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EU Consultation on Climate and Energy Green paper

Thank you for the opportunity to respond to the Green Paper "A 2030 framework for climate and energy policies".

My qualifications to respond are as follows. I am an internationally recognised Systems Engineer expert, currently employed by a European multi-national company. I live in Scotland, where I can observe the impact of some of the current policies first hand. I am a hillwalker, skier, sailor and a member of a number of conservation charities.

Current EU policies have achieved much, and are recognised as world leading. However we are now able to see substantial unintended consequences as a result of current policies. The new framework for 2030 is an opportunity to build on the good that has already been achieved, and at the same time adjust and add features to mitigate or eliminate the unintended consequences of current policies.

4.1. General

There is a tendency to believe, and to imply in policy documents, that three key concepts are equivalent and interchangeable when they are not. These three concepts are:

- Low-carbon
- Renewable
- Sustainable.

They are neither equivalent nor interchangeable. They are different. Relevant targets are different, and not necessarily synergistic. There are disturbing unintended consequences, including massive environmental damage and a likely failure to meet GHG reduction targets, because the EU's current policy does not properly distinguish between them.

- For example, biomass is "renewable". But it is only "low carbon" if biomass is growing, and absorbing carbon, as fast as it is being burnt, and producing carbon. It is only sustainable if the planting rate matches the consumption rate, and the growing stocks are large enough to maintain steady state of carbon absorption in spite of harvesting. It has been suggested by THE ECONOMIST newspaper that current and planned rates of consumption of biomass are causing massive deforestation, mostly outside the EU, and will generate a carbon debt it will take 100 years to pay off.

- As another example, wind power is classed as "renewable". However, it is not, in itself, sustainable, because other non-wind generating plant needs to be built to provide back-up supplies when the wind does not blow. This other plant, and associated infrastructure, need to be treated as part of “the system” when assessing CO2 savings due to wind power. And it is only low carbon if no damage is done to carbon sinks such as peat-lands during the construction of the wind farms and associated infrastructure.

This condition is currently being violated in many wind farm projects in the EU, negating much or all of the claimed carbon saving from building wind farms in the first place.

- As a third example, the level of subsidy for renewable energy offers very attractive financial incentives for landowners and investors. This is leading to pressure on local communities to accept projects they regard as damaging to their environment. Further, there are anecdotal suggestions that the renewable energy subsidies are attractive to organised crime. These trends are not socially sustainable, and are likely to lead to exploitation of the subsidy regimes in ways not intended by the policies they are designed to implement, and damaging to the credibility of the policies the subsidies are supposed to advance.

- As a fourth example, claimed carbon emission savings from recently installed "renewable" energy systems often over-estimate how much conventional generation has been displaced, and how much CO2 the displaced generation would have produced. This is due to two factors: failure to account for the carbon cost of back-up capacity and spinning reserve attributable to wind generation; and using estimates of the CO2 intensity of the fossil-fueled generation that assume more coal and less gas and nuclear than is actually the case.

General Recommendations:
I would like to make three general recommendations before moving on to discuss targets specifically.

1. Policies need to be framed such that the problem is actually solved, not merely transferred to another part of the world with a different regulatory regime. There is no point reducing GHG emissions in the EU if this results in a corresponding increase in GHG emissions somewhere else to service demands (for products and services) that originate in the EU.

2. A whole system whole life analysis is required to support subsidy payments, focusing on minimising GHG emission and Carbon intensity, to make sure that new energy systems are actually providing the GHG benefits claimed, and not causing socially and environmentally unsustainable unintended consequences.

3. Subsidy regimes must be adjusted to place as much weight on protecting carbon sinks, such as peatlands, which lock in a great deal of CO2, as on generation of "renewable" and low carbon energy.

4.2 Targets
Incorrectly framed targets drive perverse behaviour which often negates the intent of the policy. It is therefore absolutely critical that targets are set correctly, consistently, and in a way that systematically incentivises individual self-interested decisions in a way that achieves progress towards policy objectives. Targets should be set in such a way that the totality of self-interested decisions by individual stakeholders results in the maximum reduction in GHG emissions for the minimum overall financial, environmental and societal cost.

Recommendations: Choice of targets:

The use of "CO2 saved" is unsatisfactory for the reasons stated above.

Carbon sinks and carbon sequestration ecosystems must be explicitly accounted for in the target regime, so that investments that protect and enhance such ecosystems are preferred over those that damage and degrade them, and given equal weight to investments that save corresponding amounts of CO2 emission.

The best basic metric to assess the effectiveness of the transition of power generation to low carbon is "CO2 intensity", expressed for example as grams of CO2-equivalent GHG emission per KWH delivered to consumers. One benefit of this metric is that it can be applied equally well to energy savings measures: the carbon cost of reducing demand in kWh can then be compared directly with the carbon emission required to satisfy the demand. The two key issues that have to be resolved with this metric are:

I. what is the "whole system" for which the "carbon cost" is calculated? As well as the direct carbon cost of primary and back-up generation systems and associated infrastructure, it must include effects of loss of carbon sinks and carbon sequestration ecosystems, such as peatlands and forest habitat.

II. the lifetime over which up-front carbon costs are amortised.

And what national and regional metrics and targets are most appropriate? We all live on the same planet. Sea level rises will not respect national borders. GHG-reduction policies must be framed such that they do not simply transfer economic activity from low-carbon economies to high-carbon ones, resulting in a global increase in CO2 emission in spite of regional savings. In terms of economic impact, the carbon intensity per unit of GDP may be a more satisfactory metric than total GHG emission for a country.
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I hope this is clear. If you have any questions on this submission, please do not hesitate to contact me.

Sincerely yours,

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