

Submission from EPA to DCMNR Green Paper on Energy

1 Introduction

Energy issues are becoming increasingly complex and subject to significant external drivers particularly those arising from environmental and geopolitical issues. The Green Paper on Energy provides a context for, and assessment of, the challenges and issues surrounding energy policy. It also summarises key background information for development of national energy policy.

In this document the EPA provides a brief response to the Green Paper. The response focuses on environmental and sustainability issues. These have implications for the other policy areas being considered. The response largely addresses the relevant questions suggested for the consultation process. However, for convenience, these are briefly reformulated in Appendix 1.

2 General comments

The Green paper “policy framework” aims, to ensure security of energy supply, to promote sustainability of energy and to enhance the competitiveness of energy supply. In some cases the details of these areas suggest apparently contradictory aims e.g. to reduce environmental damage due to emissions of carbon dioxide while, at the same time, exploiting potential oil reserves. The resolution of such apparent contradictions will be an important aspect of energy policy development.

In the context of sustainability of energy supply the EPA wishes to emphasise the imperative for national energy policy development to be directly linked to the steps required to address the challenges of climate change, i.e., to reduce and eliminate greenhouse gas emissions. The vision of sustainable economic development will not be achieved unless these issues are fully addressed within the energy and transport sectors in the context of EU and wider international actions. It is important to recognise that we are moving to a situation of global carbon constraint and so our dependence on fossil fuels must be reduced by all means available.

Considerable synergies exist between provision of energy security and achievement of environmental objectives. The EPA will contribute in all possible ways to the advancement of environmentally sustainable energy solutions and policies.

3.1 Climate change

Climate change is the most challenging environment issue facing the world today. Economic analysis¹ shows that failure to take urgent actions to address climate change will in the long term undermine social systems and economic development and that the costs of inaction significantly outweigh the costs of actions to address the causes of climate change. The fourth IPCC assessment report to be published in early 2007 is likely to reinforce these points as well as the scientific findings of previous reports.

¹ The Stern Report provides an economic analysis of these climate change issues

The Green paper presents the challenges in meeting the national target under the Kyoto Protocol to the UN Framework Convention on Climate Change (UNFCCC). EU Council Conclusions that developed countries need to further reduce GHG emission by 15-30 % by 2020 are also cited. These reflect the EU position that the objective of the UNFCCC, to stabilise atmospheric GHG concentrations in order to prevent dangerous climate change, can be achieved if global temperatures do not rise by more than 2° C above pre-industrial levels².

Various analyses indicate that in order to achieve this long-term target, developed countries must reduce GHG emissions by 70-90% of 2000 levels by 2050. This is an enormous challenge, which can only be achieved if a pathway for such reductions is established in the short term. National energy policy development and investments also need to work towards achievement of these objectives and EPA considers that the Green Paper does not go far enough in this regard. The associated costs of inaction need to be factored into any alternative policy options being considered. These costs should also be included in analyses of policy options that contribute to continued emissions of GHGs.

In recognition of the importance of climate change, establishment of a medium term GHG emissions reduction target that will establish a pathway for achievement of longer-term emissions reductions is recommended e.g.

- By 2020 the energy sector will have reduced GHG emissions by at least the indicative level (15-30%) agreed in the EU Council Conclusions with further deeper cuts beyond that timeframe.

Such an objective would strongly reinforce market signals on development and deployment of renewable energies and bio-fuels as well as signal support for market investment in technological innovation and deployment. The absence of hard targets significantly weakens the policy.

3.2 Kyoto Protocol flexible mechanisms

The Green paper highlights the Emissions Trading scheme. This is one of three flexible mechanisms established under the Kyoto Protocol as cost effective methods to reduce GHG emissions. The other Kyoto protocol flexible mechanisms, i.e., the Clean Development Mechanism and Joint Implementation, are also mentioned.

These innovative mechanisms also provide opportunities to invest in, and pilot energy solutions, that reduce GHG emissions respectively in developing countries and economies in transition. Lessons learned in such investments can inform decisions on future investment in energy technologies in Ireland.

- The full use of KP flexible mechanism is encouraged as well as analysis of lessons and opportunities for sustainable energy options arising from CDM and JI projects elsewhere in the world.

² This temperature target implies a GHG stabilisation level between 450 to 500 ppm CO₂ equivalent current CO₂ levels are 370 ppm and rising by 2ppm per annum.

3.3 Trans-boundary Air Pollution

The Green Paper also highlights the damaging effects of emissions of other gases such as sulphur dioxide (SO₂) and nitrogen oxides (NO_x). These emissions differ from emissions of GHGs in that their impacts are more local and regional in nature. Their impacts are also more immediately evident and effective policy responses can provide more immediate results e.g. the positive health effects of the ban on sales of bituminous coal.

Emissions of these pollutants are subject to targets established under the Gothenburg Protocol to the UNECE Convention on Long Range Transport of Air Pollution (CLTRAP) and under the EC National Emissions Ceiling (NEC) Directive. Considerable progress has been made in relation to reducing emissions of SO₂. However, Ireland faces significant challenges in meeting its target on NO_x emissions. These emissions are largely associated with energy and transport.

The Gothenburg Protocol and NEC Directive are intrinsically linked. These are both currently subject to review and revision. This is likely to result in a broadening and deepening of their scope, e.g., to include pollutants such as particulate matter e.g. PM₁₀ to further reduce adverse impacts on health.

- Costs of short, medium and longer term damage to human health, ecosystems and climate by emissions to air from energy and transport, need to be factored into economic analysis of future energy options and given priority attention in future energy policy development.

Considerable synergies exist between measures to reduce emission of trans-boundary pollutants and GHGs.

3.4 Transport

Transport is a major source for emissions of GHG and NO_x. In 2004 transport contributed over 18% of total GHG emissions. This is an increase of 144% since 1990. This increase is due almost entirely to road transport and is continuing.

Making transport users fully aware of the external costs of transport (such as emissions of greenhouse gases and NO_x) will be key to changing travel patterns and development of eco-driving. However, in the absence of alternative solutions, there are limits to the benefits of such campaigns.

A substantial increase in public transport capacity is required to provide a frequent and reliable service which will encourage greater use by the public. In addition, the barriers preventing people from moving from the private car to public transport need to be identified and addressed.

Embracing the 'polluter pays' principle and raising awareness of the significant external costs associated with transport hold the potential to bring about changes in personal behaviour. However, innovative systems to save energy and reduce pollutant emissions are required.

- Strong linkage of energy and transport policy and infrastructure development to the National Spatial Strategy is encouraged to reduce the current level of long distance commuting.

- Further incentives to develop renewable fuels for transport sector particularly in the context of the decoupling of EU farm payments from food production.

4.1 Electricity generation

The energy flow diagram for electrical generation, Figure 3 of the Green Paper, graphically shows that the majority of energy input to the generation process is lost. Given the environmental and financial costs of energy this is not sustainable. Measures to reduce or utilise such energy losses are required. In addition a fundamental examination of electricity energy use and generation is required to justify the ongoing maintenance of such low efficiency systems.

Here again there are possibilities to further exploit the use of biomass for electricity generation and an EPA position paper on bioenergy is attached for information.

4.2 Projections

The EPA notes the statement in Para 2.1.11 that “the Government is moving to address the acknowledged need to improve the quality of its future scenario-casting ability in support of evidence-based policy making and for use by the energy sector”. It is recommended that close links are established between these analyses and work on projections of future GHG emissions being established by the EPA. This work should also interact with the international research community work on development of future socio-economic scenarios in support of the work of the Intergovernmental Panel on Climate Change (IPCC)

5 Research

The focus on research and innovation in the Green Paper is welcome as is the establishment of the Energy Research Council. The importance of energy for sustainable socio-economic development means that sustained investment in an active and dynamic energy research community is required. In relation to energy research the issues and challenges are well known and include.

- Analysis of current, and projections of future, national energy requirements and options to provide these
- Fundamental analyses of efficiencies and options to increase these, particularly in electrical energy generation, distribution, use and storage
- Development and deployment of renewable geothermal, solar, wind, tidal and wave and low carbon technologies
- Barriers to low or no-carbon energy technologies, options to remove these including analysis of incentives, regulatory and institutional barriers.
- Management of energy needs and options to overcome barriers to uptake of sustainable energy options.

Priority research issues have also been highlighted in the document, including scientific, technical and socio-economic analysis of

- The costs of medium to long term environmental and socio economic damage of emissions linked to energy production and use.
- Tools and mechanisms to advance sustainable energy,

This type of analysis requires that energy research programmes should be further coupled with relevant environmental research. The relatively small and co-operative nature of the Irish research community provides an excellent opportunity for such initiatives, which would be supported by the EPA through its ERTDI programme.

It is also necessary to link national research to Framework programmes at EU level and to wider international research. Re-research or buy-in to technologies or solutions that are inappropriate for Ireland should be avoided.

Appendix 1

Question 3. The development of storage of gas may to be linked to work on utilisation of Carbon Capture and Storage (CCS) technologies. Further national research on this area may be warranted.

Question 6. The use of indigenous energy resources is assumed to refer to potential oil and gas reserves. The cost for development of such resources needs to be coupled to costs of environmental damage and balanced with costs of development of renewable energies

Question 8. The green paper has many positive aspects in relation to security of energy supply. However, the focus on fossil oil based energy may not be a useful basis for consideration of long-term energy security and sustainability objectives.

Questions 9, 10 & 11. Clear policy signals and investments are required to improve the pace of development of renewable energy and replace the use of electricity for heating c.f. recommendation above. Additional steps may be taxation of inefficient approaches, appliances and processes combined with incentives for efficient options.

Questions 12 &13 C.f. Section 5 above

Question 15. A combination of mandatory targets and incentives are required. Institutional practices and approaches need also to be examined and changed if not in line with policy objectives. Section 3.1 indicates that a specific target on GHG emissions reduction for 2020 is required.

Question 16. The green paper provides a number of useful contributions to establishment of the right direction for energy sustainability. However, further input and focus on development of objectives in relation to sustainable development and environmental issues is required.