

DUBLIN
REGIONAL
AUTHORITY



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RÉIGIÚNDA
ÁTHA CLIATH

Dublin Regional Authority

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13th November, 2006

**Mr. Noel Dempsey, T.D.,
Minister for Communications, Marine and Natural Resources,
29-31 Adelaide Road,
Dublin 2**

Re: Green Paper on Energy

Dear Minister Dempsey,

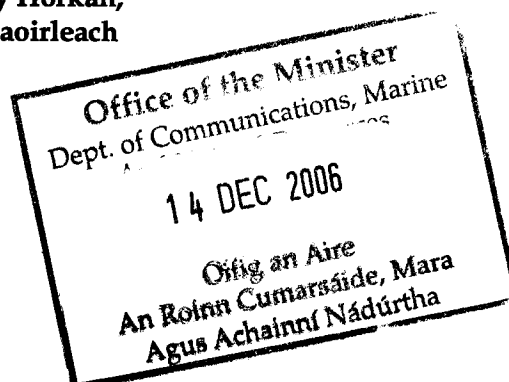
The Dublin Regional Authority at its meeting on 12th December, 2005 adopted the attached submission to the Government's Green Paper on Energy.

I should be obliged if you would give these comments every consideration.

Yours sincerely,

**Gerry Horkan,
Cathaoirleach**

FAO BT, SW, UNGC, TH
For Observations _____
For Action _____
For Follow Up _____
For Information _____
C.C. _____
Date 14.12.2006





Department of Communications,
Marine and Natural Resources

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14 December 2006

Mr Gerry Horkan
Cathaoirleach
Dublin Regional Authority
11 Parnell Square
Dublin 1

Re: Green Paper on Energy

Dear Mr Horkan

On behalf of Mr. Noel Dempsey T.D., Minister for Communications, Marine and Natural Resources, I wish to acknowledge receipt of your correspondence dated 13 November 2006, the contents of which will be brought to the Minister's attention.

Yours sincerely

Carina O'Donoghue
Private Secretary to the
Minister for Communications, Marine and Natural Resources

Energy

Marine

Natural Resources

Beidh fáilte roimh comhfhreagras as Gaeilge

Dublin Regional Authority

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UDARAS
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TOWARDS A SUSTAINABLE ENERGY FUTURE FOR IRELAND

Submission to the Department of Communications, Marine and
Natural Resources

December, 2006

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PREAMBLE

The Minister for Communications, Marine and Natural Resources, Mr. Noel Dempsey, T.D., launched the Government's Green Paper on Energy - Towards a sustainable energy future for Ireland - and invited comments from interested parties on the themes and issues raised in the Paper.

The Green Paper outlines the options for the future direction of energy policy based on three pillars -

- Security of supply
- Environmental sustainability and;
- Economic competitiveness

The Dublin Regional Authority, having discussed the contents of the Government's Green Paper, herein submits the comments and recommendations of its members to be considered as part of the development of sustainable energy future for Ireland.

Gerry Horkan

Councillor Gerry Horkan,
Cathaoirleach

1. GENERAL COMMENTS

The Green Paper on Energy discusses the challenges in balancing the three key principles of energy policy in an Irish context: security of supply; environmental sustainability; and maintain economic competitiveness.

The Dublin Regional Authority in considering energy policy directions for Ireland acknowledges that Ireland shares many of the same challenges on this issue as other countries in the EU and globally. However, the Authority also recognises that in addressing these challenges, the Government should take due cognisance of the specific characteristics of the Irish situation and ensure that any future policies should have distinct regard to the fact that -

- the Irish energy market is small and geographically peripheral;
- Ireland is heavily dependent on imported energy. Ireland spends over €7 billion per year on energy. 87% of this is currently imported, significantly higher than the EU average of 50% and this percentage is rising as the contribution from natural gas declines;
- Ireland is experiencing continued high levels of demand growth (in the order of 4% p.a.) in line with buoyant economic growth;
- there has been limited new entry/competition into the generation/supply sectors;
- there are low levels of international physical interconnection to wider markets, unlike our European counterparts;
- there has been an historic under-investment in energy networks;
- energy consumption in the transport sector has increased significantly in recent years (151% between 1990 and 2005), and is almost totally reliant on imported oil;
- overall energy and electricity costs in particular, have risen sharply since 2000; and
- the Government's commitment to avoid the development of nuclear power.

The Dublin Regional Authority further acknowledges that Ireland must take account of its commitments under the Kyoto protocol, which will come into operation in 2008.

In October 2000, the Government published its National Climate Change Strategy (NCCS), which is currently under review. This Strategy sets out a ten-year policy framework for achieving the necessary reductions to meet Ireland's target of limiting its greenhouse gas emissions to 13% above 1990 levels by the first commitment period 2008-2012 (as its contribution to the overall EU target).

Ireland ratified the Kyoto Protocol on 31 May 2002, along with the EU and its Member States, and is now internationally legally bound to meet this greenhouse gas emissions reduction target.

2. ENERGY TARGETS

The Dublin Regional Authority recommends that, as a fundamental part of its Energy Strategy, Ireland must make efforts to meet the EU targets for renewable energy and energy efficiency, for example -

EU Targets for Renewable Energy and Energy Efficiency	Ireland's Targets for Renewable Energy and Energy Efficiency
<u>Total renewable energy</u> : 12% of energy consumption by 2010 (from 6% in 2001. It is proposed that this target will be increased to 15% by 2015)	
<u>Renewable electricity</u> : 21% of electricity consumption by 2010 (from 13.9% in 1997 and 15.2% in 2001)	<u>Renewable electricity</u> : 15% of electricity consumption by 2010
<u>Biofuels</u> : 2.0% of transport fuel mix by 2005 (the actual result was 1.4%) and 5.75% by 2010 (it is proposed that this target will rise to 8% by 2015)	<u>Biofuels</u> : 0.13% of total transport fuel mix by the end of 2006. A target of 2.2% has since been set for 2008
<u>Energy efficiency</u> : an overall saving of 9% of final energy consumption over 9 years until 2017 (in the context of an overall target of 20% by 2020)	<u>Energy efficiency</u> : 1% energy saving each year over 9 years (from 2008 to 2017)

3. IRELAND'S ENERGY CHALLENGES

The challenge for Ireland is to meet its commitments and targets arising from existing EU legislation on renewables, energy efficiency and climate change. In this regard, Ireland must decide which sectors (wind, biomass, wave, etc..) to prioritise and the instruments to use to promote these sectors. Ireland should make every effort to go beyond its commitments at EU level and to set more ambitious targets on the basis of national policy priorities.

4. SOURCES OF RENEWABLE ENERGY

The Dublin Regional Authority sets out hereunder the various renewable sources of energy which should be addressed by Government within its energy policy:-

4.1 Wind energy

Ireland has one of the best wind resources in the world. The European Wind Atlas shows almost the entire country of Ireland as having either an excellent or very good wind resource and in recent years efforts to exploit this resource have begun to gather pace. In 2004, the installed capacity of wind farms in Ireland reached 339MW, up from 167MW in 2003. By the end of 2005 this had risen a further 46% to 496MW. By the end of 2006 it is expected to reach 736MW (enough electricity to supply around 400,000 homes). In the longer term it is considered feasible that up to 50% of Ireland's total electricity consumption could come from wind energy. By March 2006 there was a total of 50 wind farms in Ireland. The largest onshore wind farm in Ireland is located at Meentycat, Co. Donegal. The project was completed in 2004 and has an installed capacity of 72.4 MW (38 turbines). There is currently one offshore wind farm in Ireland, situated 10 km off the coast of Arklow. The project began operation in 2004 and has an installed capacity of 25.2MW.

The Dublin Regional Authority considers that wind power will make the most significant contribution to the achievement of national targets for green electricity, due to its environmental benefits and increasing competitiveness.

Europe is currently the world leader in wind power, responsible for around 75% of the world's production of wind-generated electricity and 90% of the market for wind energy equipment. Current constraints in the development of the wind sector include the insufficient supply of turbines (due to the huge increase in demand in the US and Europe) and delays in grid access, which is a particular issue in Ireland.

Recent developments in wind turbine design and engineering have greatly enhanced the competitiveness of the wind energy sector and have also helped to overcome some concerns in relation to the environmental impact of wind farms (noise, visual impact, landslide, impact on wildlife, etc.). However, because the best sites for wind farms are often also high amenity areas, this remains an important consideration for national environmental policy developments in Ireland.

4.2 Hydroelectricity

Hydroelectricity is Ireland's second most important source of renewable electricity, after wind. The bulk of the large-scale resource (over 10 MW) has already been developed and is operated by the ESB (220MW in total). The technology is mature and reliable and further technical improvements in hydro plant are likely to be limited. The main scope for hydroelectricity development, therefore, lies in the capability to install further small-scale systems.

The Dublin Regional Authority recommends the further development of small scale hydroelectricity systems within the energy strategy.

4.3 Waste Biomass

Energy from waste biomass encompasses the production of heat, fuels and/or electricity from agriculture and municipal wastes. Seven landfill gas projects (totalling 21.48 MW) have so far reached commercial operation in Ireland. Technologies to produce electricity and heat from landfill gas are now well established and environmental legislation, which requires the collection of methane at landfill sites, is being widely introduced. Department of the Environment, Heritage and Local Government has estimated that approximately 70 MW of electrical energy can be generated annually from municipal solid waste.

The Dublin Regional Authority recommends that the Department of the Environment, Heritage and Local Government provide financial resources to the development of further sites for waste biomass as a priority.

4.4 Biomass - Energy Crops and Forestry Residues

Biomass is the oldest of the renewable energy sources. In Ireland, its main use is as fuel-wood for domestic and process heating, which amounts for just under 1% of total primary energy demand. There is an established market for Combined Heat & Power (CHP) generation using straightforward biomass. However, further R&D and demonstration is needed for gasification technologies. The Department of Agriculture and Food is currently finalising plans for a scheme to support the purchase of specialised wood biomass harvesting and processing equipment and a support scheme for the planting of short-rotation willow coppice as a source of energy.

The Dublin Regional Authority supports this initiative and recommends the further development of this process as a part of the energy strategy.

4.5 Ocean energy (covering both wave and tidal energy)

Ireland possesses some of the greatest potential wave power resources in Europe, with a potential wave energy resource at least as large as that for offshore wind energy. In theory, wave energy could provide Ireland's entire electricity demand, though of course this is subject to practical and economic limits. Tidal energy could supply an estimated

6% of Ireland's electricity demand. The Marine Institute and Sustainable Energy Ireland (SEI) are currently implementing a strategy for the development of Ireland's ocean energy. An important milestone in this strategy is the establishment of a wave energy test site a mile and a half off the coast of Spiddal in Co. Galway. The 37-hectare site is now open to entrepreneurs and engineers to test prototype ocean energy generators. The first wave energy generator, 'Wavebob,' was deployed at the site in March 2006.

The Dublin Regional Authority supports the Marine Institute and Sustainable Energy Ireland in the development of this initiative and recommends that Government ensure its continued research and development within its energy strategy.

4.6 Solar

Active solar heating systems convert solar radiation into thermal energy (heat) which can be used directly or converted to electricity. In Ireland this technology is best suited to low-temperature heating applications, which do not require direct sunlight (e.g. domestic water systems, space heating, etc.). It is now a well-established technology and commercially available across Europe. Photovoltaics, on the other hand use semiconductor materials to convert solar energy to electricity. Costs are still high, but reducing, and the technology is beginning to be more attractive for use in commercial and industrial buildings.

The Dublin Regional Authority recommends that the Government should continue to research and develop the viability of this source of energy in Ireland.

5. GRID ISSUES

Access to the grid, at a reasonable and transparent price, is one of the main objectives of the Renewables Directive and is considered to be essential for the development of renewable electricity generation. It requires Member States to put in place measures to facilitate access to the grid for renewable electricity.

In Ireland, the existing grid infrastructure was mainly built when the electricity sector was publicly owned and was designed to allow access to large power plants. Renewable sources of electricity, however, tend to be smaller scale and more dispersed and it is generally uneconomical, and potentially destabilizing to connect them directly to the existing transmission system.

In 2003, the ESB raised concerns relating to the security and stability of electricity supply as the total amount of wind power in the system grew. This led to a moratorium on grid connections for wind generation in 2003. The Commission for Energy Regulation (CER) established working groups to address some of the technical concerns raised by the ESB and to develop new grid codes at transmission and distribution level.

Following the adoption of these new grid codes, the moratorium was lifted in December 2004, and a group processing approach for grid connection applications was put in place.

The first set of connection offers under this approach ('Gate 1') was made during the course of 2005, with a total of 370 MW of new renewable generation across 33 developments receiving offers. The capacity remaining in the queue for connection after the Gate 1 process totals almost 3000 MW, indicating the considerable potential that remains for increasing renewable energy input to the grid.

Gate 2 is currently in progress, however an analysis of proposed renewable energy projects in Ireland highlights some significant complications, which the Dublin Regional Authority considers should be immediately resolved. These complications include:-

- There is nearly 2000 MW of renewable energy capacity in the grid connection application process (after Gate 2).

- There are several hundred MW of renewable capacity with planning permission and a Power Purchase Agreement (PPA) but no signed grid connection agreement.
- Given the proposed timeline for processing grid connection applications, some of the planning permissions for these projects may lapse.
- There are several hundred megawatts of wind energy capacity with signed grid connection agreements and planning permission but no PPA.

6. ALTERNATIVE TRANSPORT FUEL - BIOFUELS

Biofuel is bio-energy produced from biomass. The term commonly applies to liquid transport fuels, but also includes gas and solid fuels such as wood pellets and chips, and also the combustion of organic material. Generally, a distinction is made between first-generation biofuels (mainly produced from food crops such as cereals, sugar beet and rapeseed) and second generation biofuels (produced from non-food feedstocks, such as 'woody' sources or via new technologies to convert biomass to liquid (BTL)).

At present, three biofuels account for almost all consumption in the transport sector world-wide: Bioethanol, biodiesel, and biogas. Bioethanol is the world's main biofuel. Biodiesel, which until recently was produced almost solely in the EU, is now gaining a foothold in many regions across the world. Biogas comes third and has so far made a breakthrough only in Sweden.

Brazil and the US are the main production regions for bio-ethanol (in Brazil, over 11 million vehicles run on either pure or blended bioethanol, representing 45% of the national fuel consumption); the EU has the largest production of bio-diesel. Germany, France, Sweden and Spain are the leading EU countries regarding the use of biofuels for transport.

When discussing biofuel it is important to have regard to its pros and cons -

pros

- Low emissions of greenhouse gases in comparison to fossil fuels (In principle, biofuels are "carbon neutral": when they are used, no more carbon dioxide is released than has been absorbed during the growth of the plants used to make these biofuels);
- Biofuels can help to develop new markets for agricultural and forestry produce;
- First-generation biofuels can currently be used in low-percentage blends with conventional fuels in most vehicles and can be distributed through the existing infrastructure (Some diesel vehicles can run on 100% biodiesel);
- Biofuels can displace petroleum-based fuels that are currently dominant in the transport sector and can provide a domestic rather than imported source of transport fuel.

cons

- Possible environmental risks (there are dangers, particularly with first generation biofuels, of more use of fertilisers and pesticides to grow energy crops, giving rise to greater risks for biodiversity and soil quality. Growing energy crops for export could also lead to more deforestation in developing countries, with negative implications for global warming);
- Using agricultural land to grow bio-energy crops would compete with the use of land for food and animal feed production. To reach the 5.75% target of the Biofuels Directive, biofuel crops would take up between 4% and 13% of the total agriculture area of the EU-25;
- High production costs (with current technology, EU-produced biodiesel breaks even at around €60 per barrel, while bioethanol becomes competitive at around €90 per barrel);
- Losses to the exchequer in tax revenue.

The Dublin Regional Authority agrees that despite the possible risks, encouraging the use of currently available biofuels is an important intermediate step to reducing greenhouse gas emissions, to diversifying transport energy sources, and to preparing the economy for other alternatives in the transport sector which are not yet mature, such as second generation biofuels, natural gas and hydrogen fuel cells.

Second generation biofuels should be more cost effective and are expected to have much lower overall greenhouse gas emissions and other environmental impacts than first generation biofuels, which currently dominate production in the EU. A Biofuels Technology Platform, launched by the European Commission in June 2006, aims to advance research and development on second generation biofuels.

Proposals on Procurement of "Green" Vehicles by Public Authorities

The European Commission published a proposal in December 2005 for a new Directive, which would require public authorities to allocate 25% of their annual vehicle procurement budget to clean vehicles. The clean vehicles Directive, if adopted, would impose strict standards for the type of fuel or engine in vehicles weighing more than 3.5 tonnes, when bought by public bodies, including governments, regional and local authorities and EU institutions. This would include buses and most utility vehicles, such as rubbish collection vans, etc... For a large vehicle to meet the necessary environmental standards, it would have to use an "alternative" fuel, such as biofuels or hydrogen, or alternatively be an electric or hybrid vehicle.

The Dublin Regional Authority recommends that the energy strategy should set out the methods by which Ireland will meet its obligations under this heading.

7. ENERGY EFFICIENCY

In relation to the Energy Efficiency End-use and Energy Services Directive, Ireland is now committed to improving energy efficiency by at least 1% each year over 9 years, (from 2008). Ireland's proposals in this regard will be outlined in a new National Energy Efficiency Action Plan, which, under the terms of Directive, must be presented to the European Commission by July 2007.

It is expected that this plan will include targets for public bodies, including local authorities, for cuts in energy consumption across a range of service areas, including:

- energy savings in local authority buildings and housing stock,
- adaptation of public procurement practices to include energy efficiency criteria, energy audits of local authority activities, and
- an increased emphasis on the building control function and the activities of local energy agencies.

The Dublin Regional Authority recommends that in addition to these developments, the Government should establish a team of experts to develop new energy efficiency initiatives. The Dublin Regional Authority further recommends that the energy strategy should further promote the current energy efficiency initiatives operation in Ireland, for example -

- The Greener Homes Scheme, which provides assistance to homeowners who intend to purchase a new renewable energy heating system for either new or existing homes. The scheme is administered by Sustainable Energy Ireland (SEI) and aims to increase the use of sustainable energy technologies in Irish homes.
- Ireland's House of Tomorrow is a research, development and demonstration programme, which provides financial support to encourage developers of housing, new and refurbished, involving clusters of 5 or more homes, to incorporate design and technology features, which deliver significantly superior energy and CO2 performance. The aim is to establish, over a number of years, a nationwide network of accessible examples of more sustainable energy design and technology practices.
- The Warmer Homes Scheme aims to improve the energy efficiency and comfort conditions of homes occupied by low-income households. This approach is founded on a social employment delivery model, which engages regional community based organisations to acquire and apply the skills to carry out the work - which includes attic insulation, draught proofing, lagging jackets, energy efficient lighting, cavity wall insulation and energy advice.

- The annual Sustainable Energy Awards are intended to encourage, recognise and reward excellence in energy management in the industrial, commercial and public sectors. The awards focus on individuals, groups and organizations, who demonstrate a commitment to include energy management as part of their overall management structure
- The Large Industry Energy Network (LIEN) is a voluntary networking initiative, aimed at improving the management and efficiency of energy use in industry. Currently it has 80 members, representing 51.3% of the Total Primary Energy Requirement of industry in Ireland. Members share information on energy saving technologies and techniques to maximise savings.
- The Energy Agreements Programme is targeted at Ireland's largest energy using companies and requires participating firms to work towards the energy management standard, IS 393.

CONCLUSIONS

In conclusion the Dublin Regional Authority further considers that in developing its strategy "Towards a sustainable energy future for Ireland", the Government should be informed by the "Review of Energy Policy", published in June 2006 by an Oireachtas Joint Committee on Communications, Marine and Natural Resources. This report outlines 38 recommendations in relation to future energy policy in Ireland, including one on promoting a debate on nuclear energy. On renewable electricity, the report recommends that:

- Ireland must look beyond its 2010 target of providing 15% of gross electricity consumption from renewable energy and should set the goal of achieving the overall EU target of 21%.
- In the longer term, Ireland must provide at least 50% of its electricity from renewable sources by 2050.
- Ireland's peat fired power stations be fully converted to biomass by 2020;
- Increased Government support is made available in the next National Development Plan (NDP) for renewables and energy efficiency.
- Ireland increases its production and use of liquid biofuels to reach the EU target of 5.75% substitution by 2010 (aided by an overall biofuel blend requirement being placed on suppliers). To meet this target, the Committee calls for the establishment of large-scale biodiesel and bioethanol plants and recommends that the possibility of providing State assistance to encourage the conversion of the Mallow sugar factory to bioethanol production should be investigated.
- The additional excise and VAT receipts accruing from rising oil and gas prices be ring-fenced to be used as fiscal supports for all forms of renewable energy in addition to supports for R&D.

The Joint Committee also recommends that micro-generation or mini-generation CHP for individuals or communities should be permitted, including the use of local distribution over the network (wheeling). It also recommends the establishment of an Energy Consumer Users Body, which would be consulted by all Government bodies and NGO's in the development of all aspects of energy policy.