action on Active Travel' published earlier this year, which calls for at least 10% of all transport expenditure go into supporting active travel[13].

In addition to this and to ensure strategic transport decisions are taken with a full description of costs and benefits the Scottish Transport Appraisal Guidance should be amended so it takes full account of the economic benefits of active travel. These currently go unacknowledged despite established methods for identifying savings from improvements in health and reduced pollution.

Improvements in efficiency must be met with real reductions in energy use if transport emissions are to be reduced. Savings from greater efficiency are being outstripped by growth in demand and by the fact technology development is being used to give more power and features to cars rather more fuel efficiency. A transformational change is needed in how we approach personal mobility – the actions set out in the consultation fall well short of describing such a change.

For instance, the action in the consultation to 'develop an understanding of the contribution of alternative technologies....' offers little encouragement that much will happen to change our reliance on both the private car and fossil fuel power. This weak ambition is also increasingly out of line with the commitments of our European neighbours. Spain has committed to there being some 1 million electric vehicles (EV) (4% of total cars in Spain) on the road by 2014, while Renault and EDF Energy in France are in partnership to roll out a fleet of eclectic cars by 2011. The book, *Plugged In the End of the Oil Age*, published by WWF[14] provides a compelling case for the role electric vehicles have to play in bringing about the needed transformation in personal mobility.

13 See http://www.adph.org.uk/

14 See Plugged In the End of the Oil Age published by WWF

http://assets.panda.org/downloads/plugged_in_full_report___final.pdf

The consultation sets out a strong case for the growth in electric vehicles but offers no indication as to how it intends to fulfil this potential. The Scottish Government should require the rolling replacement of the public sector car fleet with electric vehicles. This should focus on the urban environment to start with where the current range of EV would not be limiting.

The Scottish Government should review planning guidance to ensure it supports the roll out of the infrastructure needed for electric vehicles.

10. Planning and Consents

The planning system, right through from Permitted Development Rights to the National Planning Framework has a critical role in removing barriers to renewable energy and ensuring strategic decisions deliver the necessary infrastructure.

WWF responded to the consultation on Permitted Development Rights for Microgeneration and we await with interest the response from the Scottish Government. We believe in several areas, the permitted development bar has been set too high, such that it will exclude the majority of householders in Scotland. This will give little new incentive to householders to install microgeneration equipment, and continue the trend of slow uptake. Instead, changes in permitted development rights should be sufficient to unlock the real potential of householder's micro generating capacity.