

7 November 2006

Energy Green Paper Submissions
Energy Planning Division
Department of Communications, Marine & Natural Resources
Adelaide Road
Dublin 2

Attached below is the **initial response** from the Energy Policy Study Committee of the Irish Academy of Engineering to the recently published Green Paper.

As you are aware, The Irish Academy of Engineering submitted a detailed ***Report and Recommendations for future Energy Policy in Ireland*** to the Minister shortly before the publication of the Green Paper. This Report contains a total of 39 Recommendations covering all sectors and provides realistic and deliverable strategies to achieve the policy aims. No fundamental differences have been expressed by the wide range of people who received this Report.

The information and recommendations in the Academy Report form the basis for the initial response and suggestions outlined below.

Given the complexity of the subject and the importance of the issues for the country, the suggested timescale for constructive responses to the Green Paper is very short. The Green Paper is discursive, but lacks structure and much remains to be done to transform it into a set of clear, well based and effective policies. Our comments are designed to assist in this process and are not intended in any way to criticise the considerable work that has gone into the production of the Paper. We are ready to discuss the many issues as required.

In preparing this initial response, views on the Green Paper have been sought from a number of people who have considerable knowledge of various aspects of energy policy and practices. This response is intended as an overview (macro-level) and more detailed responses can be submitted if time permits.

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**ENERGY POLICY STEERING COMMITTEE
IRISH ACADEMY OF ENGINEERING**

COMMENTS ON THE GREEN PAPER – NOVEMBER 2006

INTRODUCTION

The publication of the Green Paper is a major step forward. It is both timely and critical in relation to the future of Ireland's economy. The personal leadership of the Minister is a key factor in this and the Academy fully supports his endeavours to develop an effective National Energy Policy.

The Academy welcomes the recognition that a National Energy Policy must embrace all sectors, including Transport and Buildings, and must in the words of the Minister, represent "joined-up thinking".

Highlighting of the three key issues listed below will provide the necessary framework for the more specific policies:

- • Security of Supply
- • Economic Competitiveness
- • Environmental Consequences

Setting a target of a 20% reduction in energy demand is both welcome and consistent with EU policy, particularly in view of the rapidly emerging problems associated with greenhouse gases and climate change.

GENERAL POINTS

1. **1.** *The Report identifies* three main uses of primary energy - Electricity, Transport and Heating. While electricity is addressed in detail, the Heating of Buildings which is the area of **greatest potential for demand reduction** does not get comparable examination. Similarly, Transport, which is the most problematic energy area receives scant attention. The above comment applies particularly in relation to firm proposals for action.

2. **2.** There is a pattern in the Green Paper of focussing on what could be described as the secondary aspects of policy, rather than primary matters. For example:

- • **Electricity Policy** deals mainly with renewables and does not address the primary area of Thermal Generation, which will represent an average of ca. 85% of production up to 2020.

- • **Heating of Buildings:** Biomass and innovative technologies receive considerably more attention than the primary issue of the implementation of best practice building regulations.

- • **Transport** – To the extent that transport is addressed, the focus tends to bio fuels and public transport, rather than private transport, planning and gridlock, which again are the primary issues.

In 80 : 20 terms the “80” is not receiving adequate consideration.

Another way of making the same point as in 2 above is to pose the question:

“Excluding proposed policy on renewables and the use of market forces to deliver solutions what substantive new policies emerge from the Green Paper?”

3. There is a tendency in the Paper to ignore **economic realities**. Sweden, which is well in advance of Ireland in Energy Policy terms, is preparing a twenty year plan to optimise use of energy including phasing out of the use of oil and gas. A basic principle being used is that “solutions” ie., technologies **must be economic** (market competitive).

This topic requires more attention and the Academy Report makes a number of suggestions for special studies with regard to developing better energy policies. Current energy subsidies in Ireland exceed €1bn p.a. and suggestions for new developments in the Green paper are not supported by economic arguments. The suggestion that interconnectors might be funded from the **general tax base**, rather than by **the users** is an example of potential economic distortion that can lead to sub-optimal energy practices. Other practices arise in the Transport Sector.

4. The Green Paper conveys an impression that Security of Supply is **the critical issue**. The Academy Report calls for a balance, which would involve economic and environmental impacts being viewed as equal, or perhaps, in the longer term, as the more critical issue.

SPECIFIC COMMENTS

A. ELECTRICITY PRODUCTION AND DISTRIBUTION

- ○ **Irish prices** have risen much more rapidly than the EU average since 2000. This rapid upward trend is **likely to continue** based on the strategies suggested (30% penetration by renewables; investment in networks and interconnectors; costs of creating AIM; inducements to new entrants etc.).
- ○ **A Review of Regulation** as experienced in the Republic should be carried out earlier than proposed. Regulatory rules determine the tactics of participants in relation to the market and in energy policy terms regulation has not been effective. This Review could be linked with the Deloitte & Touche Report on the Electricity Sector.

- ○ Substitution of 25% of **peat by biomass** is inconsistent with the present trends in afforestation and competing demands for the output.
- ○ It should be clearly acknowledged that irrespective of any other developments, electricity production will be critically dependent on **natural gas** (including LNG) until at least 2020 – **a key security issue**.
- ○ The comments on **Nuclear Energy** (pg 56) appear to be factually incorrect in relation to costs and available plant sizes. The Academy has already recommended commissioning a Report on the **current state** of Nuclear power engineering and economics.
- ○ The contrast between nuclear power and “clean coal” technology is interesting. “Clean Coal” technology is at the R&D stage and economic solutions are well in the future. **Western** nuclear power by contrast has a 50 year track record including an excellent safety record. In the UK studies conclude that nuclear is the most economic form of future generation taking all factors into account.
- ○ The core issue to be addressed in the Electricity Sector is the future **Generation mix**. This is a prime cause of relatively high Irish prices and will effectively determine the future trend. Recommendations on addressing this key issue are contained in the Academy Report.

B. HEATING OF BUILDINGS

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- ○ Green Paper proposals on sources of heating energy are similar to the Academy Report recommendations in this area. Reservations must be expressed, however, with regard to the economics and availability of wood biomass in Ireland at the scale envisaged to enable the extensive conversion targets to be achieved.
- ○ The key Academy Report recommendations relate to demand reduction and a target of 50% by 2020 is proposed (*Recommendations 1 to 5, page 55 in the Academy Report, Part 1*).
- ○ While measures to improve energy efficiency in the Heating Sector are identified, much more effort must be applied to implementation and enforcement if the proposed target in the Green Paper is to be achieved.
- ○ In relation to the proposed review of the Building Regulations in 2008, in order to reduce the **traditional long transition and lag times** to full implementation, a specific Policy objective should be set to have the necessary preparatory work and consultations completed as early as possible with a commitment to the resources required for full implementation. The Academy Report has recommendations in this regard.

- ○ In the area of Sustainability of Energy Supply the Policy actions outlined are welcomed. The challenge for the Policy Action Area is to focus on targeted and specific programmes to deliver the potential improvements - initially in areas where the greatest gain can be made using existing technologies, for example, domestic building thermal performance improvement through rigorous Building Regulation implementation and enforcement; the upgrading of the 2002 Regulations; and a drastic reduction in transition and lead times to full implementation.
- ○ In combating Fuel Poverty, the measures outlined are welcomed, including the capital investment proposal for improvements to 10,000 low income homes pa. The potential for energy efficiency improvement incentives for the majority of the 90,000 new housing units being built annually and for **legacy stock** already existing should also be included if **meaningful** energy efficiency gains are to be made.

C. TRANSPORT SECTOR

- ○ **Transport is the most problematic sector.** With the exception of planned initiatives in biofuel substitution and relatively small taxation incentives (VRT) there are no policy proposals contained in the Green Paper. Reference is made to future action plans and expenditure in the Transport area, but the range of initiatives necessary to address energy policy in the Sector is not identified.
- ○ The Academy supports the increasing use of biofuels and encouragement of hybrid vehicles. It has also listed a series of Recommendations (*pages 35 – 37, Academy Report*) to deal with the major energy issues ranging from integrated planning, use of efficient technologies, financial incentives and prioritised investment in infrastructure. These are an essential part of a comprehensive White Paper on Energy.
- ○ The Government commitment to integration of spatial development and transport investment is welcomed. However, positive action is required in the strategy to demonstrate this commitment through action. More is needed than a public awareness campaign to encourage eco-driving.
- ○ Tax incentives and emission levies are recognised as holding potential for changing patterns and should be vigorously developed and applied to include, for example, engine size and efficiency ratings, to reduce usage in this sector.

D. CROSS-SECTORAL ISSUES

- ***Note:** The Academy has refrained from offering advice on organisational or structural issues, preferring to address policy areas where the body of engineering experience and scientific knowledge available to the Academy can be used to best effect.*

Security of Supply

- Over the next 15 - 20 years the key issue to be addressed is the security of natural gas supplies. A combination of the Corrib Gas Field and a new LNG plant would effectively underpin security in this critical area.

In the longer term a **transition away from oil/gas** in an economic manner is the main challenge.

Conservation of Energy

- A headline target of 20% per capita reduction in demand by 2020 is a realistic target. Nevertheless, experience suggests that it will be **extremely difficult** to achieve. It appears that the **scale of the effort required** is being seriously underestimated in both institutional and monitoring terms.

Underpinning studies will be necessary to address many of the implementation issues listed in the Green Paper and in this response. A number of these are suggested in the Academy Report.

SUGGESTIONS RELATING TO THE STRUCTURE OF THE FORTHCOMING WHITE PAPER

- 1.** 1. National Policy should deal with Transport, Heating and Electricity in a comprehensive and comparable manner.
- 2.** 2. The primary **aims of the Policy** (security etc) should be placed in a specific Irish context and linked directly to emerging or existing EU Policy.
- 3.** 3. Setting firm action plans and targets is appropriate up to 2020. Beyond that for a variety of technical and economic reasons it may be more appropriate to state a direction (or longer term aim) for example, the phasing down of oil/gas usage, future transport patterns, integrated planning etc.
- 4.** 4. A clear distinction should be made between demand reduction (20%) and substitution of fossil fuels (eg., 15%).

In order to provide a **realistic framework** the 20% and 15% suggested targets should be allocated over the three main sectors. A preliminary look would indicate the following breakdown. The 2020 deadline may, however, be very problematic for **substitution**.

Assuming 15 MToE primary annual usage split evenly between Transport, Heating and Electricity:

a) Demand Reduction.

20% equates to a reduction of approximately 3 MToE p.a.(by 2020)

	Demand Reduction by Sector	
Heating	1.60 MToE	32%
Transport	0.80 MToE	16%
Electricity	0.60 MToE	12%

b) Substitution (of fossil fuels that emit GHGs)

15% equates to approximately 2.20 MToE p.a.

	Substitution by Sector	
Heating	0.60 MToE	12%
Transport	0.55 MToE	11%
Electricity	1.10 MToE	22%

- 5.** 5. In addition to general target setting, arrangements to detail sectoral targets and, particularly to **monitor progress** need to be outlined