Dear Sir,
I attach Carrigeen Against Pylons submissions to the Regional Spatial and Economic Strategy (RSES). Proposals in the draft document to "support the safeguarding of strategic energy corridors from encroachment by other developments that could compromise the delivery of energy networks" should not be adopted. Such energy corridors have not been defined and to restrict other development of undefined areas of the state would be unreasonable, would damage economic development and would be against the rights of citizens.

New high voltage lines of 200kV and greater should be placed underground. New power lines and power installations must demonstrate full compliance at all times with the best practices of the "Health Effects of Electromagnetic Fields" report, the Department of Communications, Marine and Natural Resources, 2007 and also at with international best practice and all ICNIRP guidelines. Planning shall not be granted for projects which cannot demonstrate transparent compliance with each of these requirements.

Also of point having examined the Southern Assembly documents. See attached document giving our additional suggestions.

The Southern Assembly have simply avoided dealing with most of the significant issues and generally take a positive view that loads of renewable energy, data centres and telecoms infrastructure will be great and to everyone's benefit.

Our overall summary is as follows:

Overall this RSES is fundamentally flawed because -

1. ***some of the most serious and widespread sources of environmental impacts have been left out of the plan / assessment (e.g. noise/Infrasound, 5g emissions, effectiveness of wind turbines / renewables in displacing fossil fuel).***
2. *the documentation is not suitable for effective participation*
3. *many aims and outcomes are so vague as to be impossible to assess the impact*
4. ***the entire SEA and draft plan need to be revised to thoroughly address the following serious omissions:***

- *No account taken of noise, Infrasound and Low Frequency Noise from windfarms. A serious omission as this has significant adverse impacts on human and animal health but has not been accounted for at all. Noise exposure has a cumulative impact on health. Noise impacts also apply to off-shore installations.*
- *'Partnering' between developers and Local Authorities i.e. those who are supposed to police developers to protect the public interest regarding compliance with environmental requirements is a clear and blatant conflict of interest. We are shocked that this inappropriate suggestion has been included.*
- *Presumes that more renewable energy is better. This appears to be based on the assumption that renewable energy developments do not have adverse effects on communities (this is wrong e.g. see https://www.agriland.ie/farming-news/52-communities-are-fighting-against-wind-in-ireland/)*

- *Again, presumes that more renewable energy is better. This appears to be based on the further assumption that renewable energy developments such as wind turbines are effective at displacing fossil fuels, however, as per this submission, you will see this is far from the case. Not all sources of renewable energy are efficient at displacing fossil fuel.*
- *The 5 documents underpinning this 'consultation' comprise a total of 1084 pages. The average person simply does not have the time or background to trawl through these complicated documents looking for the needle in the haystack, often phrased in ambiguous language, that will be used to force possibly unwanted developments with significant, permanent adverse effects into their areas. This is NOT effective participation.*

- *The plan is silent on the extent of growth in electricity demand through the widespread development of energy hungry data centres. (data centres can have the energy demand of a small city). More data centres, which want to be powered by 'green energy' is driving the industrialisation of rural Ireland……this is a huge adverse impact!*
- *No account is taken of dangerous emissions from the planned extensive and intensive rollout of 5g broadband infrastructure. (e.g. p244 Draft Regional Spatial & Economic Strategy SEA Environmental Report for the Southern Region"*

Also note, from this RSES, it appears that most County Councils will be revising their Noise Action Plans now or in the near future. This will be an important opportunity.

In that instance we have seen the council ignore noise from sources other than road/rail and make statements like
- ' *Noise is defined as unwanted sound and can range from high levels to levels only just audible'. and*
- *'when noise is not noticeable there is no effect'*.
i.e. totally avoiding some of the most significant issues (if you can't hear it, it can't hurt you'!)
The RSES SEA above is doing the same thing.

Best regards,

Carrigeen Against Pylons ,
Carrigeen,
South Kilkenny

--
Regards,

Carrigeen against pylons

Southern Regional Assembly Submission 2019

EXECUTIVE SUMMARY

Authorisation of wind farms in the Republic of Ireland by means of the planning system is proceeding in a hopelessly uncoordinated and chaotic manner. There is a renewable energy Directive 2009/28/EC, which as part of an overall EU target of 20% renewable energy by 2020 requires Ireland to achieve 16% of its energy from renewable sources in the same timeframe. There are Irish policy documents completed without any form of proper analysis or public participation that some 40% of Irish electricity should come from renewable sources by 2020. Indeed, the failure to complete any form of analysis and associated public participation on the adoption of the National Renewable Energy Action Plan (NREAP), required in June 2010 as part of the implementation of Directive 2009/28/EC, has led to a ruling of non-compliance in International law against the EU at the UNECE Aarhus Convention. The EU continues to fail to comply with ongoing compliance proceedings there, even though the Aarhus Convention is an integral part of EU legal order.

No plan or programme for renewable energy / wind energy in the Republic exists, even though some 3,500 MW of wind energy representing some 2,000 turbines have been installed to date here. All based on individual planning approvals, with zero coordination between the individual projects. However, as an EU Directive, Directive 2009/28/EC occupies a position of primacy in the Irish planning context and actually defines that there are eleven recognised sources of renewable energy, of which wind energy is only one.

It also defines a legal requirement that national rules concerning the authorisation, certification and licensing procedures that are applied to renewable energy projects are proportionate and necessary. Plus that Member States shall, in particular, take the appropriate steps to ensure that: *"rules governing authorisation, certification and licensing are objective, transparent, proportionate, do not discriminate between applicants and take fully into account the particularities of individual renewable energy technologies".* Proportionality is a key element of EU jurisprudence, which requires that when there is a choice of means; "*recourse must be had to the least onerous*". In simple terms, when there is a choice of available technologies, the one with lower costs and impacts has to be prioritised.

As regards transparency, Directive 2003/4/EC on environmental information requires that: "*Member States shall, so far as is within their power, ensure that any information that is compiled by them or on their behalf is up to date, accurate and comparable".* It is increasingly clear that in the absence of any assessment and associated environmental information of what the implementation of this renewable energy Directive in Ireland is to deliver, other than compliance with an arbitrary chosen political target, that a complete vacuum has been created. At the project level in relation to approvals of wind farms, in order to comply with Directive 2003/4/EC, the Environmental Impact Assessment Report (EAIR) prepared for the planning authority by the Developer should be up to date, accurate and comparable. Regretfully, it is increasingly clear, that time and time again there are sections in such EAIRs related to the performance of the project, both with respect to the carbon emission savings claimed for and with respect to the quality of the power output, which are blatantly false and at variance with the referenced analysis provided in this document.

Sadly one has to question the technical competency of those writing these EAIRs, who clearly cannot differentiate between the level of substantiated analysis required in a regulatory submission and the writing of promotional material for the media. Neither is it acceptable for planning authorities to justify decision making for such intrusive developments solely on the basis of arbitrary political targets and blatantly inaccurate performance claims.

Unfortunately an examination of the wind energy section of the website of the Sustainable Energy Authority of Ireland shows equally biased and false claims, both in relation to the value of power output of a turbine and the relative cost of wind energy in comparison to other renewable sources, i.e. that it is the cheapest.

Even as far back as 2004 technical analysis completed by ESB National Grid pointed out the detrimental impact the variable and intermittent output of wind turbines was having on other conventional generators on the grid. As the penetration of wind energy increased, i.e. the percentage of wind energy on the grid, these conventional generators had to operate more and more uneconomically in a stop start fashion to balance this variable input. This increased both their operating costs and reduced significantly their efficiencies, thereby leading to reduced emission savings. As this report concluded, the utilisation of wind energy to reduce carbon emissions appeared rather high with respect to other sources.

It has long been recognised that a cheaper means to reduce carbon emissions is to use Waste to Energy plants, which as the municipal waste is approx. 50% of biogenic origin, so too is 50% of the electrical output classified as renewable energy. Section 4 of the Submission demonstrates a week in January 2019, when there was no wind for several days, with as a result no wind energy inputted to the grid. Then for two days the wind rose before dropping off again, causing huge grid stability problems as the output from the turbines poured on to the grid in an uncontrolled fashion. Other generators there had to be throttled back, including the Indaver Waste to Energy plant in Co. Meath. However, as the waste deliveries kept coming and the furnace temperature has to be kept at a minimum of 850 ºC, the steam generated at that plant had simply to be dumped to the plant cooling system, rather than used to generate electricity for the extended period over those two days during which Indaver's output was curtailed.

In simple terms, in periods of high winds, high quality cost effective renewable electricity, which would otherwise be available 24/7, is now being dumped to facilitate an ever increasing amount of wind energy being authorised by the Irish planning system in an uncoordinated and chaotic fashion. Blatant discrimination is occurring, which is a breach of the legal obligations specified in Directive 2009/28/EC.

Time and time again, as the renewable programme in Ireland is based solely on a political target with zero supporting analysis, when it comes to the project approval stage for wind farms, what is repeatedly seen is the complete lack of transparency in the section in the EIAR on alternatives. These simply do not provide a transparent and adequate evaluation of the other renewable sources available, in particular completely failing to mention measures now established to co-fire biomass in the three existing peat fired stations in the Republic, plus measures to introduce biogas into the natural gas network and use it to co-fire the existing gas fired stations on the grid. This then raises the question, are these now renewable related installations to also be discriminated against, as they are curtailed off the grid, in the same manner as now occurs with Indaver, to facilitate even more frequent power surges from wind farms, as more and more of these are authorised in this chaotic and discriminatory

fashion? This is an approach taken to authorisation, which is clearly illegal with respect to what is required by Directive 2009/28/EC.

Eirgrid have confirmed the causal link between renewable energy proposals and the desire to seek planning for high voltage line projects. Project splitting is not permitted and the effects on high voltage grid build need to be considered at the planning stage of such projects. Eirgrid high voltage line projects have been demonstrated to breach ICNIRP criteria but have been passed in planning against the current national policy of the Department of the Environment.

The Irish State and European Commission have accepted the “robustness of an approximately two-fold increased risk of childhood leukaemia at magnetic field levels" which occur near to overhead high voltage power lines.

Proposals in the draft document to “support the safeguarding of strategic energy corridors from encroachment by other developments that could compromise the delivery of energy networks" are not to be adopted. Such energy corridors have not been defined and to restrict other development of undefined areas of the state would be unreasonable, would damage economic development and would be against the rights of citizens.

Contents

BACKGROUND

The 20% by 2020 renewable energy European Directive (2009/28/EC) requires that "rules governing authorisation, certification and licensing are objective, transparent, proportionate, do not discriminate between applicants and take fully into account the particularities of individual renewable energy technologies". It is obligatory that local authorities are able to demonstrate that these requirements have been met in all planning decisions for renewable energy.

Local authorities shall not process proposals which are unable to demonstrate compliance with the Aarhus Convention.

Local Authorities shall comply with compliance decisions in International law related to the UNECE Aarhus Convention, including Decision V/9g of non-compliance by the EU in the manner in which it has adopted the National Renewable Energy Action Plans (NREAPs) without adequate public participation in decision making.

All machinery, including wind turbines, must demonstrate compliance with the Machinery Directive as a condition of planning approval.

Eirgrid have confirmed the causal link between renewable energy proposals and the desire to seek planning for high voltage line projects. Eirgrid has for example admitted that "the Grid Link project was originally developed in response to the following drivers: The integration of new generation".[1]

The Irish State and European Commission have accepted the "robustness of an approximately two-fold increased risk of childhood leukaemia at magnetic field levels above 0.3/0.4 μT". These values occur due to overhead high voltage power lines. [2]

It is policy that new overhead high voltage powerlines must avoid areas of high population density due to a risk of childhood leukaemia.[3] However, this policy has not been adequately enforced by the state [4] and EirGrid fail to comply with the requirements of the state subsequent to the 2007 state document.[5]

New high voltage lines of 200kV and greater should be placed underground. New power lines and power installations must demonstrate full compliance at all times with the best practices of the "Health Effects of Electromagnetic Fields" report, the Department of Communications, Marine and Natural Resources, 2007 and also at with international best practice and all ICNIRP guidelines. Planning shall not be granted for projects which cannot demonstrate transparent compliance with each of these requirements.

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[1] EirGrid Summary Report on Grid-Link Project for the Independent Expert Report Panel (2015)

[2] Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR). Preliminary opinion on potential health effects of exposure to electromagnetic fields. European Commission; 2013 Nov.

[3] Health Effects of Electromagnetic Fields. Department of the Marine, Communications and Natural Resources, Dublin, Ireland. 2007.

[4] Submission of Irish Doctors Environmental Association, North South Interconnector Oral Hearing, An Bord Pleanala, Nov 2016.

[5] Illustration 6.3 and 6.5. Environmental Impact Statement, Woodland-Moyhill 400kV Transmission Line. Main EIS Text. Volume 2A. Meath-Tyrone 400kV Interconnection Development. EirGrid submission to North South Interconnector Oral Hearing, An Bord Pleanala, Nov 2016.

Proposals in the draft document to “support the safeguarding of strategic energy corridors from encroachment by other developments that could compromise the delivery of energy networks" are not to be adopted. Such energy corridors have not been defined and to restrict other development of undefined areas of the state would be unreasonable, would damage economic development and would be against the rights of citizens.

1 LEGISLATIVE CONTEXT FOR RENEWABLE ENERGY AND WIND ENERGY IN IRELAND

1.1 Absence of Plans and Programmes related to Renewable Energy and Wind Energy

There is a tendency for planning applicants to claim that there is a legally valid national policy supporting industrial power generation projects which are claimed to be renewable. Attention is drawn to Points 16 to 22 of the High Court Judgement *[2017] IEHC 550*.[6] No actual plan or programme exists either at EU or National level for the implementation of renewable energy and wind energy in the EU or the Republic of Ireland. This is despite the fact that by the end of 2018 in the Republic more than 3,500 MW of renewable energy and wind energy had been installed, which represents nearly 2,000 turbines on the landscape at an installed cost of some €7 billion.[7]

Therefore, the approval of such renewable energy and wind energy projects by the planning authorities in an isolation of each other and in absence of an overall plan and programme is leading to a range of inevitable High Court challenges. These in an equally piecemeal and haphazard fashion, such as the above case *[2017] IEHC 550*, are failing to bring any form of legal clarity, instead descending into arguments related to adequacy of reasoning and prematurity of decision-making.

1.2 Irish Planning System and Renewable Energy

The Irish Planning Policy system is set within a hierarchical structure, as identified in the following figure. National policy is informed by EU Directives, Planning Legislation, Ministerial Guidelines, Government Policy and Capital programmes.

[6] http://www.courts.ie/Judgments.nsf/0/C4ECD8B4597E5055802581C6003A7103

[7] Figure 4.14 of German wind energy publication on international total cost of projects documents nearly $2.5 million per MW for Ireland, which is approx. €2 million per MW: http://www.windguard.de/veroeffentlichungen.html?file=files/cto_layout/img/unternehmen/veroeffentlichungen/2014/Kostensituation%20der%20Windenergie%20an%20Land%20-%20Internationaler%20Vergleich.pdf

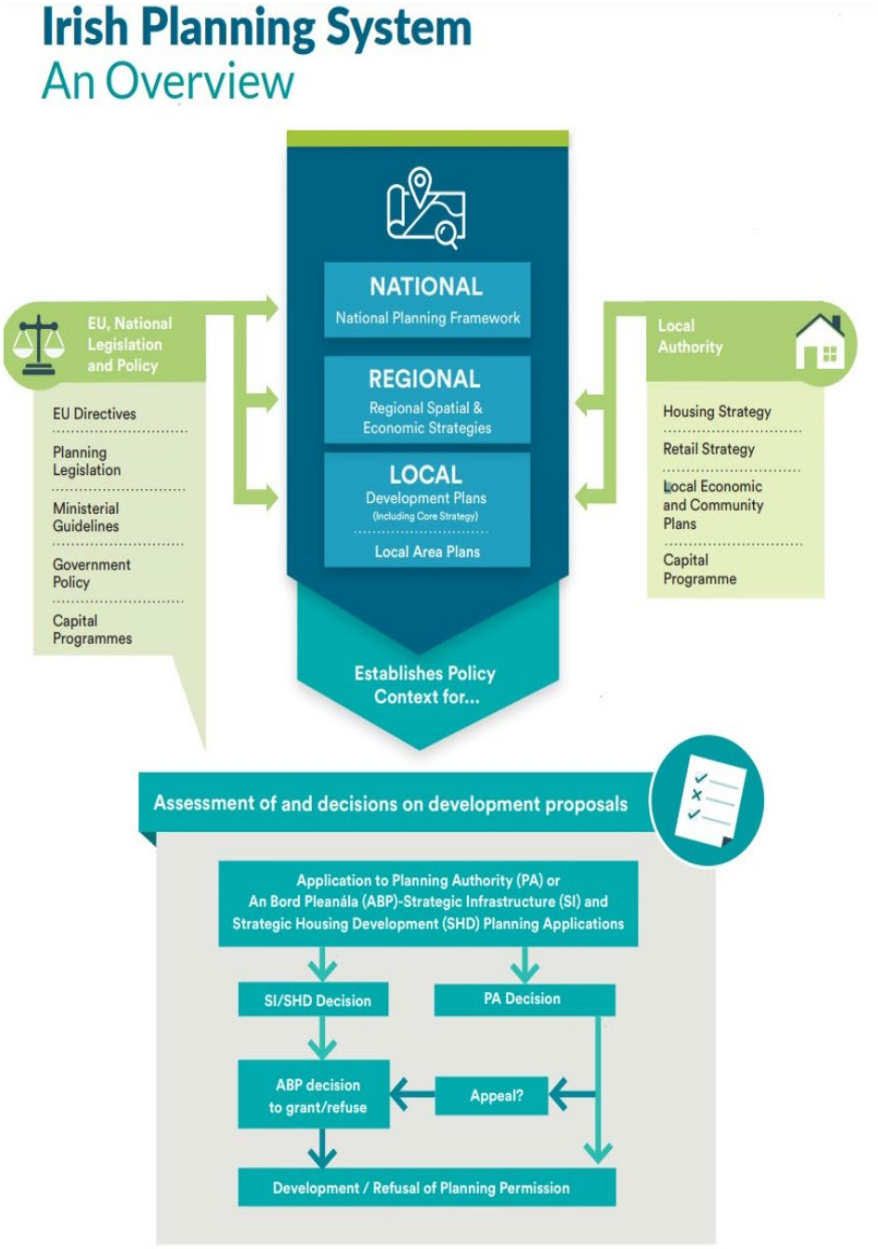

Figure 3-1: Irish Planning System – An Overview Extract from the National Planning Framework – Ireland 2040

Figure 2.1: Flow sheet of Irish Planning System as provided in EAIR

This submission highlights the primacy of EU Directives within this hierarchy. Applicant planning submissions often make references to the 'National Energy Policy' without every defining this. An example application includes the paragraph:

- *Ireland's mandatory national target is to supply 16% of its overall energy needs from renewable sources by 2020. This target covers energy in the form of electricity (RES-E), heat (RES-H) and transport fuels (REST). For RES-E alone, Ireland has set a national target of 40% by 2020 as outlined in the NREAP. Government policies identify the development of renewable energy, including wind energy, as a primary strategy in implementing national energy policy.*

If we consider these in turn: The mandatory target derives from Directive 2009/28/EC,[8] which indeed establishes a 16% renewable energy target for the Republic of Ireland, but this was based upon 'gross final consumption of energy', which was defined in the Directive as:

- *"energy commodities delivered for energy purposes to industry, transport, households, services including public services, agriculture, forestry and fisheries, including the consumption of electricity and heat by the energy branch for electricity and heat production and including losses of electricity and heat in distribution and transmission"*

It is important to note here as documented in the 2005 Irish guidelines on "How to conduct a Regulatory Impact Analysis"[9] the Irish Government decided at that time that Regulatory Impact Analysis should be introduced across all Government Departments and Offices and applied to:

- Proposals for primary legislation involving changes to the regulatory framework, significant Statutory Instruments,

- Proposals for EU Directives and significant EU Regulations when they are published by the European Commission, and

- Policy Review Groups bringing forward proposals for legislation.

In their first National Implementation Report of 2014 to the UNECE Aarhus Convention Meeting of Parties the Irish State clarified in Section XX: 'Opportunities for public participation in the preparation of policies relating to the environment provided pursuant to Article 7':[10]

- *"The Cabinet Handbook states that Government approval is required for significant new or revised policies or strategies and that approval should be sought sufficiently in advance of publication of such initiatives to allow proper consultation and consideration. There is also a requirement to conduct a Regulatory Impact Analysis (RIA) before any policies (both regulatory and non-regulatory) are officially adopted".*

- *"The introduction of the RIA process in June 2005 provided that a RIA must be conducted by all Policy Review Groups proposing primary legislation or a significant regulatory change".*

Such a Regulatory Impact Analysis includes a detailed cost benefit analysis, assessment of environmental impact and a public participation procedure before the regulatory measure is adopted. However, none was ever completed in advance of the adoption of Directive 2009/28/EC or prior to the adoption of any other Government policy related to renewable energy. Neither did the EU ever complete

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8 https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32009L0028

9 As updated in June 2009: https://govacc.per.gov.ie/wp-content/uploads/Revised_RIA_Guidelines_June_2009.pdf

10 https://www.dccae.gov.ie/en-ie/environment/topics/aarhus-convention/national-implementation-reports/Pages/National-Implementation-Reports-.aspx

any form of assessment of what renewable energy infrastructure was to be built, where it was to be built, what were its costs and impacts, before the overall political target of 20% renewable energy for the EU by 2020 was adopted. Indeed, as Recital (15) of the 2009/28/EC Directive documents, this overall 20% target was shared out among the Member States based upon their existing level of renewable energy and a 'fudge factor' based on GDP.

To reiterate the position stated by the some applicants: "*This target covers energy in the form of electricity (RES-E), heat (RES-H) and transport fuels (REST). For RES-E alone, Ireland has set a national target of 40% by 2020 as outlined in the NREAP".* Directive 2009/28/EC was adopted in April 2009 and required by 30th June 2010 Member States to adopt a National Renewable Energy Action Plan (NREAP) to a defined template provided by the EU Commission.[11] These completed NREAPs had then to be notified to the Commission on the 30th June 2010.

It their "Delivering a Sustainable Energy Future For Ireland: The Energy Policy Framework 2007 – 2020: Government White Paper on Energy" a 33% target for renewable electricity was adopted, a 10% target for renewable heat and 10% target for biofuels in transport. As Appendix A describes in more detail, all of this was completed in a totally arbitrary manner without the benefit of any analysis of costs or benefits, being justified solely by a statement:

- *"The Government considers that the balance of social costs and benefits must be recognised as positive and that is our starting point".*

This form of mal-administration continued into October 2008, when the Minister for the Environment, without providing any form of supporting analysis or conducting any form of public participation, simply stood up and announced that the target for renewable electricity had now been increased to 40%.

In the High Court judgement on *Swords -v- Minister for Communications, Energy and Natural Resources & ors [2016] IEHC 503*[12] it is recorded that:

- *"…the State acknowledges that it did not carry out a strategic environmental assessment or an environmental impact assessment in adopting the NREAP but contends, in essence, that the SEA Directive did not apply to the NREAP because the NREAP is a statement (or restatement) of existing State policy and, thus, was unlikely to have any new significant environmental effects"*

Indeed the State went so far as to claim in the Court proceedings that the NREAP was not a plan or programme related to the environment, even though the EU in legal proceedings against it at the United Nations Economic Commission for Europe (UNECE) Aarhus Convention Compliance Committee confirmed that it was such a plan.[13] As Appendix B goes on to explain in more detail, the EU's legal framework simply does not allow such plans or programmes of this nature, with huge financial and environmental impact, to be adopted without first going through detailed Strategic Environmental Assessment with associated public participation. Indeed, the

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11 http://europa.eu/rapid/press-release_IP-09-1055_en.htm

12 http://www.courts.ie/Judgments.nsf/0/4B8AEDC42AE79B298025801B003E70D6

13 See Point 75 of Findings on Communication ACCC/C/2010/54: https://www.unece.org/fileadmin/DAM/env/pp/compliance/C2010-54/Findings/ece_mp.pp_c.1_2012_12_eng.pdf

complete mess that has resulted can be seen in the content of the Irish NREAP itself, which goes from Section 5.2 to Section 5.4 omitting entirely its Section 5.3 on impacts:

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***

In conclusion, while no analysis or legally required Strategic Environmental Assessment with public participation actually supports it, there is a requirement in Directive 2009/28/EC for 16% of total energy to come from renewable sources, with Irish policy decisions taken in relation to a 40% renewable electricity target with a 10% target for both renewable heat and biofuels.

However, there is no national policy or plan or programme for renewable energy and wind energy and as is explained in the next Section, Directive 2009/28/EC has specific legal requirements related to transparency and proportionality, while as previously highlighted, such EU Directives have priority within the hierarchy of the Irish Planning System.

1.3 Legal Requirement on Authorisation Rules to be Transparent and Proportionate

Article 13 of Directive 2009/28/EC on “Administrative procedures, regulations and codes” requires that:

- *1. Member States shall ensure that any national rules concerning the authorisation, certification and licensing procedures that are applied to plants and associated transmission and distribution network infrastructures for the production of electricity, heating or cooling from renewable energy sources, and to the process of transformation of biomass into biofuels or other energy products, are proportionate and necessary.*

- *Member States shall, in particular, take the appropriate steps to ensure that:*

- *(d) rules governing authorisation, certification and licensing are objective, transparent, proportionate, do not discriminate between applicants and take fully into account the particularities of individual renewable energy technologies;*

Authorisation clearly means the granting of planning permits, which is what this procedure entails and is the only one related to the proposed development which involves public participation. Proportionality is a key aspect of EU jurisprudence, and

the principle of proportionality is one of the key principles of Community law and given this pivotal status, it has been the focus of many judgments of the European Court; where the following principles have been repeatedly expounded:

- *"….according to settled case-law, the principle of proportionality, which is one of the general principles of European Union law, requires that measures adopted by the European Union institutions do not exceed the limits of what is appropriate and necessary in order to attain the objectives legitimately pursued by the legislation in question; when there is a choice between several appropriate measures, recourse must be had to the least onerous, and the disadvantages caused must not be disproportionate to the aims pursued."*[14]

Transparency is self-understood, but at the same time EU Directives interact and complement each other and it is worthwhile here referring to Directive 2003/4/EC, which transposes the environmental information pillar of the UNECE Aarhus Convention into EU Law.[15] Article 8 of this Directive on "Quality of environmental information" states:

- *1. Member States shall, so far as is within their power, ensure that any information that is compiled by them or on their behalf is up to date, accurate and comparable.*

As the European Communities (Access to Information on the Environment) Regulations 2007 to 2018 states:[16]

- *5 (1) A public authority shall-*
- *(c) ensure that environmental information compiled by or for it, is up-to-date, accurate and comparable*

However, as the next Section demonstrates, not only is this planning application prepared on behalf of the planning authority grossly inaccurate, but so too are many of the claims made by Sustainable Energy Authority of Ireland (SEAI) in support of wind energy to the detriment of other sources of renewable energy. Indeed, Directive 2009/28/EC defines:

- *'energy from renewable sources' means energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases;*

There are in fact eleven different sources of renewable energy, yet from the behaviour of the Irish administration and the Developer to date, one would be forgiven for thinking that there was only one, i.e. wind energy, which as is discussed later in this Submission raises serious questions with respect to proportionality.

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14 For example ECJ, 07.03.2013, T-370/11, *Poland v Commission* http://curia.europa.eu/juris/documents.jsf?num=T-370/11

15 https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=CELEX:32003L0004

16 https://www.dccae.gov.ie/documents/Unofficial%20Consolidation%20AIE%20Regs%202011-2018.pdf

2 REPEATED USE OF INACCURATE INFORMATION AND CLAIMS

2.1 Example Developer's Claims for Carbon Savings (Drehid Wind Farm)

In Volume 2 Chapter 5 of the Developer's EAIR the following claim is made in Section 5.4.4 Carbon Balance:

- *In terms of the capacity factor, EirGrid in their 'All Island Generation Capacity Statement' (2017-2026) estimate a capacity factor of approximately 30% for onshore wind. We have applied a 35% capacity factor for the proposed development which is greater than the EirGrid estimation as a result of the turbine type proposed for the site i.e. tall turbines (tip height of up 169m) with greater rotor diameters.*

- *It is estimated that assuming an output of up to 48MW, the proposed Drehid Wind Farm will result in the net displacement 41,337 tonnes of CO_2 per annum (based on grid-mix of electricity generation) and over the 30-year lifetime of the wind farm 1,240,110 tonnes of CO_2 will be displaced.*

If we examine the capacity factor first, this is generally defined as; *"the amount of energy produced (MW output) relative to the theoretical maximum that could have been produced if the wind generation operated at full capacity. Therefore, it represents the average output of the wind generation"*.

Eirgrid's own data shows the following capacity factors for wind energy in Ireland:[17]

2011	2012	2013	2014	2015	2016	2017
28%	27%	27%	26%	31%	26%	26%

Therefore 30% for onshore wind which Eirgrid claim in the above is actually rather optimistic.

Relative to other countries it is somewhat windy in Ireland, but our average wind speed is about 11 knots, see wind map overleaf, while in the region where the proposed turbines are to be located, the averaged wind speed is considerably less.

17 http://www.eirgridgroup.com/Annual-Renewable-Constraint-and-Curtailment-Report-2017-V1.pdf

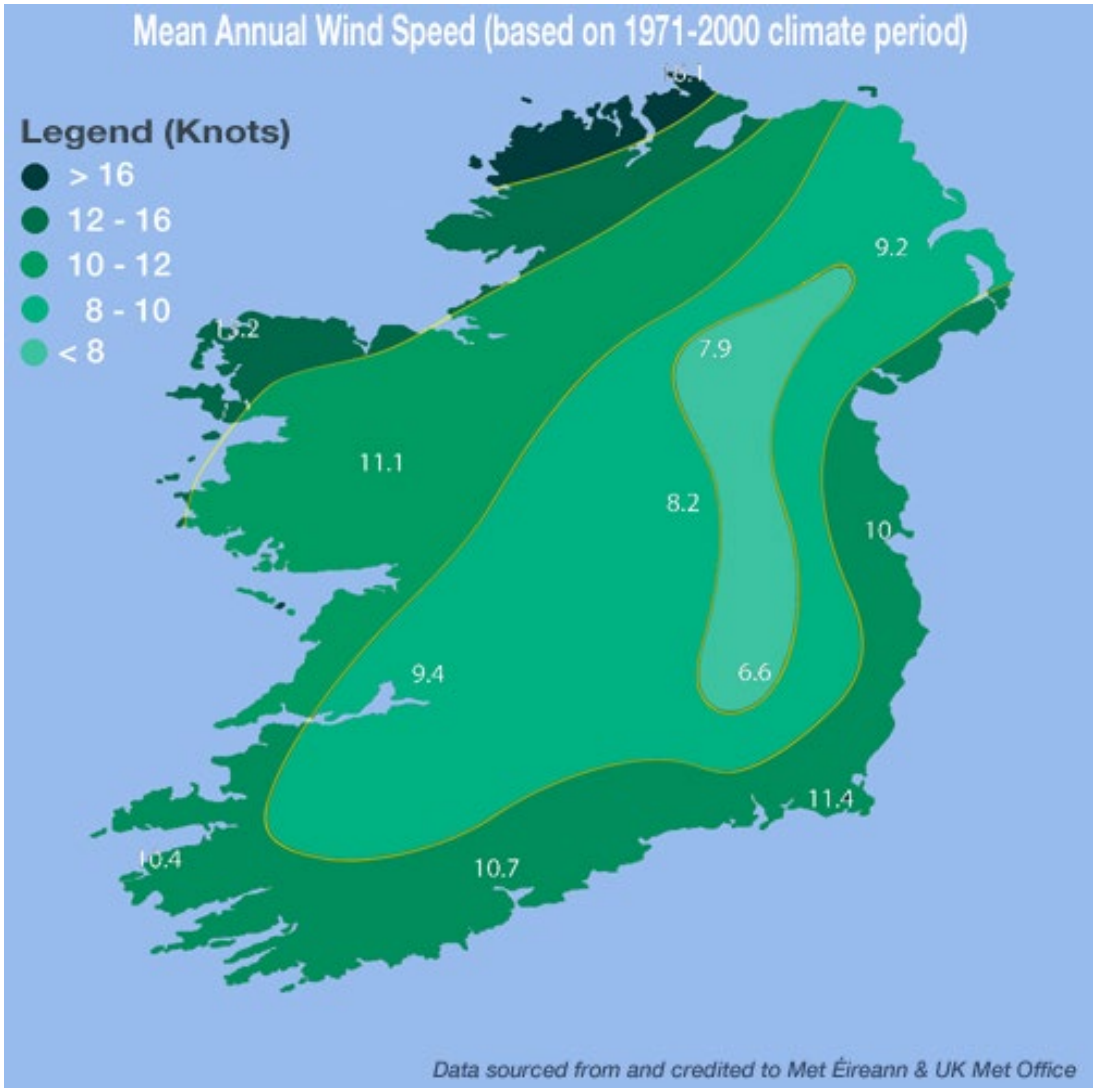


Figure 3.1: Map of Ireland's Average Wind Speed[18]

1 knot is equal to 0.514 m/s or 1.85 km/h, so an average wind speed of 11 knots is just a gentle breeze. The power output of a wind turbine is related to the cube of the wind speed, so if the wind speed halves, the power output of the generator goes down by a factor of eight (2^3). The figure overleaf shows the power output of a typical 2.3 MW turbine (Model E-70 manufactured by Enercon GmbH) versus the wind speed at a low lying English location. It is not until the wind speed reaches 12 m/s (23 knots) that the turbine has reached full output, while at half that wind speed, namely 6 m/s (11 knots), the power output is only 300 kW of the total 2.3 MW rating (13%).

18 https://irishweatheronline.wordpress.com/climate-of-ireland/

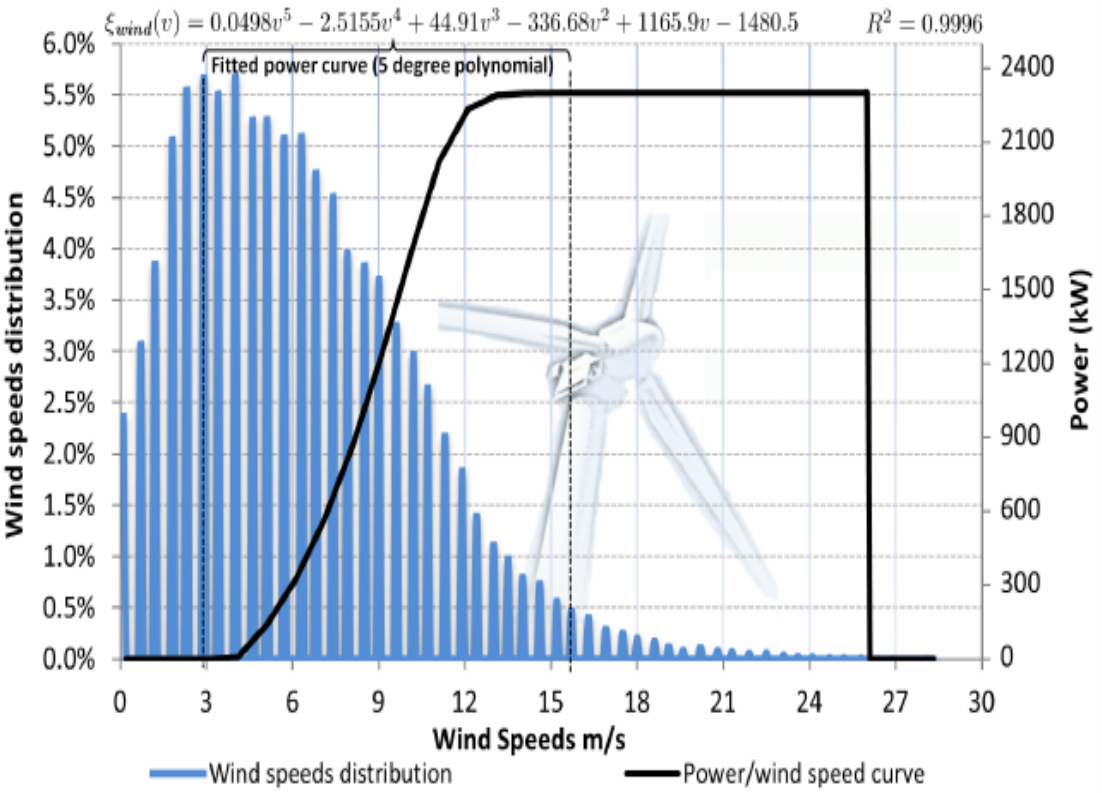
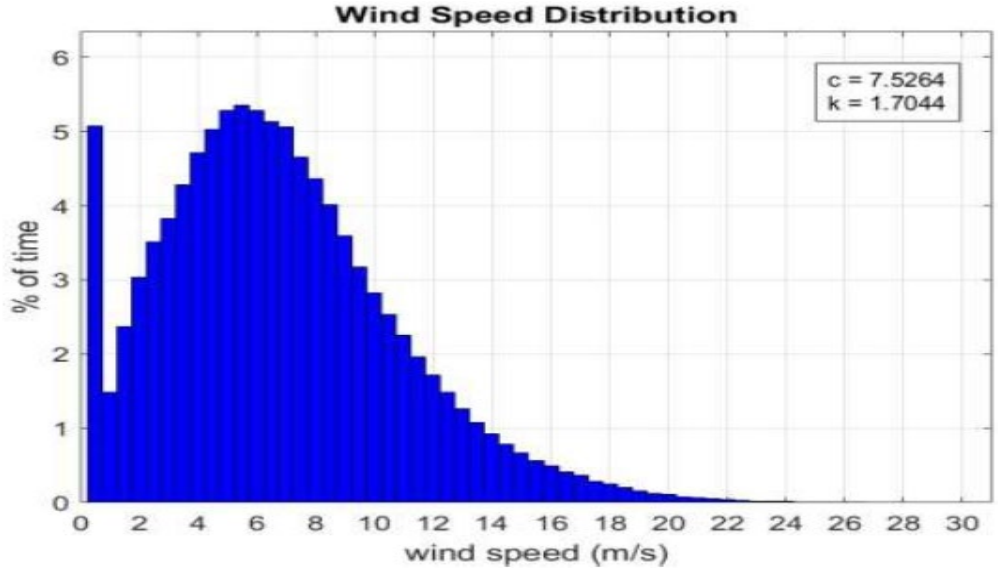


Figure 3.2: Wind speed distribution for a low lying English site versus the power curve of 2.3 MW Model E-70 turbine manufactured by Enercon GmbH[19]

The figure below shows the average wind speed distribution for a site on the County Carlow / County Wicklow border,[20] which is not dissimilar to the above in Figure 3.2.



19 https://www.researchgate.net/publication/270586944_The_impact_of_wind_uncertainty_on_the_strategic_valuation_of_distributed_electricity_storage

20 https://www.seai.ie/resources/publications/2016_RDD_72._Micro_Sitting_Guidelines_for_Wind_Energy_Autoproducers.pdf

Figure 3.3: Wind speed distribution at a low lying site in Ireland.

Therefore, the overwhelming percentage of the time the turbine is going to be operating at less than its rated full power output, with this output dropping rapidly when the wind speed lulls. Recent data shows that UK offshore farms have achieved an average monthly capacity factor of 34.5% compared to 25.6% onshore,[21] therefore the developer's claim of a 35% capacity factor in a known low wind onshore site for his carbon saving calculation does not compare with the facts at hand for such capacity factors. Indeed, if one turns to Chapter 1 of the EIAR and Section. 1.3.4 'Competitiveness of Wind Energy' it is stated there in relation to a modern wind turbine: *"Over the course of the year, it will generate about 31% of the theoretical maximum output. This is known as capacity factor".*

'Wind Energy Engineering - A Handbook for Onshore and Offshore Wind Turbines'[22] is a recent 2017 detailed engineering textbook by a number of specialist authors designed to inform on the technical issues around implementing wind farm projects. In the introduction to its Chapter 9 on 'Aerodynamics and Design of Horizontal-Axis Wind Turbines' it is stated:

- *A wind turbine is a device that transforms the kinetic energy in the wind into electricity, and the overall object is to make a machine that will survive all the expected loads in the design lifetime of typically 20 years and to produce electrical energy as cheap as possible*

Chapter 25 is entitled the 'Economics of Wind Power Generation' and in Section 25.4 on the 'Levelised Cost of Electricity' it is stated:

- *The LCOE [The levelised cost of electricity] is estimated over the lifetime of the energy-generating technology, typically 20 years for wind generators*

It further clarifies in Section 25.11 on 'Project Lifetime':

- *The figure used for the design lifetime of a typical wind turbine is 20 years. It used to be a 30-year lifetime. With the low turbulence of offshore wind conditions leading to lower vibrations and fatigue stresses, it is likely that the turbines can last longer, from 25 to 30 years, provided that corrosion from salty conditions can be controlled.*

To explain, because onshore wind blows over undulating contours and varying surface roughness (e.g. flat fields versus trees) this generates a turbulent gusty flow regime. The resulting stresses and strains placed on the large wind turbine leads to increased maintenance and replacement of key parts. Chapter 15 of the above handbook is entitled 'Reliability of Wind Turbines' and is written by two technical specialists of the National Renewable Energy Laboratory, a US Federal Government Agency. Figure 3.4 overleaf from this Chapter 15 shows the average failure rates for key wind turbine components, an important aspect being the gearbox. It is well understood within the wind energy industry that few gearboxes will make it past a ten

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21 https://journals.sagepub.com/doi/full/10.1177/0957650915597560

22 Elsevier Inc. doi:10.1016/B978 - 0 - 12 - 809451 - 8.00015-1. http://www.ccpo.odu.edu/~klinck/Reprints/PDF/letcherBook2017.pdf

year lifespan,[23] with the replacement cost being some 10% of the installed cost of the wind turbine project.

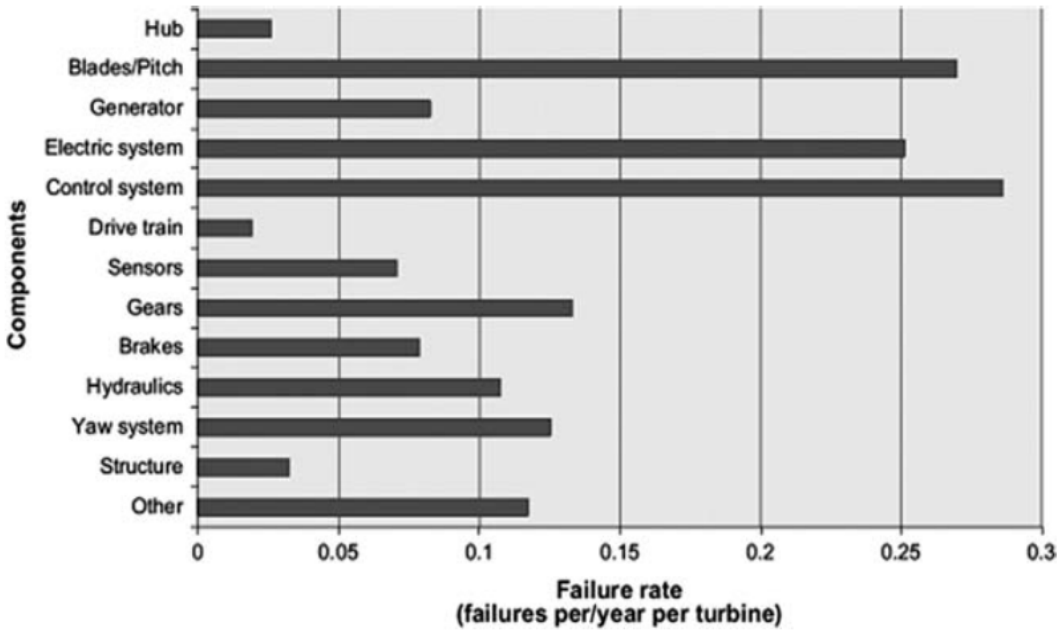

Figure 3.4: Average failure rates for wind turbine components

This then leaks to the classic bathtub curve as explained by the UK's Health and Safety Executive (HSE) with respect to ageing plant:[24]

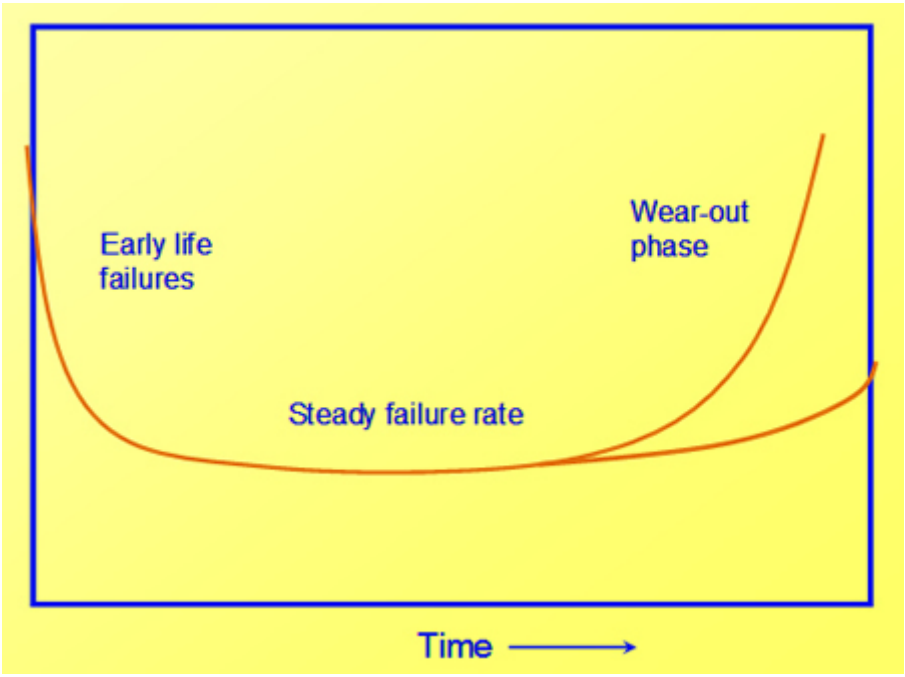

Figure 3.5: Classic bathtub curve for failure rates as taken from UK Health and Safety Executive

[23] https://www.windpowerengineering.com/business-news-projects/wind-turbine-gearboxes-fail-hit-20-year-mark/

[24] http://www.hse.gov.uk/offshore/ageing/information.htmc

- *The ageing process is depicted simply and effectively by the 'bathtub curve'. This shows the following characteristics:*
    - *possible initial failures associated mainly with fabrication defects;*
    - *the occurrence of failures associated with inevitable operational wear and tear;*
    - *accelerated failure and a loss of integrity associated with the onset of ageing.*

Chapter 15 of the wind energy engineering handbook also demonstrates a classic bathtub curve for wind turbines; while it also goes on to clarify:

- *a 20 year design life refers to the classic fatigue wear out of materials*

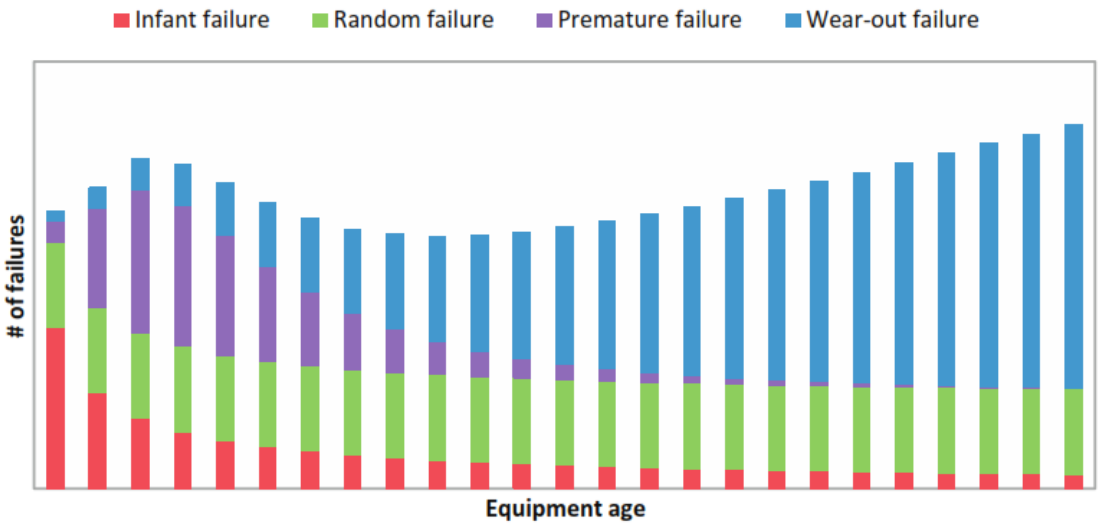

Figure 3.6: Common failure types for wind turbine equipment over the project life cycle

In conclusion therefore, the utilisation of a 35% capacity factor and a 30 lifespan for the project in the assessment of carbon savings in the EAIR grossly overstated the actual known performance data for similar technology in such a location. Indeed, it is fair to say, that recalculated with known capacity factors and lifespans, the actual carbon savings could only be half of what is claimed for in the EAIR. Indeed, there are serious questions to be asked about the competency of those writing this EIAR, when such claim are made without any reference to the established literature on the subject and which are in direct variance to that literature.

2.2 Example Developer's Claims for Supply of Electricity (Drehid Wind Farm)

In Chapter 2 of the EAIR entitled "Description of the Proposed Development" it is claimed based again on a 35% capacity factor:

- *The 147,168MWh of electricity produced by the proposed wind farm would be sufficient to supply approximately 35,000 Irish households with electricity per year, based on the average Irish household using 4.200 MWh of electricity.*

However, if we go back to the previous Figures 3.2 and 3.3 showing the wind distribution curve and power output curve for a wind turbine, it is abundantly clear that for large parts of the year, a wind turbine is producing little if any power output. Indeed, what power output it does produce is highly intermittent and variable. As Gas Networks Ireland were pointing out in August 2018:

- *Natural gas demand for power generation hit an all-time high in June and July of 2018, with up to 90% of the country's electricity supply generated from natural gas and an average of 70% over the months of June and July. This was a significant year-on-year increase, compared to a generation figure of 60% for the equivalent period in summer 2017[1]. The substantial rise in the use of natural gas is attributed to the fall in renewable energy generation in June and July, when the warm weather saw renewable generation at an average of only 14%. In July, wind generation supplied as little as 0.3% (11MW) of electricity demand, resulting in significant variation in output, with the gap filled by flexible, natural gas fired power plants.*[25]

From a factual perspective the Developer's statement above is a complete lie. Due to the inherent highly intermittent and variable nature of wind energy, such turbines are completely and utterly incapable of supplying a single house with the reliable supply of electricity they have been provided with, since Irish electrification in the decades immediately before and after WWII. Indeed, one does have to question the competency of those who write such statements in what is a technical submission to a regulatory body and clearly cannot differentiate between the requirements for technical accuracy and marketing spin for the media.

2.3 Biased and Inaccurate Claims about Wind Energy by SEAI

Sadly this is a trend carried through by the Sustainable Energy Authority of Ireland (SEAI), despite as discussed previously there being a legal obligation as a public authority to ensure that environmental information is accurate, up to date and comparable. In the Section of their website on wind energy it is first claimed:[26]

- *It can be used as an alternative to fossil fuels in generating electricity, without the direct emission of greenhouse gases. And there will always be wind; it is inexhaustible and renewable.*

Again this is highly technically inaccurate and false. Wind energy due to its highly variable and intermittent nature cannot replace conventional generation using fossil fuels or nuclear. The quote related to the summer of 2018 above being only one of many examples and despite the inaccurate statement by SEAI above, as Figure 3.3 also confirms, there is a significant percentage of Irish climatic conditions, which simply do not supply sufficient wind speeds for any significant generation of wind energy. It is not disputed that wind energy can reduce the run time on conventional power stations, but it is simply incapable of being an alternative to conventional generation using fossil fuels. Indeed, all such conventional generation is required to be available for the significant periods where there is little or no wind.

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25 https://www.gasnetworks.ie/corporate/news/active-news-articles/natural-gas-generation-hits-all-time-high/

26 https://www.seai.ie/sustainable-solutions/renewable-energy/wind-energy/

- *Wind energy is currently the largest contributing resource of renewable energy in Ireland. It is both Ireland's largest and cheapest renewable electricity resource.*

Ireland has a limited resource of hydro-electricity, and given the generous subsidies given in recent years to wind energy developers, it is not surprising that wind energy is now Ireland's largest renewable energy resource. However, as the "Impact of Wind Power Generation In Ireland on the Operation of Conventional Plant and the Economic Implications" published in 2004 by ESB National Grid concluded:[27] This was written at a time when there was an indicative target being considered by the EU that 13.2% of Ireland's primary electricity would come from renewable sources by 2010. As the report points out, increasing the percentage of highly variable and intermittent wind energy on the grid cause conventional generators to operate in an increasingly inefficient stop / start manner.

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

This increases costs and reduces the effective emissions savings. An analogy can be to consider conventional generators as like vehicles driving in a congested urban environment, with frequent stop / starts and acceleration and deceleration to compensate for the highly intermittent and variable wind energy input, while previously they were operating on a steady load like driving on the motorway. Indeed, this is another reason why the simplistic carbon saving calculations completed by the developer and referred to previously in Section 3.1, do not reflect actual real world emission savings.

As that 2004 report went on to conclude:

- *The EU target for Ireland, from all renewable sources, is 13.2%. Therefore it can be estimated that, in the long term, using WPG* [Wind Power Generation] *to comply with the EU target will increase electricity generation costs by 15% (€196m as a percentage of €1.28bn). This translates to a CO_2 abatement cost in excess of €120/tonne.*

- *The cost of CO_2 abatement arising from using large levels of wind energy penetration appears high relative to other alternatives.*

As previously outlined, these inefficiencies increase as more wind energy is added to the grid, thereby increasing further the relative abatement cost. As the renewable energy programme has proceeded in Ireland without any form of supporting analysis, there has never been a proper economic assessment of the cost of reducing carbon emissions, using wind energy or any of the other ten sources of renewable energy listed in Directive 2009/28/EC.

Indeed, of the eleven different sources of renewable energy defined in Directive 2009/28/EC, many are of a diffuse nature and more suited to being applied for heat energy rather than the generation of electricity. An example of this being the use of solar energy for water heating, which is a simple technology approach, such as circulating water through evacuated glass tubes.

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27 https://docs.wind-watch.org/EirGrid-WindImpact-Main.pdf

- *Typical well-installed systems provide up to 60% of hot water demand over 12 months.*[28]

The cost effectiveness of this approach can be determined from the fact that such installations were in use even before grants for their installation became available, as could also be said in relation to biomass (wood based) heating systems and aerothermal and geothermal systems for space heating. If we consider a Waste to Energy (WtE) plant, the waste is combusted at a minimum temperature of 850 ºC producing in the boiler high pressure steam for electricity generation and hot water for use in district heating. Some 50% of the waste is of biogenic origin (biomass) and therefore 50% of energy produced is from a renewable source.

If this waste had instead gone to landfill, the biogenic fraction would have rotted and produced methane, which is a global warming gas with a Global Warming Potential (GWP) of 28 – 36 over 100 years.[29] In other words it is some 28 to 36 times more potent than carbon dioxide. While the landfill gas collection system would have captured some of this methane for combustion in gas engines, figures show that of the order of 40% is directly released to atmosphere.[30] In a WtE plant, the heat and mass balance shows 810 kWh of electricity produced per tonne of Municipal Solid Waste (MSW) combusted with about 0.72 kg biogenic CO_2 and 0.53 kg fossil CO_2 per kWh of direct emissions.[31]

In the same timeframe that the Irish report was stating that utilising a low penetration of wind energy to reduce a tonne of carbon dioxide was €120, it was being reported that the cost to avoid 1 tonne of CO_2 with WtE was about €43, whereas the costs to avoid 1 tonne of CO_2 with (other) biomass was €80.[32] Indeed, if district heating systems are used in addition to solely electrical outputs, then this WtE CO_2 avoidance cost reduces to the range €7 to €20.

It is therefore very difficult to reconcile these values with SEAI's claims, which are provided without any supporting evidence, that wind energy represents Ireland's *"cheapest renewable electricity resource".* Indeed, that wind energy has received very generous preferential treatment and subsidies under the Renewable Feed In Tariff (REFIT) scheme is not in doubt, but it also has to be subsidised indirectly by other generators running more inefficiently, considerable grid expansion at taxpayer's direct costs, plus in more recent times a raft of Demand Side Units (DSUs)[33] and

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28 https://www.seai.ie/sustainable-solutions/renewable-energy/solar-energy/heat-and-hot-water-from-solar/

29 https://www.epa.gov/ghgemissions/understanding-global-warming-potentials

30 See for example Table 4.10: https://www.epa.ie/pubs/reports/research/climate/CCRP_3_Timoney_MethaneLandfill_web.pdf

31 Consonni et al 2005 https://pdfs.semanticscholar.org/4bc0/99953f62973e77f7a29474afcef4bd4636eb.pdf http://www.seas.columbia.edu/earth/wtert/newwtert/meetings/meet2005/WTERTAnnualMeeting/presentations/S.%20Consonni.pdf

32 https://www.powerengineeringint.com/articles/print/volume-15/issue-5/features/waste-to-energy-energy-no-time-to-waste.html and Section 7.7 of: https://www.umwelt.nrw.de/fileadmin/redaktion/PDFs/umwelt/munlv_klimaschutz_endbericht.pdf

33 See Section 3.6(a):

Battery Energy Storage Schemes (BESS). These later are now required as the grid is unstable due to the increasing input of volatile and intermittent wind energy. The DSUs are small generators which can ramp up quickly to stabilise demand, typically being diesel engines, while the BESSs can for short periods provide power into the grid in order to stabilise the fluctuations occurring. However, all of this comes at extra cost, which is not being reflected on the financial assessments of wind power being completed by SEAI. There is also a lack of transparency in claimed for carbon dioxide savings for wind power. REFIT is EU State Aid for Environmental Protection and in the application for REFIT I in 2007 to approve 1,450 MW of wind energy[34] the following information was supplied by the Department of Communication, Energy and Natural Resources on projected emission savings based on the fact that wind technology would be the dominant technology:

Emissions	***Annual** savings per 100 MWs installed* *Tonnes of oxide*
Carbon Dioxide	*0.19 ml.*
Sulphur Dioxide	*4k*
Nitrogen Oxides	*1.3k*
	Ml = millions *K = thousands*

In essence a claim that it would deliver 1.9 million tonnes of CO_2 savings per 1,000 MW of installed capacity. However, SEAI report for 2012 claims a CO_2 emissions reduction of 1.51 million tonnes for 1,783 MW of installed wind energy in the Republic of Ireland, which is 0.84 million tonnes per 1,000 MW or only 45% of 2007 claim.[35]

In conclusion, it is long overdue that a proper transparent analysis of what wind energy has been installed to date and what it has actually cost is completed, as clearly what information if being provided by the Irish authorities is blatantly biased and inaccurate or to put it in layman's terms; false.

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http://www.eirgridgroup.com/site-files/library/EirGrid/4289_EirGrid_GenCapStatement_v9_web.pdf

[34] PART III.10 SUPPLEMENTARY INFORMATION SHEET ON ENVIRONMENTAL PROTECTION AID

[35] https://www.seai.ie/resources/publications/Quantifying-Irelands-Fuel-and-CO2-Emissions-Savings-from-Renewable-Electricity-in-2012.pdf

2012 installed capacity in the Republic obtained from NREAP progress report.

3 How Increasing Amounts of Wind Energy are Discriminating Against Other Renewable Energy Suppliers

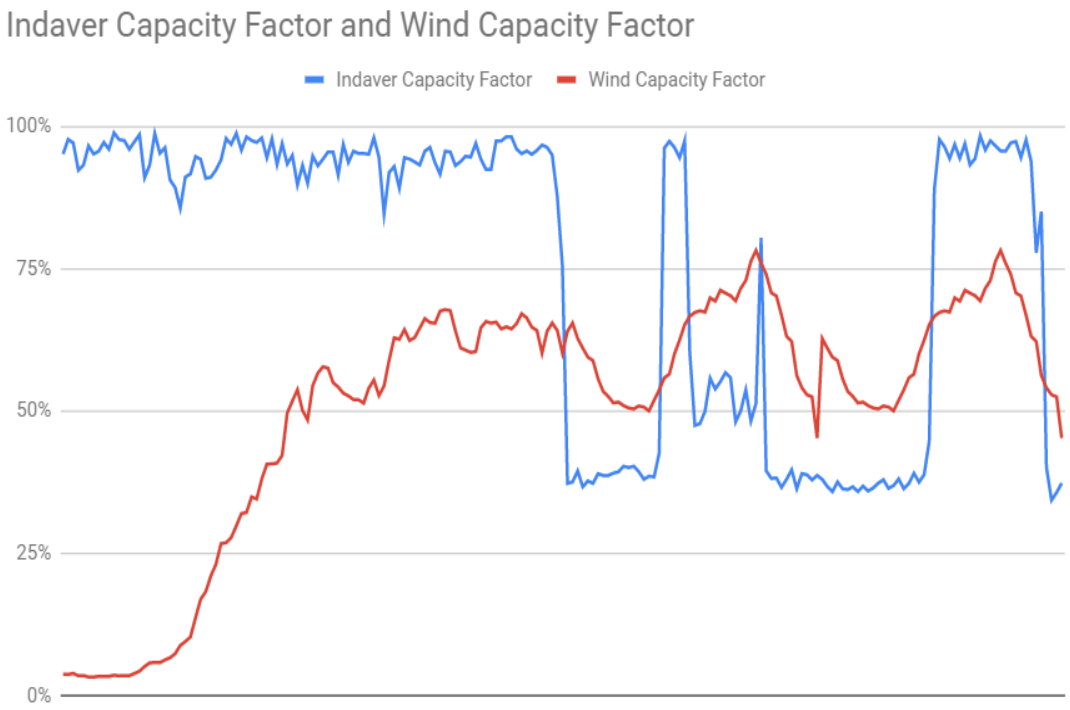

Figure 4.1: Wind Energy Capacity Factor and Capacity Factor of Indaver WtE for the 12th and 13th January 2019 (Data from Eirgrid)

Figure 4.1 above shows the relevant capacity factors for wind energy in Ireland and the Indaver WtE plant in Duleek, Co. Meath. This facility treats some 200,000 tonnes of MSW per annum, with an electricity output of 18 MW, which was until recently a continuous output, with over 50% being classified as renewable.[36] Outside of a short annual maintenance period this output is continuous so Indaver are in their rights to claim that this 18 MW is "*enough to power more than 22,000 homes*"

Figure 4.2 shows the wind energy output for Ireland and the electricity demand for the week 7th January to 13th January 2019. As can be seen the early part of the week demonstrated little or no wind.

36 https://www.indaver.com/ie-en/services-for-municipal-waste/municipal-services-in-ireland/treatment-of-msw-in-meath/

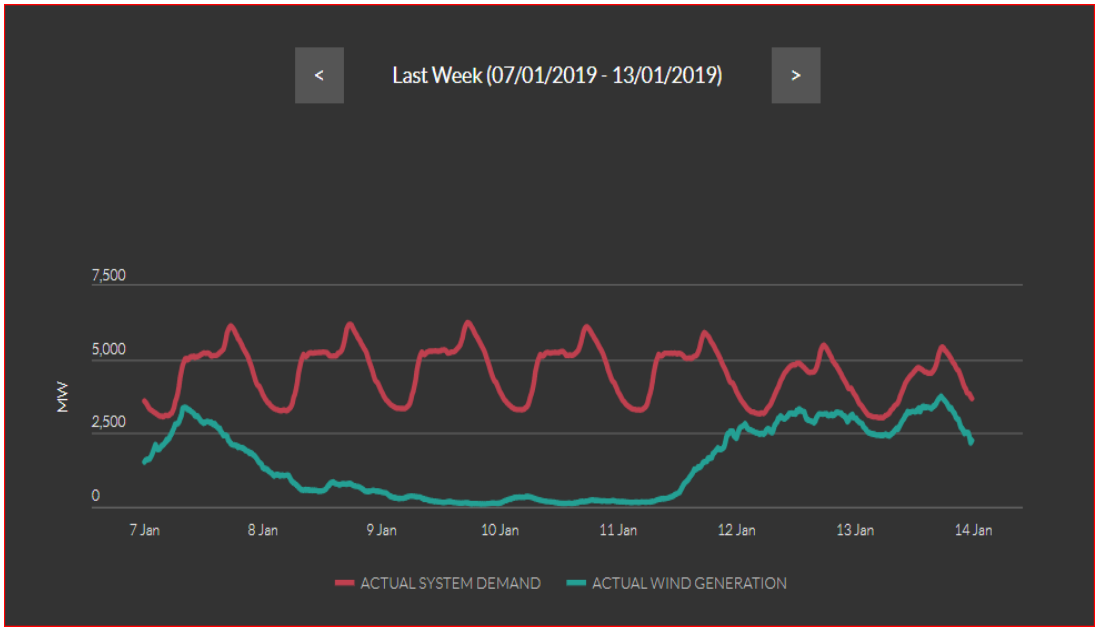

Figure 4.2: All island electricity demand and wind energy output for week 7th Jan to 13th Jan 2019 (Eirgrid Data)

Figure 4.3 overleaf shows the wind speeds recorded for the period 11th to 13th January 2019 at Casemont Aerodrome. These should be compared with the criteria established in Section 3.1 and in particular Figures 3.2 and 3.3, plus recalling that 1 knot = 0.514 m/s. It can be seen from the wind data for the 11th Jan overleaf that recorded wind speeds in the morning were circa 5 knots (2.6 m/s), which from Figure 3.2 was inadequate to produce any electricity from a turbine. By the evening the wind speed had reached 17 knots (8.75 m/s), which corresponds with a circa 50% output of a turbine. On the next day the 12th, wind speeds ranged between 17 and 22 knots (11.3 m/s), the latter corresponding to a 74% output from the turbine. By the early part of the 13th wind speed reached 23 knots, before gradually decreasing.

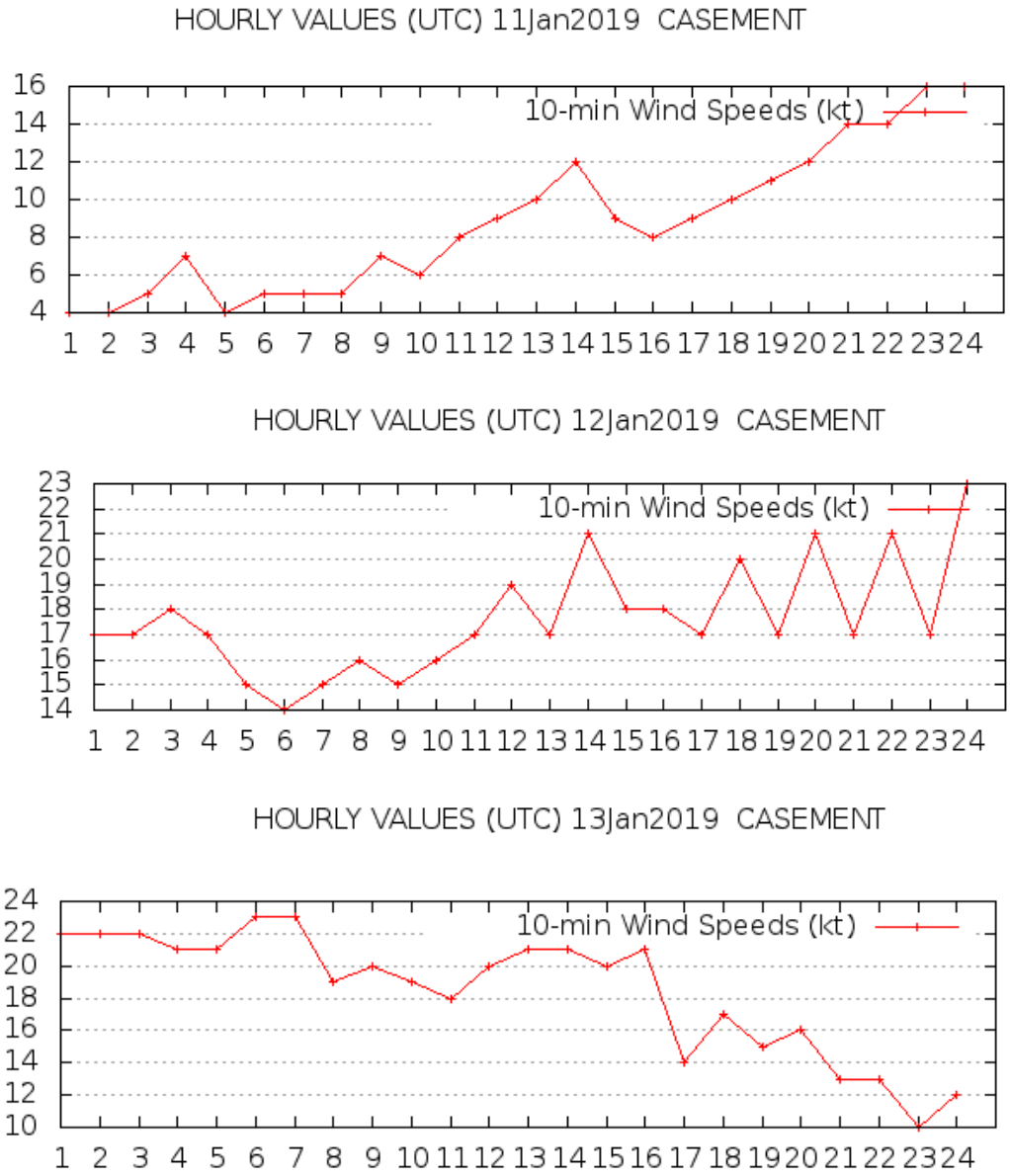

Figure 4.3: Hourly wind speed values in knots recorded for Casemont Aerodrome for 11th to 13th January 2019 (Met Eireann data)

There are a number of points to note here:

- The Republic of Ireland has an installed wind energy capacity of 3,500 MW and that of N. Ireland 1,300 MW giving a total capacity of 4,300 MW. From Figure 4.1 wind energy capacity on the 12th and 13th reached 60 to 75%, which is in line with the wind speeds recorded at Casemont Aerodrome and the performance output of a wind turbine. Therefore, the 'all Ireland' output recorded in Figure 4.2 of 2,500 to > 3,000 MW of wind energy on 12th and the 13th January is entirely appropriate.

- However, these were not strong winds by Irish standards and in winter periods such episodes of winds of this strength and higher are are not uncommon; Met Eireann's own data showing that wind speeds of 22 knots or greater occur at Casemont Aerodrome at least 4% of the time.

- Electricity demand is higher in winter than in summer, particularly so around the period of January.

Yet there was so much wind energy on the grid on the 12th and 13th January that other generators had to be taken off line and kept on hot standby ready to ramp up, when the inevitable happened and the wind dropped. This can be clearly seen in Figure 4.1, where Indaver had to be taken off the grid for extended periods. However, such a waste to energy plant can't be simply throttled back, the waste is still arriving and the furnace temperature has to be kept at a minimum of 850 ºC. Instead the steam generated simply has to be dumped into the plant's cooling system rather than be used to generate steam. Not only is this a loss of revenue to the WtE operator, but it is reflected in resulting higher costs for waste disposal of those using that facility.

Furthermore, if we refer back to Section 2.3 and the legal requirement that:

- *rules governing authorisation, certification and licensing are objective, transparent, proportionate, do not discriminate between applicants and take fully into account the particularities of individual renewable energy technologies;*

In no uncertain terms blatant discrimination is occurring, in that renewable energy produced at the Indaver WtE, in a far more reliable and cost effective manner, now has to be dumped to facilitate ever more wind energy being placed on the grid. Wind energy which by its highly variable and intermittent nature is deeply flawed for the production of significant amounts of electricity. Indeed, as is shown by Figures 4.1 and 4.2, this wind output basically isn't there when it is needed for days on end and then it floods the grid for a short period with high inputs. This can only be managed by discriminating against other users, including those which are lower cost and more reliable renewable inputs. It is also fair to say that this is what you get, when you allow a 'wild west' of wind farm developments, without any analysis, without any assessments or without any of the legally required rules to ensure that authorisation is transparent, proportionate and does not discriminate between individual renewable technologies.

It is also fair to say, that the data shown in Figure 4.1 is by no means an isolated case of the Indaver WtE being curtailed off the grid to facilitate high wind inputs, as the analysis above of the 12th and 13th January would confirm. Indaver like other industrial sites licensed by the Environmental Protection Agency has to produce an Annual Environmental Report, which in its case as a WtE includes a review of its energy performance, as it has a minimum energy recovery target specified in its license. This Annual Environmental Report will include data related to curtailment, but the 2018 version will not be published until March 2019. It will be clear then as to how much renewable energy from this WtE has been curtailed to facilitate the fact that there is too much wind energy on the grid, but from a review of Eirgrid data such as shown on Figure 4.1, it seems to be considerable and potentially of the order of 10%.

4 FAILURE TO PROPERLY CONSIDER ALTERNATIVES

Consideration of alternatives is a key element of Environmental Impact Assessment, which in its original form dated back to the first Environmental Impact Assessment Directive 85/337/EEC of 1985 (since codified as Directive 2011/92/EC). The importance of this consideration of alternatives has been given increased emphasis

in the amendments to this original Directive and by recent rulings of the Court of Justice of the European Union (CJEU). The most recent amendment to the Environmental Impact Assessment Directive 2014/52/EU, which is applicable to this project, changed the description of the information required to assess alternatives from the text below in Directive 2011/92/EC:

- *An outline of the main alternatives studied by the developer and an indication of the main reasons for his choice, taking into account the environmental effects;*

To the following in Directive 2014/52/EU:

- *A description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;*

C-461/17 'Holohan and Others' is a CJEU judgement of the 7th November 2018[37] relating to a referral from the Irish High Court. The case in question concerned the interpretation of EU legislation relating to habitats and environmental impact assessment with respect to a judicial review taken of the planning permission for 1.5 kilometres of single lane road crossing the River Nore in County Kilkenny.

One of the questions referred to the CJEU by the Irish High Court was:

- *whether an option that the developer considered and discussed in the environmental impact assessment, and/or that was argued for by some of the stakeholders, and/or that was considered by the competent authority, amounts to a "main alternative" within the meaning of Article 5(3)(d) of [the EIA Directive], as amended, even if it was rejected by the developer at an early stage;*

- *whether [the EIA Directive], as amended, has the effect that an environmental impact assessment should contain sufficient information as to the environmental impact of each alternative as to enable a comparison to be made between the environmental desirability of the different alternatives; and/or that it must be made explicit in the environmental impact statement as to how the environmental effects of the alternatives were taken into account;*

- *whether the requirement in Article 5(3)(d) of [the EIA Directive], as amended, that the reasons for the developer's choice must be made by "taking into account the environmental effects", applies only to the chosen option or also to the main alternatives studied, so as to require the analysis of those options to address their environmental effects;*

The CJEU judgment clarified:

- *Article 5(3)(d) of Directive 2011/92 must be interpreted as meaning that the developer must supply information in relation to the environmental impact of both the chosen option and of all the main alternatives studied by the developer, together with the reasons for his choice, taking into account at*

37 http://curia.europa.eu/juris/liste.jsf?language=en&num=C-461/17

least the environmental effects, even if such an alternative was rejected at an early stage.

This places a significant obligation on the developer to assess main alternatives and their impacts, in order to provide a justification for his choice, taking into account the applicable environmental effects. However, not only did this not occur in Volume 2 Chapter 16 'Alternatives' of the EIAR, but what is written there is of such bad standard, that the competency of the author has to be questioned, particularly so when it comes to large scale power generation.

Indeed, an objective consideration of alternatives meeting the requirements above and the legal requirements of Directive 2009/28/EC highlighted already in Section 2.3 would systematically consider in turn:

- Each of the eleven recognised sources of renewable energy
- Their advantages and disadvantages, such as intermittency or stable output
- Their financial costs; both direct costs and hidden costs. An example of the latter being the huge investment required in grid upgrades for wind energy and the requirement for additional grid stabilisation measures, such as curtailment of other users, DSUs and BESSs, etc. There should of course be a transparent conclusion on the cost of the applied renewable technology to reduce a tonne of carbon emissions.
- Their environmental impacts; visual, noise, wildlife impacts, etc.

Sadly the Section on alternative technologies runs only to two pages and is completely inadequate with respect to the above. If we consider the Section on Bio-Energy, then this is mainly an attack on UK consultants BW Energy and their report prepared for the Rethink Pylons campaign group on converting the Moneypoint power station to biomass.

Of course such a conversion of Moneypoint is not without both financial and environmental costs, but when one examines all of the eleven different renewable sources above in an objective manner; one finds that none actually are suited to the large scale generation of electricity. Which begs the question, as to why we are where we are? To which the answer is, as described already in in this Submission, is that no form of legally required assessment and associated public participation was ever completed before these targets were adopted. It is also highly disingenuous in this Chapter 16 to imply that the cost of wind in Ireland is solely linked to its REFIT price of 7 cents. There are additional costs associated with grid infrastructure, the variable and intermittent nature of its output, etc., which have to be carried by the consumer and add considerably to that unit cost.

However, before closing on the issue of Bioenergy there are a number of further developments in Ireland in this sector, which were never mentioned in this Chapter 16. On the 24th July 2018 the following reply was provided in the Oireachtas by the Minister for Communications, Climate Action and Environment:[38]

- *The Lough Ree and West Offaly plants will no longer receive support for their peat production under the PSO from the end of 2019. Both plants have been*

[38] https://www.oireachtas.ie/en/debates/question/2018-07-24/2126/

approved under the REFIT 3 scheme for PSO support for co-firing 30% of total capacity out to 2030, and it is expected that these plants will begin co-firing on biomass in 2019. These two plants require the relevant planning permission to operate beyond 2019. The Edenderry plant has been approved for 30% co-firing support out to 2030, subject to renewal of planning permission.

So three peat fired power stations representing a total output of 370 MW of electricity, will shortly have 30% of that output originating from renewable sources. Furthermore, if we go back to Gas Networks Ireland website, then this explains:[39]

- *Renewable gas[40] will be available on the gas network from late in 2018 and Gas Networks Ireland aims to supply 20% of Ireland's gas from renewables by 2030. This equates to 15% of electricity generation demand or the heating requirements of up to 1,000,000 homes[41]. EU reports have indicated that Ireland has the greatest potential for renewable gas deployment of any of the EU 27 countries[42]. It is estimated that the roll out of renewable gas in Ireland will support 6,500 jobs[43], mostly based in rural Ireland.*

Equally one could point out that there are currently only two WtE plants in the Republic of Ireland, Indaver and Dublin WtE in Ringsend. Additional WtE capacity is required for waste management in the South East, South and West of the Country.

The only conclusion one can draw from the increasing number of partly biomass fuelled power generation plants on the grid, is that if Irish authorities continue to authorise more and more wind energy in a uncoordinated manner without any proper analysis, then considerable discrimination of these other renewable energy sources will occur, as they are curtailed to facilitate the increasing peaks in wind energy output. This is a failure of transparency and proportionality and is discriminating against other renewable sources. Hence by its nature it is a fundamental breach of Article 13 of Directive 2009/28/EC on "Administrative procedures, regulations and codes".

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39 https://www.gasnetworks.ie/corporate/news/active-news-articles/natural-gas-generation-hits-all-time-high/

40 *Renewable gas is made using grass and other natural feedstocks using a process called anaerobic digestion.*

41 *1,000,000 homes is based on typical domestic gas consumption per CRU decision paper: https://www.cru.ie/wp-content/uploads/2017/07/CER17042-Review-of-Typical-Consumption-Figures-Decision-Paper-1.pdf and is therefore based on total gas consumption.*

42 *Optimal use of biogas from waste streams. An assessment of the potential of biogas from digestion in the EU beyond 2020 (European Commission)*

43 *IrBEA – Irish BioEnergy Association.*

Appendix A – Irish Legislative Measures on Renewable Energy and Relevant Public Participation

Table A1: Summary of Public Participation completed up to the adoption of the NREAP in 2010

Date	Decision	Brief Description	Legislative requirement related to Public Participation	Public Participation Completed	Remarks
Adopted on 27th September 2001. Transposition required by 27th October 2003	Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market	Member States required to set national indicative targets for the consumption of electricity produced from renewable sources. National indicative targets were consistent with the global indicative target of 12 % of gross national energy consumption by 2010 and in particular with the 22.1 % indicative share of electricity produced from renewable energy sources in total Community electricity consumption by 2010. Reference values for Member States' national indicative targets for the contribution of electricity produced from renewable energy sources to gross electricity consumption by 2010 – for Ireland 13.2%	Both EU and Ireland had signed but not ratified the Aarhus Convention. Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (Strategic Environmental Assessment) did not require transposition until 21st July 2004. Actual transposition occurred through S.I. No. 435 of 2004, which applied to plans and programmes (or modifications thereto) whose first formal preparatory act occurs on or after 21st July 2004.	None	Signing a convention does not have a binding effect on the prospective Party concerned if the convention requires ratification. However, in accordance with the Vienna Convention on the law of treaties of 23rd May 1969 (article 18), after a country signs a convention, it is obliged to refrain from acts which could defeat the object and purpose of the convention.
January 2007 is referred to in Foreword by Minister of Finance	National Development Plan 2007-2013	National Development Plan encompassed investment of €184 billion over seven years. *"Investment in key strategic energy infrastructure projects including the East/West and North/South interconnectors and ongoing investment in sustainable energy with a view to meeting the target of 15% of electricity production from renewable sources by 2010".* *"The projected Energy Network Investment Programme 2006-2010 includes:* *• 350,000 new connections;* *• 50 new transmission/HV stations;* *• 1100 MW connections for renewables; and* *• 400 km transmission lines".* *"In the case of electricity, the 2010 target for renewable energy consumption has been increased to 15%".* *"A 2020 target for the share of electricity produced from renewable energy sources and targets for renewable heat and transport sectors, including bio-energy, will be finalised in the context of the Energy Policy White Paper and in the light of EU developments".*	Some elements of the National Development Plan concerned 'plans and programmes related to the environment'. As the EU had ratified the Aarhus Convention in 2005 and it was therefore part of Community Law, the requirements of Article 7 on "Public Participation Concerning Plans and Programmes relating to the Environment" applied. Strategic Environmental Assessment applies to plans or programmes prepared for agriculture, forestry, fisheries, **energy**, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and which set the framework for future	*"To assist consideration of the appropriate investment strategy for the National Development Plan 2007-2013 the Government engaged in a comprehensive consultation process and commissioned an ex-ante study by the Economic and Social Research Institute (ESRI) of their recommended investment priorities for the Plan.* *A widespread and extensive consultation process was undertaken with the social partners, regional bodies and other interested bodies".* 77 submissions were received.	As regards Article 7 of the Aarhus Convention, the necessary public participation was carried out, but there is no record of 'in the decision due account being taken of the outcome of the public participation'. The National Development Plan specified specific energy infrastructure to be delivered and allocated the defined financial resources. In the context of emerging jurisprudence of the European Court of Justice and Member State Courts, such as the UK Supreme Court, it did 'set the framework for future development consent' of projects related to wind energy and high voltage transmission. Yet no Strategic Environmental Assessment was completed. Note the inclusion of the North/South Interconnector to N. Ireland and the East/West Interconnector to the UK, which engaged transboundary issues.

Date	Decision	Brief Description	Legislative requirement related to Public Participation	Public Participation Completed	Remarks
		"During the period 2007-2013, the main focus of investment by EirGrid will entail improvement of the transmission network for electricity to accommodate increased usage and enhance security of supply, to allow increased connection of sustainable and renewable energy sources to the network and to support greater interconnection with Northern Ireland and Great Britain. Expenditure of some €770 million is envisaged on the transmission system over the period of the Plan. Such work on the transmission system will be undertaken by ESB (as asset owner) and will be carried out in accordance with EirGrid's Development Plan, as approved in advance by the CER. Ownership of the East-West Interconnector, for completion in 2012, will be vested in EirGrid". *"Bord na Mona's proposed capital expenditure of €270 million over the period of the NDP relates to the development of wind farms in Mayo and the Midlands and the development of a waste management facility, which may include a waste-to-energy function. These projects will contribute to the security of energy supply and will also have a positive environmental impact in terms of helping to meet Ireland's target of 15% of electricity from renewable sources by 2010".*	development consent of projects listed in the Directive on Environmental Impact Assessment. In Irish legislation this includes wind farms greater than 5 MW and high voltage infrastructure of 220 kV or more, which were an integral part of the National Development Plan.		
March 2007	Delivering A Sustainable Energy Future For Ireland: The Energy Policy Framework 2007 – 2020 Government White Paper on Energy	*"This White Paper sets out the Government's Energy Policy Framework 2007-2020 to deliver a sustainable energy future for Ireland".* *"The Government is committed to delivering a significant growth in renewable energy as a contribution to fuel diversity in power generation with a 2020 target of 33% of electricity consumption. Wind energy will provide the pivotal contribution to achieving this target. We also need a balanced portfolio of renewable technologies including biomass and ocean technology".* *"We will ensure through EirGrid's Grid Development Strategy 2007-2025 and in light of the All-Island Grid Study the necessary action to ensure that electricity transmission and distribution networks can accommodate, in an optimally economic and technical way, our targets for renewable generation for the island to 2020 and beyond".* *"There are other constraints to be addressed, including planning, and issues of public acceptance and local community support. These will be tackled through coordinated national, regional and local approaches".* *"The Semi-State Energy Companies (BGE, ESB, Bord na Móna and EirGrid) will build on the progress made under the last NDP*	The White Paper concerned 'policies related to the environment'. As the EU had ratified the Aarhus Convention in 2005 and it was therefore part of Community Law, the requirements of Article 7 on "Public Participation Concerning Policies relating to the Environment" applied namely: - *"To the extent appropriate, each Party shall endeavour to provide opportunities for public participation in the preparation of policies relating to the environment".*	There was a 2006 Green Paper on Energy, which attracted over 100 submissions and discussions held with a number of key stakeholders. The outcomes of the consultation process are set out in Section 2 of the White Paper. The public participation therefore met the requirements of Article 7 of the Convention in relation to policies.	One has to be critical of the degree of analysis inherent in setting the targets for renewable electricity consumption. *"We are setting very ambitious targets for expanding the role of renewable energy notably the target of 33% of electricity consumption to come from renewable resources by 2020. There are considerable challenges inherent in realising these ambitious targets. The growth of emerging technologies remains constrained by their relative cost. (Offshore wind which is capital intensive and technologically challenging is a case in point). High fossil fuel prices have contributed to making renewables more cost competitive but investment costs do remain a key challenge.* *The Government considers that the balance of social costs and benefits must be recognised as positive and that is our starting point".*

Date	Decision	Brief Description	Legislative requirement related to Public Participation	Public Participation Completed	Remarks
		by investing over €7bn, mainly in the electricity and gas transmission and distribution networks, in new and modernised power generation and in wind energy projects". *"We will ensure completion of the ongoing capital investment programme in transmission and distribution networks by 2010 and oversee further extensive investment in a programme expected to total €4.9bn up to 2013".* *"We are setting a further target of 12% renewable heat market penetration by 2020."* *"We are setting a biofuels penetration target of at least 10% for 2020 in light of EU developments…"*			In this regard the preamble of the Aarhus Convention provides additional guidance: - *"Recognizing the importance of fully integrating environmental considerations in governmental decision-making and the consequent need for public authorities to be in possession of accurate, comprehensive and up-to-date environmental information".*
15th October 2008	Dail Eireann Debate Vol. 663 No. 4: Speech of John Gormley Minister for Environment, Heritage and Local Government on Financial Resolution No. 15 (resumed). 'Carbon Budget'.	The Minister said: *"One of the most effective ways of reducing our national greenhouse gas emissions is to generate as much electricity as possible from renewable sources rather than from fossil fuels. The previous Government adopted a target that 33% of electricity consumed would be from renewable sources by 2020. Today I can confirm that the Government has now agreed, on the recommendation of my colleague, the Minister for Communications, Energy and Natural Resources, Eamon Ryan, T.D. to increase this target to 40%.* *The target is underpinned by analysis conducted in the recent All Island Grid Study which found that a 40% penetration is* ***technically feasible****, subject to upgrading our electricity grid and ensuring the development of flexible generating plant on the electricity system."*	Article 7 of the Aarhus Convention applied as the EU had ratified in 2005. The target can be considered a 'statement of intent', therefore: - *"To the extent appropriate, each Party shall endeavour to provide opportunities for public participation in the preparation of policies relating to the environment".*	None	The extent of increasing the target from 33% to 40% had a huge impact on the extent of infrastructure, which would have to be delivered by any subsequent plan or programme. Lots of things are 'technically feasible', that doesn't mean they make sense with regard to economic and environmental impacts.
Directive adopted on 23rd April 2009, but Member States would have been engaged in its preparation.	Directive on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC	Recitals clarify: *(9) "The European Council of March 2007 reaffirmed the Community's commitment to the Community-wide development of energy from renewable sources beyond 2010. It endorsed a mandatory target of a 20 % share of energy from renewable sources in overall Community energy consumption by 2020 and a mandatory 10 % minimum target to be achieved by all Member States for the share of biofuels in transport petrol and diesel consumption by 2020, to be introduced in a cost-effective way".*	Irish 2005 guidelines on "How to conduct a Regulatory Impact Analysis"[44]. The Irish Government decided in June 2005 that Regulatory Impact Analysis should be introduced across all Government Departments and Offices and applied to: - Proposals for primary	There was no Regulatory Impact Assessment or other public participation completed in Ireland with regard to the adoption of this Directive.	The only reference to public participation in the Directive was to be found in Recital (90): *"The implementation of this Directive should reflect, where relevant, the provisions of the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, in particular as implemented*

44

A copy of these can be downloaded from: http://www.legislationline.org/search

Date	Decision	Brief Description	Legislative requirement related to Public Participation	Public Participation Completed	Remarks
		(15) "The starting point, the renewable energy potential and the energy mix of each Member State vary. It is therefore necessary to translate the Community 20 % target into individual targets for each Member State, with due regard to a fair and adequate allocation taking account of Member States' different starting points and potentials, including the existing level of energy from renewable sources and the energy mix. It is appropriate to do this by sharing the required total increase in the use of energy from renewable sources between Member States on the basis of an equal increase in each Member State's share weighted by their GDP, modulated to reflect their starting points, and by accounting in terms of gross final consumption of energy, with account being taken of Member States' past efforts with regard to the use of energy from renewable sources". Ireland was therefore assigned a 16% mandatory national overall target. Article 4 clarifies: *"Each Member State shall adopt a National Renewable Energy Action Plan. The national renewable energy action plans shall set out Member States' national targets for the share of energy from renewable sources consumed in transport, electricity and heating and cooling in 2020, taking into account the effects of other policy measures relating to energy efficiency on final consumption of energy, and adequate measures to be taken to achieve those national overall targets, including cooperation between local, regional and national authorities, planned statistical transfers or joint projects, national policies to develop existing biomass resources and mobilise new biomass resources for different uses, and the measures to be taken to fulfil the requirements of Articles 13 to 19".*	legislation involving changes to the regulatory framework, significant Statutory Instruments, - Proposals for EU Directives and significant EU Regulations when they are published by the European Commission, and - Policy Review Groups bringing forward proposals for legislation. In their first National Implementation Report of 2014 to the UNECE Aarhus Convention Meeting of Parties the Irish State clarified in Section XX: Opportunities for public participation in the preparation of policies relating to the environment provided pursuant to Article 7: *"The Cabinet Handbook states that Government approval is required for significant new or revised policies or strategies and that approval should be sought sufficiently in advance of publication of such initiatives to allow proper consultation and consideration. There is also a requirement to conduct a Regulatory Impact Analysis (RIA) before any policies (both regulatory and non-regulatory) are officially adopted".* *"The introduction of the RIA process in June 2005 provided that a RIA must be conducted by all Policy Review Groups proposing primary legislation or a significant regulatory change".*		*through Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information".* The Irish 2005 Regulatory Impact Assessment guidelines contained some important points: *"Regulatory Impact Analysis is a tool used to assess the likely effects of a proposed new regulation or regulatory change. It involves a detailed analysis to ascertain whether or not the new regulation would have the desired impact. It helps to identify any possible side effects or hidden costs associated with regulation and to quantify the likely costs of compliance on the individual citizen or business".* *"The steps of Regulatory Impact Assessment comprise":* *"1. Statement of policy problem and objective* *2. Identification and description of options* *3. Impact analysis including costs and benefits of each option* *4. Consultation* *5. Enforcement and compliance for each option* *6. Review* *7. Summary of merits / drawbacks of each option and identification of recommended option where appropriate".* *"Cost-benefit analysis: This entails identifying and evaluating expected economic, environmental and social benefits and costs of proposed public initiatives. A measure is considered justified where net benefits can be expected from the intervention".*
The date set	Ireland's National	In the NREAP sectoral targets for renewable energy are set in	The NREAP was a plan or	A completely inadequate	The position of the Irish State is as

Date	Decision	Brief Description	Legislative requirement related to Public Participation	Public Participation Completed	Remarks
in Directive 2009/28/EC for notification of the NREAPs to the EU Commission was 30th June 2010. After some slight modifications, the NREAP was resubmitted to the EU Commission in October 2010.	Renewable Energy Action Plan (NREAP)	Section 3, the measures for achieving those targets are set in Section 4, in particular those for the electricity infrastructure development in Section 4.2.6 and the support schemes in Section 4.3, while in Section 5, the contribution of each renewable technology is defined, as the template states: - "For the electricity sector, both the expected (accumulated) installed capacity (in MW) and yearly production (GWh) should be indicated by technology". To summarise, the NREAP is a ten year plan in which defined infrastructure is to be supported and brought through the regulatory framework. However, there was no assessment of impacts. Section 5.3 of the NREAP template, a template established by the EU Commission's Decision C(2009) 5174-1, was entitled "Assessment of Impacts". It was an optional section and the Irish NREAP goes from Section 5.2 to Section 5.4.	programme related to the environment, this was confirmed by the EU both in writing and verbally to UNECE in Communication ACCC/C/2010/54. Therefore, Article 7 of the Convention applied. The EU and Irish State chose not to apply the Strategic Environmental Assessment procedure to the adoption of the NREAP. Their claim was that the NREAP was not specific enough to 'set the framework for future development consent'. While the case law in relation to what 'sets the framework for future development consent' continues to evolve, as Advocate General Kokott of the European Court of Justice has concluded[45]: - *"To summarise, it can therefore be said that a plan or programme sets a framework in so far as decisions are taken which influence any subsequent development consent of projects, in particular with regard to location, nature, size and operating conditions or by allocating resources".*	two week consultation was held in the middle two weeks of June 2010 prior to its adoption on 30th June 2010. The findings and recommendations of the UNECE Aarhus Convention Compliance Committee in ACCC/C/2010/54 were endorsed by the July 2014 Meeting of the Parties and now form Decision V/9g on compliance by the European Union with its obligations under the Convention: *(a) That the Party concerned, 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 National Renewable Energy Action Plans (NREAPs) by its member States on the basis of Directive 2009/28/EC, has failed to comply with Article 7 of the Convention;* *(b) That the Party concerned, by not having properly monitored the implementation by Ireland of Article 7 of the Convention in the adoption of Ireland's NREAP, has also failed to comply with Article 7 of the Convention;* *(c) That the Party concerned, by not having*	articulated in the introduction to the NREAP: - *"The National Renewable Energy Action Plan (NREAP) sets out the Government's strategic approach and concrete measures to deliver on Ireland's 16% target under Directive 2009/28/EC".* Therefore they claim that the NREAP was not a plan or programme related to the environment, but only a: "Summary of national renewable energy policy". With regards to the absence of any information relating to assessment of impacts, it is worthwhile reiterating the preamble to the Aarhus Convention, which states: - *"Recognizing the importance of fully integrating environmental considerations in governmental decision-making and the consequent need for public authorities to be in possession of accurate, comprehensive and up-to-date environmental information".*

[45] See further analysis in 'In sowing the wind, how Ireland could reap the whirlwind' – a case against Irish wind development(s): http://www.tandfonline.com/doi/full/10.1080/02646811.2015.1008847#.VQQVYo6sXmo

Date	Decision	Brief Description	Legislative requirement related to Public Participation	Public Participation Completed	Remarks
				in place a proper regulatory framework and/or clear instructions to implement and proper measures to enforce Article 7 of the Convention with respect to the adoption of NREAPs by its member States on the basis of Directive 2009/28/EC, has failed to comply also with Article 3, paragraph 1, of the Convention.	

Appendix B – The Failure to Complete a Strategic Environmental Assessment for the NREAP

4.1 Background to Strategic Environmental Assessment

As generally understood, Strategic Environmental Assessment is a systematic and anticipatory process, undertaken to analyse the environmental effects of proposed plans, programmes and other strategic actions and to integrate the findings into decision-making. For example the United Nations Economic Commission for Europe (UNECE) Protocol on Strategic Environmental Assessment was adopted in Kyiv in May 2003 and entered into force in July 2010. As UNECE clarified[46]:

- *Strategic Environmental Assessment is a systematic and anticipatory process, undertaken to analyse the environmental effects of proposed government plans, programmes and other strategies, and to integrate the findings into decision-making. It involves the public and environmental and health authorities, giving them a say in government planning: the responsible authority has to arrange for informing the public and consulting the public concerned, and the decision-maker has to take due account of comments received from the public and from the environmental and health authorities. Such assessments are most commonly carried out for land-use planning at various levels of government, but are also applied to other sectoral plans, such as for energy, water, waste, transport, agriculture and industry.*

The EU's Directive on Strategic Environmental Assessment 2001/42/EC[47] was required to be transposed by Member States by July 2004. In Ireland S.I. No. 435 of 2004 and S.I. No. 436 of 2004 transposed this EU legislation into Irish law. Under the Directive plans and programmes, which are prepared for energy, which set the framework for future development consent of projects falling with the scope of the Directive on Environmental Impact Assessment, are required to undergo an SEA. As wind farms and high voltage lines fall within the scope of the Directive on Environmental Impact Assessment[48], therefore an SEA is required for such renewable energy plans and programmes which 'set the framework for future development consent'.

Strategic Environmental Assessment facilitates consideration of the environment in relation to fundamental issues (why, where and what form of development?) rather than addressing only how an individual project should be developed. The potential for environmental gain is much higher with Strategic Environmental Assessment than with Environmental Impact Assessment.

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46 http://www.unece.org/press/pr2010/10env_p22e.html

47 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32001L0042

48 See Annex I and II: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32011L0092

4.2 NREAP and Strategic Environmental Assessment

In her article in the Journal of Energy & Natural Resources Law,[49] Eva Barrett discusses the failure to complete a Strategic Environmental Assessment (SEA) for the 2010 National Renewable Energy Action Plan (NREAP) and concludes:

- *Based on a teleological reading of the SEA Directive (along with the interpretation provided by AG Kokott), one of the primary objectives of the SEA Directive is to ensure that all preparatory measures, which could result in the implementation of projects with significant effects on the environment, should be assessed in order to take these effects into account. As such, Ireland's NREAP should have been made the subject of an environmental assessment, if it could be found to 'set the framework for the future development consent of listed projects'. Annex II.1 indent one of the SEA Directive lists 'nature, size and allocation of resources' as criteria that governments should use in determining whether a plan or programme establishes a framework for projects and other activities. For its part, the Irish NREAP provides detail on the size and nature of the Irish renewable energy plan, particularly providing detail as to how the Irish legislative obligations are to be met by the development of a substantial amount of onshore wind. It also outlines the policies and financial support mechanisms either in place or to be developed to promote renewable energy development.*

- *Following this line of reasoning, the Irish NREAP could easily be considered a preparatory measure (subject to approval from the Commission) that would result in the implementation of wind projects with significant effects on the environment. Fundamentally it constitutes the sole comprehensive plan required by law, which outlines Ireland's renewable energy plan up until 2020. As both policy documents and financial plans or programmes are excluded from the ambit of the SEA Directive, Ireland's NREAP is the only official document systematically detailing Ireland's plan to develop wind energy that could have been made subject to Article 3 of the SEA Directive. It is submitted here that given this fact, it should have been the subject of an assessment that considered the environmental implications of the plan, and the alternative options open to the government to fulfil their renewable energy obligations.*

- *Furthermore, this environmental report along with the draft plan should have been made available to both the public and the authorities concerned to give them:*

    - *… "an early and effective opportunity" to express their opinions on the draft plan or programme concerned and on the accompanying environmental report. In order that due account may be taken of those opinions by the authority envisaging the adoption of such a plan or programme, Article 6(2) makes clear, first, that such opinions must be received before the adoption of that plan or that programme and, secondly, that the authorities to be consulted and the public affected or likely to be affected must be given sufficient time to evaluate the envisaged plan or programme and the environmental report upon it and to express their opinions in that regard.*

[49] Volume 33, Issue 1, 2015: 'In sowing the wind, how Ireland could reap the whirlwind' – a case against Irish wind development(s): http://www.tandfonline.com/doi/abs/10.1080/02646811.2015.1008847

- *If this interpretation of Inter-Environnement is accepted, then the Swords decision highlighted a central omission in the preparation of Ireland's NREAP. The proposed plan should have undergone an environmental assessment and fulfilled the public participation obligations in line with the requirements of the SEA Directive. As a result, if challenged, Ireland could be obliged to suspend or annul its NREAP (or certain aspects of it) until a replacement NREAP (which has undergone an environmental assessment) could be put in place as was required by the CJEU in comparable circumstances in Inter-Environnement Wallonie (2012).*

Interaction of UNECE Aarhus Convention and Strategic Environmental Assessment Directive

The UNECE Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters[50] was ratified by the EU in February 2005 through Decision 2005/370 and became a binding part of Community Law[51]. As the EU clarified in their first National Implementation Report to UNECE[52]:

- *International agreements concluded by the European Community are binding on the institutions of the Community and on Member States. In accordance with the European Court of Justice's case-law, those agreements prevail over provisions of secondary Community legislation. The primacy of international agreements concluded by the Community over provisions of secondary Community legislation also means that such provisions must, so far as is possible, be interpreted and applied in a manner that is consistent with those agreements.*

- *Such provisions constitute rules of Community law directly applicable in the internal legal order of the Member States, which can be relied on by individuals before national courts against public authorities.*

The requirement for public participation on plans and programmes related to the Environment is defined in Article 7 of the UNECE's Aarhus Convention. Note: Article 7 of the Aarhus Convention is broader in scope that that of the Strategic Environmental Assessment legislation, but one way of complying with it is to complete a Strategic Environmental Assessment. Therefore the public participation requirements of the Strategic Environmental Assessment should also comply with Article 7 of the Convention, which requires that:

- *Each Party shall make appropriate practical and / or other provisions for the public to participate during the preparation of plans and programmes relating to the environment, within a transparent and fair framework, having provided the necessary information to the public. Within this framework, Article 6, paragraphs 3, 4 and 8, shall be applied. The public which may participate shall be identified by the relevant public authority, taking into account the objectives of this Convention.*

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50 http://www.unece.org/env/pp/welcome.html

51 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32005D0370

52 http://ec.europa.eu/environment/aarhus/pdf/sec_2008_556_en.pdf

Where Articles 6(3), 6(4) and 6(8) states:

- *3. The public participation procedures shall include reasonable time-frames for the different phases, allowing sufficient time for informing the public in accordance with paragraph 2 above and for the public to prepare and participate effectively during the environmental decision-making.*

- *4. Each Party shall provide for early public participation, when all options are open and effective public participation can take place.*

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

This places a very defined obligation on public authorities in relation to the rights of the public. The UNECE Meeting of the Parties on the Aarhus Convention is the Treaty Convention, which takes place every three years. Under the Vienna Convention on the Law of Treaties[53], an agreement reached by the Parties becomes part of the legal interpretation of the Treaty. On the 30th June 2014, the 47 Countries (Parties), which had ratified the Convention met in Maastricht, the decisions formally adopted by the Meeting of the Parties by consensus included[54]:

- *Decision V/9(g) on compliance by European Union (ECE/MP.PP/2014/L.16)*

An examination of this decision on compliance by the European Union shows[55]:

1. Endorses the following findings of the Committee with regard to communication ACCC/C/2010/54:

(α) That the Party concerned, 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 National Renewable Energy Action Plans (NREAPs) by its member States on the basis of Directive 2009/28/EC, has failed to comply with article 7 of the Convention;

(β) That the Party concerned, by not having properly monitored the implementation by Ireland of article 7 of the Convention in the adoption of Ireland's NREAP, has also failed to comply with article 7 of the Convention;

(χ) *That the Party concerned, by not having in place a proper regulatory framework and/or clear instructions to implement and proper measures to enforce article 7 of the Convention with respect to the adoption*

53 Article 31: https://treaties.un.org/doc/Publication/UNTS/Volume%201155/volume-1155-I-18232-English.pdf

54 http://www.unece.org/fileadmin/DAM/env/pp/mop5/Documents/Post_session_docs/ECE.MP.PP.2014.2.Add.1_aec.pdf

55 http://www.unece.org/environmental-policy/conventions/public-participation/aarhus-convention/tfwg/envppcc/envppccimplementation/fifth-meeting-of-the-parties-2014/environmental-policytreatiespublic-participationaarhus-conventionenvpptfwgenvppccenvppccimplementationfifth-meeting-of-the-parties-2014european-union-decision-v9g.html

of NREAPs by its member States on the basis of Directive 2009/28/EC, has failed to comply also with article 3, paragraph 1, of the Convention;

So we now have the above declaration in International Law, which is automatically a breach of Community and National Law. It all comes back to the requirement of the Convention and associated EU law for the public to have the option to participate in the NREAP when all options are open, as Decision V/9(g) requires:

- *This would entail that the Party concerned ensure that the arrangements for public participation in its member States 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 article 6, paragraphs 3, 4 and 8, of the Convention are met,* ***including reasonable time frames, allowing sufficient time for informing the public and for the public to prepare and participate effectively, allowing for early public participation when all options are open, and ensuring that due account is taken of the outcome of the public participation.*** *Moreover, the Party concerned must adapt the manner in which it evaluates NREAPs accordingly;*

The current situation is that the EU Commission is refusing to take the necessary measures to ensure compliance. The UNECE Aarhus Convention Compliance Committee has made it clear that they are "…disappointed by the failure of the Party concerned to address the specific findings endorsed by decision V/9g", [56] highlighting that a "…proper regulatory framework could include an amendment to current relevant applicable legislation, and that clear instructions would amount to a direction or order that had to be followed by Member States. These should be complemented with proper monitoring of the implementation".

However, there is also a wider dimension here, in that as the EU replied in 2007 to a request of Aarhus Convention Compliance Committee in relation to defining the complex interplay between the Aarhus Convention and its implementation in Community legal order[57], namely:

"*The impact on the European Community of approval of the Aarhus Convention:*

- *On the basis of the case-law of the Court of Justice of the European Communities, the decisions of which are binding on the Community and its Member States, three main aspects should be stressed.*
    - *An agreement concluded by the Council is binding on the Community's institutions and Member States[58]. It is the above Court's settled case-law*

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56 See Committee's first progress review on the UNECE webpage for implementation of Decision V/9g of non-compliance. http://www.unece.org/environmental-policy/treaties/public-participation/aarhus-convention/envpptfwg/envppcc/envppccimplementation/fifth-meeting-of-the-parties-2014/european-union-decision-v9g.html

57 See documentation provided in response to the Committee's request made at CC-17 on 21/11/2007. http://www.unece.org/env/pp/compliance/Compliancecommittee/17TableEC.html

58 Article 300(7) of the Treaty establishing the European Community.

that such an agreement forms ***an integral part of the Community's legal order and the Court of Justice ensures compliance with it.***[59]

- *This rule applies not only to international agreements concluded by the Community alone but also to joint agreements,*[60] *in respect of the provisions which fall within the competence of the Community.*[61]

  - ***Such agreements take precedence over legal acts adopted under the EC Treaty (secondary Community law).*** *So if there was a conflict between a Directive and a Convention, such as the Aarhus Convention, all Community or Member State administrative or judicial bodies would have to apply the provision of the Convention and derogate from the secondary law provision.*[62] *This precedence also has the effect of requiring Community law texts to be interpreted in accordance with such agreements.*

  - ***In ensuring compliance with commitments arising from an agreement concluded by the Community institutions, the Member States fulfil an obligation in relation to the Community, which has assumed responsibility for the due performance of the agreement.***[63]

- *Therefore, under Article 226 EC, the Court of Justice may punish a Member State for non-compliance with an agreement concluded by the Community*[64]*. It has also been declared competent to hand down a preliminary ruling under Article 234 EC on the interpretation and validity*[65] *of Community legal acts incorporating the agreement into the Community system"*. [emphasis contained in original text]

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59 Judgment of 30.4.1974, Case 181/73, Haegeman, paragraph 5; judgment of 26.10.1982, Case 104/81, Kupferberg; judgment of 30.9.1987, Case 12/86, Demirel, paragraph 7. This principle was most recently confirmed in the judgment of 11 September 2007, Case C-431/05, Merck Genéricos- Productos Farmacêuticos Lda/ Merck Co. Inc, Merck Sharp & Dohme Lda, paragraph 31.

60 Joint agreements are those concluded by the Community and all or some of its Member States with other countries and/or international organisations.

61 Judgment of 19.3.2002 in Case C-13/00, Commission v Ireland, paragraph 14; judgment of 30.5.2006 in Case C-459/03, Commission v Ireland, paragraph 84, and judgment of 11 September 2007 in Case C-431/05 above, paragraphs 31 to 33.

62 Judgment of 10.9.1996 in Case C-61/94, Commission v Germany, paragraph 52; judgment of 1.4.2004 in Case C-286/02, Bellio F.lli, paragraph 33; judgment of 10.1.2006 in Case C-344/04, IATA e.a., paragraph 35, and judgment of 12.1.2006 in Case C-311/04, Algemene Scheeps Agentuur Dordrecht, paragraph 25.

63 Settled case-law, Court's judgment of 30.9.1987 in Case 12/86, referred to above, paragraph 9; judgment of 19.3.2002 in Case C-13/00 referred to above, paragraph 15, judgment of 30.5.2006 in Case C-459/03 referred to above, paragraph 85, and judgment of 7.10.2004 in Case C-239/03, Commission v France, paragraph 26.

64 Judgments of 10.9.1996 in Case C-61/94 and of 7.10.2004 in Case C-239/03, both referred to above.

65 Paragraphs 27 and 39 of the judgment of 10.1.2006 in Case C-344/04, referred to above.

In essence, the '20% by 2020 renewable energy' Directive 2009/28/EC, was flawed as it is in conflict with the Convention, this decision V/9g makes clear, which is part of the interpretation of the Convention and hence a declaration in International and Member State law. As such then as highlighted above; *"…all Community or Member State administrative or judicial bodies would have to apply the provision of the Convention and derogate from the secondary law provision"*.

4.3 Requirement for Public Participation 'When all Options are open' - Legislative Context

The previous section documents the serious legal non-compliances with respect to the renewable energy Directive and its implementation through the NREAPs, which were adopted by the Member States on the 30th June 2010 and notified to the EU Commission. The Judgment in Case C-416/10 of the European Court of Justice was very clear[66]:

- *"Under the Aarhus Convention, when a decision-making procedure concerning the environment is initiated, the public concerned must be able to participate in it from its beginning, that is to say, when all options are still open and effective public participation can take place".*

This is to be found not only in Article 6(4) of the Aarhus Convention, which relates to public participation in decisions on specific activities, namely planning approval of projects, but is also engaged by Article 7 of the Convention, as it relates to public participation concerning plans and programmes related to the environment. In EU legislation which transposes it, one can see the same requirement in Article 6(4) of the Directive on Environmental Assessment (2011/92/EC), where:

- *"The public concerned shall be given early and effective opportunities to participate in the environmental decision- making procedures referred to in Article 2(2) and shall, for that purpose, be entitled to express comments and opinions when all options are open to the competent authority or authorities before the decision on the request for development consent is taken".*

Furthermore, with respect to the SEA Directive (2001/42/EC), Article 6(2) requires:

- *"The authorities referred to in paragraph 3 and the public referred to in paragraph 4 shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme or its submission to the legislative procedure".*

Note: As previous an SEA is one of the means of implementing Article 7 of the Convention and therefore must comply with requirements of Article 7 regarding public participation on plans and programmes related to the environment.

Maastricht Recommendations

At their July 2014 Meeting of the Parties in Maastricht, UNECE adopted their Maastricht Recommendations on Promoting Effective Public Participation in

66 http://curia.europa.eu/jcms/upload/docs/application/pdf/2013-01/cp130001en.pdf

Decision-making in Environmental Matters[67]. These are based on existing good practice, and are intended as a practical tool to improve the implementation of the Convention's provisions on public participation in decision-making and to be used in two key ways:

(α) *To assist Parties when designing their legal framework on public participation in environmental decision-making under the Convention;*

(β) *To assist public officials on a day-to-day basis when designing and carrying out public participation procedures on environmental decision-making under the Convention.*

Note: Extensive reference in the Maastricht Recommendations are made to the findings and recommendations of the UNECE Aarhus Convention Compliance Committee, which once they have been endorsed by the Meeting of the Parties, then form part of the legal interpretation of the Convention[68]. As these recommendations clarify with respect to effective public participation when all options are open.

- *2(b). The "zero option" means the option of not proceeding with the proposed activity, plan or programme at all nor with any of its alternatives.*

- *16. In line with the Convention's requirement for the public to have an opportunity to participate when all options are open,[69] the public should have a possibility to provide comments and to have due account taken of them, together with other valid considerations required by law to be taken into account, at an early stage of decision-making when all options are open, on whether the proposed activity should go ahead at all (the so-called "zero option").[70] This recommendation has special significance if the proposed activity concerns a technology not previously applied in the country and which is considered to be of high risk and/or to have an unknown potential environmental impact. The opportunity for the public to provide input into the decision-making on whether to commence use of such a technology should not be provided only at a stage when there is no realistic possibility not to proceed.[71]*

- *17. The framework for decision-making may involve various consecutive strategic decisions under article 7 or 8 of the Convention (policies, plans, programmes, legislation or regulations) and individual decisions under article*

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67 http://www.unece.org/fileadmin/DAM/env/pp/mop5/Documents/Post_session_docs/ece_mp.pp_2014_2_add.2_eng.pdf

68 Article 31 of the Vienna Convention on the Law of Treaties: https://treaties.un.org/doc/Publication/UNTS/Volume%201155/volume-1155-I-18232-English.pdf

69 Article 6 paragraph 4 of the Convention.

70 Compliance with regard to Lithuania, ECE/MP.PP/2008/5/Add.6, para. 74; Compliance with regard to the European Commission, ECE/MP.PP/2008/5/Add.10, para. 51; Compliance with regard to Slovakia, ECE/MP.PP/2011/11/Add.3, ECE/MP.PP/2011/11/Add.3, para. 61 and 63.

71 Compliance with regard to Lithuania, ECE/MP.PP/2008/5/Add.6, para 74

6 of the Convention (for example, decisions authorizing the basic parameters and location of a specific activity, its technical design, mitigation measures and, finally, its technological details related to specific environmental standards as applicable to the activity in the selected location). Such decision-making is often known as "multi-stage" decision-making.

- *18. If so preferred, the framework for public participation in multi-stage decision making may reflect the concept of tiered decision-making whereby at each stage of the decision-making certain options are discussed and selected with the participation of the public, and each consecutive stage of decision-making addresses only the issues within the option already selected at the preceding stage. While the competent authority may have certain discretion as to the range of options to be addressed at each stage of the decision making, at each stage where public participation is required, it should occur when all the options to be considered at that stage are still open and effective public participation can take place. If a particular tier of the decision-making process has no public participation, then the next stage that does have public participation should provide the opportunity for the public to also participate on the options decided at that earlier tier.*

- *19. Irrespective of how the framework for decision-making is structured, the public should have a possibility to discuss the nature of and need for the proposed activity at all (the zero option, see para.16 above). In order to satisfy the requirements of the Convention and to meet the legitimate expectations of the developer, this possibility should be provided at the earliest stage of the entire decision-making, when it is genuinely still open for the project not to proceed.*

- *78. In the case of tiered decision-making (see para. 17 above), in order to ensure early and effective public participation when all options are open:*

    - *(a) There should be at least one stage in the decision-making process when the public has the opportunity to participate effectively on whether the proposed activity should go ahead at all (the zero option) (see also para 16 above);*
    - *(b) In addition, at each stage of a tiered decision-making process, the public should have the opportunity to participate in an early and effective manner on all options being considered at that stage;*
    - *(c) Information about the decision-making in the earlier tiers should be available in order for the public to understand the justification of those earlier decisions — including the rejection of the zero option and other alternatives;*
    - *(d) When in a tiered decision-making process new information subsequently sheds doubt on decisions made in the earlier tiers or stages or severely undermines their justification it should be possible to reopen these decisions.*

- *80. "When all options are open" may be read as a time when any option could still be chosen as the preferred option. Some examples of situations when all options might no longer be considered open could include:*

    - *When a public announcement of a preferred option has been made even though the plan or programme has not yet been adopted;*

- *When a formal decision on the issue has been taken by a public body (including representative bodies like local, regional or national parliaments);*
- *When a decision maker has promised to constituents that they will pursue or avoid particular options;*
- *When a public authority has concluded contracts or agreements with private parties related to a decision subject to the Convention which would have the effect of foreclosing options prior to meaningful input from the public*[72]*.*

[72] See the findings of the Compliance Committee on communication ACCC/C/2008/24 concerning compliance by Spain (ECE/MP.PP/C.1/2009/8/Add.1), para. 119 (a) (iii).

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p128 Draft Regional Spatial & Economic Strategy Natura Impact Report for the Southern Region https://www.southernassembly.ie/uploads/general-files/Final_Draft_RSES_NIR-AA_13-12-18_with_Cover_Page.pdf	RPO 211 -216 support sustainable development of energy infrastructure including renewable energy. This has long term positive impacts for biodiversity in general and European Sites, as it contributes to Ireland's obligations in terms of reduction of GHG emissions and climate change. However this policy base is likely to require new grid and generation infrastructure e.g. wind farms on and offshore; wave; tidal; overhead lines and underground / sub-sea cables, all of which have potential for direct and indirect adverse effects on European Sites. Key issues include: □Alteration to water quality from construction activities; □Permeant and temporary loss of habitat from construction / operation of new infrastructure; □Spread of invasive species; □Mortality from collisions / bird strikes; □Disturbance from surface and sub-sea noise generation during construction; □Reduced fecundity; □Reduction in available feeding area / roosting sites as a result of exclusion; and □Changes to migration paths.	As per the previous sections of this submission, it simply cannot be assumed that blanket support of renewable energy has long term positive benefits. Development of grid and industrial infrastructure has huge potential for lasting and serious detrimental effects on people and the environment. **Recommendation:** Correction required. Remove underlined text which is incorrect and clarify as follows: "The long term impacts for biodiversity are unknown and indeed are likely to have an overall detrimental effects if unnecessary or ineffective infrastructure is constructed, or the planning process is flawed. Climate change and GHG emissions are not always the key factor in assessing impacts of renewable energy and grid development on biodiversity. There is huge variation in the ability of different Renewable energy sources to effectively and reliably displace fossil fuels, with a recent empirical assessment of ten European countries, (Marques et al.)reporting that an increase in the installed capacity of wind generation provokes an increase in electricity generation from oil and gas". Marques et al. Report = "Have fossil fuels been substituted by renewables? An empirical assessment for 10 European countries.". https://www.sciencedirect.com/science/article/pii/S0301421518300983.

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p94 Draft Regional Spatial & Economic Strategy Natura Impact Report for the Southern Region https://www.southernassembly.ie/uploads/general-files/Final_Draft_RSES_NIR-AA_13-12-18_with_Cover_Page.pdf	RPO 127 relates to the management of noise and the preparation of Noise Action Plans. No potential for adverse effects.	The NIS is incorrect and needs to be corrected. There is a legal obligation for environmental information to be accurate. The stated objectives of supporting renewables such as wind turbines **will** have adverse impacts through an increase in environmental Noise emissions including noise beyond the range of human hearing such as ILFN. **Recommendations:** remove text 'no potential for adverse effects'. Include text explaining The World Health Organisation's 'Environmental Noise Guidelines for the European Region 2018 recognises that noise from many sources, including wind turbines can have negative impacts on human health It also recognises that wide ranging measurement of levels and frequencies of noise is required, stating: *"Based on all these factors, it may be concluded that the acoustical description of wind turbine noise by means of Lden or Lnight may be a poor characterization of wind turbine noise and may limit the ability to observe associations between wind turbine noise and health outcomes."* (p.86) WHO report =http://www.euro.who.int/__data/assets/pdf_file/0008/383921/noise-guidelines-eng.pdf?ua=1 Wind Guidelines in Ireland are acknowledged by all to not be fit for purpose e.g. http://www.engineersjournal.ie/2018/01/23/ilfn-infrasound-low-frequency-noise-turbine-health/ The adverse impacts of noise on people and the environment is going largely undocumented due to the failure of the Irish authorities to carry out an SEA, AA and suitable monitoring in advance of adopting the NREAP and Gate3+GRID25.

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P117 Draft Regional Spatial & Economic Strategy SEA Environmental Report for the Southern Region https://www.southernassembly.ie/uploads/general-files/Final_Draft_RSES_SEA_13-12-18_with_Cover_Page.pdf	RPO96 Indigenous Renewable Energy Production and Grid Injection It is an objective to support the integration of indigenous renewable energy production and grid injection.	As per the previous sections of this submission, it simply cannot be assumed that blanket support of indigenous renewable energy has long term positive benefits. All development of grid and industrial infrastructure for has potential for detrimental effects on people and the environment. Only that which is necessary and effective should be considered based on objective analysis. **Recommendation:** “Unnecessary or ineffective infrastructure is detrimental to society (by increasing cost burdens and causing disruption) and the environment. e.g. There is huge variation in the ability of different Renewable energy sources to effectively and reliably displace fossil fuels, with a recent empirical assessment of ten European countries, Marques et al. reporting that an increase in the installed capacity of wind generation provokes an increase in electricity generation from oil and gas”. Supporting If indigenous renewable energy does not safely and effectively displace foreign energy sources. Report = "Have fossil fuels been substituted by renewables? An empirical assessment for 10 European countries.”. https://www.sciencedirect.com/science/article/pii/S0301421518300983.

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Draft Regional Spatial & Economic Strategy SEA Environmental Report for the Southern Region https://www.southernassembly.ie/uploads/general-files/Final_Draft_RSES_SEA_13-12-18_with_Cover_Page.pdf	RPO 82 Offshore energy resources The National Planning Framework supports the progressive development of Ireland's offshore renewable energy potential, including domestic and international grid connectivity within the context of the Offshore Renewable Energy Development Plan (OREDP). Wind energy is currently the largest contributing resource of renewable energy in Ireland. With the potential to achieve between 11GW – 16 GW of onshore wind and 30 GW of off shore wind by 2050 (SEAI, 2016), the sector can make a significant contribution to meeting our national energy demands assisting in our attaining our energy and emissions targets for 2020 and beyond.	Recommendation: Review and correct this statement in light of the previous evidence demonstrating that wind energy is not a effective means of meeting Ireland's energy demands including: Marques et al. - an increase in the installed capacity of wind generation provokes an increase in electricity generation from oil and gas". Report = "Have fossil fuels been substituted by renewables? An empirical assessment for 10 European countries.". https://www.sciencedirect.com/science/article/pii/S0301421518300983.

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P117 Draft Regional Spatial & Economic Strategy SEA Environmental Report for the Southern Regio https://www.southernassembly.ie/uploads/general-files/Final_Draft_RSES_SEA_13-12-18_with_Cover_Page.pdf	RPO 95 Renewable Wind Energy It is an objective to support the sustainable development of renewable wind energy (on shore and off shore) at appropriate locations and related grid infrastructure in the Southern Region in compliance with national Wind Energy Guidelines.	**Recommendation**: Remove this objective in light of all of the previous evidence demonstrating that: • wind energy is not a effective means of meeting Ireland's energy demands • that it emits Noise including Infrasound and Low Frequency noise which is damaging to human health and the environment and • It necessitates further industrial grid and backup power station infrastructure. • Communities don't want it and are expending huge time and resources objecting to windframs being facilitated by the Irish State in breach of the human rights. https://www.agriland.ie/farming-news/52-communities-are-fighting-against-wind-in-ireland There is simply no rational argument for supporting development of wind energy.
P117 Draft Regional Spatial & Economic Strategy SEA Environmental Report for the Southern Region https://www.southernassembly.ie/uploads/general-files/Final_Draft_RSES_SEA_13-12-18_with_Cover_Page.pdf	RPO 92 Integrating Renewable Energy Sources It is an objective to support the sustainable development, maintenance and upgrading of electricity and gas network grid infrastructure to integrate a renewable energy sources and ensure our national and regional energy system remains safe, secure and ready to meet increased demand as the regional economy grows.	Again, blanket support for more and more infrastructure is unreasonable and must be kept within reason. If renewable sources of energy are effective at replacing fossil fuel generation plant, then grid upgrades and new grid infrastructure can be almost eliminated or minimised by siting new renewables at the location of the power stations to be decommissioned thereby facilitating re-use of a brown field site. **Recommendation:** replace blanket support for grid infrastructure with: "It is an objective to minimise the requirement for development and upgrading of electricity and gas network grid infrastructure by selecting renewable energy sources which effectively and cost efficiently replace fossil fuel so as to ensure our national and regional energy system remains safe, secure and ready to meet increased demand as the regional economy grows.

Document	Document Text	Comment and recommendation
P117 Draft Regional Spatial & Economic Strategy SEA Environmental Report for the Southern Region https://www.southernassembly.ie/uploads/general-files/Final_Draft_RSES_SEA_13-12-18_with_Cover_Page.pdf	RPO96 Indigenous Renewable Energy Production and Grid Injection It is an objective to support the integration of indigenous renewable energy production and grid injection.	Again, blanket support for more and more infrastructure is unreasonable and must be kept within reason. Not all renewables are equally effective and poor siting or planning decisions can cause If renewable sources of energy are effective at replacing fossil fuel generation plant, then grid upgrades and new grid infrastructure can be almost eliminated or minimised by siting new renewables at the location of the power stations to be decommissioned thereby facilitating re-use of a brown field site. **Recommendation:** replace blanket support for integration of indigenous renewable energy production and grid injection with: “It is an objective to support the integration of effective and cost efficient indigenous renewable energy production and grid injection subject to minimal development and upgrading of electricity and gas network grid infrastructure.

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p192 Draft Regional Spatial & Economic Strategy SEA Environmental Report for the Southern Region https://www.southernassembly.ie/uploads/general-files/Final_Draft_RSES_SEA_13-12-18_with_Cover_Page.pdf	RPO 211 New Energy Infrastructure It is an objective to support the sustainable reinforcement and provision of new energy infrastructure by EirGrid, ESB Networks and other key energy agencies (subject to appropriate environmental assessment and the planning process) to ensure the energy needs of future population and economic expansion within designated growth areas and across the Region can be delivered in a sustainable and timely manner and that capacity is available at local and regional scale to meet future needs.	Given the preceding arguments and evidence that wind energy leads to additional grid and backup infrastructure it is no wonder that Ireland has one of the most expensive electricity rates in Europe. Unquestioning support of the push by ESB and EirGrid for more and more energy infrastructure is not to be welcomed either from a cost or environmental point of view. It should not be forgotten that in the past, Ireland was perfectly capable of serving its needs without having to vastly expand the network. This objective is far too ambiguous as written to facilitate any useful assessment of environmental impacts without knowing more detail about locations and volume of future needs. As written, it amounts to blind support for a grid developers charter. **Recommendation:** replace text with - “New Energy Infrastructure: It is an objective to minimise the amount of new energy infrastructure so as to preserve the environment from unnecessary industrialisation and minimise costs to consumers and businesses. Energy efficient measure shall be strongly promoted to support this

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p192 Draft Regional Spatial & Economic Strategy SEA Environmental Report for the Southern Region https://www.southernassembly.ie/uploads/general-files/Final_Draft_RSES_SEA_13-12-18_with_Cover_Page.pdf	IRPO 212 ntegrated Single Electricity Market (I-SEM) It is an objective to support the Integrated Single Electricity Market (I-SEM) as a key priority for the region and seeks the sustainable development and reinforcement of the energy grid including grid connections, transboundary networks into and through the region and between all adjacent regions subject to appropriate environmental assessment and planning processes.	The preceding arguments and evidence show that additional grid infrastructure is a significant contributor to the fact that Ireland has one of the most expensive electricity rates in Europe. Unquestioning support of the push by ESB and EirGrid for more and more energy infrastructure is not to be welcomed either from a cost or environmental point of view. It should not be forgotten that in the past, Ireland was perfectly capable of serving its needs without having to vastly expand the network. This objective is far too ambiguous as written to facilitate any useful assessment of environmental impacts without knowing more detail about locations and volume of future needs. As written, it amounts to blind support for a grid developers charter. **Recommendation:** replace text with - “Single Electricity Market: It is an objective to minimise the amount of new energy infrastructure so as to preserve the environment from unnecessary industrialisation and minimise costs to consumers and businesses. Energy efficient measure shall be strongly promoted to support this.

Document	Document Text	Comment and recommendation
p192 Draft Regional Spatial & Economic Strategy SEA Environmental Report for the Southern Region https://www.southernassembly.ie/uploads/general-files/Final_Draft_RSES_SEA_13-12-18_with_Cover_Page.pdf	RPO 214 Electricity Infrastructure It is an objective to support the development of a safe, secure and reliable supply of electricity and to support and facilitate the development of enhanced electricity networks and facilitate new transmission infrastructure projects that might be brought forward in the lifetime of this plan under EirGrid's (2017) Grid Development Strategy (subject to appropriate environmental assessment and the planning process) to serve the existing and future needs of the region and strengthen all-island energy infrastructure and interconnection capacity	Given the preceding arguments and evidence that wind energy leads to additional grid and backup infrastructure it is no wonder that Ireland has one of the most expensive electricity rates in Europe. Unquestioning support of the push by ESB and EirGrid for more and more energy infrastructure is not to be welcomed either from a cost or environmental point of view. It should not be forgotten that in the past, Ireland was perfectly capable of serving its needs without having to vastly expand the network. **Recommendation:** replace text with - "Electricity Infrastructure: It is an objective to minimise the amount of new electricity infrastructure so as to preserve the environment from unnecessary industrialisation and minimise costs to consumers and businesses. Energy efficient measure shall be strongly promoted to support this
p192 Draft Regional Spatial & Economic Strategy SEA Environmental Report for the Southern Region https://www.southernassembly.ie/uploads/general-files/Final_Draft_RSES_SEA_13-12-18_with_Cover_Page.pdf	RPO 216 Delivery of Energy Networks Local Authorities shall work in partnership with existing service providers to facilitate required enhancement and upgrading of existing infrastructure and networks (subject to appropriate environmental assessment and the planning process) and support the safeguarding of strategic energy corridors from encroachment by other developments that could compromise the delivery of energy networks.	This objective is inappropriate and introduces a conflict of interest into a relationship that should have independence at its core. Service providers are developers. Local Authorities have a fundamental role and a duty of care to protecting local environments on behalf of the communities in their area. They are the enforcers of environmental / planning breaches. It is quite simply not appropriate for the local authorities to 'partner' with developers / service providers. **Recommendation:** Remove this objective!

Document	Document Text	Comment and recommendation
p273 Draft Regional Spatial & Economic Strategy SEA Environmental Report for the Southern Region https://www.southernassembly.ie/uploads/general-files/Final_Draft_RSES_SEA_13-12-18_with_Cover_Page.pdf and discussion page 274	RPO 213 Renewable Energy Generation and Transmission Network Local Authority County and City Development Plans shall support the sustainable development of renewable energy generation and demand centres such as data centres (subject to appropriate environmental assessment and the planning process) to spatially suitable locations to ensure efficient use of the existing transmission network) _____ The Strategic energy infrastructure policy objectives (RPO 211-16) are positive for PHH, MA, AQ and CF as they support renewable energy proposals to the electricity transmiss ion grid; energy security for Ireland through supporting the reinforcement and strengthening of the electrici ty transmission and distribution network; and enhancement of electricity and gas	Data centres use an extraordinary amount of energy sometimes as much as a small city. This objective is far too vague and ambiguous to carry out any assessment on the impacts of data-centres. Huge power hungry development such as data centres developed across Ireland will significantly drive up our electricity demand. As these data centres can't realistically be power by 100% renewable energy (no matter what their advertising brochures claim), vast amounts of additional renewable energy infrastructure could be driven into the Irish landscape with further significant adverse effects.

Document	Document Text	Comment and recommendation
	supplies including networks	
To be added	New Objective	**Recommendation:** Add a new Objective: Local Authority County and City Development Plans shall support the precautionary principle with regard to emissions from wind turbines, grid and communications infrastructure.

Document	Document Text	Comment and recommendation

Overall this RSES is fundamentally flawed because

- some of the most serious and widespread sources of environmental impacts have been left out of the plan / assessment (e.g. noise/Infrasound, 5g emissions, effectiveness of wind turbines / renewables in displacing fossil fuel).
- the documentation is not suitable for effective participation
- many aims and outcomes are so vague as to be impossible to assess the impact
- the entire SEA and draft plan need to be revised to thoroughly address the following serious omissions.

more specifically:

- No account taken of noise, Infrasound and Low Frequency Noise from windfarms. A serious omission as this has significant adverse impacts on human and animal health but has not been accounted for at all. Noise exposure has a cumulative impact on health. Noise impacts also apply to off-shore installations.

- 'Partnering' between developers and Local Authorities i.e. those who are supposed to police them to protect the public interest regarding compliance with environmental requirements is a clear and blatant conflict of interest. We are shocked that this inappropriate suggestion has been included.

- Presumes that more renewable energy is better. This appears to be based on the assumption that renewable energy development do not have adverse effects on communities (this is wrong e.g. see https://www.agriland.ie/farming-news/52-communities-are-fighting-against-wind-in-ireland/)

- Again, presumes that more renewable energy is better. This appears to be based on the further assumption that renewable energy developments such as wind turbines are effective at displacing fossil fuels, however, as per this submission, you will see this is far from the case. Not all sources of renewable energy are efficient at displacing fossil fuel.

- The 5 documents underpinning this 'consultation' comprise a total of 1084 pages. The average person simply does not have the time or background to trawl through these complicated documents looking for the needle in the haystack, often phrased in ambiguous language, that will be used to force possibly unwanted developments with significant, permanent adverse effects into their areas. This is NOT effective participation.

- The plan is silent on the extent of growth in electricity demand through the widespread development of energy hungry data centres. (data centres can have the energy demand of a small city). More data centres, which want to be powered by 'green energy' is driving the industrialisation of rural Ireland……this is a huge adverse impact!

- No account is taken of dangerous emissions from the planned extensive and intensive rollout of 5g broadband infrastructure. (e.g. p244 Draft Regional Spatial & Economic Strategy SEA Environmental Report for the Southern Region