



Irish Wind Energy Association
And
British Wind Energy Association

Joint Submission to

Department of Enterprise, Trade and Investment *on:*

NORTHERN IRELAND
STRATEGIC ENERGY FRAMEWORK 2009
Pre - Consultation Scoping Paper

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1.0 Introduction

The Irish Wind Energy Association (IWEA) and the British Wind Energy Association (BWEA) welcome the Department of Enterprise Trade and Investments initiative to develop a Strategic Energy Framework for 2009. We very much welcome the opportunity to comment at this preconsultation stage and look forward to engaging constructively throughout this process.

IWEA and BWEA represent the interests of the renewable energy industry in Northern Ireland, Ireland and Great Britain.

We believe that increasing the share of our energy from renewable sources will deliver significant benefits for the electricity customer, the local economy and society. Recent volatility in fossil fuel prices has demonstrated that regions with a high dependence on energy imports are exposed to a high level of risk. This volatility makes it difficult for investors in the economy to make reliable long term forecasts of their energy costs. The most effective way to reduce this volatility is to increase the share of energy costs that are predictable and based locally. This will lead to lower and more stable long term energy costs. As other regions move to stabilise their long term energy costs it is essential that Northern Ireland continues to increase its relative competitiveness in this area.

It is estimated that between 25 and 30% of capital investment in renewable energy is retained in the local economy. This typically flows to companies in construction, legal, finance and other professional services. Over the next 12 years it is expected that developments in renewable electricity will generate private investment of over £1.2bn in Northern Ireland and of this, around £300m will be retained by local NI businesses.

Climate change is fast becoming a more important national and international issue. The availability of significant natural resources provides Northern Ireland with the opportunity to make a meaningful contribution to this issue while delivering a cleaner local environment.

As the world moves towards a low-carbon economy the price of carbon will increase, NI should not be left behind but should embrace this approach. Indeed Northern Ireland has the potential to be a world leader in the ever growing green economy. The region has unique access to markets and natural energy resources including wind, marine and geological storage. US president elect Obama has outlined a strategy for developing 5 million new green collar jobs in the US. Based on the relative sizes of the US and NI economies this would be equivalent to over 14 000 new jobs in NI if the region can deliver a similar strategy. IWEA and BWEA believe that Northern Ireland can use its strategic advantages to surpass this level.

We believe that there are four key areas that the strategic energy review can enable the energy sector to realise these benefits

- 1) Northern Ireland should adopt a target of 42% electricity from renewable sources by 2020.
- 2) A strategy for investment and development in the Grid infrastructure should be developed.
- 3) Consistent policy and strategy should be adopted across government. In particular energy and planning policy should be aligned.
- 4) A roadmap for policy development should be introduced to provide greater investment confidence in the sector.

In this response we will highlight the benefits of these actions and outline a potential road map for achieving them. We have also provided detailed responses to the specific questions raised as part of the consultation paper in the annex.

2.0 Renewable Targets

The Department of Enterprise Trade and Investment, in co-operation with its counterpart in Ireland, published the internationally acclaimed All Island Grid Study in January 2008. This study demonstrated that 42% of the island's energy needs could be met by renewable sources. The IWEA and BWEA believe that Northern Ireland should adopt 42% as a formal target.

It is vital that a formal target is adopted as this will create the framework for other policy decisions. Without a target in place for renewable energy, development of the industry will continue to be frustrated by a multitude of detailed policy concerns and minimal progress will be made.

Achieving a 42% share of electricity from renewable sources would ensure lower wholesale energy prices, lower carbon emission, enhanced energy security and robust system stability as well as foster the growth of a multi-million pound Northern Ireland renewable industry.

Based on current market conditions, meeting this target will generate private investment of over £1.2bn in wind generation in Northern Ireland. Of this, around £300m will be retained by local NI businesses. This will provide a significant boost to local industry and will create several thousand jobs in high value industries.

3.0 Grid Investment and Development

A robust and reliable grid infrastructure will be necessary to enable the continued development of the Northern Ireland economy. A high performance grid infrastructure which takes advantage of the

latest technological advancements to support both renewable and conventional generation is needed for a high performance generation portfolio. An infrastructure which can accommodate increased levels of renewable generation gives greater energy security, greater price stability and depresses the average market price, ultimately resulting in lower energy costs for consumers.

A robust grid system provides greater security of supply to Northern Ireland customers and enables investment in energy intensive industries. It will also allow for more efficient dispatch of generating resources and the reduction of transmission losses.

Further interconnection with the ROI and the UK would add to system flexibility while the enhanced integration of the SEM North and South should lead to greater price stability.

4.0 Consistent Policy Framework

A consistent policy framework facilitates the efficient delivery of objectives. This will reduce the ultimate cost of implementing any strategy to the benefit of the customer and the economy. Due to the complexity of the energy industry this is a challenging task that most jurisdictions have not effectively addressed. This strategic energy review provides Northern Ireland with an opportunity to investigate means of delivering a consistent platform for policy.

In particular there is a need to align policy between the planning and energy sectors. The development of new energy generation facilities (renewable or conventional) will have a significant interaction with the planning process. It is essential that the developments respect the character of Northern Ireland's landscape and fit within its overall planning strategy. Once this has been achieved the costs of new developments can be reduced by aligning the planning process with energy considerations.

The current process for determining supplementary planning guidance for wind development in Northern Ireland should fit within the overall Northern Ireland policy framework. It is feared that in the event that this process imposes restrictions on the height of turbines that may be developed, Northern Ireland will be forced to develop more expensive generating facilities in the future. Reducing the height of a wind turbine leads to a disproportionate loss in energy yield. This will add significant costs to the consumer and will result in a greater number of turbines being required to deliver the same quantity of energy. We believe that Northern Ireland should use world class technology to fully reap the benefits of its natural resources.

It will also lead to less efficient and more dispersed grid development. We believe that the draft SPG should be amended to reduce its prescriptive nature. This will allow individual developments to be

considered on their merits. It will allow for more efficient development in specific cases where this meets overall policy objectives.

We believe that a renewable energy planning strategy should be developed for each of the 11 new proposed super councils.

There should also be more flexibility in the generator licensing process. In particular if it were possible to assign licenses it would simplify the transfer of ownership process and facilitate the entry of new investors to the Northern Ireland energy sector.

5.0 Roadmap for Policy Development

While the strategic Energy Framework will set the broad direction of energy policy for Northern Ireland there will be many detailed policy issues to be developed as the industry evolves. The manner in which this policy develops is of central interest to investors and energy market players. A clear and transparent process greatly reduces the perceived risk associated with Northern Ireland as an investment location. Policy makers in Northern Ireland have an excellent track record in this regard. We strongly commend their efforts to involve industry in discussions and analysis of key issues. However, the sheer number of important issues that require analysis makes it difficult for industry to engage as constructively as it might wish. The proposed roadmap is a device to facilitate industry in its engagement.

We recommend the introduction of a formal process for policy development that provides clarity on its scope and likely timing. It is recognised that policy makers may need to make decisions on issues outside the normal timelines and process. If there is a facility available to fast track decisions and consultations where necessary we believe that it will allow the development of a more structured and scheduled approach to be adopted for the majority of policy considerations.

6.0 Conclusions

The IWEA and BWEA strongly welcome the commencement of a process to develop a strategic energy framework for Northern Ireland. This is an essential process to set the direction for the energy industry at a time of unprecedented change. We look forward to engaging throughout this process and will be consulting actively with our members throughout. We believe that the key outcomes of this process should be:

- 1) Northern Ireland should adopt a target of 42% electricity from renewable sources by 2020.
- 2) A strategy for investment and development in the Grid infrastructure should be developed.
- 3) Consistent policy and strategy should be adopted across government. In particular energy and planning policy should be aligned.
- 4) A roadmap for policy development should be introduced to provide greater investment confidence in the sector.

Annex – Answers to questions raised in the pre consultation paper

Key Policy Questions

The Department is acutely aware that national and international developments are increasingly moving the primary focus of energy policy world-wide towards tackling the threat of climate change as well as addressing concerns around security of supply and economic development. These concerns are set to be key strategic priorities for Northern Ireland for the foreseeable future. The goal is a sustainable, secure and affordable energy infrastructure, so:

- *How can we protect the Northern Ireland economy and consumers from being held hostage in the future to external energy forces?*
- *How do we deliver a reliable and secure energy supply at the minimum cost to consumers?*
- *What more can we do to facilitate renewable energy development and deployment?*
- *How can Northern Ireland best contribute to the carbon reduction targets set for Europe and the UK?*
- *How can we maximise the opportunities presented by regional cooperation on energy matters?*

Answers:

Northern Ireland can protect its economy and consumers by securing as much of its energy as possible from indigenous sources. The resources available to Northern Ireland have the added advantage of a long term stable and low operating cost. The all-island grid study demonstrated that 42% of the island's energy supply could be met from renewable sources. This level should be set as a firm target for 2020.

Reliability and security are dependent on the existence of a robust grid infrastructure. A detailed plan to upgrade this infrastructure should be developed. This should seek to increase interconnection with neighbouring regions and to enable delivery of supply to new industries.

The alignment of energy and planning policy would greatly facilitate renewable energy development. This will ensure that development is consistent with planning objectives and is achieved efficiently.

Northern Ireland can positively contribute to both the European and UK Carbon targets in two main ways. Firstly, taking advantage of the natural resources available to Northern Ireland will make an appreciable contribution to these targets. However, Northern Ireland can make an even bigger

contribution by showing leadership on renewable development and integration. This is a high value add area where Northern Ireland has unique opportunities and skills. The development of innovative solutions in Northern Ireland could facilitate the development of new renewable integration strategies that may be adopted elsewhere.

Investing in innovation and development of skills will allow Northern Ireland to benefit significantly from the growing international market for renewable energy and support services. NI is also uniquely placed to access the UK and Irish markets for energy and renewable certificates. Increased interconnection and harmonisation of policy will also facilitate access to these markets.

Electricity:

Flowing from the establishment of the competitive wholesale Single Electricity Market and the growing emphasis on electricity generated from renewable sources, there is a need to future proof the electricity infrastructure. There is a growing realisation that increasing the proportion of power generation from renewable sources has the greatest potential to enhance security of supply, reduce our dependence on imported fossil fuels (and their associated price volatility), and reduce carbon emissions.

- a) *How can the electricity grid infrastructure be improved to enhance security of supply at least cost to consumers, e.g. to provide a flexible and robust transmission and distribution network with stronger interconnection that can absorb significant amounts of renewable generation?*
- b) *Should consideration be given to zoning areas where the wind resource (and therefore wind farm development) is greatest, in order to minimise the impact of additional electricity grid lines on the landscape? This could apply to both land based and off shore development.*
- c) *Should new grid development be constructed within infrastructure corridors encompassing other utility services and key transport links e.g. alongside new arterial roads?*
- d) *In the light of question a): Is our current power generation mix fit for purpose in order to meet long term security of supply and emissions targets?*
- e) *For gas and electricity customers, how can greater levels of retail competition be introduced in NI?*
- f) *In looking to 2020 and beyond to 2050, will the current energy mix (gas, oil, coal, renewables) continue to meet Northern Ireland's economic needs e.g. facilitating industrial growth and rural development, with particular reference to the development of new energy technologies?*
- g) *Should there be enhanced electricity interconnection to provide further security of supply and import/ export of generated electricity. Is it accepted that in terms of cost and security of supply, the most effective means for interconnection is via overhead power lines?*

Answers:

a) A high performance grid infrastructure which takes advantage of the latest technological advancements to support both renewable and conventional generation is needed for a high performance generation portfolio. An infrastructure which can accommodate increased levels of renewable generation gives greater energy security, greater price stability and depresses the average market price, ultimately resulting in lower energy costs for consumers. Stronger interconnection will have a positive effect on security and stability; however care should be taken when determining the regulations governing the operation of the interconnectors in order to achieve the best solution for grid stability both North and South. It will also be necessary to ensure that the planning process enables efficient grid development.

b) IWEA and BWEA believe that a coherent and firm renewable energy planning strategy should be a part of every super council's plan. As part of that strategy, there may be merit in the identification and subsequent zoning of lands suitable for wind farm development. This has the potential to secure; shorter timelines for project development, infrastructure economies of scale and the exploitation of the best sites. However, more analysis would be required to determine if this would be the most desirable approach.

c) An integrated approach to infrastructure development has the potential to deliver greater capacity in an efficient manner. However, it may also be necessary to develop grid infrastructure along dedicated routes. It would be important not to preclude this.

d) The current generation mix is not best placed to meet Northern Ireland's long term energy needs. More flexible plants will be required. Greater demand side participation should be promoted and research should commence on a strategy for integrating transport and electricity.

e) Northern Ireland is a small market and greater harmonisation and integration with neighbouring markets will be necessary to enable more competitors to develop operations on a sufficient scale to allow efficient competition. A robust and transparent policy framework will assist new players in understanding the industry.

f) The All Island Grid Study demonstrated that 42% of the islands electricity consumption could be met by renewable energy by 2020, however, it is recognised that a diverse generation portfolio is required in order to complement increased levels of renewable penetration. While energy imports to NI will be reduced, conventional generation will still have a role to play in supporting the transition towards better renewable technologies and developments. In the longer term it is expected that new

technologies will allow Northern Ireland to secure an even greater share of its energy from renewable sources.

g) Greater interconnection results in a more flexible power system and increases the ability of system operators to improve least cost economic dispatch levels, as well as providing the opportunity for energy exports. While it is generally recognised, *ceteris paribus*, that OHL is a considerably cheaper connection method than UGC, the suitability of connection method to be used for any interconnector should be determined on an individual project basis.

Gas:

The Department has a statutory duty to promote the development and maintenance of an efficient, economic and co-ordinated gas industry in Northern Ireland. Natural gas is the cleanest burning and least polluting fossil fuel and is available in Greater Belfast and the urban areas served by the North-West and South-North gas pipelines.

- a) Should there be increased penetration of natural gas within the existing licensed areas to displace oil usage in particular, and should any gas uptake be incentivised to encourage customer switching from other fossil fuels?*
- b) Should the gas transmission network in NI be extended to provide natural gas to new areas, such as Omagh, Strabane, and Enniskillen in the west, even though the economic case for doing so may not be strong?*
- c) If the gas network is to be extended, should there be incentives to encourage customer switching from other fossil fuels? And how should the cost be met?*
- d) What benefits would be provided for Northern Ireland energy consumers if a natural gas storage was available in Northern Ireland, and/or a liquefied natural gas facility was available in the Republic of Ireland.*
- e) In light of declining UK gas reserves and increasing dependency on imports, should natural gas still be considered as the principal long term fuel source for power generation, and commercial and domestic energy requirements in NI?*

Answers:

Where it is economical to do so there are some clear advantages to extending the Northern Ireland gas network. It may be worthwhile to provide some incentive for customers to move from more polluting fossil fuels to gas to offset the high initial cost of making the transition. There is also significant value on developing a robust gas infrastructure, however, the economic case for this, needs

to be carefully studied and balanced with concerns over the long term security of supply of gas. Increasing the use of gas rather than renewable technologies will also have an adverse impact on carbon production and climate change.

There is currently an overdependence on imported natural gas on the island and this has significant impacts on energy security. The availability of storage facilities in Northern Ireland and a LNG facility in the Republic of Ireland would mitigate this.

Sustainable Energy:

- a) *In the context of EU and UK targets for renewable energy, at what level should Northern Ireland set its own renewable energy generation and consumption targets – and should specific targets be set for key renewable technologies?*
- b) *How should the necessary costs of increased investment in renewable energy and associated infrastructure be balanced with the need to minimise the cost of energy to the consumer and how should such costs be shared between present and future consumers?*
- c) *Should Northern Ireland include significantly increased levels of micro-generation as part of the energy mix going forward? If so, should NI concentrate on specific technologies?*
- d) *Should Northern Ireland focus on certain key emerging technologies for strategic energy planning and investment; e.g. the potential for alternative fuel sources for transport? If so, which energy technologies are likely to offer the best prospects?*
- e) *Should Northern Ireland continue to rely on a voluntary agreement mechanism as per the Energy Efficiency End Use and Energy Services Directive to get energy suppliers to provide energy efficiency services?*
- f) *Should Northern Ireland roll out smart metering?*
- g) *DETI believes that energy efficiency and managing demand are key contributing factors in meeting our climate change targets. How can energy efficiency activities in Northern Ireland best be co-ordinated?*

Answers:

a) A 42% target should be set for electricity from renewable sources by 2020 for Northern Ireland. A high penetration of renewable generation capacity is crucial if NI is to make its contribution to the UK's 15% renewable energy target in line with its obligations under the EU directive on the promotion of the use of energy from renewable resources. While it is recognised that a diverse renewable portfolio would have a positive impact on system stability, any specific targets for individual technologies should be based on the practical available resource for that technology. Some

threshold targets for energy from marine technology would provide a strong support to developing technologies.

b) It is clear that NI cannot sustain its heavily fossil fuel dependent energy portfolio into the future. Without the contribution of renewable energy, in the medium to longer term the cost of energy to the consumer will inevitably rise in response to higher fossil fuel prices driven by scarcity. Thus the key to minimising costs to the consumer is to provide clear and coherent market signals to developers and credit institutions coupled with efficient processing systems. Since most renewable technologies are capital intensive, this would reduce the cost of risk for each project resulting in lower energy prices for consumers, as many renewable technologies, such as wind, solar and tidal operate at close to zero marginal cost. The cost of developing infrastructure should be socialised as this will allow access to cheaper financing costs.

c) Micro-generation has a valuable contribution to make to a sustainable energy future for Northern Ireland, both in terms of off-setting demand and contributing to embedded generation. Proper financial incentives should be introduced to encourage the take-up on renewable technologies. However, it is important to ensure that the incentives do not promote the development of microgeneration in cases where it is not economically or environmentally justified.

The incentives must also be supported by appropriate planning and building regulations to allow economically feasible installations to take place. With effective competition in the renewable technology sector, market forces should extract the most efficient suppliers; however public safety should be a primary concern. IWEA and BWEA believe that any financial or commercial supports should be paralleled with appropriate safety legislation, ensuring the safe and compliant installation of micro-generation units.

d) Energy technologies which are likely to offer the best prospects for NI are the technologies in which NI is resource abundant e.g. on-shore wind, off-shore wind, wave and tidal. In addition, the development of management systems for demand response and demand side management will be crucial for NI both in terms of energy efficiency and address curtailment issues.

e) We should all be responsible for ensuring the provision of efficient energy services in line with the Energy Efficient End Use and Energy Services Directive and IWEA and BWEA believe that any system to ensure that this goal is realised should be developed and adopted with the support of all interested parties.

f) The use of smart metering should be an integral part of the strategic energy framework. Smart metering opens up the possibilities for micro-generators to sell their electricity; while also providing a

price signal to users that has the potential to change consumption patterns and habits. It is important that any programme to roll out smart metering should be based on the best available technology to ensure that demand side participation is facilitated. Investigation on better integration of wholesale and retail pricing will be necessary to allow consumers to actively participate in demand side management.

g) Energy efficiency and demand side-management activities can best be managed through regulation of the use of inefficient technologies, power systems and appliances e.g. incandescent light bulbs etc; and the roll out and use of smart metering which will give a full or partial price signal to consumers for the purposes of billing. Such measures would necessarily involve co-ordination between the regulator, the TSO and the Single Market operator.

Security of Supply:

Reliable and competitively priced energy supplies are the bedrock for economic growth and for society as a whole.

- a) *What are the priorities for Northern Ireland and what measures do we need to take, including working with Great Britain and the Republic of Ireland, to deliver a long term, reliable and balanced energy mix?*
- b) *To what extent should government rely on commercial forces to provide for security of supply?*
- c) *What should the power generation mix look like in 2015, 2020, and beyond in order to provide security and diversity of supply?*
- d) *Should the debate on nuclear power be guided by technical and economic arguments, or other factors, such as whether NI can rely on GB or international solutions on waste?*

Answers:

a) Northern Ireland should aggressively move towards a generation mix that makes the maximum use of indigenous energy resources. This would ensure lower wholesale energy prices, lower carbon emission, enhanced energy security and robust system stability as well as foster the growth of a multi-million pound Northern Ireland renewable industry. Further interconnection with the south of Ireland and Great Britain would add to system flexibility while the enhanced integration of the SEM North and South should lead to greater price stability.

b) NI needs to greatly increase its stock of renewable energy in order to both ensure security of supply and contribute to international commitments. However, given the capital intensive nature of most renewable technologies, and the volatility of energy prices it is clear that market intervention is

required in order to release the required loan funds. Without intervention, commercial forces may act to delay the deployment of renewable generation and maintain NI's dependence on imported energy. While this may still result in uninterrupted supply, the longer term consequences for consumers would most likely take the form of very high energy costs

c) The key to a secure supply of energy is a diverse generation portfolio of which a large percentage is supplied by indigenous energy sources. Northern Ireland is resource abundant in terms of wind, wave and tidal energy and it is through the exploitation of these resources that Northern Ireland will be able to ensure greater diversity and security of energy supply.

d) In the same way that renewable generation has externalities which are outside market forces (e.g. zero emissions), nuclear power has externalities which must be taken into account when debating its usage. However, aside from these problems there are clear technical difficulties associated with integrating a large nuclear generation unit on a small electrical system. Only very large nuclear generators are available at commercial terms and these would create significant system reliability issues and a lack of flexibility on the power system.

Role of the Department:

The principal objective of the Department and the Regulatory Authority in carrying out their respective electricity functions is to protect the interests of consumers of electricity supplied by authorised suppliers, wherever appropriate by promoting effective competition in the generation, transmission or supply of electricity. The Department and the Regulatory Authority also have a statutory duty to promote the development and maintenance of an efficient, economic and co-ordinated gas industry in Northern Ireland.

Amongst other measures, they seek to meet their responsibilities by securing a diverse and viable and environmentally sustainable long-term energy supply. The Department's statutory responsibilities are given in Annex B.

- a) *How can the Department improve on how it currently supports the Northern Ireland energy sector in the future?*
- b) *Does the Department need to review its statutory duties and principal objectives for electricity and gas? If so, how? This is asked in light of the growing emphasis on developing a competitive energy market based on sustainable energy sources that deliver security of supply and which help to deliver EU and UK long term climate change targets – for example, should the department refocus its statutory duties away from electricity and gas to electricity and heat?*
- c) *Energy policy is primarily an economic development responsibility (with a clear statutory role for DETI working alongside the NIAUR), but clearly has wider environmental and social impacts. How can these best be represented and balanced?*

Answers

The Department is making a significant contribution to the Northern Ireland energy sector through its leadership. Development of the Strategic Energy Framework is a key step in the development of the industry. The Department should take an active role in championing this vision and encouraging others to take actions to support it. The Department should also increase its support for research and development in Northern Ireland.