

**20<sup>th</sup> May 2005**

**ESB Response to  
Energy Research Development and Demonstration  
Consultation Paper  
issued by  
The Department of Communications Marine and Natural Resources**

**Introduction**

ESB welcomes the opportunity to respond to the Department's recent consultation paper on Energy Research Development and Demonstration.

We believe that this paper is both timely and important given that Energy Policy generally is moving towards the upper end of the public policy agenda both in Ireland and in other European countries as a direct result of concerns around security of supply, energy pricing and the environmental commitments.

From an Irish perspective these concerns are even more acute given that as a nation we import the vast majority of primary fuels and are geographically placed at the end of a very long supply chain. Accordingly it is important that Ireland maximises the benefits it can achieve in the research field.

We wish to comment on a number of areas in the paper, including:

- the organisation of research and development in Ireland,
- the increasing interaction between environmental issues and the energy industry,
- the All Island and European context.

However, underpinning all of our comments is a concern around the quantity and quality of electrical engineering graduates emerging from Irish third level establishments – it is on this point that ESB's response starts.

## Comments on the Promotion of Electrical Engineering

The electricity industry has undergone extensive change in the past number of years. The number of players in the industry has increased dramatically with the establishment of a Commission for Energy Regulation, a separate Transmission System Operator, several independent electricity generation companies (including renewable generation businesses) and supply companies. Within ESB the separation of business functions required to ensure proper operation of the industry also impacts on the requirements for specialist engineering skills. For proper development of the electrical industry in Ireland a sustainable resource of engineering graduates and post-graduates is a critical piece of educational infrastructure, and the promotion of energy-related engineering expertise at university level is likely to be the most effective way of ensuring that such skills are available to the industry.

ESB is seriously concerned by the sharp downward trend in the number of school leavers entering third level 'Electrical and Electronic Engineering' (or similar) programmes in Universities and Institutes of Technology. Other Engineering programmes appear to be suffering a significantly smaller downward trend nationally. One recent media reports suggests: -

*According to Professor Tom Brazil, who heads up the University College Dublin department (Electrical and Electronic Engineering), a total of 32 Irish students sitting their Leaving Cert next month have chosen the course as their number one choice on their CAO form. (Irish Independent – 3<sup>rd</sup>. May 2005 – Page 6).*

This is a serious reduction on previous years. It could lead to less than 10% of first year engineering students in UCD studying 'Electrical and Electronic Engineering' from somewhere close to 30% four to five years ago, unless the other disciplines suffer a similarly dramatic drop in numbers.

Apart from ESB, this trend should be of significant concern to the wider electricity industry.

Along with the obvious need to maintain standards and quality at primary degree level, there will also be a need for a small number of high-calibre post graduate engineers on an ongoing basis. These would appear to be best produced from research environments attached to third level institutions, where the qualifications can be acquired and expertise can be developed in the context of specific and relevant research. Furthermore universities and third level institutions provide a solid basis for *Capacity Building* in research fields which if coupled with an

appropriate organisation structure to include industry participants would provide a focussed research infrastructure in Ireland.

### **Comments on the Organisation of Energy Research in Ireland**

ESB agrees with the views expressed by DCMNR that that the optimum means of co-ordinating energy research activities for the overall benefit of the electrical industry in Ireland is achieved through the establishment of a separate co-ordinating council, set out as Option 2 under paragraph 3.3 of the consultation paper.

Whereas the primary concern of ESB is that this research would lead to the development of suitable engineering resources, other skills such as those relating to energy market economics could also be promoted through such research centres and the overseeing body could ensure that funds invested were dispersed in such a manner as to develop these fields of expertise within Ireland also. We believe that it is of critical importance that the board of the co-ordinating council should comprise of representatives from the energy industry, universities, Science Foundation Ireland and DCMNR. We note that the Electricity Research Centre at UCD, in their response, advocate close industry involvement through a board structure as a critical success factor to their work – ESB supports the ERC in this view and broadly supports their input to this debate.

The mandate for this board should ensure that a high percentage of research activity funding should be related to the universities and other technical third-level institutions to ensure that this research leads to the development of a sustainable pool of expertise for the overall benefit of the industry in Ireland which, as set out in the previous section, is of great importance to the economic well being of Ireland.

### **Comments on the Interaction of Environment and Energy Policy**

Historically energy policy concerned itself with security of supply and energy pricing – more recently the competition agenda sought to deliver both security of supply at an efficient price through the promotion of competitive electricity markets in accordance with European Directives. However, it is clear that the energy landscape going forward has changed substantially. It is no longer simply focussed on competition to reduce prices, it is increasingly influenced ( and at times driven ) by other variables such as security of supply and environmental objectives, set by both national policy and European policy. This raises many

energy policy issues which are particularly acute for a small electricity industry such as Ireland. From the perspective of research development and demonstration it is clear that environmental considerations must be factored into any assessment of an appropriate energy research programme and accordingly the coordination council should be charged with ensuring its inclusion.

### **Comments on the All Island and European Context**

ESB fully supports the development of an All Island electricity market. We see such a market as a logical development in line with European policy which provides greater scale for the electricity supply industry and thereby enhanced economies of scale to the benefit of all electricity customers. We therefore support fully the strategic goal of cooperation on energy research development and demonstration on an all island basis. We would suggest therefore that the Department consider whether the Energy Research Coordination Council as proposed in the consultation paper should be constituted on an All Island basis with linkages to all Universities and third level institutions on the Island as a whole.

In relation to Europe, ESB supports the development of Regional Electricity Markets as a stepping stone towards a single European electricity market and has advocated the development of an East West electricity interconnection in order to make such a market real. However, it is not clear that the benefits which would accrue through an All Island focus on research and development could be extended to a European focus as from technical and economic perspective the challenges facing the electricity industry in Ireland are significantly different in some respects to the challenges facing the industry across Europe. This derives from our unique position as a very small Island system on the periphery of Europe with quite a distinctive fuel mix. However ESB accepts that the relevant research institutions in Ireland are better placed to give an informed opinion on this matter.

### **Conclusion**

In this response ESB has commented on a number of proposals in the Department's consultation paper. We wish to reiterate again that our primary consideration in responding has been to highlight the need to encourage a sufficient flow of qualified graduates and post graduates in electrical engineering to Irish industry. This is a critical concern to us and accordingly we advocate a focus on research and development in Universities and third level institutions on an All Island basis as one measure to help promote careers in electrical engineering.