



Meeting Ireland's Electricity Needs post-2020

**Submission to the Joint Oireachtas Committee on
Climate Change and Energy Security**

from the

Western Development Commission

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Western Development Commission
Dillon House
Ballaghaderreen
Co. Roscommon
Tel: 094 986 1441
Fax: 094 986 1443
Web: www.wdc.ie

Submission from the Western Development Commission (WDC) to the Joint Oireachtas Committee on Climate Change and Energy Security Consultation on Meeting Ireland's Electricity Needs post-2020

1. Introduction and context

The Western Development Commission (WDC) welcomes this opportunity to make a submission to the Joint Oireachtas Committee on Climate Change and Energy Security public consultation on 'Meeting Ireland's Electricity Needs post 2020'. Over the last decade the WDC has been working to highlight electricity infrastructural development and regulatory issues and the potential for the development of renewable electricity generation in the Western Region.

The WDC is a statutory body established by government to promote, foster and encourage economic and social development in the Western Region¹. It operates under the aegis of DCRaGA.²

The WDC works in co-operation with national, regional and local bodies involved in western development to ensure that the Western Region maximises its full development potential by:

- analysing economic and social trends and making policy recommendations;
- promoting the Western Region through the LookWest.ie campaign;
- supporting the rural economy through facilitating strategic initiatives (e.g. rural tourism, renewable energy);
- and providing risk capital to businesses through the WDC Investment Fund.³

One of the functions of the WDC is regional policy development. In doing this, the WDC seeks to ensure that government policy reflects the needs of the region in such areas as infrastructure, natural resources, industrial and rural development. It also tracks the implementation of policies and recommends adjustments as appropriate.

The WDC regards the provision of a quality electricity network and supply as important elements of the infrastructure required to underpin the economic development of the

¹ Counties Donegal, Sligo, Leitrim, Roscommon, Mayo, Galway and Clare.

² Department of Community, Rural and Gaeltacht Affairs.

³ See www.wdc.ie

region. It regards the development of the electricity generation system, and renewable generation in particular as an area of significant economic potential for the region. Hence the WDC monitors and comments on relevant developments and policies for the electricity and wider energy sector⁴.

In this submission, before addressing the detailed questions, we make comments about the importance of the electricity provision, in terms of transmission, distribution and generation for regional development and the necessity of seeing the targets for 2020 and beyond in the context of energy strategy as a whole.

2. The importance of electricity for regional development

The WDC believes that an efficient, resilient energy infrastructure is crucial for regional development. Given the importance of energy infrastructure in underpinning development we are concerned that regions such as the west, with low population densities and spatially dispersed industrial development, but high potential natural resources for the generation of electricity, are given due consideration in the development of the electricity sector.

Existing industry needs robust, reliable electricity supply, and infrastructure capable of meeting any increase in electricity need. The Western Region also needs to be able to attract new industries and businesses and without good power capacity and reliability potential investors are less likely to consider regional locations.

The WDC has previously raised these issues with both the Commission of Energy Regulation (CER) and EirGrid in relation to infrastructure and supply in the Western Region, and has emphasised that appropriate investments must be made to allow the region to compete in attracting industry and employment. The WDC welcomed EirGrid's 'Grid 25' Development Plan and believes it will provide critically important infrastructural development for the region and help to realise the significant potential for renewable generation to be realised. It is, however, most important that the investments outlined in 'Grid 25', which are to be further detailed in Autumn 2009, are rapidly advanced so that the infrastructure can be built with a minimum of delay.

⁴ Energy Submissions made by the WDC: Submission on Eirgrid Transmission Plan 2007-2011; Towards a Sustainable Energy Future for Ireland: Green Paper on Energy; WDC IBEC Submission on the Transmission Development Plan 2006-2010; WDC Submission to CER Consultation on Bord Gáis Networks Connections Policy; WDC Submission to Review of the Electricity Sector in Ireland; WDC Submission to the CER Electricity Revenue Review 2006-2010: Transmission Price Control Review; WDC submission to the Commission for Energy Regulation Consultation on Natural Gas Policy Framework. All of these are available at www.wdc.ie

In the past, the western counties were given less priority in regard to energy. However, this scenario this is set to change. Exploitation of the west's renewable energy resources will involve major power flows from west to east. The west has abundant ocean energy and high wind speeds, and will therefore be at the forefront of renewable energy development and provision. The east coast, with the majority of the country's electricity consumption, will look to the west for stability and security of supply. This presents a huge challenge in terms of wind and ocean generation (including R&D), network development and pumped storage.

There is an opportunity for the Western Region to become an energy hub, generating significant amounts of renewable electricity and developing expertise in emerging renewable technologies. This will benefit a wide range of bodies and individuals, including Institutes of Technology, universities, manufacturing facilities, construction companies, experts and investors.

Planning for electricity infrastructure and supply should take account of these potential benefits which could be significant for the national economy. In developing the electricity sector we should aim to generate the widest economic benefits possible and this goal should be an intrinsic part of planning for electricity post 2020.

Community involvement

In addition to capturing employment, economic growth and developing expertise all of which should be key objectives when developing the sector, the WDC believes that there is an important role for community investment and local involvement in the development of the sector.

Local community support for the renewable energy sector is important if the sector is to realise its full potential as an energy resource and to achieve government policy goals and targets. The benefits of community involvement in the renewable energy sector include:

- 1 A greater level of public acceptance of renewable energy projects which international experience has shown to result in increased levels of uptake of renewable energy technologies.
- 2 Provision of potential investment opportunities and monetary reward for people living in rural areas.
- 3 Assistance in the implementation of government policy goals and targets by helping to address such issues as increasing fuel security through use of local energy resources, increasing the rates of renewable energy generation and reducing carbon emissions.

The White Paper on Energy⁵ states that constraints to the development of the renewable energy sector, including issues of public acceptance and local community support, need to be ‘tackled through coordinated national, regional and local approaches’ (2007, p.35)⁶. Achieving local community support is important if the renewable energy sector is to realise its full resource potential.

3. Questions posed by the Joint Oireachtas Committee

This WDC submission only responds to the questions relevant to WDC experience or remit.

1. What do you consider to be the current state of readiness, likely feasibility, and efficacy of the principal options for new sources of power generation in Ireland post-2020?

Our answer to this questions focuses on the necessity of achieving the objectives set out in the White Paper so that we are in a position to have a competitive and innovative sector post 2020. Achieving targets for electricity in 2020 and beyond will require major changes to the way we develop the electricity and wider energy sector. There is a need to take account of the societal aspects, including regional development, to gain widest benefits of this important area and the associated major investment.

The White Paper details the objectives for energy to 2020 and beyond with the key objectives of security of supply, sustainability and competitiveness. However, it is important to have an implementation strategy detailing all aspects of what will be required (in terms of policy changes, support mechanisms etc), and highlighting the risks, and the ways to address or mitigate these risks, to achieve the goals for the sector.

Meeting Government’s 2020 renewables target will require significant investments in the grid at transmission and distribution levels. There will have to be a huge increase in the amount of wind generation. The construction of new flexible generating plant, including pumped storage, to accommodate maximum wind generation on the system is required. Much of the existing plant (apart from being old and inefficient) is inflexible and incapable of responding rapidly to system conditions arising from large-scale wind generation. There is likely to be increased installation and connection of micro wind-generators across the country. The further development and implementation of a long-

⁵ DCENR, 2007, Delivering a Sustainable Energy Future for Ireland: The Energy Policy Framework 2007 - 2020

⁶ *ibid.*

term support mechanism for renewable generation will be necessary, for example extending the REFIT scheme into the longer term. These are just examples of some of the things that will need to happen to ensure that we can achieve goals for 2020 and beyond.

The appropriate mechanisms are needed to ensure that they are made to happen. An overall implementation group of key institutions responsible for achieving the targets to 2020 and beyond should be formed. This should be answerable to Minister for Energy. It needs to include the CER, EirGrid, ESB and representatives of all of the energy sections of DCENR so that they are all working together and aware of all of the requirements to achieve electricity goals post 2020.

The WDC believes that there needs to be coordinated planning of energy infrastructure development so that energy needs are met using appropriate infrastructures and technologies. Fuels and resources need to be used in their most efficient, valuable forms. For example burning wood for heat and in combined heat and power plants is more efficient than using it for stand alone electricity generation and natural gas, a valuable fossil fuel should be used to support the variable renewable technologies in mid merit or peaking plant rather than in base load generation.

We believe that planning the development of the transmission network should be done on an All-Island basis and that this would allow for improved electricity infrastructure and capacity in border counties. However, we recognise that exploiting the wind resources of the west and north west will require major upgrading of the transmission network, and this will bring wider benefits to region in terms of development.

2. What measures should be taken to improve the prospects for the deployment of new sources of power generation after 2020?

There is an urgent need to get the next generation of conventional plant right, i.e. the right type of plant in the right locations. The CER's methodology for determining which projects should get grid connection offers is geared for capacity – with little mention of the type and location, but these will be major factors in Ireland's success in meeting the Government's 2020 targets.

While this consultation is about post-2020, how we manage the development of the electricity sector (in terms of infrastructure, generation and the incorporation of renewable energy in the mix) in the intervening period, is important otherwise we will be starting from the wrong place. This phase between now and 2020 is a crucial learning period; we must exploit it fully in order to be best placed to address and benefit from the energy issues in the post-2020 era.

5. Do current, and future envisaged, electricity market structures raise issues for the putative new generation sources?

Any development of the market has to take the needs of investors for a consistent price signals to allow them to plan and fund their investments.

The regulatory pricing framework for wholesale electricity and the uncertainty surrounding the capacity payments mechanism can significantly impact on investment decisions. Currently this payment is calculated on a year by year basis and can be quite volatile; investors in new generation plant (particularly conventional) need more certainty in the capacity payments they are likely to receive (over a period of ten years for example) if they build a new generating plant.

8. Do the arrangements in place for infrastructure planning, permitting and provision strike an appropriate balance between private and public interests?

Many electricity infrastructure projects are currently subject to long delays in the planning process. If we are to achieve targets by 2020, and indeed progress beyond them, people will need to accept new features on the landscape – large and small/micro wind turbines, new power lines and supporting towers. At the same time they need to be planned sensitively and with the early participation of local communities which will be affected by them.

9. Are there stand-alone distributed generation technologies, or cross-cutting technologies such as CHP, for which special provision should be made?

The WDC is currently leading a wood energy development project for the Western Region. As part of this initiative a report⁷ was commissioned to assess the biomass Combined Heat and Power (CHP) market potential in the region and the potential economic and social benefits that could be derived from development of the sector. This assessment was recommended in the WDC Wood Energy Strategy for the Western Region (December 2007)⁸. This research provides public and private stakeholders with practical CHP market information, and outlined recommendations to support development.

⁷ WDC, 2008, Biomass CHP Market Potential in the Western Region: An Assessment

⁸ WDC, 2008, Wood Energy Strategy for the Western Region. This strategy is available for download at www.wdc.ie

A significant finding of this report is that with commercially available technologies, biomass CHP is possible for users with a continuous heat load of over 600 kW_{th}⁹. Even so, a major challenge facing the promotion of biomass CHP in the Western Region will be to identify sites with a large enough ‘year round’ heat load. To a large extent, these are the same obstacles facing fossil fuelled CHP.

The ‘bottom-up’ market analysis carried out as part of this study identified 119 potential sites in the Western Region, of which potentially 22 could install biomass CHP under a medium development scenario, resulting in deployment of 42MWe.

Substantial social and economic benefits resulting from the growth of biomass CHP were identified by the study. The medium scenario market projections would potentially result in a direct gross investment of €138 million and create approximately 321 jobs by 2020. A requirement for 500,000 tonnes of woodchip was estimated, displacing approximately 370,000 tonnes of CO₂-equivalent from fossil fuel sources.

In order to stimulate regional deployment of biomass CHP, all sites with a continuous heat load above 600 kW_{th} should be encouraged to investigate the applicability of biomass CHP technology. The market segments to be targeted have been identified within the report, particularly the forest products’ manufacturers and sawmills.

Issues for development of the biomass CHP sector

The following issues for the development of the biomass CHP sector were highlighted in the report.

Expertise and Knowledge

Experience of biomass CHP in Ireland and awareness of the technology is relatively low. Training in biomass CHP technology should be considered for energy professionals in Ireland. This would be most effective as part of a national CHP support programme and could be delivered at a regional level. Adding experts to speak on relevant biomass CHP topics to the line-up for the existing workshops and seminars on energy and biomass would enhance the knowledge of biomass CHP in Ireland.

Pricing

The REFIT tariff of €120/MWh for electricity generated by biomass CHP, which was announced in 2007, is competitive, based on both economic analysis and comparison with international schemes. Long-term, stable, feed-in tariff support schemes have had a very positive market impact in other countries.

⁹ Such a heat load would typically be required by a large hotel (>100 rooms) with a swimming pool, or a hospital.

Support Programme

The 30% capital funding available through SEI's biomass CHP programme is a significant support to the industry, however the duration of this programme may prove a barrier to development. Projects must be completed by 2010 in order to avail of support. Given the lengthy planning process and construction times that can be encountered by biomass projects, this is a significant restriction. Other pre-conditions of the grant programme pose significant cost and therefore risk for a project developer. SEI's programme also offers up to 40% financial support for carrying out biomass CHP feasibility studies. A higher level of funding for feasibility studies would be a comparatively low-cost method of stimulating the industry.

District Heating

Within the European markets there is a clear link between district heating networks and the application of CHP technology. If biomass CHP is to be seriously considered the barriers to district heating must be reduced. There are currently no direct supports for district heating infrastructure therefore a parallel support for district heating should be considered, which would facilitate a greater number of potential CHP sites.

Public Procurement to stimulate development

In Europe public procurement and purchasing of renewable energy has acted as significant driver of growth in the sector. At European Commission level green public procurement is increasing cited¹⁰ as an important mechanism for influencing market development. In Ireland Mayo County Council has become the first local authority to switch to an independent power supplier for its unmetered electricity services. The council is to save €150,000 on its annual energy costs through a new €1 million contract with Energia. The new 18-month electricity contract will provide the power for 11,000 public lights in the existing network. The local authority's switch from conventional power generation to 'green power' will result in an annual reduction of more than 4,500 tonnes of carbon dioxide.

Research and Development

In the short term all CHP technology will be imported. If the region develops significant research and manufacturing capabilities for CHP technology this will lead to significant indirect job creation. The report recommended regional research centres are needed to develop core competences relevant for the combustion of biomass. They are likely to be in the IoTs. Greater participation in relevant international research projects should be encouraged.

¹⁰ http://ec.europa.eu/environment/gpp/index_en.htm.

Conclusion

The WDC is pleased to have the opportunity of making a submission to the Joint Oireachtas Committee on Climate Change and Energy Security. We are happy to provide further information or examples in relation to this submission, should they be required.

Western Development Commission**6 July 2009**

If there are any queries in relation to this submission, please contact

Dr Helen McHenry
Policy Analyst

Western Development Commission
Dillon House
Ballaghaderreen
Co. Roscommon
Phone: 094 986 1441
E mail: helenmchenry@wdc.ie