

Submission on Cloghan Wind farm: Planning Application 12293 – Offaly Co. Council

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Attached: (1) Information on Turn 180.

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1. THE LEGAL OBLIGATIONS OF THE COMPETENT AUTHORITY

In March 2011, the European Court ruled against Ireland in case C-50/09 for failure to properly transpose the Environmental Impact Assessment Directive (85/337/EEC as amended), in particular the obligations of the competent authority under Article 3 of the Directive to complete its own Environmental Impact Assessment of the direct and indirect effects of the development. To clarify the planning authority is responsible for completing its own environmental assessment of the direct and indirect effects of the proposed development on the following:

- (a) human beings, flora and fauna,
- (b) soil, water, air, climate and the landscape,
- (c) material assets and the cultural heritage, and;
- (d) the interaction between the factors mentioned in paragraphs (a), (b) and (c).

This requirement is now transposed into Irish law by Sections 171 and 172 of the Planning and Development Acts (2000 to 2011). Indeed the Department of the Environment in September 2012 finished the consultation on its draft guidelines on this issue¹, these guidelines couldn't be clearer:

- “4.2: In order to comply with the requirement of sections 171A and 172 and the requirements of Article 6 and 10a of the Directive, it is essential that an assessment of the environmental effects of relevant projects is carried out by the competent authority and that the assessment is clearly documented with a ‘paper trail’ being available for public scrutiny and to facilitate and defend any

¹<http://www.environ.ie/en/Publications/DevelopmentandHousing/Planning/FileDownload.30821.en.pdf>

legal challenge. To facilitate ease of communication etc., the ‘paper trail’ should also be in electronic format”.

With regard to the proposed project, the only justification for this project is related to the alleged benefits in environmental protection, namely greenhouse gas reductions. How do these compensate for the clear disadvantages in relation to considerable financial and environmental impacts? As the European Court of Justice stated in its C-50/09² ruling against Ireland; the competent authority may not confine itself to identifying and describing a project’s direct and indirect effects on certain factors, but must also assess them in an appropriate manner, in the light of each individual case. It is clearly unlawful to approve a project with very significant environmental impacts, such as on landscape, human health (noise), flora and fauna, etc, without assessing any of the reasons and considerations for offsetting these impacts. Indeed, it will also be necessary to demonstrate what alternatives were considered to achieve these same alleged environmental benefits.

If we consider COM(2012) 628, the proposal for a new Environmental Impact Assessment Directive³; “the general objective of the proposal is to adjust the provisions of the codified EIA Directive, so as to correct shortcomings, reflect ongoing environmental and socio-economic changes and challenges, and align with the principles of smart regulation. With regard to Article 8; “the competent authority is required to include in the development consent decision itself some items substantiating the decision; this reflects the case-law (e.g. C-50/09)”, namely:

The results of consultations and the information gathered pursuant to Articles 5, 6 and 7 shall be taken into consideration in the development consent procedure. To this end, the decision to grant development consent shall contain the following information:

- *(a) the environmental assessment of the competent authority referred to in Article 3 and the environmental conditions attached to the decision, including a description of the main measures to avoid, reduce and, if possible, offset significant adverse effects;*
- *(b) the main reasons for choosing the project as adopted, in the light of the other alternatives considered, including the likely evolution of the existing state of the environment without implementation of the project (baseline scenario);*
- *(c) a summary of the comments received pursuant to Articles 6 and 7;*
- *(d) a statement summarising how environmental considerations have been integrated into the development consent and how the results of the consultations and the information gathered pursuant to Articles 5, 6 and 7 have been incorporated or otherwise addressed.*

Therefore the legal obligations of the competent authority under this Directive are clear.

² <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62009CJ0050:EN:NOT>

³ <http://ec.europa.eu/environment/eia/pdf/COM-2012-628.pdf>

While the United Nations Economic Commission for Europe's (UNECE) Aarhus Convention was only ratified by Ireland in mid-2012, the Convention is part of Community legal order since its ratification by the EU in February 2005.

- Article 1 of Decision 2005/370 provides: 'The UNECE Convention on access to information, public participation in decision-making and access to justice in environmental matters, (Aarhus Convention) is hereby approved on behalf of the Community.
- Recital 7 of Decision 2005/370 states: 'The objective of the Aarhus Convention, as set forth in its Article 1 thereof, is consistent with the objectives of the Community's environmental policy, listed in Article 174 of the Treaty, pursuant to which the Community, which shares competence with its Member States, has already adopted a comprehensive set of legislation which is evolving and contributes to the achievement of the objective of the Convention, not only by its own institutions, but also by public authorities in its Member States'.

As the proposed development fell under the terms of the Annex II of the Environmental Impact Assessment Directive and Annex I (20) of the Aarhus Convention, Community legal order and the Convention apply to this planning consent process.

Indeed the Aarhus Convention is clear in Article 6 (8) that:

- "Each Party shall ensure that in the decision due account is taken of the outcome of the public participation".

Page 109 of the "Aarhus Convention: An Implementation Guide" further defines that

- "The requirement to take into account public participation "as far as possible" establishes an objectively high standard to show in a particular case that public comments have been seriously considered".
- "The relevant authority is ultimately responsible for the decision based on all information; including comments received, and should be able to show why a particular comment was rejected on substantive grounds".

This comprehensive written submission will not only have to be recorded, but there will also have to be a written record to demonstrate on what grounds the substantive issues raised in the submission were accepted or rejected as invalid. This is part of the procedural requirements relating to the rights of those engaging in the public participation. Furthermore, under S.I. No. 133 of 2007 (as amended)⁴, which implements Pillar I of the Aarhus Convention on access to information on the environment, both the environmental assessment to be completed under Article 3 of the Environmental Impact Assessment Directive and the written record of the analysis of the public participation can and will be formally requested.

Finally in this regard, the author has already been through a process of a Communication ACCC/C/2010/54 at the Aarhus Convention Compliance Committee, which has already ruled that the renewable energy programme in the EU is in breach of the Convention, see next section. In addition he has also been involved in a

⁴ <http://www.environ.ie/en/AboutUs/AccessToInformationontheEnvironment/>

second Communication ACCC/C/2012/68⁵ in relation to the Scottish renewable energy programme, which was heard at the Compliance Committee meeting in Geneva on the 12th December 2012. Following that meeting the Committee presented the following four questions to the Scottish Administration.

- Please demonstrate how the comments submitted by the communicant in the decision-making for (a) the Carriag Gheal wind farm, and (b) the West Loch Awe Timber Haul, were considered in during the decision-making.
- What was the basis document (policy document, strategy, programme, plan, etc.) for decisions on the Carriag Gheal wind farm and the linked access West Loch Awe Timber Haul Route?
- Under Scottish law, is there a specific obligation that information about comments received during the EIA procedure is available before the decision is issued?
- Please elaborate on why the Renewable Energy Routemap, is a policy rather than a plan/programme.

Clearly, the Compliance Committee were highly concerned in relation to the lack of evidence that the public participation on the project had been assessed and taken account of in the decision-making. In relation to the policies, plans, programmes to justify the approval of the two named projects, during the course of the meeting, which the author attended to help present the case, the question of the Scottish Government's Renewables Routemap came up. The Committee was shocked to discover that, despite the pronouncements of Fergus Ewing MSP and First Minister Alex Salmond, the Scottish Government's Renewables Routemap 2020 and Energy Policy Statement are still officially only drafts. So officials have relied on these drafts in giving the go-ahead for more than 3,500 wind turbines, granting planning without proper scientific justification, instead utilising draft documentation for which the public participation has not been completed.

2. THE LEGAL FAILINGS OF THE IRISH AND EU RENEWABLE ENERGY PROGRAMME

Directive 2001/42/EC on Strategic Environmental Assessment is clear in Article 3 (2) (a) that a detailed Environmental Report and public consultation, i.e. a Strategic Environmental Assessment, is required for plans and programmes in the area of energy, which lead to future development consent of projects falling under Directive 85/337/EC. Note: Wind farms are listed under Annex II of the Environmental Impact Assessment Directive and the relevant project is subject to such a procedure. These measures have been translated into Irish law since 2004⁶.

Such a Strategic Environmental Assessment, a process mandatory by law, requires documentation of the environmental objectives, alternatives, impacts, mitigation measures of the plan and programme then a detailed public consultation with due

⁵ <http://www.unece.org/env/pp/compliance/compliancecommittee/68tableeuuk.html>

⁶ <http://www.environ.ie/en/DevelopmentHousing/PlanningDevelopment/EnvironmentalAssessment/>

account of the public participation to be taken in the resulting policy decision. These measures have to be completed before the plan or programme can be adopted.

Despite this legal requirement, no such Strategic Environmental Assessment has been completed, indeed as the Decision from the Commissioner for Environmental Information CEI/09/0016⁷ demonstrated in this regard, there was not even a ranking system in place for considerations of technology alternatives in terms of their ability to meet the criteria in the renewable energy Directive and no options considered to reach the objectives in the legislation.

Therefore a core principle in relation to environmental assessment and democratic accountability has been by-passed and the renewable energy programme in Ireland is proceeding without 'proper authority'. This and other failings in relation to access to information and public participation in decision-making lead to a Communication from Pat Swords being accepted by the United Nations Economic Commission for Europe (UNECE) Aarhus Convention Compliance Committee. As Ireland was not then a Party to the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, the Communication ACCC/C/2010/54 was accepted in relation to the EU as a Party.

On the 16th August 2012 the Compliance Committee issued its findings and recommendations⁸, in relation to compliance by the EU with the terms of Convention, which applied to the implementation of the Renewable Energy Programme in Ireland. The Committee determined that the EU did not comply with the provisions of the Aarhus Convention in connection with its 20% renewable energy by 2020 programme (Directive 2009/28/EC) and its implementation throughout the 27 Member States by the National Renewable Energy Action Plans (NREAPs), namely:

- By not having in place a proper regulatory framework and / or clear instructions to implement Article 7 of the Convention with respect to the adoption of NREAPs by Member States on the basis of Directive 2009/28/EC has failed to comply with Article 7 of the Convention;
- By not having properly monitored the implementation by Ireland of Article 7 of the Convention in the adoption of Ireland's NREAP also has failed to comply with Article 7 of the Convention;
- By not having in place a proper regulatory framework and / or clear instructions to implement Article 7 of the Convention with respect to the adoption of NREAPs by Member States on the basis of Directive 2009/28/EC has failed to comply also with Article 3, paragraph 1, of the Convention;

The Compliance Committee has therefore recommended that the EU is now required to put in place the necessary measures, such that they ensure that the arrangements for public participation in a Member State are transparent and fair and that within those arrangements the necessary information is provided to the public. In addition, such a regulatory framework and / or clear instructions must ensure that the requirements of the Convention are met, in relation to reasonable time-frames, allowing for sufficient time for informing the public and for the public to prepare and participate effectively, allowing for early public participation when all options are

⁷ <http://www.ocei.gov.ie/en/DecisionsoftheCommissioner/Name,12832,en.htm>

⁸ See UNECE webpage on Communication ACCC/C/2010/54:
<http://www.unece.org/env/pp/compliance/Compliancecommittee/54TableEU.html>

open, and ensuring that due account is taken of the outcome of the public participation.

In the Irish context, leave has been given in the High Court (2012/920/JR) for a Judicial Review on the 15th January in relation to the following Reliefs:

Relief 1: Order of Certiorari

Order of “certiorari” of the Irish National Renewable Energy Action Plan (NREAP) adopted under Directive 2009/28/EC and the Renewable Energy Feed In Tariff (REFIT) scheme (State Aid N571/20006 and its extension).

Relief 2: Declaration

An order of *Declaration* by way of an application for Judicial Review in relation to the current implementation of the renewable energy programme and its associated funding arrangements. Is it lawful vis a vis Directive 2001/42/EC and Article 7 of the Aarhus Convention to grant planning permission for such developments and award funding under the REFIT scheme when no proper and legally compliant environmental considerations and public participation in decision-making have occurred in the development of this programme. In particular, as a requirement of Annex I of Directive 2001/42/EC, the main environmental protection objectives of the plan or programme should be clearly defined and the alternative measures considered to achieve them.

Despite these legal failures having been repeatedly brought to their attention for over three years, the EU and Irish administrations have steadfastly refused to ensure compliance with the necessary scientific assessments of the programme. One can however, complete one’s own assessment of this programme. The result is sobering, a capital cost of some €30 billion, in which the bulk of the infrastructure will be life expired in 15 years and the environmental benefits, if they occur at all, only amount to €5 million per annum. Clearly, other measures at far less cost, both financially and environmentally, could have been implemented to achieve what is a very poor benefit.

Da mihi facta, dabo tibi ius; is a legal principle based on Roman law; parties should present the facts of a case, while the judge rules on the law. In reality when the renewable programme is subjected to proper scientific assessment and the cost, benefit analysis defined, what is apparent is that a fundamental principle of EU and International law has been violated; namely the Principle of Proportionality.

The Principle of Proportionality requires each decision and measure to be based on a fair assessment and balancing of interests, as well as on a reasonable choice of means. Simply put, the extent of the action must be in keeping with the aim pursued. This Principle plays a central role in the case law of the European Court of Justice, regardless of whether the case involves agriculture, free movement of goods, citizenship, etc. Indeed, when applying the general principle of proportionality, the European Court of Justice frequently states that the principle requires an act or measure to be “suitable” to achieve the aims pursued, or it rather concludes that a decision is disproportionate because it is “manifestly inappropriate in terms of the objective which the competent institution is seeking to pursue”.

Further details on these issues are provided in an associated web link⁹, which graphically documents the legal failures of this programme.

3. THE VALIDITY OF THE CLIMATE ASSESSMENT MADE IN THE EIS

3.1 General

The following are the claims made by the developers for the proposed project:

Table 15.9.2 Greenhouse Gas Benefit From Cloghan Wind farm As A Result of Exporting 91.43GWh

	CO ₂	N ₂ O	CH ₄	% Of Irelands Total Emissions ⁽¹⁾
CCGT Producing 91.43GWh (tonnes CO ₂ Equivalent)	49,108	56.14	1.99	-
Total / Annum (tonnes CO ₂ Equivalent) Savings Due To Wind farm	49,108			(0.08)

(1) Based on a total emission of 62.8 million tonnes CO₂ equivalent in 2012 (Kyoto Target)

Unfortunately the calculation method used by the developer to derive the above figures is false, as it ignores the significant inefficiencies induced on the grid by this highly intermittent and variable generation. Wind generation does not replace conventional generation on a one to one basis. Indeed this is recognised in the funding arrangements for the project, in that the operator under the Renewable Energy Feed in Tariff (REFIT) receives €67 per MWh, while the electricity supplier who takes the power generated received an extra €10 per MWh, as a result of the extra balancing costs involved with this intermittent and variable supply¹⁰.

Furthermore, the whole purpose of environmental assessment is to consider alternatives. If indeed the objectives of this project are to achieve the savings similar to the above, and there are no other objectives identified, then clearly there was no consideration in the developer's documentation as to alternatives which were available to achieve them. In particular when it has to be considered that wind energy is only one of the eleven sources of renewable energy identified in Directive 2009/28/EC, which implements the EU's 20% renewable energy by 2020 target. So therefore how do we know that the proposed development has minimised the financial and environmental costs in relation to achieving an objective such as above? We don't and neither is it legally acceptable to approve such a development without consideration of such alternatives.

To repeat, the sole justification for wind energy projects, such as that proposed, are the alleged benefits in relation to environmental protection, in particular projected savings in greenhouse gas emissions and fossil fuel usage. However, no such data exists in relation to actual verified emissions savings. As a result there is increasing disquiet and dissatisfaction with the failure to provide proper verified emissions data in relation to the justification for these wind farms. Despite the reality of how

⁹ See copy on web in relation to Principle of Proportionality – the legal failures of the Irish and EU renewable energy programme: <http://bishophill.squarespace.com/blog/2013/1/7/principle-of-proportionality.html>

¹⁰ <http://www.dcenr.gov.ie/Energy/Sustainable+and+Renewable+Energy+Division/REFIT.htm>

intermittent wind energy interacts with the grid, i.e. it induces significant inefficiencies on the existing power plants, EU and other Member State public authorities are insisting that 1 MWh of wind energy input will displace 1 MWh of power plant emissions, i.e. the counterfactual case.

3.2 The basis for the EU Policy

The EU Commission's official position in their "Renewable Energy Road Map Renewable energies in the 21st century: building a more sustainable future COM (2006) 848 final"¹¹ is that:

- "Greenhouse gas emissions, including CO₂ emissions, from renewable energy sources are either low or zero. Increasing the share of renewables in the EU fuel mix will therefore result in significantly lower greenhouse gas emissions".

If one considers the documentation prepared in the build-up to the 20% renewable energy target, one of the main documents which formed the basis for the target was the above COM (2006) 848. This claimed that the additional renewable energy deployment needed to achieve the 20% target would reduce annual CO₂ emissions in a range of 600-900 million tonnes (Mt) in 2020.

The source of this claim was the PRIMES computer model used by the Commission, a computer model which has caused a lot of controversy, as it remains the private property of the National Technical University of Athens. While assumptions are published, independent parties cannot replicate the results. In the EU Commission's consultation on the "Energy Roadmap for 2050"¹², it is reported that a few organisations from diverse sectors criticised the PRIMES model regarding its transparency. Note: Only a few organisations would have the technical skills to evaluate the function of such a model. Furthermore, the Final Report of the Advisory Group on the Energy Roadmap 2050 was clear¹³:

- "Recommendation Fifteen: The PRIMES model should be made publicly available so that its results can be replicated by interested parties and to the extent that the PRIMES model is used to support the Roadmap, the assumptions and technology costs should be made explicit".

With regard to the claim of 600-900 Mt of greenhouse gas reductions in 2020, which is the justification for the 20% renewable energy target, the Commissioner's reply also references SEC(2006) 1719, which is the Commission Staff Working Document in relation to the Renewable Energy Roadmap. In relation to Section 5.1.3 of this document on the benefits of the 20% renewable energy target, one gets an insight into the key assumption of the PRIMES model in relation to assessing greenhouse gas emissions, namely "the assumption that CO₂ savings per percentage point increase of renewable energy's share is constant". In other words there is no

¹¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52006DC0848:EN:NOT>

¹² SEC(2011) 1569 Part 3/3:
http://ec.europa.eu/energy/energy2020/roadmap/doc/sec_2011_1569_3.pdf

¹³ SEC(2011) 1569 Part 1/3:
http://ec.europa.eu/energy/energy2020/roadmap/doc/sec_2011_1569_1.pdf

allowance being made for the increased inefficiencies, which are occurring on the grid, with resulting higher fuel consumption and emissions, as more and more intermittent renewable energy is placed on the grid.

This is a position, which is a constant through all the EU's documentation and documentation produced by the Department of Communications, Energy and Natural Resources; see for instance the Irish progress report on its National Renewable Energy Action Plan (NREAP)¹⁴. Indeed, if we consider the EU's Intelligent Energy Europe's GP-WIND programme¹⁵, which as the project description states with regard to its benefits:

- "A more rapid on and offshore deployment with a high consenting rate and reduction in the processing period while ensuring due consideration to environmental and community issues".

Then the lead partner is the Scottish Administration and the second partner the Sustainable Energy Authority of Ireland (SEAI)¹⁶. Their case studies refer to:

- "The annual emission savings are estimated by multiplying the total annual energy output, by the emission factor for the counterfactual case (i.e. coal fired generation, fossil fuel mix generation and average country grid mix generation)".

In other words, for each MWh of wind energy input to the grid, then automatically the emissions related to the same MWh of fossil fuel power plant generation is displaced, no allowance is made for the fact that the fossil fuel plants have to be kept running to balance the volatile and intermittent input of the wind energy.

3.3 The factual evidence in relation to this policy

If we consider the NREAP template produced by the EU¹⁷, then the only Section which can be considered related to environmental issues was Section 5.3:

¹⁴ See in particular Section 10 of: <http://www.dcenr.gov.ie/NR/rdonlyres/B611ADDD-6937-4340-BCD6-7C85EAE10E8F/0/IrelandfirstreportonNREAPJan2012.pdf>

¹⁵ <http://www.project-gpwind.eu/>

¹⁶ http://www.seai.ie/Renewables/Wind_Energy/Good_Practice_Wind/

¹⁷ http://ec.europa.eu/energy/renewables/doc/nreap_adopovedversion_30_june_en.pdf

5.3. Assessment of the impacts (Optional)

Table 13: Estimated costs and benefits of the renewable energy policy support measures:

Measure	Expected renewable energy use (ktoe)	Expected cost (in EUR) – indicate time frame	Expected GHG reduction by gas (t/year)	Expected job creation

With regard to this table on expected greenhouse gas reductions, nineteen of the Member States left this completely blank, while the others, such as the UK provided little or limited information. Struan Stevenson a Scottish MEP, on behalf of the Author and other wind farm campaigners, wrote in February 2012 to the EU Energy Commissioner, pointing out not only failings in relation to the Aarhus Convention, but also that:

- “These National Renewable Energy Action Plans, along with Strategic Environmental Assessments (SEAs) are vital tools for informing the public about environmental objectives, alternatives and impacts. They also provide an opportunity for stakeholders to participate in decision-making process. If the NREAPs and SEAs are not completed properly then the Commission simply cannot allow legislation to proceed”.

The position of the EU Energy Commissioner in his reply¹⁸ was that Section 5.3 of the NREAP was an optional reporting requirement, in order “to avoid an excessive administrative burden on the Member States”. However, the Commissioner did refer to Article 22 of the Renewable Energy Directive (2009/28/EC) and the reporting requirement of the Member States to report on estimated greenhouse gas savings and that these were now available on the Commission’s Transparency Platform. This issue was also raised in Communication ACCC/C/2010/54, but as it was at a late stage it was not considered by the Compliance Committee.

Consideration of the first NREAP progress reports, which are now available on the EU website¹⁹, demonstrates that no allowance has been made in the claims made for greenhouse gas savings in relation to the inefficiencies induced on the electricity grid by the input of the intermittent wind energy. Instead the theoretical assumption is made that no such inefficiencies are occurring.

The position of Hans Van Steen, Head of Unit, Renewables and CCS policy – ENER/C1, Directorate General for Energy, is clear. They have no means of ensuring the transparency of the information on the NREAP progress reports, i.e. no relevant calculation method for intermittent renewables, such as wind, and it is up to us, the public, to judge the transparency of the information on the public platform, rather than

¹⁸ Reference JB/cw (2012) 131731 dated 23.03.2012

¹⁹ http://ec.europa.eu/energy/renewables/reports/2011_en.htm

them in relation to their obligations under the Convention²⁰. On this point, it is worth pointing out that in relation to the progress report on the Irish NREAP, this even states that there are clear limitations in this methodology used to calculate greenhouse gas emission²¹, but it is claimed that it provides useful indicative results. This issue will be returned to later, as there is actual data, which is available to the Irish authorities, but ignored in complying this progress report for the Transparency Platform, which presents a very different picture of the emissions performance of the Irish grid.

Indeed with regard to the position of the EU, under the original 2001/77/EC Directive on renewable energy, the Commission was required under Article 4 of the Directive to present, not later than 27 October 2005, a well documented report on experience gained with the application and coexistence of the different mechanisms used in Member States. The report was required to assess the success, including cost effectiveness, of the support systems promoting the consumption of electricity from renewable energy sources in conformity with the national indicative targets. This document COM (2005) 627²² had a section related to:

- Intermittency in production and balancing power: need for an appropriate combination of internal market and renewables regulation

This recognises that wind power is an intermittent source of generation and as a result increasing grid balancing costs are incurred. To explain, the weather systems which produce the strong winds sufficient to generate significant wind energy output are typically relative fast moving, so power plants have to be kept on hot stand-by ready to ramp back-up when the wind drops. In addition, as the power output of a wind turbine is proportional to the cube of the wind velocity, if the wind speed halves, the power output goes down by a factor of eight. Therefore on a short term basis the thermal power plants on the grid have to modulate more frequently to compensate and ensure that the total power input to the grid is steady to match the instantaneous demand profile. This is what is referred to by balancing costs. In COM (2005) 627 it is freely admitted that there are significant balancing costs associated with the integration of intermittent wind energy. Yet at the same time in all other documentation produced by the EU in relation to the emissions performance of wind energy generation, there is a complete denial to acknowledge the increased emissions associated with the thermal plants now having to operate more inefficiently.

The position is therefore is that the EU's and Member State claims in relation to fuel and emissions savings are not transparent. Under Article 5 of the Aarhus Convention:

- “Public authorities possess and update environmental information which is relevant to their functions”.

²⁰ See information on the webpage of the UNECE Communication ACCC/C/2010/54 submitted on the 13.03.2012 :
<http://www.unece.org/env/pp/compliance/Compliancecommittee/54TableEU.html>

²¹ See page 24 of: <http://www.dcenr.gov.ie/NR/rdonlyres/B611ADDD-6937-4340-BCD6-7C85EAE10E8F/0/IrelandfirstreportonNREAPJan2012.pdf>

²² <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2005:0627:FIN:EN:PDF>

- “Each Party shall ensure that, within the framework of national legislation, the way in which public authorities make environmental information available to the public is transparent and that environmental information is effectively accessible”.

Transparency is defined by the “Aarhus Convention: An Implementation Guide”,

- “Transparency means that the public can clearly follow the path of environmental information, understanding its origin, the criteria that govern its collection, holding and dissemination, and how it can be obtained”.

As the relevant EU legislation states, Member States have to ensure that information on the environment is up to date, accurate and comparable²³. There is a reason; access to transparent environmental information ensures that members of the public can understand what is happening in the environment around them. It also ensures that the public is able to participate in the decision making in an informed manner.

In this context it has to be pointed out that in 2004, Eirgrid produced an engineering report²⁴ on the impact of wind energy and its intermittency on the economics of operation of conventional plant. This concluded that:

- “The adverse effect of wind on thermal plant increases as the wind energy penetration rises. Plant operates less efficiently and with increasing volatility”.

The report recommended that the proposed wind energy programme not be proceeded with given the other far more cost effective alternatives available for carbon abatement. It was ignored.

In July 2012, the Energy and Climate Change Committee of the UK Parliament took evidence on; “The Economics of Wind Power”²⁵. It is important to consider the submission from Sir Donald Miller F.R Eng, FRSE, who was Chairman SSEB/Scottish Power 1982-92 (Wind 13).

- “The assumption that each MWh of electricity generated from wind saves the equivalent in CO₂ emissions from fossil fuel power stations would not be supported by any engineer with experience of operating power plant. The considerably lower efficiency of the back up thermal plant running at part loads together with the additional losses from frequent deloading and reloading as the wind strength varies, all consume additional fuel. The jury is still out on the exact implications of this but there is accumulating evidence from analysis of actual system operations both in the USA and more recently for the Irish Grid that high wind penetrations save little or negligible emissions of CO₂ and can in some circumstances actually lead to increases”.

²³ Regulation 1367/2006 as applies to the Institutions and Bodies of the EU and Directive 2003/4/EC as applied to the Member States, which is transposed into Irish Law through S.I. No. 133 of 2007 and S.I. 662 of 2011.

²⁴ [http://www.eirgrid.com/media/2004%20wind%20impact%20report%20\(for%20updated%20007%20report,%20see%20above\).pdf](http://www.eirgrid.com/media/2004%20wind%20impact%20report%20(for%20updated%20007%20report,%20see%20above).pdf)

²⁵ <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmenergy/writew/517/contents.htm>

Note: His critical submission of the UK's renewable energy strategy was shared by many others from a technical background, who contributed to this public consultation. Indeed many Submissions referred to the failures to provide verified emissions data and to comply with the Aarhus Convention.

With regard to the Scottish Parliamentary Inquiry into the renewables programme held in early 2012, the Professional Engineering Institutions; Institution of Mechanical Engineers (IMechE), Institution of Civil Engineers (ICE), Institution of Engineering and Technology (IET) and the Institution of Engineers and Shipbuilders in Scotland (IESIS) combined to make a joint presentation. Their oral presentation to the Committee was clear²⁶, in that it primarily focused on the need to understand the effect intermittent generation was having and the degree reduction of CO₂ which would result from the deployment of the proposed renewable energy sources. The point was stressed, i.e. the need to have **quantitative** assessment for the necessary balancing generation. This also referred to the work completed by Dr Fed Udo in analysing the Republic of Ireland's wind energy programme and resulting claims in relation to emission and fossil fuel savings, a point which will be returned to later.

3.4 The absence of justification in relation to claims of environmental protection

We therefore have a situation where the proposed greenhouse gas savings associated with the EU's renewable energy programme simply have not been documented in a transparent manner. Indeed if one considers the NREAPs, they are simply not known at all. Despite this EU and Member States are implementing State Aid funding for renewable projects. In the Republic of Ireland this falls under the REFIT (Renewable Energy Feed In Tariff) scheme, which provides preferential access to the grid and preferential financial arrangements, such as to the proposed wind farm. However, the provision of such State Aid is subject to rules. While State Aid funding can be approved in relation to objectives of environmental protection, the relevant EU guidelines²⁷ are very clear in relation to the proportionality of aid:

- "Aid is considered to be proportional only if the same result could not be achieved with less aid. In particular, the aid amount must be limited to the minimum needed to achieve the environmental protection sought".

Yet as already has been documented we now have the situation, where not only do we not know the tonnes of greenhouse gases to be avoided nor the resulting costs, but clearly nothing on alternatives and what they might cost. Indeed one could also go further and ask as to what is the environmental impact associated with any emissions savings, which potentially could occur?

A key legally binding principle of environmental protection is the analysis of cost, benefits and consideration of alternatives. As a result we know the impacts of pollutants, such as that of fine airborne particulates on human health, as the EU and some national governments have assessed both the cost of those impacts and the costs of reducing the concentrations of those pollutants, such as by tighter emissions standards for power plants and new vehicles.

²⁶ http://www.scottish.parliament.uk/S4_EconomyEnergyandTourismCommittee/General%20Documents/INSTITUTION_OF_ENGINEERING_AND_TECHNOLOGY.pdf

²⁷ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:082:0001:0033:EN:PDF>

Yet when it comes to carbon dioxide there has been essentially a complete failure to properly fund and execute these vitally necessary, albeit complex, studies. We are in the dark about the external cost of carbon dioxide. To explain, the internal cost is what we pay directly, such as on our electricity bill, while the external costs does not appear as a direct charge to the consumer, but which has a cost to society as a whole, such as through environmental degradation. Obviously external costs are an absolutely key element of cost, benefit analysis and the resulting decision making.

Indeed the 'Polluter Pays Principle', which was formally adopted through the Maastricht Treaty in 1992, sets the aim that external costs should increasingly become internalised. Therefore, if mandatory targets related to renewable energy are to be implemented to reduce the external costs associated with the use of energy, what are the relevant external costs and additional internal costs incurred in avoiding them? Clearly the report below, which the EU Commission was required by European law to complete by the end of 2005²⁸, was extremely important in this regard.

- "Consider the progress made in reflecting the external costs of electricity produced from non-renewable energy sources and the impact of public support granted to electricity production".

This report was never completed by the EU Commission, when replying to a written question on this from Struan Stevenson MEP in March 2012, the reply from the EU Energy Commissioner was simply astounding. Article 8 of Directive 2001/77/EC was completely clear; it placed the obligation on the Commission to complete the above report. However, Commissioner Oettinger stated that as the Member States did not provide information on the externalities related to the generation of non-renewable energy, the Commission didn't produce a separate report to deal with the above. Note: It was the obligation of the Commission to produce this report, not the Member States to provide the data. While he didn't mention it at all, it clearly wasn't seen as important either to evaluate the impact of the considerable public support given to renewable generation.

The Commissioner's reply also stated that "the analysis of the attempts to internalise the external costs of energy has been the basis for several energy and climate change initiatives, including progress reports of the Commission, the 2008 Energy and Climate Package and the EU Emissions Trading Scheme itself". He then provided reference to a number of reports by the Commission. Yet none of these provide data on what is the external cost of greenhouse gas emissions. The closest one comes to this is COM (2006) 848, the Renewable Energy Road Map²⁹, in which reference is made to in one of the figures to the "Extern-E study for the European Commission".

This research project³⁰ on the external costs of energy did produce a final report in 2005 and while it did contain good analysis of the impact of air pollution, related to the work on the EU's Clean Air for Europe (CAFE) programme, which was being

²⁸ Article 8 of Directive 2001/77/EC: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2001:283:0033:0033:EN:PDF>

²⁹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0848:FIN:EN:PDF>

³⁰ <http://www.externe.info/>

completed at the same time, the chapter on global warming is, as the authors admit, characterised by “uncertainties and incompleteness inherent in these estimates”³¹. Instead it was decided that a ‘shadow price’ should be used based on “society’s willingness to pay for early action against global warming”. Note: The Extern-E analysis on climate change quoted extensively the work of Professor Richard Tol, a Dutch economist who was until recently employed in the Irish Economic and Social Research Institute (ESRI), who in a more recent 2009 publication on the “Economic Effects of Climate Change”³² stated:

- “Projections of future emissions and future climate change have become less severe over time - even though the public discourse has become shriller”.
- “The quantity and intensity of the research effort on the economic effects of climate change seems incommensurate with the perceived size of the climate problem, the expected costs of the solution, and the size of the existing research gaps. Politicians are proposing to spend hundreds of billions of dollars on greenhouse gas emission reduction, and at present, economists cannot say with confidence whether this investment is too much or too little”.

In a similar article by Prof Tol, “The Social Cost of Carbon: Trends, Outliers and Catastrophes”³³, his conclusion on the external cost was about \$20 per ton of carbon, which equates to \$5.5 per tonne of CO₂. Yet all of this is based on the premise that the UN’s Intergovernmental Panel on Climate Change (IPCC) has accurate estimates on future climate trends.

Unfortunately scientific fact has long gone as a basis of decision making in the EU Commission. If one accesses the EU Commission’s webpage on Climate Action³⁴, in relation to a roadmap to a low carbon economy by 2050, this states:

- “Science tells us that all developed countries would need to reduce emissions by 80-95% in order to have a fair chance of keeping global warming below 2°C”.

As Struan Stevenson MEP pointed out in the start of his letter to the EU Commissioner for Energy, there is a “current furore in relation to the EU’s renewable energy and climate change targets”. The scientific community does not support statements such as the above, which are nothing short of the opinions of individuals, which are not supported by facts and time and time again bear the stamp of sensationalism. Of huge concern is the blind faith we are now expected to put in the skills of a limited number of mathematical experts and their computer models (General Circulation Models). Simply put, the contribution of carbon dioxide to the earth’s natural greenhouse effect is completely swamped by the presence of simple water vapour. The threat of global warming is singularly based on the principle of a feed forward effect, i.e. that if the earth’s temperature increases slightly, then more water vapour will enter the atmosphere and as a result we will enter into a never ending spiral of run-away temperatures.

³¹ A derived damage of \$33 t/C was stated (ca. €9 t/CO₂) but this could range from \$7 t/C to \$33 t/C (in 1995 prices).

³² Journal of Economic Perspectives – Volume 23, Number 2, Spring 2009, Pages 29-51

³³ <http://www.economics-ejournal.org/economics/journalarticles/2008-25>

³⁴ http://ec.europa.eu/clima/policies/roadmap/index_en.htm

Yet if this feed forward mechanism were not to occur, and there are no records from extensive data from the past that it does occur, then even the UN's Intergovernmental Panel on Climate Change (IPCC), a deeply politicised body, has to admit that a doubling of the global atmospheric carbon dioxide level would only lead to about a 1.2°C rise in temperature. Note: We are only about a third of a way to that doubling of the pre-industrial age concentration. Given that humans live in a temperature range of -50°C to +50°C, sometimes within the same year, one can only conclude; so what, after all the impacts would actually be more positive than negative!

Yet not only are these uncertainties glossed over in the official documentation, but the only certainty with the IPCC's climate models is that they are extremely uncertain. Indeed they completely ignore the solar variations, which are strongly related with the natural climate change cycles, which always occurred prior to the industrial age. From a scientific perspective, given our current level of data and scientific understanding, it is pure and utter arrogance for any organisation to claim that they can model, not to mention predict, the complexity which is occurring within the earth's ecosystem. Not unsurprisingly, the evidence is increasingly mounting that these mathematical models are not an accurate reflection of the complex dynamics, which are occurring, and that their predictions do not reflect what is actually happening. It is not unsurprising that China³⁵, where technology is valued, is calling for a complete review of climate change science by 2015, as a precondition for entering any possible negotiated agreement post 2020.

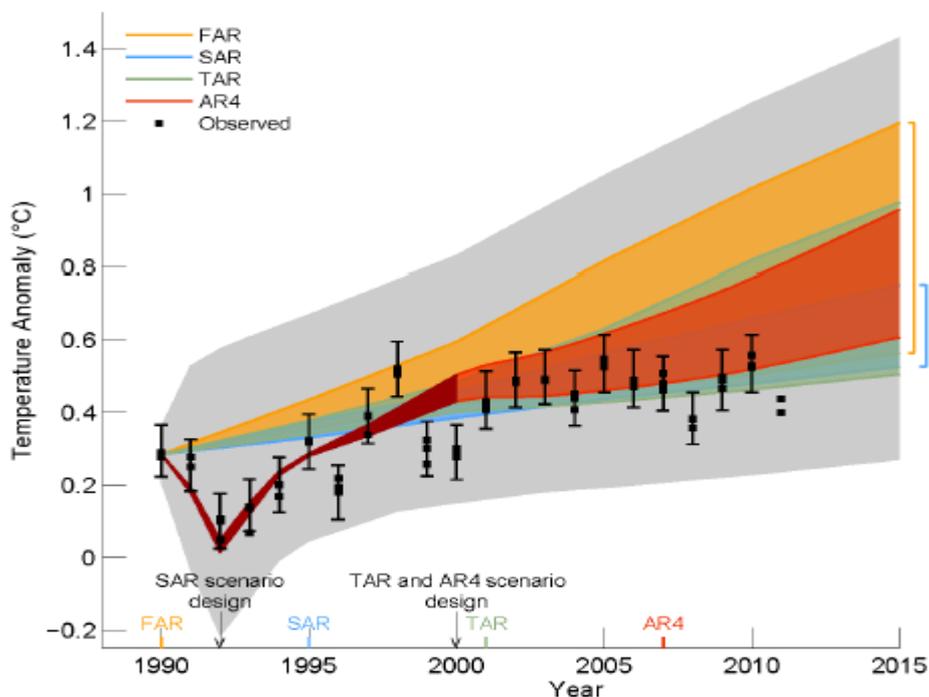


Figure 3: Extract from recently released draft AR5 IPCC Climate Change Report. The four bright colours represent the predicted temperatures of the IPCC models, which are in stark contrast to the observed temperatures.

³⁵ <http://www.springerlink.com/content/w342k240350n4564/fulltext.pdf> and http://scienceandpublicpolicy.org/images/stories/papers/reprint/human_induced.pdf

One can only therefore conclude that the \$5.5 per tonne of CO₂, derived by Prof Tol based on the state of knowledge in 2008, is if anything on the high side.

As a result we are now in a situation where we do not know what tonnes of greenhouse gases are to be saved, what the costs and alternatives are, nor what the environmental impact of those emission savings will be. One can clearly conclude: So how can it be demonstrated that the State Aid for Environmental Protection is proportionate?

As a result of a number of access to information on the environment requests, the Department of Communications, Energy and Natural Resources are now stating:

- No verification of emission savings with the wind energy installed to date has been completed;
- No estimation of greenhouse gas savings has been completed with regard to Ireland's National Renewable Energy Action Plan, which is to implement the EU's 2009/28/EC Directive on achieving an EU 20% renewable energy target by 2020;
- The funding mechanisms for the renewable energy programme (REFIT) are to ensure delivery of an EU obligation in relation to renewable energy and not part of a commitment to contribute to any quantifiable environmental target related to quantified carbon dioxide savings³⁶.

Ireland's renewable energy programme is simply a massively expensive project to install over four thousand wind turbines (7,145 MW) and to double our grid by an additional 5,000 km of high voltage lines. It is **not** a programme to achieve carbon dioxide and fuel savings using the principle of proportionality and the fundamental premise of minimising the burden on citizens and industry. Experience has shown that every job created in this renewable energy sector will displace two to four jobs elsewhere in the commercial sector, which cannot carry the cost of soaring energy prices.

Indeed the situation is so disconnected with regard to any tangible link to environmental protection, that if we consider the extension to the Renewable Energy Feed-in Tariff (REFIT) State Aid programme (N571/2006) for Irish renewable energy, which was announced in early 2012 and will fund an additional 4,000 MW of renewable energy, about 2,000 additional wind turbines including the proposed development, there is essentially a single one page document from the Irish authorities in the application process. Nowhere does it state what greenhouse gases are to be saved by the measure³⁷, instead all it provides is the percentage of electricity generation we have by renewables and the percentage which is sought.

Indeed one could legally question the justification for these support schemes, which are related to the Judgment of the European Court of Justice of the 13th March 2001

³⁶ http://www.unece.org/fileadmin/DAM/env/pp/compliance/C2010-54/Correspondence%20with%20communicant/frCommC54Annex_Reply_from_DCENR_5Sept2011.pdf

³⁷ See documentation submitted on the 13.03.2012:
<http://www.unece.org/env/pp/compliance/Compliancecommittee/54TableEU.html>

in case C-379/98, PreussenElektra AG v Schleswag AG³⁸, the findings of the Court in relation to justifying state aid for wind generated renewable electricity was on the basis that:

- 73 “The use of renewable energy sources for producing electricity, which a statute such as the amended Stromeinspeisungsgesetz is intended to promote, is useful for protecting the environment in so far as it contributes to the reduction in emissions of greenhouse gases which are amongst the main causes of climate change which the European Community and its Member States have pledged to combat”.
- 75 “It should be noted that that policy is also designed to protect the health and life of humans, animals and plants”.

Therefore, this ruling is clear; the justification for support mechanisms for renewable energy is on the basis that positive reductions in emissions in greenhouse gases are occurring and that the health and life of humans, animals and plants are protected.

Scientific evidence is that with regard to the investment, which is now occurring in wind energy is that this is not occurring. For instance many people are suffering³⁹ fatigue, headache, impaired concentration, sleep disturbance and physiological stress due to prolonged exposure to audible low frequency noise from wind turbines. The Strategic Environmental Assessment Directive is clear, such environmental impacts should have been assessed, the proper mitigation measures implemented and the situation monitored for unforeseen effects. This didn't happen and now countless European citizens are suffering a major loss of amenity and consequential health impacts.

3.5 The actual results of the EU and National Renewable Energy Policy

Ireland is an isolated island with a limited amount of hydro electricity available for balancing wind generation. It is therefore possible to analyse the performance of the thermal plants on its grid as the wind energy input varies, a position which is facilitated by Eirgrid, who not only publish wind energy input to the grid in 15 minute intervals, but also modelled emissions from the thermal power plants based on their theoretical loads⁴⁰. While this is not as precise as actual measured fuel consumption of the power plants, it is providing useful data for the interested public to analyse. This analysis of Eirgrid's data shows⁴¹ that emissions on the grid actually start to rise when the wind energy input exceeds 1,200 MW. Yet we have 2,000 MW of wind energy installed and a National Renewable Energy Action Plan, which calls for 7,145 MW.

³⁸ <http://eur-lex.europa.eu/Notice.do?val=250623:cs&lang=en&list=250623:cs,250557:cs,250554:cs,&pos=1&page=1&nbl=3&pgs=10&hwords=&checktexte=checkbox&visu>

³⁹ See conclusions on recent noise study:
http://vbn.aau.dk/files/62413823/Maastricht_Moeller_et_al_2011.pdf

⁴⁰ <http://www.eirgrid.com/operations/>

⁴¹ Pro bono work completed by Hugh Sharman, Denmark. Similar work completed by Fred Udo, Holland.

Republic of Ireland

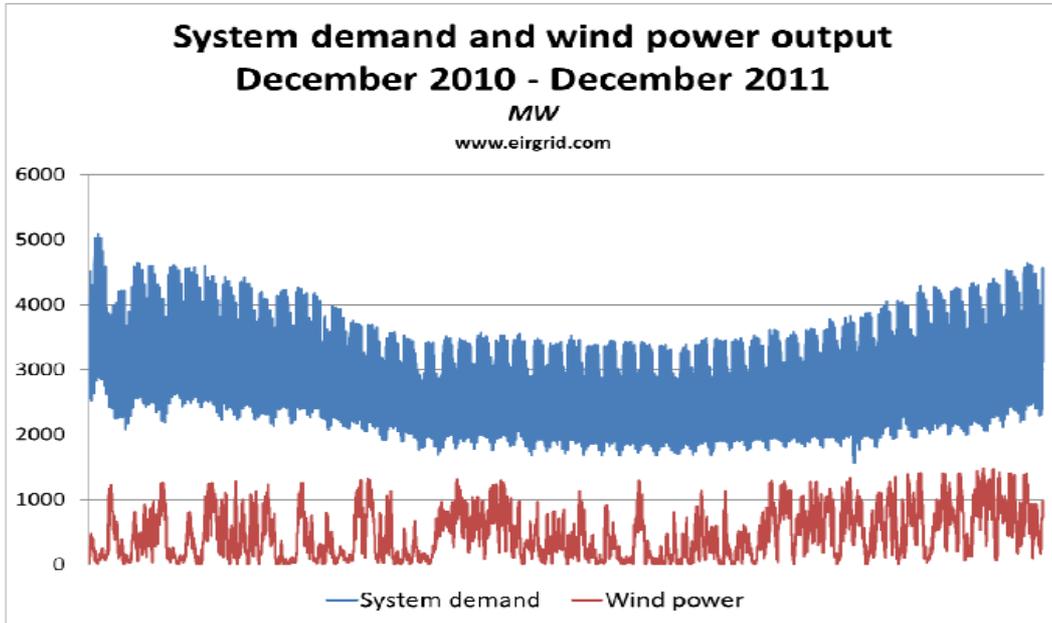


Figure 1: Irish grid performance December 2010 to December 2011.

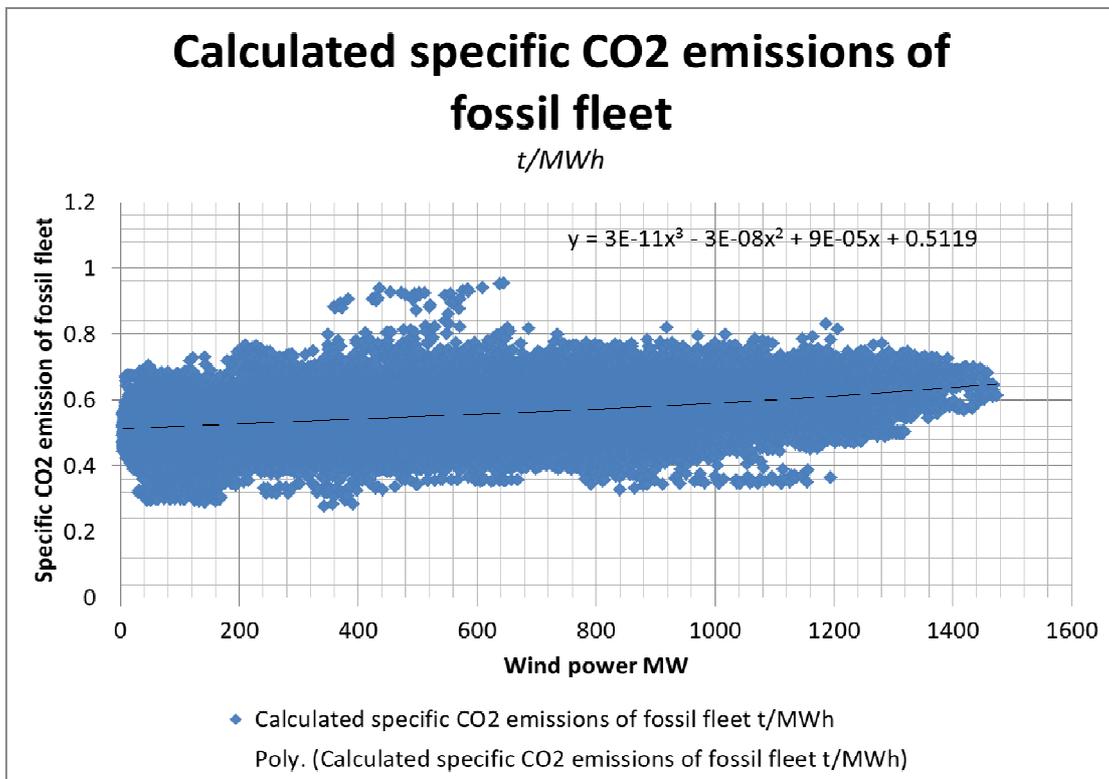


Figure 2: Graph showing how emissions of fossil fuel power stations on grid rises with increased wind energy input

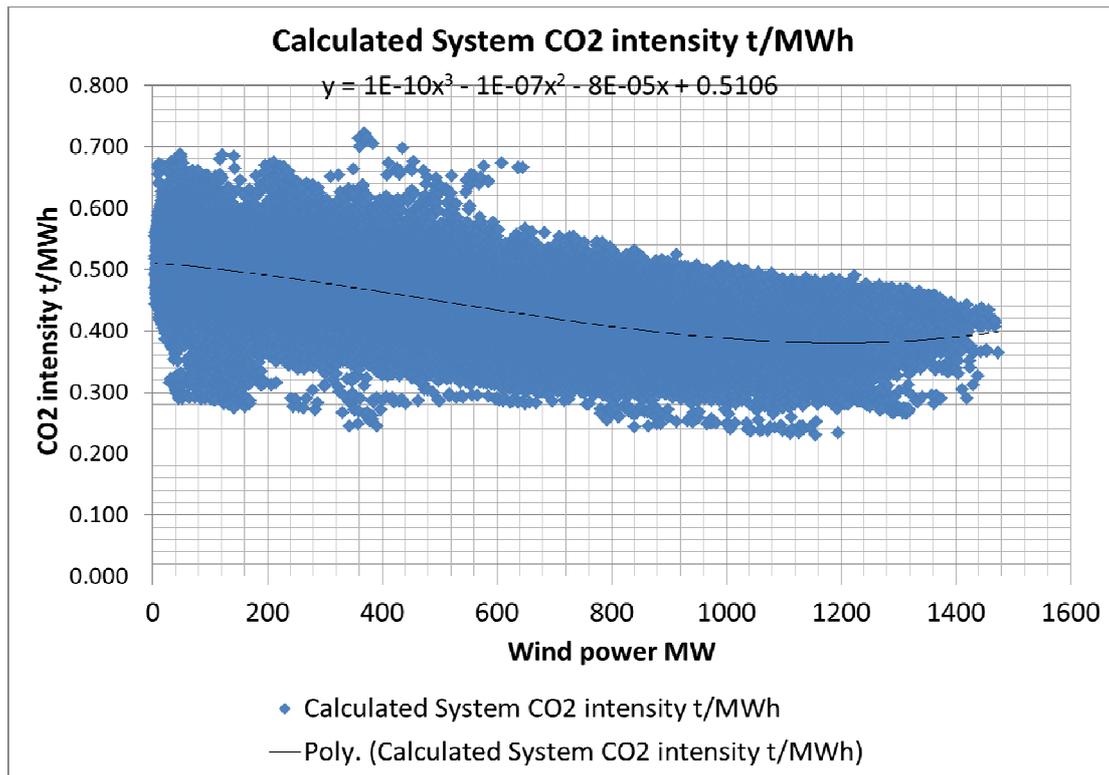


Figure 3: Overall emissions intensity of Irish grid in relation to wind energy input – note emissions start to rise when wind energy input exceeds 1,200 MW

It is important to note, that if the EU's and the Irish authorities claims that each MWh of electricity generated from wind saves the equivalent in CO₂ emissions from fossil fuel power stations, then the graph in Figure 2 would be a straight horizontal line, i.e. there would be no increase in fuel consumption and emissions as the wind energy input increases. Furthermore, the graph in figure 3 is of huge concern, as it clearly shows that a fraction of the proposed wind energy to be installed under the Irish NREAP, a position has been reached where the emissions on the grid are actually increasing.

Unfortunately the Irish authorities have refused to carry out the legally required environmental assessments of their renewable programme and have ignored the above emissions data, which is readily available, when preparing their official publications and submissions to the EU. Indeed as was previously mentioned, these inefficiencies were pointed out in 2004 by Eirgrid, who recommended that the wind energy programme not be proceeded with, unfortunately this technical and economic analysis was ignored.

3.6 Conclusion

The only justification for this programme is alleged greenhouse gas emission savings for which the figures provided by the developer are clearly false. The grid is already operating so inefficiently with wind power installed to date, that the addition of the proposed wind farm is not going to make any difference in terms of quantifiable emissions savings. However, even if we were to assume that 50% of the claimed for 49,108 tonnes of emission savings were to occur, in practical terms this only amounts at €5 per tonne for the external cost of carbon dioxide (Tol 2008) to an

annual environmental benefit of €125,000, if even that at all, which is hugely disproportionate to actual impacts incurred.

4. THE FAILURE TO PROPERLY ASSESS NOISE IMPACTS IN THE EIS

The EIS provided the following noise predictions. However, it failed to assess the low frequency noise associated with wind turbines.

Wind Speed, m/s at 10m height	Noise Level LA90, dB(A) re 2x10 ⁻⁵ Pa, at House			
	H02	H12	H22	H26
4	34.1	34.9	33.7	33.5
5	37.6	38.4	37.2	37.0
6	41.0	41.7	40.6	40.3
7	43.0	43.7	42.6	42.3
8	43.7	44.4	43.3	43.0
9	43.7	44.4	43.3	43.0
10	43.5	44.2	43.1	42.8
11	43.5	44.2	43.1	42.8
12	43.6	44.3	43.2	42.9

Table 12.8.2.1 Wind Turbine Noise Levels at the Survey Locations at Various Wind Speeds

As has been previously raised:

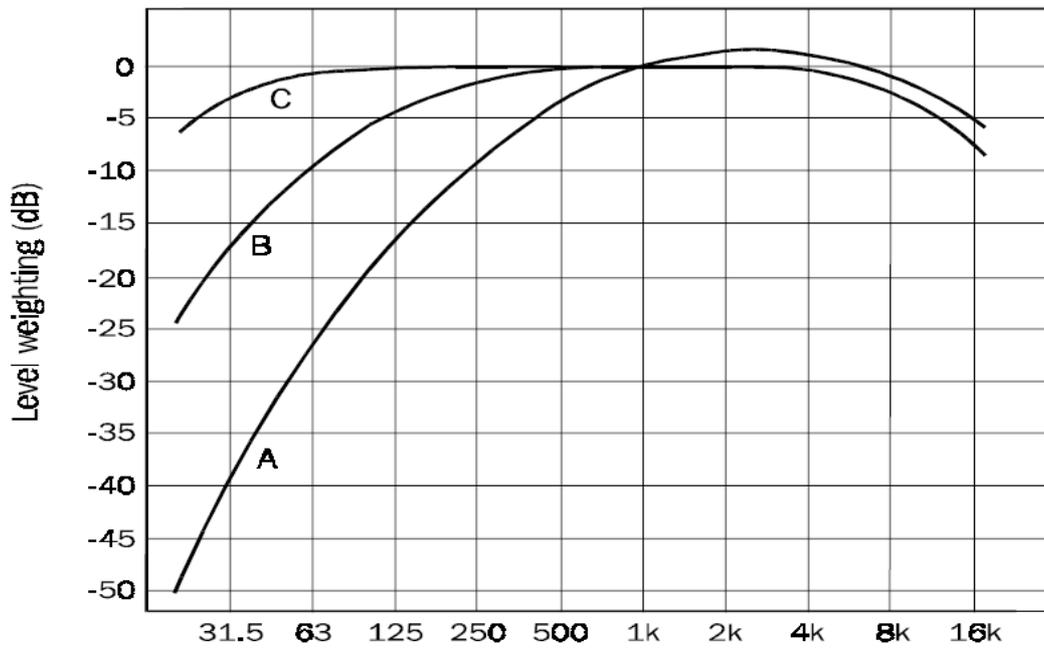
- *“Many people are suffering⁴² fatigue, headache, impaired concentration, sleep disturbance and physiological stress due to prolonged exposure to audible low frequency noise from wind turbines. The Strategic Environmental Assessment Directive is clear, such environmental impacts should have been assessed, the proper mitigation measures implemented and the situation monitored for unforeseen effects. This didn’t happen and now countless European citizens are suffering a major loss of amenity and consequential health impacts”.*

To put the above assessment completed by the developer into context. The German TA Lärm noise regulations of 1998⁴³ are not only extremely comprehensive, but they predate the widespread introduction of wind energy. Indeed, their sister regulations for air TA Luft have been the cornerstone of Irish technical standards for air pollution control since the introduction of licensing arrangements with the Air Pollution Act of 1987. TA Lärm in Section 6.1 sets a nighttime level of 35 dB(A) in pure residential

⁴² See conclusions on recent noise study:
http://vbn.aau.dk/files/62413823/Maastricht_Moeller_et_al_2011.pdf

⁴³ <http://www.umweltbundesamt.de/laermprobleme/publikationen/talaerm.pdf>

areas and 40 dB(A) for general residential areas and small settlements. However, in Section 7.3 in relation to special regulations and consideration of low frequency sound, which is predominately noise under 90 Hz, if in rooms with closed windows the resulting noise level $L_{Ceq} - L_{Aeq}$ exceeds 20 dB then under such circumstances appropriate reduction measures have to be investigated. In Section A.1.5 further details are provided in that DIN 45680 is referenced for investigation and evaluation of low frequency sound.



However, some simple points to notice, the 'C' weighted sound pressure levels dB(C) are more biased towards low frequency weighting than the conventional 'A' weighted sound pressure levels dB(A). See graph above. While the 'A' weighting is reflective of normal industrial and traffic type noise, the 'whoosh' type low frequency noise of a wind turbine needs to be assessed by conducting measurements which are also 'C' weighted. This is because when the 'A' weighted factors are applied; the significant contribution from the low frequency turbine 'whoosh' is masked out.

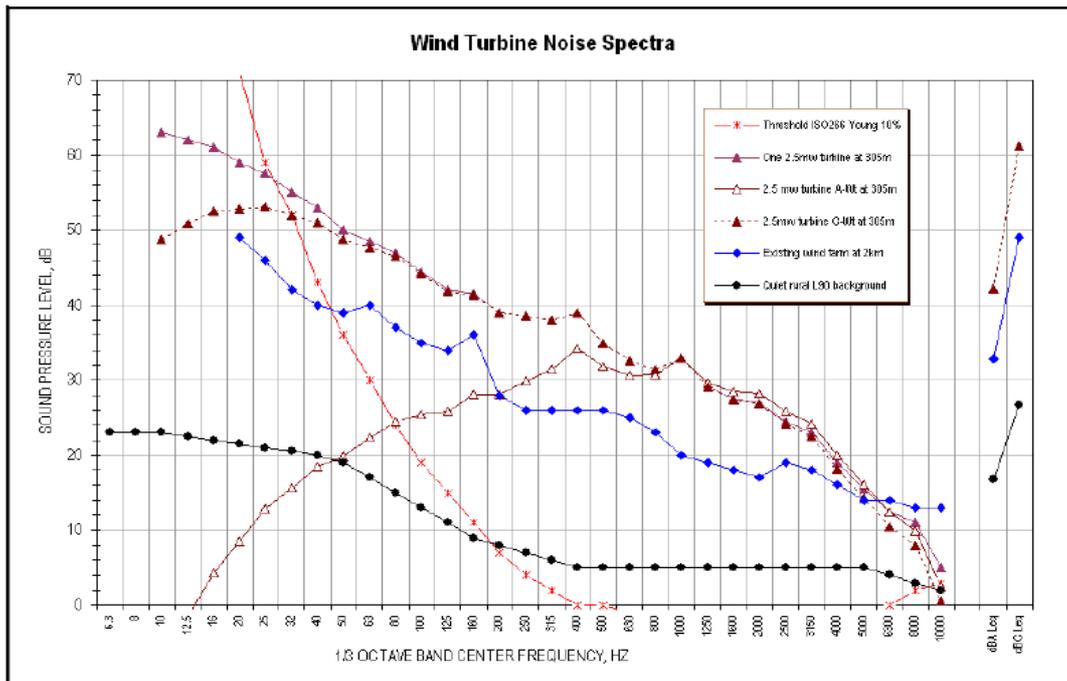


Figure 1-Graph Of Wind Turbine Sounds Vs. Rural Background And Threshold Of Perception
 (Note: The lowest L_{Aeq} and L_{Ceq} shown at right are measured background L_{A90} and L_{C90} . The L_{eq} values could be 0-5 dB higher)

Note: The graph above shows how wind turbine noise is biased towards the low frequency spectrum.

The net result of this can be seen from the graph below, namely when 'A' weighted analysis is conducted; people are much more annoyed by wind turbine noise than other more 'normal' noise even at a higher sound pressure level.

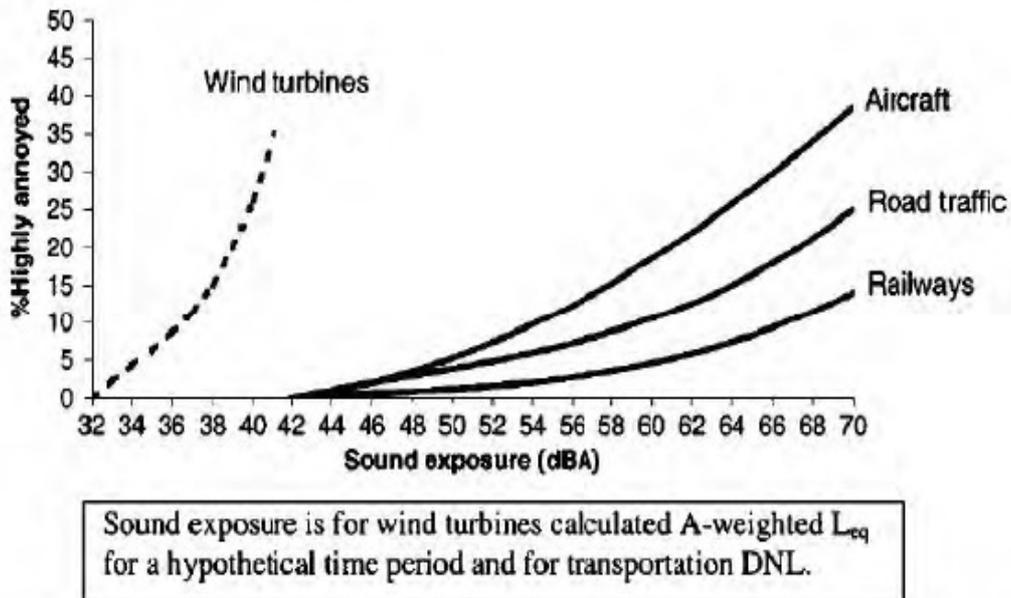


Figure 2. Percent of respondents reported high annoyance attitude as a function of sound level.
 (Day-night average sound level for aircraft, road traffic, and railways; L_{eq} for wind turbines).
 Source: Pedersen and Person Waye (2004), Figure 3.

In most cases, where relationships between sound level and annoyance have been determined, wind turbine annoyance starts at sound levels 10 dB(A) or more below the sound level that would cause equivalent annoyance from the other common community noise sources. Whereas one would expect that people would be annoyed by 45 dB(A) night time sound levels outside their homes in an urban area, rural residents are equally annoyed by wind turbines when the sound levels are 35 dB(A). Given that wind turbine utilities are often permitted to cause sound levels of 40 dB(A) or higher at the outside of homes adjacent to or inside the footprint of wind utilities the negative reactions to wind turbines from many of those people is understandable.

An additional factor which must be considered is that noise levels quoted by the manufacture can be out by 8 to 15 dB(A), depending on weather conditions, mismatch of blade angle, etc⁴⁴. Note: The IEC 61400-11 test procedures used to derive this data states that the turbine's reported sound power levels represent the turbine's sound emissions at or above its nominal operating wind speeds under standardised weather and wind conditions. It should be clear that any assertions by the acoustical modeller that the models represent "worst case" sound level estimates rely on careful phrasing or ignorance of the underlying standards and methods. Furthermore, a building will have lower attenuation for low frequency sound than it does for higher frequency sound⁴⁵.

With regard to health impacts, the World Health Organisation (WHO)⁴⁶ has found that to protect children's health sound levels should be less than 30 dB(A) during sleeping periods. They note that a child's autonomous nervous system is 10 to 15 dB more sensitive to noise than adults (WHO night time recommendations for the general public are 30 dB inside bedrooms, and 45 dB outside open bedroom windows). Even for adults, health effects are first noted in some studies when the sound levels exceed 32 dB(A), 10-20 dB(A) lower than the levels needed to cause awakening. The WHO researchers found that sound levels of 50 dB(A) or more strongly disrupted hormone secretion cycles. For sounds that contain a strong low frequency component, which is typical of wind turbines, WHO says that the limits may need to be even lower than 30 dB(A) to not put people at risk.

The WHO is very clear in that when prominent low-frequency components are present, noise measures based on A-weighting are inappropriate. The difference between dB(C) and dB(A) will give crude information about the presence of low-frequency components in noise, but if the difference is more than 10 dB, it is recommended that a frequency analysis of the noise be performed. It should be noted that a large proportion of low-frequency components in noise may increase considerably the adverse effects on health.

⁴⁴ A point not only often documented in the literature, but recently confirmed by extensive acoustic measurements by the Belgian group VentduRaison:
<http://www.sdcounty.ca.gov/pds/docs/ZA/NoiseMaterial.pdf>

⁴⁵ "Generally a partition will have better noise reduction with increasing frequency. It is therefore important to check the noise reduction at certain frequencies when dealing with low frequency, rumble type noise". See page 14 of:
<http://www.cedengineering.com/upload/An%20Introduction%20to%20Noise%20Control%20in%20Buildings.pdf>

⁴⁶ <http://www.who.int/docstore/peh/noise/guidelines2.html>

The developer may consider his conclusions to be reasonable, but a proper analysis, which considered the points above, in particular the impact of varying weather conditions and turbines operation plus ensuring that the $L_{Ceq} - L_{Aeq}$ does not exceed 20 dB, would quickly come to an altogether different conclusion, in particular the nearest dwelling at 503 m and the impact on the amenity and health of those resident there. Note: In reality given the scattered nature of Irish rural housing, in this planning application and most similar ones, it is simply not possible to ensure adequate separation between residential dwellings and wind turbines in order to protect the health and amenity of the population.

As regards the planner, there is an obligation to fulfil his legal responsibility under Article 3 of the Environmental Impact Assessment Directive, namely to properly assess the impact on human beings. In addition there are also huge legal liabilities. Section 108 of the Environmental Protection Agency Act of 1992 provides that where any noise is “so loud, so continuous, so repeated, of such duration or pitch or occurring at such times as to give reasonable cause for annoyance to a person in any premises in the neighbourhood or to a person lawfully using any public place”, a local authority, the EPA and any person affected by the noise may complain to the District Court. The District Court may order the person responsible for the noise to take the measures necessary to reduce the noise to a certain level or to take specified measures for the prevention or limitation of the noise. Any person who contravenes any provision of the Environmental Protection Act, or any regulation or order made there under is guilty of an offence.

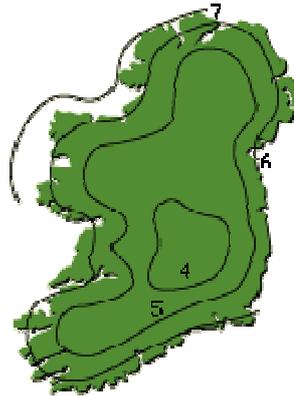
Indeed, the issue has hit home already in Germany with a Court ruling against an Enercon turbine installation⁴⁷. After all TA Lärm in Section A 2.5.2 sets an additional factor of 3 to 6 dB to be applied where there is a tonal element to the noise, as was determined by the German Court for the Enercon E-82 turbine. The fact that Enercon has sold over 3,000 such turbines, without advising of the tonal element in the noise profile, is not a material factor in any Court judgement. Naturally, as authorities have acted without proper due attention to the legal requirements to proceed with proper care and attention, it really does open up a ‘can of worms’ with respect to legal liability.

5. THE VALIDITY OF THE ASSESSMENT OF SOCIO-ECONOMIC AND TOURISM IMPACTS

If we consider the proposed wind farm, then this is to be located in a part of Ireland, where Met Eireann’s own data shows the average wind speed is 4 m/s (<15 km/h)⁴⁸, see overleaf.

⁴⁷ <http://www.windwahn.de/index.php/news/gerichte/enercon-e-82-pulsed-noise>

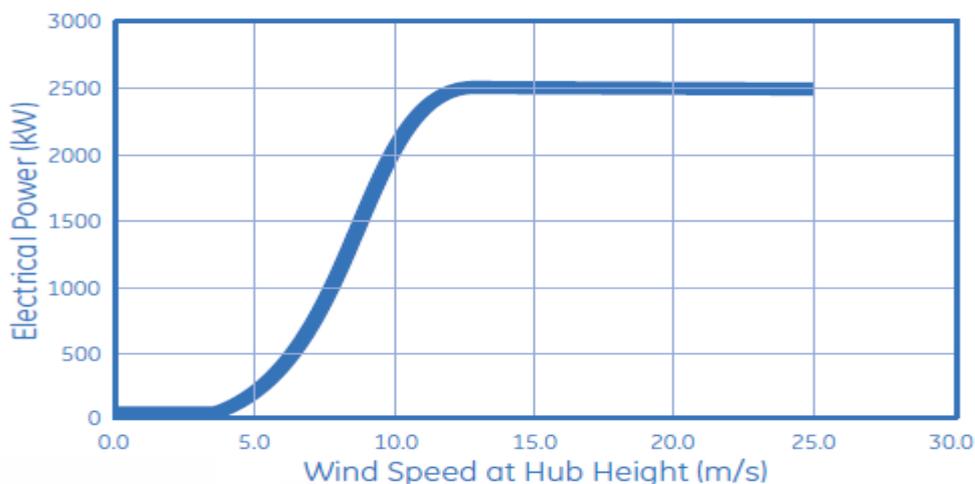
⁴⁸ <http://www.met.ie/climate-ireland/wind.asp>



Mean annual wind speed
(units in m/s)

If one considers the manufacturer's own performance data (GE 2.5x1-100)⁴⁹, see below, then essentially at this average wind speed and below, the turbine will not produce power. Indeed as the power from the generator is related to cube of the wind velocity, it is not until a wind speed of 12 m/s is reached, which is three times the average for the midlands area, that the turbine will be at full output. Basic maths and common sense tells one that three times the average doesn't occur very often.

2.5-103 Power Curve



Performance curve for GE 2.5 Turbine

From an economic perspective, what we have now in Ireland are two duplicate generating systems, one which has to be given priority, but only functions when the wind speed is significantly above the average. The other system using our existing fossil fuel plants has to be kept running, for the many occasions when the wind simply isn't strong enough, but now operates in a more inefficient manner due to the

⁴⁹ <http://www.ge-energy.com/content/multimedia/files/downloads/GEA17007A-Wind25Brochure.pdf>

highly intermittent wind energy which it is now required to balance, all of which adds to cost. In addition wind energy is more expensive to produce than conventional electricity, so it has to be given incentives, i.e. above market price guaranteed tariffs, to encourage the development of wind farms, such as the proposed.

We even have the situation where in late 2012; the European Parliament's energy committee was assessing proposals to expand the EU's current 20% renewable energy by 2020 target. Their draft report on "Current challenges and opportunities for renewable energy on the European energy market 2012/2259(INI)", even states in Point 25 with regard to the financial support structures for renewable energy:

- "Emphasises that the Member States currently use almost 170 different types of promotion mechanism; points out that this support has led to healthy growth but that some of the promotion systems are very costly and that, in some cases, a considerable financial burden has been placed on consumers without their having had a choice in the matter".

So the net result is entirely predictable, electricity costs soar, which has a highly detrimental impact on the economy, from manufacturing to commercial activities. It is not as if the State Administration has not been made aware of this, it has over and over again, such as in Submissions from Irish industrial and commercial organisations to the Commission for Energy Regulation⁵⁰, or those of the Irish Academy of Engineering⁵¹. Despite this there has been a failure to take due account of these economic issues raised, a position which is also to be seen in the developer's documentation for this project; it is as if these serious economic impacts do not exist, they are simply not mentioned or addressed.

So the developer farms the subsidies available, he then in his documentation points out how some of it will be dispensed as largesse to the surrounding community, but no mention is made of the economic impact of those who now have to pay 'above the odds' for their electricity to fund his subsidies. This is a serious matter, in the Eirgrid 2004 report on the economic implications of wind generation, referred to previously, it was pointed out that 1,500 MW of wind energy on the grid would increase generating costs by 15%. Yet we now have 2,000 MW on the grid, despite this same report advising strongly that the same wind energy programme not be proceeded with. It is also necessary to highlight, as agencies such as Vincent de Paul are pointing out, fuel poverty is an increasing problem in Ireland as electricity rates soar⁵². These adverse impacts are at an increasingly serious level. Failure to assess them in the approval process for the proposed wind farm and to give them due consideration is a clear legal failure.

With regard to Tourism, the Failte Ireland Guidelines on the treatment of tourism in Environmental Impact Statements⁵³ were prepared with the assistance of Dublin

⁵⁰ <http://www.cer.ie/en/renewables-current-consultations.aspx?article=d7a3e817-e64d-47e4-8f50-e0b6b187ad69>

⁵¹ <http://www.iae.ie/publications/>

⁵² "Research carried out by the Society of St Vincent de Paul last year found that fuel poverty was becoming an increasing issue for many with some older people reporting that they were going to bed early in the evening to avoid rising bills": Irish Times 25th May 2012.

⁵³ See for instance reference in a planning context at:
http://www.dlrco.ie/files/Leopardstown_Link_Road/Appendix1.pdf

Institute of Technology and are material to the assessment of the proposed development. In this regard if the Failte Ireland guidance is reviewed, then clearly it is the intent that it will form ‘the main reports and technical advice’ issued to the competent authority, as part of compliance with Article 6 of the Aarhus Convention and Article 6 of the Directive on Environmental Impact Assessment. This guidance also states among others that:

- “It is important to note that there appears to be evidence that the visitor’s expectations of ‘beautiful’ scenery does not exclude an admiration of new modern developments – such as windfarms – which appear to be seen as indicative of a modern, informed and responsible attitude to the environment”.

There is no doubt that this might well be an opinion of an individual, indeed a populist opinion of some, but it is not one which is readily supported by facts⁵⁴, such facts, as opposed to opinions, which are necessary to comply with the legal framework. Indeed under Article 5 of the Aarhus Convention, Parties to the Convention are required to ensure:

- “Public authorities possess and update environmental information which is relevant to their functions”.
- “Each Party shall ensure that, within the framework of national legislation, the way in which public authorities make environmental information available to the public is transparent and that environmental information is effectively accessible”.

If one again considers the “Aarhus Convention: An Implementation Guide”, it states:

- “Transparency means that the public can clearly follow the path of environmental information, understanding its origin, the criteria that govern its collection, holding and dissemination, and how it can be obtained”.

Under Community law, the implementing measures relate to the above are to be found in Directive 2003/4/EC⁵⁵, which is clear in Article 8 in relation to the Quality of Environmental Information, which has to be accurate, up to date and comparable. Under National law, S.I. No. 133 of 2007 had to be updated to properly give effect to the above Community Directive by S.I. 662 of 2011, such that in Ireland also, a public authority shall ensure that environmental information complied by or for it, is **up to date, accurate and comparable**.

In was on this basis that an Access to Information on the Environment Request was made by the author to Dublin Institute of Technology on the 1st October 2012 as to:

- The environmental information held by and for Dublin Institute of Technology in which the transparency of the environmental information in the Failte Ireland guidelines was ensured, i.e. compliance with Article 8 of Directive 2003/4/EC.

⁵⁴ See for instance Submission from John Muir Trust to Scottish Parliament:

http://www.scottish.parliament.uk/S4_EconomyEnergyandTourismCommittee/Inquiries/John_Muir_Trust.pdf

⁵⁵ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:041:0026:0032:EN:PDF>

- Environmental information in relation to the function of Dublin Institute of Technology in issuing reports and advice to other public authorities, such as compliance with transparency requirements for environmental information, dissemination of environmental information, etc.

There was a refusal to answer this request; instead the request being transferred to Failte Ireland, despite the documentation concerned clearly stating that:

- “These guidelines were written with the assistance of Conor Skehan, Head of Department of Environment and Planning, Dublin Institute of Technology”.

An Internal Review was requested from Dublin Institute of Technology, which was received on the 5th November 2012 from Dr Mike Murphy, Director & Dean, College of Engineering & Built Environment. Again there was a refusal to reply to the request.

In relation to Failte Ireland, they finally replied on the 9th November 2012, with the below:

Please find attached a link to our report from 2008 on visitor attitudes towards wind farms: Fáilte Ireland 2008; Survey of Visitors Attitudes to Wind Farms:

http://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/3_Research_Insights/4_Visitor_Insights/Visitor-Attitudes-on-the-Environment.pdf?ext=.pdf

The guideline document relating to tourism and environmental impact statements was prepared with technical assistance from Conor Skehan of Dublin Institute of Technology.

If we consider the guideline document, then clearly it is opinionated, biased and without doubt insulting to the views of those, who believe that Ireland’s landscape heritage should be unspoilt by huge structures dedicated to the ideology of a global planetary emergency, which simply does not exist. It is also legally unsound, as it has failed the first basic test with regard to its accuracy and transparency, i.e. there is no documentation to confirm its accuracy, it is essentially an opinion piece.

With regard to the 2008 survey referred to above, then this was conducted in mid-2007, when there were only 67 wind farms in the Republic of Ireland, totalling less than 800 MW. The current situation is that there is now over 2,000 MW installed. As has been noted elsewhere, particularly in Scotland, there is an increasingly adverse reaction as the number and visibility of wind turbines increase. Indeed the latest survey there by the John Muir Trust⁵⁶ suggested that high concentrations of wind farms could pose a serious threat to tourism in Britain’s scenic areas. The poll showed that:

- 43 per cent of people in Britain who visit scenic areas in the UK for their natural heritage and beauty would be ‘less likely to visit a scenic area with a large concentration of wind farms’.
- Just 2 per cent say they would be ‘more likely to visit a scenic area with a large concentration of wind farms’.

Indeed if we consider the 2008 Survey completed by Failte Ireland:

⁵⁶ <http://www.jmt.org/news.asp?s=2&nid=JMT-N10737>

- “The proportions rating the impact of the wind farms as negative increased with the perceived beauty of the location. For instance, there was greater relative negativity expressed about potential wind farms on coastal landscapes (33%) and mountain (27%) or farmland (27%). On the other hand less than one in five were negatively disposed to the construction on bogland (18%) or urban industrial land (13%)”.

There is no doubt that there is a not insignificant adverse reaction to the presence of wind turbines in the landscape, which as the survey report documented itself, increases as the number of turbines increases, i.e. “in terms of the size and composition of wind farms, tourists tended to prefer farms containing fewer turbines”.

Why should those who make their living in the tourism industry in the midlands have it compromised by this development, which clearly does not demonstrate any significant environmental benefit and contributes to an adverse economic impact on the nation as a whole? Both the Aarhus Convention and Article 9 of the Directive on Environmental Impact Assessment require that the competent authority document the “main reasons and considerations on which the decision is based, including information about the public participation process”. Certainly to date in the developer’s documentation, these issues on economics and tourism have not been addressed.