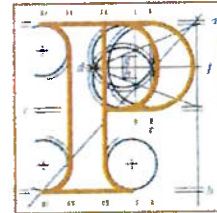


Our Case Number: ABP-319448-24



An
Bord
Pleanála

Eco Advocacy
Kieran Cummins
Trammon
Rathmolyon
Enfield
Co. Meath
A83 PW32

Date: 21 May 2024

Re: Proposed Development of an 8 no turbine wind farm development and associated works on land within the townlands of Clonmellon, Kilrush Upper, Kilrush Lower, Newtown, Ballinlig, Carnybrogan, Cavestown and Rosmead, County Westmeath and Galboystown, Co. Meath. (www.knockanarraghwindfarmsid.ie)

Dear Sir / Madam,

An Bord Pleanála has received your recent submission in relation to the above mentioned proposed development and will take it into consideration in its determination of the matter. Please accept this letter as a receipt for the fee of €50 that you have paid.


The Board will revert to you in due course with regard to the matter.

Please be advised that copies of all submissions / observations received in relation to the application will be made available for public inspection at the offices of the local authority and at the offices of An Bord Pleanála when they have been processed by the Board.

More detailed information in relation to strategic infrastructure development can be viewed on the Board's website: www.pleanala.ie.

If you have any queries in the meantime please contact the undersigned officer of the Board. Please quote the above mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Yours faithfully,


Raymond Muwaniri
Executive Officer
Direct Line: 01-8737125

PA04

Tel	Tel	(01) 858 8100
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64 Sráid Maoilbhride	64 Marlborough Street
Baile Átha Cliath 1	Dublin 1
D01 V902	D01 V902



Contact reference: Our Ref. 01_8588100, 1890_275175,
Public Access Desk: 01_8737104: from 10 to 12:30 & from 2 to 4:30.

The Secretary,
An Bord Pleanála,
64 Marlborough Street,
Dublin 1

30th April 2024

Planning Ref.: PA17.319448 (An Bord Pleanála)
Received Date: 2/04/2024
Submissions By: 23rd May 2023
Applicant: Knockanarragh Wind Farm Ltd
Dev. Address: townlands of Clonmellon, Kilrush Upper, Kilrush Lower, Newtown, Ballinlig, Carnybrogan, Cavestown and Rosmead, County Westmeath and Galboystown, Co. Meath.
Brief Description: 8 no turbine wind farm development and associated works

URL: <https://www.pleanala.ie/publicaccess/EIAR-NIS/319307>
URL: <https://knockanarraghwindfarm.ie>
Submission Fee: € 50.00

Dear Sir/ Madam

Note that there are **33 pages** in total to this submission inclusive of the cover page.

We are aware that numerous other submissions and reports are also being submitted by or on behalf of other groups. We hereby adopt all of these other submissions as part of our submission.

We note that the application is in the name of **Knockanarragh Wind Farm Limited**. We understand that this is a company owned by **Statkraft**. We question why the application is not submitted in the name of Statkraft? Why the necessity of applying under a separate company?

Yours sincerely,

Kieran Cummins,

SUBMISSION re Planning File ref. no. PA17.319448

Knockanarragh Wind Farm Limited

APPLICATION

"In accordance with Section 37E of the Planning and Development Act 2000, as amended, we, Knockanarragh Wind Farm Ltd. give notice of our intention to make an application to An Bord Pleanála for permission for a Proposed Development which will consist of an 8 no turbine wind farm development and associated works on land within the townlands of Clonmellon, Kilrush Upper, Kilrush Lower, Newtown, Ballinlig, Carnybrogan, Cavestown and Rosmead, County Westmeath and Galboystown, Co. Meath. The planning application area is approximately 115.81 ha in size.

The Proposed Development will consist of:

- Construction of 8 No. wind turbines with an overall ground to blade tip height of between 175m – 180m inclusive. The wind turbines will have a rotor diameter ranging from 155m to 162m inclusive and a hub height ranging from 97.5m to 99m inclusive. Each turbine will have individual output of between 6.6MW to 7.2MW inclusive.
- Construction of temporary crane hardstands and permanent turbine foundations.
- Construction of permanent internal site access roads including passing bays and all associated drainage infrastructure
- Construction of 1 no. permanent 110 kV electrical substation west of Clonmellon, Co Meath to include 2 no. control buildings with welfare facilities, all associated electrical plant and equipment, security fencing and gates, all associated underground cabling, wastewater holding tank, and all ancillary structures, bunding and works.
- Construction of 33kV underground electricity cabling, including joint bays and ancillary works, along the L5542 and N52 connecting the Main Wind Farm Development Site: to the Proposed 110kV Substation at Clonmellon.
- Construction of a section of 110kV electricity cabling between the Proposed 110kV Substation and the existing overhead line at Clonmellon, inclusive of 110kV interface masts.
- Construction of an internal collector cable circuit within the Main Wind Farm Development Site, including directional drilling of (125m) cabling between Turbine 5 and Turbine 8.
- Construction of two construction compounds with associated temporary site offices, parking areas, welfare facilities and security fencing.
- The use of the construction compound in the Southern Cluster as a maintenance hub to facilitate the operational phase of development.
- Development of two borrow pits for the purpose of stone extraction.
- Undergrounding of approximately 610 metres of existing 10 kV overhead electrical power line in the vicinity of Turbine 6.
- Development of an internal site drainage network and sediment control systems.
- Improvements to an existing site entrance off the L5542/Carnybrogan local road to include localised widening of the road and creation of a splayed entrance to facilitate the delivery of abnormal loads and turbine component deliveries. Improvements will include removal of existing vegetation to accommodate visibility splays.
- A new site entrance and slip road from the L5542/Carnybrogan local road to facilitate the delivery of abnormal loads and turbine component deliveries to northern part of the site.
- Road improvements to L5542/Carnybrogan local road to facilitate the delivery of abnormal loads and turbine component deliveries.
- A new site entrance to T8 from the N52 via an existing agricultural access within the townlands of Cavestown and Rosmead.
- A new site entrance from the L6821 to the Proposed 110 kV Substation at Clonmellon.
- Ancillary forestry felling of between 19.62ha and 20.09ha to facilitate construction of the development.
- All associated site development works including berms, landscaping, and soil excavation and the ongoing maintenance and management of the biodiversity measures in accordance with the Habitats and Species Management Plan.

- Measures for biodiversity enhancement including wader scrapes for snipe, stockproof fencing and other measures.
- The enhancement and replacement of hedgerows and broadleaf trees and the planting of new hedgerows and trees.
- A 35-year operational life for the Wind Turbines from the date of commissioning of the entire Proposed Development.”

SITE SPECIFIC OBSERVATIONS

1. Are these applications not premature pending the implementation of new guidelines on utility grade wind parks?
2. The site is currently agri, grazing type land. The area is surrounded by residential homes. There are also primary schools to consider. Noise and flicker is a huge concern. It is submitted that this constitutes disorderly development; this is all the more crucial given the intermittent nature of wind energy. It is therefore submitted that the height of the proposed is unacceptable and un-in-keeping with this area of the midlands/ west of the country.

VISUAL

3. We are very concerned about impact of the proposed development on views and prospects. Please asses this issue fully.
4. It is submitted that taller turbines will have an overbearing affect on the landscape. Furthermore, taller turbines have a greater dominating effect on rural dwellings. To suggest that trees could screen structures the equivalent of 50 stories in height is frankly ludicrous. Moreover, trees are often felled to make way for turbines. It should also be borne in mind that the onset of **Ash Dieback disease** is devastating the population of ash trees in the countryside.
5. Please conduct a full analysis of with other wind instillations are in planning, granted or built in the wider area.
6. Please consider other permitted and applied for wind farms in the wider area. This should include Bracklin and Ballivor, etc

GENERAL OBSERVATIONS

Without prejudice to the above and to our view this application cannot be considered until the previous use and the current planning issues have been determined, we now make the following observations on the current application.

HABITAT'S

7. **Stability of Foundations:** We raise concerns about possible adverse affects to the stability of foundations as a result of the proposed excavations necessary to accommodate the proposed wind turbines. This is a significant issue given the low-lying topography of the surrounding landscape. The removal of large parts of the bog and replacement with hard surface will naturally mean that essential soakage area will be removed. Also given the amount of road network required to service the development, it is submitted that newly constructed roads comprising aggregate will largely be impermeable and thereby act as a barrier to drainage. This is a cause of great concern for local residents. We therefore submit that the proposed development is not in accordance with proper planning and sustainable development.
8. It is submitted that the excavations necessary to lay infrastructure i.e. haul routes and service roads together with foundations will likely have an adverse affect on the hydrology of the area. It follows that excavation the naturally occurring porous material and replacing it with hardcore will almost certainly give rise to trapped bodies of water. The large foundations necessary to ground such large turbines may also give rise to displacement of significant volumes of water.
9. Many of the residents also take issue with the amount of traffic that would be necessary to ship so much excavated material out and ship in very significant quantities of aggregate together with the machinery and component parts of the turbines themselves.
10. We must further caution about the removal of peat and interference with bog land. It is not as simple as stating that a certain % of land will be taken up by the wind turbine equipment itself. Interference with a bog may in itself effect the whole bog. We have seen what happened at the Derrybrian site in Galway, where excavations were being conducted to facilitate a wind farm and which caused significant subsidence. This later gave rise to a significant case brought against Ireland by the European commission. We must therefore caution about interference in any way with bogland and the groundwater table.
11. It is appropriate to make a general observation on Atlantic Salmon at this point. We understand that over the last 10 or so years, numbers of returning Atlantic Salmon have been massively dwindling. I had the privilege of meting the late *Éamon de Buítléar* in 2010 and this was the one issue that really concerned him. He spoke at length about this. It is therefore submitted that the wider river catchment area be scrutinised for records and evidence of Atlantic Salmon. We urge the utmost of caution about any development which may in any way negatively impact on Atlantic Salmon.
12. Wind turbines affect bats in a number of different ways. Striking is perhaps the most common and most obvious, but a lesser-known significant issues is that bats lungs may explode under pressure from the turbines. This also causes significant fatalities. Accordingly we raise concerns about the compatibility of the current proposals with flying bats.

Cont/d.

SOURCES OF AGGRIGATE

13. We understand that there are significant compliance issues with some of the quarries locally. We therefore ask the planning authorities to make appropriate inquiries of the applicant as to where exactly material is to be sourced and to then cross check its own records to satisfy itself that these pits are permitted and if so compliant with any extant permission/s.
14. There was a myriad of other issues, which, we submit this proposals should be declined. Issues which we feel this developments should be refused on include: -
 - a. Adverse affect to Tourism and Amenity,
 - b. Adverse affect to local amenity and of peoples enjoyment of the area and of their private homes,
 - c. HEALTH AND SAFETY: Infrasound, etc
 - d. Landscape and Visual across a very wide area,
 - e. Biodiversity (in addition to bats),
 - f. Archaeology, Architectural and Cultural Heritage,
 - g. Landscape Character Assessment,
 - h. Various legal issues,
 - i. Drainage and wells,
 - j. Disruption to Utilities
 - k. Devaluation,
 - l. THE PROPOSAL is NOT SUSTAINABLE
 - i. **STEEL,**
 - ii. **CONCRETE,**
 - iii. **ROADS,**
 - iv. **RARE EARTH METALS (MAGNETS in Machines, etc),**
 - v. **Human Rights issues regarding the sourcing of rare-earth metals such as Cobalt, Neodymium, etc**
 - vi. **The FUEL (the amount of diesel required in the construction),**
 - vii. **Aggregates required for internal road network and foundations,**
 - viii. **Sporadic nature of wind power (intermittent energy),**
 - ix. **Spinning Reserve,**
 - x. **Efficiency of Wind Turbines,**
 - xi. **Dependant on Grants/ Subsidies for viability,**
 - xii. **RoCoF**
 - m. Other Sources of Alternative Energy. Why isn't Deep Bore Geothermal considered?
15. The construction of the proposed wind farm will require immense amounts of aggregates. Many fail to realise that these are finite resources. We do not agree with the squandering of such resources for a relatively short-term project, which would in our opinion not be viable without grant incentives.
16. Wind turbines deliver intermittent energy and have to be backed up by dispatchable sources of energy such as gas, etc. Generations to come will no thank us for our wanton wastage of these resources and leaving them with little or none.
17. The applicants attempt to justify the proposal on the basis that the country must meet renewable energy targets. We take issue with the way this is presented. First and foremost the application is made by a commercial company presumably in the expectation of exploiting the very favorable grant regime which is currently in place and also to at value to its capital investment. We have previously seen some developments sold on when built.
18. **Grants:** We are aware that there are significant grants available for the construction of wind turbines. We believe that they are completely unsustainable without such grant aiding. We therefore submit that it is unethical to use so large amounts of finite natural resources constructing machines, which would otherwise be unviable. We also consider that the provision of grants to aid one form of renewable energy over other forms of meritorious renewable energy gives an unfair advantage and artificially makes one form of energy more attractive than another. We are mindful of the exclusion of Deep Bore Geothermal

energy in this context. Available evidence demonstrates that Deep Bore Geothermal energy is far more sustainable than wind.

19. It should be borne in mind that this is about appropriate planning. All other issues are irrelevant. Making assertions about employment and of Ireland's energy needs are entirely self-serving and should be disregarded. As we shall see, there are other alternative sources of energy which are much more sustainable and far less resource hungry. These are discussed further in this submission.
20. We are disappointed to note that other forms of renewable energy such as Deep Bore Geothermal Energy are not mentioned. We will be talking further about Deep Bore Geothermal Energy later in this submission, but for now it suffices to state that we believe that Deep Bore Geothermal Energy is far more efficient than Wind Energy, the latter of which is currently heavily supported by grants which we believe is the real purpose of the current spate of applications here and elsewhere.
21. Please note that we only had a very short timeframe of a few weeks to review the EIAR. Given the size, volume and complexity of the documents presented, we are commenting from a very high level. It is manifestly unfair to expect a community to analyse such a volume of documents in such a short time frame. This compares with the years the applicants had to prepare such documents coupled with a very large team of paid people. Notwithstanding, we make the below submissions based on a rather cursory review of the EIAR and related documents presented by the applicants.
22. We have repeatedly asserted over the years that EIAR's, which are prepared directly by a developer/ applicant are in our opinion unreliable and self-serving statements in support of their employer. We have found this one to be particularly so in that respect and in our opinion to some extent glamorises an operation that is anything but glamorous. What EIAR's omit to state is also of concern. In this case for example we were unable to find any reference infrasound or the sustainability of finite resources. In summary we remind the statutory authorities of their duty of care to each individual, the wider community and to the environment.

SCALE of the current proposals

23. It is considered helpful to demonstrate the scale of the proposals by reference to the below photograph.



This is in Bellacorrick, Co. Mayo

24. The above photograph shows wind turbines of 167 meters in height beside the small turbines of the 1992 ESB/ *Bord na Mona* development, situated in forestry on a flat landscape with hills in the distance on this side of the development. The smaller turbines, were decommissioned and removed after the larger ones had been built, are tiny in comparison. The nacelle on the smaller turbine clearly demonstrates the enormity of the scale of these **167-meter** high turbines. It is worth noting that the 2006 guidelines were drafted at a time when turbines were much smaller. Note that the current proposals are for turbines some **200 meters** in height; some 33 meters higher again.

25. It would appear that the proposed turbines would cause significant issues for aviators and airplanes. This is hardly surprising as 200 meters translates into 656 feet. To put that in context, it is worth noting the height of some of Ireland's tall structures: -

- the very tall spire on Trim Roman Catholic church is 208 feet,
- Dublin's liberty hall with its 16 floors is 193 feet. The current proposals amount to about 50-story building (nearly half the height of the Empire State building in New York).
- Dublin's spire is 121 meters or 396 feet.

Therefore the height of the proposed turbines is completely unacceptable in a rural landscape.

SHADOW FLICKER

26. We have read elsewhere in the EIAR that measures are proposed to limit shadow flicker. Our information from other parts of the country where such measures are installed is that they don't work effectively. Shadow flicker of any type is unacceptable. This supports our view that turbines should not be permitted within 10 rotor diameters of any residence.

DEPTHS of PEAT

27. There are significant depths of peat in many parts of this bog; both at the southern part and the northern part (Bracklyn end). This application requires the removal of very significant quantities of peat both to anchor the turbines and also to create significant roadways through the bog. Doing such violence to this delicate landscape is unacceptable.

- a. There are important habitat considerations.
- b. There are important archaeological considerations.
- c. There are important carbon sink considerations.
- d. There are important natural heritage implications.

TRAFFIC AND TRANSPORTATION

28. **Diesel** – Particulate matter from diesel fueled trucks; This is considered to be carcinogenic and poses a major health and safety risk to local residents. There will be enormous volumes of diesel consumed both by on-site machinery and by truck movements to and from the proposed development. In addition to the health issues associated with NO2 particulates, there are also significant greenhouse gas emissions.

29. Air Pollution: Particulate Matter [P.M.]. Diesel particulate matter (DPM), sometimes also called diesel exhaust particles (DEP), is the particulate component of diesel exhaust, which includes diesel soot and aerosols such as ash particulates, metallic abrasion particles, sulfates, and silicates. When released into the atmosphere, DPM can take the form of individual particles or chain aggregates, with most in the invisible sub-micrometre range of 100 nanometers, also known as ultrafine particles (UFP) or PM0.1. Exposure to diesel exhaust and diesel particulate matter (DPM) is a known occupational hazard to truckers, railroad workers, and miners using diesel-powered equipment.

30. In 2012, the World Health Organization (WHO) declared the emissions from diesel combustion to be carcinogenic. The WHO also released data showing that more than 7 million deaths are caused by indoor and outdoor air pollution. The black smoke from diesel engines is a part of outdoor air pollution contributed by buses and trucks. A study by a team of international scientists in 2013 noted that diesel smoke consists primarily of black carbon, which has a strong global warming impact on the climate; nearly 3,300 times more than that of carbon dioxide over a 20-year time period.
<http://onlinelibrary.wiley.com/store/10.1002/jgrd.50171/asset/jgrd50171.pdf>]

31. We were unable to find an analysis of the quantities of diesel fuel (fossil fuel) required together with the environmental and health affects of this. In this regard, we ask the planning authority to conduct a full analysis of these issues. The irony of using so much fossil fuel together with significant quantities of rare earth metals and finite resources to construct an energy source, which is intermittent at best, is not lost on us.

HEALTH AND SAFETY

32. There have been many newspaper reports about the safety of industrial wind turbines and indeed there is much available evidence of fires and accidents which can be easily sourced on the internet. We invite the planning authority to see for itself just how unsafe industrial wind turbines can be. The information may be assessed at: <http://www.caithnesswindfarms.co.uk/fullaccidents.pdf>
33. **Infrasound:** Moreover, there is significant evidence from outside of Ireland that Infrasound is an issue for people who live very close to wind turbines. *Dr Mariana Alves-Pereira* of Portugal has written and talked extensively on this issue. Further evidence is also available from *Bruce Rapley*, *Huub Bakker* and *Rachel Summers*. Curiously we were unable to find any reference in the EIAR to 'Infrasound'.
34. The bog has been dried out over the period of its working life. There have been fires at the bog over the past decades. Post its former use of peat harvesting, non rewetting on turbine sites leading to dry and drained bogs with high growth of highly combustible dry material such as heather scrub. Heather grows taller and more dense in dry bog than it does in wet bog naturally. Consequently, if Bord na Mona/ Powergen are the custodians and operators of this wind-farm, one must inquire as to who is responsible for future fire incidents and how are neighboring properties protected against this expanded and increased risk? Moreover, if the bog is already historically susceptible to fires in its current state so this proposal must now consider this potential extreme hazard capacity on local dwelling/property holders and the health of the people that live within proximity to this bog if a fire broke out through the inhalation of smoke pollutants. Furthermore, fires on a bog would also pose a risk for the turbines themselves. All the available evidence would lead us to the conclusion that a rewetting of the bog (or large parts of it) would be the more sustainable option and also provide a valuable carbon sink.

TOURISM AND AMENITY

35. A landscape blighted with wind turbines is unattractive to tourists. The proposed height of the turbines in the current application will make them all the more imposing. Parts of Scotland have suffered enormously from inappropriate and indiscriminate sighting of wind turbines, which is having a significant negative affect on their tourism industry. We do not wish to see Ireland follow in the same direction. When people visit such beauty spots, they typically want to view an un-spoilt Ireland.
36. Industrial wind turbines are overbearing and adversely interfere with the landscape visually: this is clearly contrary to Ireland's touristic objectives, which have been driven in recent years by Ireland's Ancient East together with the Wild Atlantic Way. There is nothing ancient about industrial wind turbines. If tourists wished to see industry, we are sure they would be visiting places such as the Ruhr valley in Germany and such like. Giant industrial wind turbines are clearly incompatible with this objective.

DECOMMISSIONING

37. Of concern is that the large concrete bases to support the turbines are to be left in situ following the end of life and decommissioning of the proposed wind turbines. Such wanton destruction of the landscape is utterly unacceptable.
38. Given the finite nature of sand and gravel which is required to construct the foundations for wind turbines in the first place, it is completely unacceptable that they would be just left there following the end of life of the turbines. We have elsewhere in this submission dealt with the finite nature of sand and gravel, but to reiterate, foundations will have been made up of very large amounts of finite resources including sand and gravel, the later of which come from eskers laid down in the last glaciation. Eskers are rapidly disappearing through extremely aggressive quarrying (much of it unauthorised) to feed the insatiable demand for developments such as wind turbines, which is in of itself; totally unsustainable. Moreover it should be noted that large amounts of rebar will also have been buried in the foundations to strengthen them.
39. Wind turbine blades cannot be easily disposed of. There is evidence from the United States of America where these are cut up and land filled. This can hardly be described as beneficial to the environment. We invite you to check out the following link in this regard:

REFUSALS

40. It is considered helpful to examine refusals for similar installations.
41. **MEATH:** PL 17.238669: Highpoint Communications Limited: Construction of a 30 metre high lattice telecommunications/3G Broadband support structure, carrying 6 number panel antennas and 4 number RT link dishes, with associated telecommunication cabinets and equipment located at ground level, all enclosed in chainlink fencing and all associated works, plus new section of access track, all at Blackshade Townland, Clonard, County Meath.
42. REFUSE permission. By comparison to the proposed turbines, the mast alluded to in the above was a minnow. The site was also close to the Royal Canal and was refused '*By virtue of its location adjacent to the Royal Canal*'
- a. **REASONS AND CONSIDERATIONS:** *By virtue of its location adjacent to the Royal Canal, the proposed development would seriously injure the visual character and scenic amenities of the area in general and the canal in particular. As such it would be contrary to the advice given at section 4.3 of the Guidelines for Planning Authorities on Telecommunications Antennae and Support Structures issued by the Department of the Environment and Local Government in July 1996 that care should be taken over sensitive landscapes, and policy HER 40 of the Meath County Development Plan, 2007-2013 to protect and enhance the heritage and recreational potential of the Royal Canal. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area. [Emphasis added]*

This single solitary mast equated to a mere 98.42'. The current proposals are for turbines of 200 meters (656 feet). It follows that would cause a massive intrusion on the landscape and are therefore unacceptable.

43. **WESTMEATH:** PL.237728: Galetech Energy Developments (GED Limited): Construction of 12 number wind turbines of hub height 85 metres and rotor diameter 100 metres, with an overall height not exceeding 135 metres...situate at Gaybrook Demesne, Mahonstown, Gibbonstown, Ballintlevy, Bellfield or Brannockstown and Gallstown, Mullingar, County Westmeath.

NOTE: The lands re this planning file are situate very close to the lands re the current file.

REFUSE permission. The proposed windfarm was refused mainly on the basis of landscape quality.

- a. **REASONS AND CONSIDERATIONS:** *The site of the proposed windfarm development is located in the vicinity of Lough Ennell, in an area of good quality, small scale landscape, containing the remnants of 18/19th century demesnes of particular significance in terms of amenity, tourism and heritage. The area also contains a large number of new houses. It is the policy of the planning authority to assess any development proposals in areas of demesne landscape according to best practice guidelines for historic landscapes. It is considered that insertion of a windfarm into this landscape would constitute a dominant and obtrusive feature in the area, which would interfere with the character of the landscape which it is necessary to preserve. Furthermore, having regard to the statements in the current Westmeath County Development Plan 2008-2014, generally advocating accommodation of windfarms in the extensive cut-over peatland areas of the county and also having regard to the sensitivities of the area and its environs, it is considered that the proposed development, notwithstanding its location in an area of "medium capacity" in the Windfarm Capacity Map of the said Development Plan, would not be in accordance with the overall development objectives of the current County Development Plan. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area. [Emphasis added]*

These turbines equated to 442.91'. Therefore, how did the current proposers consider that turbines of some 607' would somehow be acceptable?

44. **MEATH: PL 17.203801: PROPOSED DEVELOPMENT:** Application by Thornton Waste in 2005: Provision of circa 3.1 hectares of landfill area comprising parts of Phases 1 and 2 of an overall proposed landfill area (25.4 hectares) and the diversion of the southern stream around the perimeter of the landfill area, six metres wide road around landfill area, separate foul and surface water drainage networks, landscaping, berming, screen planting, fencing, boundary treatment and all site development works on a 31.9 hectares site at Boolykeagh, County Meath. These works comprise part of an overall proposed development of an integrated waste management facility comprising a recycling centre and non-hazardous residual waste landfill on a circa 82.5 hectares site at Calf Field, Ballynadrumny, County Kildare near Longwood, County Meath. The overall development site comprises lands in County Meath and County Kildare as follows: circa 31.9 hectares is located in the townland of Boolykeagh, County Meath and circa 50.6 hectares is located in the townlands of Calf Field and Ballynakill in County Kildare. A separate planning application has been lodged with Kildare County Council for the remaining components of the development, which includes: (1) access to the site for all purposes shall be from a new access road on the R160 Regional Road in County Kildare; (2) Phases 3 to 6 and the parts of Phases 1 and 2 of the landfill area in County Kildare, comprising circa 22.3 hectares. (The overall landfill comprises approximately 25.4 hectares to be development in six phases over 13 years at the rate of 220,000 tonnes per annum of residual non-hazardous household, commercial, industrial and construction and demolition wastes); (3) the proposed integrated waste management facility in the County Kildare section of the lands (50.6 hectares).

- a. REFUSE permission: Having regard to the complex hydrological and hydrogeological conditions obtaining on-site, to the limited investigation carried out of those conditions and hence to the potentially inadequate mitigation impacts associated with the proposed development, it is considered that the development site is unsuitable for a development of the nature and scale proposed, having regard to the proximity of the site to the Boyne River, a designated Special Area of Conservation and a source of water supply for the County of Meath. The proposed development would, therefore, have a significant adverse effect on the conservation and protection of the River Boyne, a Special Area of Conservation, would be prejudicial to public health and would be contrary to the proper planning and sustainable development of the area. [Emphasis added]

Note also the earlier grounds on which **Meath County Council** refused the Waste facility, which amongst other issues, stated *"by reason of its siting, context, scale, height and bulk ... would have a detrimental impact on visual amenity, heritage, tourism, recreational and environmental values of designated areas of visual quality identified in the Meath County Development Plan"*.

45. **MEATH: 22/552: 2023-02-21: OBTON** – Application for solar farm on 124 Hectares at Hawkinstown, Riverstown (ED Ardcath), Scatternagh, Balgeeth, Ardcath, Co. Meath. Application was refused by Meath County Council in March 2023 by reason that: -

HER POL 52 of the Meath County Development Plan 2021 - 2027 sets out the policy to protect and enhance the quality, character, and distinctiveness of the landscapes of the county in accordance with the national policy and guidelines and the recommendations of the Landscape Character Assessment to ensure that new development meets high standards of siting and design. As set out in the applicable Landscape Character Assessment for County Meath (Appendix 5) and associated maps, the proposed development would be partially sited in Landscape Character Assessment (LCA) 06 Central Lowlands, a landscape of High Landscape Character Value, Moderate Sensitivity and is of Regional Landscape Importance and with a recommendation to maintain the visual quality of the landscape by avoiding development that would adversely affect short range views between drumlins and to have particular regard to the retention of high quality landscapes on the tops of drumlins which are inter-visible with the Hills of Tara and Skryne in LCA 12. Based on the information submitted with the application, it is considered that, by reason of its nature, scale, massing and location, the Planning Authority is not satisfied that the proposed development sufficiently protects and enhances the quality, character, and distinctiveness of this high landscape value. The proposed development would, therefore, be contrary to the above referenced Development plan policy and would not be in accordance with the proper planning and sustainable development of the area.

EU and IRISH LAW

SEA DIRECTIVE

46. We further believe that this contrary to the SEA Directive (Strategic Environmental Assessment); which provides that Programs / Plans / Projects should be conducted as a whole and not in isolation. The current application is a project. It is considered that one cannot jump straight into projects without first having conducted the two earlier stages in the process; i.e. Programmes and Plans.
47. In light of new information we have received; we inquire whether the applicants are embarking on scoping for other Wind Farm Projects in and around the east and midlands regions of the country? It is our belief that they are. In doing so, it is considered that they have completely ignored the requirements of the SEA Directive with regard to plans and programmes.
48. The SEA Directive is to ensure that “plans & programmes” which are likely to have sufficient effects on the environment are subject to an Environmental Assessment when they are prepared and prior to their adoption (note judgment of 28th February 2012, **Inter – Environnement wallonie and Terre wallonne**, C41 / 11, EU: C: 2012:103, paragraph 40 and the case – law cited).
49. Article 6(2) of the SEA Directive furthermore tells us that the environmental assessment should be carried out at the earliest possible stage so that the results of that assessment are still capable of influencing any decisions. Indeed it is at that stage that the various elements of an alternative may be analysed and strategic choices made. It is submitted therefore that the current planning application is in fact a project.
50. We contend that no overall plan or programme was prepared by the applicant; Statkraft or Element Power for its projects in Ireland. A project comes out of plans and programmes. Plans are flexible. A programme is comprised of multiple projects that aim at outcomes.
51. We contend that the applicant has ignored its obligations under the SEA Directive and has forged ahead with multiple projects, which in fact should never have been built without fulfilling its obligation with regard to the SEA Directive at the plans and programme level.

EIA and HABITATS DIRECTIVES

52. **EIA Directive and ECJ case law:** we are concerned that the current application doesn't comply with Article 6 of the Habitats Directive 92/43/EEC. Please establish that the proposal is compatible with **EU law** including case law from the ECJ. The following cases from the **European Court of Justice** [ECJ] may be relevant: -
 - a. Case C-258/11, Peter Sweetman and Others v An Bord Pleanála
 - b. Case C-164/17, Edel Grace and Peter Sweetman v An Bord Pleanála
 - c. Case C-323/17, People Over Wind and Peter Sweetman v Coillte Teoranta
 - d. Case C-461/17, Brian Holohan and Others v An Bord Pleanála,

53. There have been health issues for residents in other parts of the country and beyond.
54. We are also aware of the case of **Shivnen & Ors -V- Enercon Wind Farm Services Ireland Ltd & Anor 2011/9955 P**. Seven families from Banteer, North County Cork claimed they had been severely impacted, particularly through noise pollution, since the turbines began operating in November 2011. The case was ultimately settled out of court order stated: *'and the court records that liability has been admitted by the defendants in the action listed in he schedule here-after.'*
55. In February 2020 we read of the case of **Laura, David and Jack Kelleher v. Green Energy Supply Ltd**. The later of which owned and operated a wind turbine installation known as Knockduff Wind Farm in Cork. The applicants claimed that the noise, vibrations and shadow flicker from the turbines, located just over 700m from their family farm resulted in them suffering from various illnesses. These included nosebleeds, ear aches, skin rashes, swollen and painful hands, loss of power in their limbs, sleep disturbance, and headaches.
- 'Counsel told the court that the settlement, including the ruling of the awards, arose following mediation between the parties conducted by retired Judge Paul Gilligan. He said that given the circumstances, especially given that the medical evidence was hotly contested, he was recommending that the settlement offers be approved by the court. Counsel said that as part of the settlement Laura (aged 15) whose ailments were more severe compared to her brothers was to receive €125,000. Her brothers David (aged 17) and Jack (aged 10) were to receive €50,000, counsel added.'*
- We submit that the above case is very relevant. While we are unaware of any underlying issues with regard to the Kelleher children (above), this is all the more cause for concern given that local children have underling issues [autism] and would be much more vulnerable. Furthermore, we understand that the turbines in County Cork were smaller than those proposed for this area thereby adding weight to our concerns.
56. **Grants:** We are aware that there are significant grants available for the construction of wind turbines. We believe that they are completely unsustainable without such grant aiding. We therefore submit that it is unethical to use so much finite natural resources constructing machines, which would otherwise be unviable. We also consider that the provision of grants to aid one form of renewable energy over other forms of meritorious renewable energy gives an unfair advantage and artificially makes one form of energy more attractive than another. We are mindful of the exclusion of Deep Bore Geothermal energy in this context. The evidence demonstrates that Deep Bore Geothermal energy is far more sustainable than wind.
57. With regard to any wind farms, which have already come on line, please clarify the **amount of energy actually being delivered** on a per annum basis. Information should include the number of turbines, the area over which they have been installed, the type of turbines involved and compared with any previously stated aspirations in planning documentation.
58. Has a full **SEA (Strategic Environmental Assessment)** analysis been conducted? The SEA Directive provides that Programs / Plans / Projects should be conducted as a whole and not in isolation. Therefore it is essential that all related wind farm applications in this and other counties be examined as part of the broader mix. Has Directive 2001/42/EC been complied with?
59. We note that an **Environmental Impact Assessment** has been submitted with the application. Please establish its adequacy and whether this application in compliance with EU Directives including Directive 85/337/EEC?
60. We note that an **Natura Impact Assessment / Appropriate Assessment** has been submitted with the application. Please establish its adequacy and whether this application in compliance with EU Directives including Directive 92/43/EEC?

61. Please establish whether all aspects of the **machinery directive** [2006/42/EC] have been complied with?
62. Having regard to the **county development plans**, we ask the planning authority and ultimately *An Bord Pleanála* to establish whether the proposals are compliant with the county development plans? We believe that they are contrary to proper planning and sustainable development and that they contravene many aspects of the county development plan such as objectives re preservation of heritage and the promotion of tourism. The proposal would also place enormous demand on finite natural resources. In addition we believe that views and prospects as outlined in the county development plan would be heavily compromised.
63. Please establish whether the proposal is compatible with the **European Landscape Convention**? The UK and Ireland ratified the convention and it became binding on 1st March 2007.
64. Have all related **health and safety** issues been reviewed? This should include lightning strikes, storm damage, anchorage, etc. Are there batteries to be installed? We understand that transformers are often colossal and often weigh up to 70 tons and more. Is the local fire services equipped to deal with fires at the proposed installation? Please establish risks associated with the following hazards: -
- e. Hazard 1. Shock or electrocution from energized conductors
 - f. Hazard 2. Arc faults that spark fires
 - g. Hazard 3. Arc flash leading to explosions
65. The composition of the proposed turbines will need to be established. This should include all rare earth metals involved in their manufacture. All **runoff** possibilities should be examined having regard to metals/contaminants contained in the proposed machines. Could runoff to nearby watercourses and or seep into the aquifer? Furthermore, in the event of a storm event and proposed wind turbines get damaged; is there a possibility of chemical/ metal escape and contamination of the groundwater aquifer?
66. Significant resources are required to enable this development. Please ensure that there is a full assessment of **all materials required in the construction of this development**? Please also quantify the amounts of materials required to construct this proposed development with specific reference to rare earth metals?
67. Please also quantify the **carbon footprint** of this development in terms of the production of resources together with the importation and construction thereof? This should account for all concrete to be used in the development. Concrete is known to leave a high carbon footprint.
68. Please establish whether **grid connection** forms part of this application? If not, please inform how it is in compliance with the principles established in *O Grianna & ors -v- An Bord Pleanála* of 2015-04-16?
69. We understand that there are still no recent **guidelines for wind energy**. Is this application not premature?
70. There have been reports of major **Human Rights abuses** regarding the mining of rare-earth metals. The source of the component parts for wind turbines including all rare-earth metals will need to be established.
71. We question where the **aggregates** are to be sourced for the construction of the proposed project? This must be established given the amount of unauthorised aggregates on the market.
72. We are frequently told about potential **employment benefits** in an effort to justify proposals. We understand that in fact often contractors are brought in from Germany and such like to install various aspects of such developments. This makes a nonsense of statements made in respect of employment benefits. Please therefore establish precisely every aspect of the construction and operation of the proposed entity and detail where it is proposed to source each of the jobs.
73. Has other forms of energy such as **Deep Bore Geothermal Energy** been considered? Unlike solar, Deep Bore Geothermal Energy can deliver **constant energy** and is considered better value for money.

74. Wind technology is rapidly changing. It is highly likely that the turbines of today will be obsolete in a few years. It will be necessary therefore to establish the **afterlife of these turbines** together with the cost factor of disposing of same given the amount of rare earth metals in their construction. The applicants will need to address these issues. It is considered that a significant sum of money would need to be lodged in an escrow account to cover disposal and reinstatement.
75. We recommend that a **full cost/ benefit analysis** be conducted to establish value for money given the resources required to construct. This should also take into account the intermittent nature of wind and solar energy. Additionally this should include comparisons with other forms of sustainable energy with particular reference to Deep-bore geothermal energy, which is fully dispatchable and not intermittent. Such an analysis should ignore completely any artificial grant incentives and focus purely on the real cost of the development together with an assessment of what can realistically be expected in terms of deliverable energy generation at these northerly latitudes. This should also factor in worst-case scenario climatic conditions (light levels) with extensive periods of cloud cover.
76. Furthermore, a full analysis of **impacts upon the surrounding community** should be conducted.
77. Please clarify whether SF6 gas is to be used as an insulant? SF6 Gas is 23,500 times more warming than carbon dioxide (CO2). Sulfur hexafluoride or sulphur hexafluoride is an extremely potent and persistent greenhouse gas that is primarily utilized as an electrical insulator and arc suppressant. The European Commission has proposed that SF6, a fluorinated greenhouse gases with a potency 25,000 times that of carbon dioxide, be banned from new electrical equipment as of 2031, as part of a broader tightening of limits on F-gases. See <https://www.bbc.com/news/science-environment-49567197>
78. On balance it is considered that this development would create an undesirable precedent and should ultimately be declined.
79. **Both Wind and Solar energy are intermittent and not dispatchable.** (*Dispatchable generation refers to sources of electricity that can be used on demand and dispatched at the request of power grid operators and according to market needs. Dispatchable generators can be turned on or off, or can adjust their power output according to an order.*)

EMPLOYMENT

80. **Assertions re Employment:** many EIAR's allude to an alleged employment benefit quiet frequently in an apparent attempt to in part justify the proposed development and were told that there may be up to 20 jobs. Such arguments are of course completely erroneous, as the issues to be determined are compatibility with established **planning principles** and compliance with **EU law and International Conventions**.
81. Furthermore, employment typically results from the requirement of one party to hire another in order to make a profit for the employer and not out of some benevolent motive. If employment were a genuine concern, then the operator/s would be well advised to explore an intensive industry such as a more labor intensive horticultural development, which would sustain far greater employment over a similar land mass. Furthermore, a horticultural land use would provide **sustainable employment** unlike construction of a wind farm, which only provides short-term employment.
82. **Effect of wind on other alternative energy sources:** we understand that on occasion Hydropower has to be turned off to let wind energy in. This could be established by appropriate questions directed to the managers of the grid?

ESKERS

83. Most of the sand and gravel requirements in Ireland come from Eskers laid down in the last Ice Age. Sadly in the space of no more than about 2 generations, we have nearly exhausted all our reserves from these eskers without any thought for future generations. The situation is so bad in the UK and China (to mention but two other countries) that they have now resorted to dredging estuaries in an effort to get sand. Being the principle constituent of concrete, to see so much buried under wind turbines which will without any doubt become white elephants is utterly crazy.

DEVALUATION

84. In most cases a person's private house represents most of that person's/ family's assets and it would be grossly unfair that the local people should suffer as a result of another's private gain. The Board's attention is specifically drawn to **Section 10. (c) Schedule Four of the 2000 Planning Act** which provides that planning permission may be refused where it would "*seriously injure the amenities, or depreciate the value, of property in the vicinity*". The Board is therefore requested to refuse permission based on the said grounds. Wind turbine industry representatives have claimed that only limited areas of the country would be available to them if significantly longer separation distances than 500m were recommended. That of course is not an argument with any merit if there are objective reasons for the separation distance in the first place. Developers have no right to claim precedence over people's property and family rights.

THE PROPOSAL / SUSTAINABILITY

85. **Developer Led:** the proposal is developer led. The effect of this proposal has already been to divide the local community between landowners benefiting from the revenue from turbine sites on the one hand and others on the other. This is inappropriate developer-led rather than national and strategic based planning. Any future Irish wind energy proposal needs to be plan led and not developer led. This proposal is inappropriately developer-led acting without any proper national and location selection strategy.
86. **The TURBINES:** The manufacture of steel and other components to assemble a turbine (particularly on the scale proposed) must also be assessed as regards its impact on the environment *vis à vis* carbon footprint and environmental sustainability of natural and finite resources.
87. **Carbon footprint of wind energy:** The manufacture of cement requires significant temperatures. The carbon footprint / ton is therefore very significant. It is submitted that the use of such a vast quantity of concrete would give rise to an unacceptably high carbon footprint. The reality is that construction and erection of wind turbines will give rise to significant and unsustainable resource consumption.
88. We were unable to easily find exact grade of aggregate, steel or nm of concrete in any of the works be it bases, culverts, manholes, etc. It would be essential that the applicants provide a table of figures for the amounts of aggregate required to construct the network of access roads.

MATERIALS USED

89. It is considered helpful to provide a short analysis of some of the components of wind turbines, which we will now outline.
90. **STEEL:** To create 1,000 Kg of pig iron, you start with 1,800 Kg of iron ore, 900 Kg of coking coal 450 Kg of limestone. The blast furnace consumes 4,500 Kg of air. The temperature at the core of the blast furnace reaches nearly 1,600 degrees C. The pig iron is then transferred to the basic oxygen furnace to make steel. 1,350 Kg of CO₂ is emitted per 1,000 Kg pig iron produced. A further 1,460 Kg CO₂ is emitted per 1,000 Kg of Steel produced so all up 2,810 Kg CO₂ is emitted. 45 tons of rebar (steel) are required so that equals 126.45 tons of CO₂ are emitted.
91. **CONCRETE:** To create a 1,000 Kg of Portland cement, calcium carbonate (60%), silicon (20%), aluminum (10%), iron (10%) and very small amounts of other ingredients are heated in a large kiln to over 1,500 degrees C to convert the raw materials into clinker. The clinker is then interground with other ingredients to produce the final cement product. When cement is mixed with water, sand and gravel forms the rock-like mass know as concrete. For the turbines currently being proposed, upwards of 200 lorry loads of readymix calculate are required to anchor each turbine (in addition to lots of reinforcing steel).
92. **ROADS:** Infill for access roads: sourced from crushed rock derived from quarrying are also required.
93. **RARE METALS:** Each and every wind turbine has a magnet made of a metal called neodymium. The mining and refining of neodymium extraordinarily dirty and toxic – involving repeated boiling in acid, with radioactive thorium as a waste product – 90% of it comes from – Baotou, China. Neodymium is a rare earth metal, which is generally sourced in China and which is causing. There are c. 4 tons of neodymium magnets in each turbine for example. China's Ministry of Industry and Information Technology estimated that the cleanup bill for southern Jiangxi Province could amount to 38 billion yuan, or around \$5.5 billion. Only a fraction of that amount has so far been spent.
94. **The MAGNETS:** The turbines themselves come from a process, which cannot be considered sustainable. In fact the trail of destruction and environmental pollution, which is left behind, is shameful.

To quote from the enclosed article on the issue '*Neodymium is commonly used as part of a Neodymium-Iron-Boron alloy (Nd₂Fe₁₄B) which, thanks to its tetragonal crystal structure, is used to make the most powerful magnets in the world...There's not one step of the rare earth mining process that is not disastrous for the environment. Ores are being extracted by pumping acid into the ground, and then they are processed using more acid and chemicals. The fact that the wind-turbine industry relies on neodymium, which even in legal factories has a catastrophic environmental impact...Finally they are dumped into tailing lakes that are often very poorly constructed and maintained. And throughout this process, large amounts of highly toxic acids, heavy metals and other chemicals are emitted into the air that people breathe, and leak into surface and ground water. Villagers rely on this for irrigation of their crops and for drinking water. 'Whenever we purchase products that contain rare earth metals, we are unknowingly taking part in massive environmental degradation and the destruction of communities.'*

Curiously RTE's weekly 'World Report programme also alluded to the issues presented in Baoding, China on 31st May 2015; <http://www.rte.ie/radio1/world-report/> It was referred to as Chinas most polluted city.

Aside from the manufacture of the magnets alluded to above and in the appended enclosure, World Report alluded to the manufacture of Blades for wind turbines together with solar panels. Some statistics about Baoding were that the skies are constantly full of smog from pollution and thus far this year, they had only got 16 days smog free as of [31st May 2015]. The listener was informed that Blue skies are seldom seen. Fine particles (PM 2.5) are double that of recommended levels and the population have respiratory problems/ breathing difficulties and facemasks are frequently worn in an attempt to protect oneself. It is estimated that air pollution is responsible for 100,000 deaths each year. Because of Chinas Censorship, it is difficult to obtain detailed data. To make matters worse, at decommissioning stage, the blades are being chopped up and being

land filled. See: <https://www.bloomberg.com/news/features/2020-02-05/wind-turbine-blades-can-t-be-recycled-so-they-re-piling-up-in-landfills>

95. We invite you to assess the following links to substantiate what we have outlined above: -

Rare-earth mining in China comes at a heavy cost for local villages

Pollution is poisoning the farms and villages of the region that processes the precious minerals
Cécile Bontron

Tue 7 Aug 2012 13.59 BST

<https://www.theguardian.com/environment/2012/aug/07/china-rare-earth-village-pollution>

Rare earth mining in China: the bleak social and environmental costs

China produces 85% of global supply of the 17 chemically similar elements crucial to smartphone, camera lens and magnet manufacture – and half that output is from the city of Baotou

Jonathan Kaiman in Baotou

Thu 20 Mar 2014 14.30 GMT

<https://www.theguardian.com/sustainable-business/rare-earth-mining-china-social-environmental-costs>

The dystopian lake filled by the world's tech lust

By Tim Maughan

2nd April 2015

<https://www.bbc.com/future/article/20150402-the-worst-place-on-earth>

China Wrestles with the Toxic Aftermath of Rare Earth Mining

China has been a major source of rare earth metals used in high-tech products, from smartphones to wind turbines. As cleanup of these mining sites begins, experts argue that global companies that have benefited from access to these metals should help foot the bill.

BY MICHAEL STANDAERT

JULY 2, 2019

<https://e360.yale.edu/features/china-wrestles-with-the-toxic-aftermath-of-rare-earth-mining>

96. **Human Rights:** In addition to the issue of sustainability raised above, there are clearly significant Human Rights issues to consider here. It is therefore unconscionable that the practices alluded to in the appended article should be supported in any way

97. **The FUEL:** The sheer volumes of concrete required together with access roads and hard standing areas, which in turn would require massive quantities of infilling to facilitate the construction of the proposed turbines is vast. It follows that the amount of diesel fuel necessary to fuel the truck to haul all this material on site would be enormous. This too must be factored into the carbon footprint equation together with the sustainability of consuming so much fossil fuel in the construction of the proposed wind turbines.

98. **Where does the aggregate come from?**

Further to the above, sourcing such an enormous quantity of aggregate would pose enormous challenges. Aggregate is a major constituent of concrete. Aggregate will also be required to construct all the hard standing areas and access roads. It is submitted that this is squandering of national resources.

The sighting of turbines should be in a situation where naturally occurring bedrock can be utilized, obviating the need for the requirement of such vast amounts of concrete and aggregate. Furthermore, in addition to aggregate, sand and gravel are also component constituents of concrete. Through our experience and understanding of the quarry industry, we know that supplies of sand and gravel are rapidly dwindling. It is therefore essential that such schemes be situate on naturally occurring bedrock!

99. **Sporadic nature of wind power:** terrestrial based wind power is historically very sporadic and erratic. To state the obvious, in periods of static airflow, no wind is produced. This causes all sorts of challenges for management of the grid in that it must be replaced by alternative sources of energy. Alternative Energy Sources are discussed separately in this submission, as are issues pertaining to the management of the grid.

100. **Spinning Reserve:**

It follows that alternative sources of energy must be constantly available to provide power when wind isn't blowing. This can be referred to as cycling up and cycling down. During periods of static air mass and nil generation of wind energy, power must be generated from other sources.

Currently the main energy source is at the Moneypoint station in County Clare. Is it not the case that this must be kept burning in order to take up the slack when there is no wind energy coming on stream? We understand that it and similar power plants cannot be turned off, as they take too long to power up (48 hours), which for obvious reasons would not be feasible when wind energy falls off. We further understand that this has been very problematic in Scotland where there are a large numbers of wind turbines. '

The Limits of Wind Power [by William Korchinski] states: - ***'The analysis reported in this study indicates that 20% would be the extreme upper limit for wind penetration... Very high wind penetrations are not achievable in practice due to the increased need for power storage, the decrease in grid reliability, and the increased operating costs. Given these constraints, this study concludes that a more practical upper limit for wind penetration is 10%. At 10% wind penetration, the CO2 emissions reduction due to wind is approximately 45g CO2 equivalent/kWh, or about 9% of total.'*** [Source: The Limits of Wind Power [by William Korchinski]

In 2012, Ireland was already at 15.3% from wind. This figure is almost certainly higher now with the advent of more energy streams (including wind) since then. *'The Department of Energy figures also show that in 2012 19.6 per cent of our gross electricity production was by renewables. 15.3 per cent of this was wind, followed by 2.7 per cent by hydroelectricity.'*

101. **Efficiency of Wind Turbines:**

'Not all the energy of blowing wind can be harvested, since conservation of mass requires that as much mass of air exits the turbine as enters it. Betz's law gives the maximal achievable extraction of wind power by a wind turbine as 59% of the total kinetic energy of the air flowing through the turbine' [Harvesting the Wind: The Physics of Wind Turbines Kira Grogg – 2005]

'Further inefficiencies, such as rotor blade friction and drag, gearbox losses, generator and converter losses, reduce the power delivered by a wind turbine. Commercial utility-connected turbines deliver 75% to 80% of the Betz limit of power extractable from the wind, at rated operating speed.' [Tony Burton et al., (ed), Wind Energy Handbook, John Wiley and Sons 2001], See also http://en.wikipedia.org/wiki/Wind_turbine#Efficiency

102. **Grants/ Subsidies:**

We understand that significant grant incentives are available for the construction of wind based power units. We further understand that such grants are restricted to terrestrial based units and that these grants are no longer available for maritime-based units. This may well explain why the current proposal is a land-based proposal. This; notwithstanding the fact that there is a far more steady flow of wind at sea. The evidence available suggests that the wind industry have lobbied extensively to retain this subsidy both in Ireland and in the UK, which is in our view misguided, and short-sighted in view of the many other more promising and sustainable energy sources. **Chasing grants/ subsidies makes for very poor planning law and should have no place in any society.**

103. **Sea based Alternatives:**

Having regard to the fact that there is far more wind at sea and as such the sea is a far more suitable location for such units (Subject of course to appropriate citing).

Transporting power from sea-based installations is also much easier in that there is no 3rd party landowners or upset residents with which to be concerned. Curiously we were unable to find any discussion on locating this project at sea in the non-technical summary of the E.I.S. conducting a simple word search.

Therefore, the discussion on alternative sites without discussion of sea-based turbines significantly calls into question the completeness of the E.I.A.R., which demeans the application in our view. It would therefore appear that the limited discussion on alternatives is more of a box ticking exercise rather than of any real engagement with the spirit of the E.I.A. directive.

RoCoF

104. **RoCoF:** Rate of Change of Frequency (islanding detection method for decentralised generation units). Because wind fluctuates electricity generated changes regularly which can cause problems on the grid. This is difficult to manage on the grid. It follows that the more wind that is put on, the more difficult it is to manage. i.e. the more wind we get the more likely the grid will have problems in managing the fluctuating power intake. We have inserted some quotes taken from a document published in 2011 by the University of Manchester entitled 'Loss of Mains Protection':

'Loss of Mains (or islanding) occurs when part of the public utility network (incorporating generation) loses connection with the rest of the system

If LOM is not detected, then the generator could remain connected, causing a safety hazard within the network.

Automatic reconnection of the generator to the network may occur causing damage to the generator and the network

Islanding is not permitted in most countries. The most challenging scenario is when the local load closely follows the generator output both in terms of active and reactive power.

LOM performance requirements – stability

LOM should be stable under remote faults cleared by the utility system.

It is undesirable to issue a false trip as it leads to the unnecessary disconnection of the generator.'

WIND ENERGY [6.15.3.2]

105. The current wind energy strategy is driven by Ireland's National Renewable Energy Action Plan [NREAP], which was submitted to the EU in July 2010 and details the renewable energy plan up to 2020. This is revised every 2 years based on whether Ireland is meeting its targets. As we understand it, currently renewable electricity ambitions are 40% of which 90% is to come from wind, which is ludicrous in the knowledge that there is a much more sustainable and less intrusive solution in the form of Deep-Geothermal.

Other Sources of Alternative Energy

106. **Alternative Energy Sources:** Renewable Energy comes in many forms including: - Biomass, Geothermal, Solar Energy, Wave Energy, Tidal Energy, Hydroelectricity, etc. It is appropriate that we should give a brief analysis of each below.
107. **Solar power:** Is the conversion of sunlight into electricity. This is somewhat dependent on technical advances in the conversion rates of the photovoltaic (PV) cells that convert sunlight into electricity. Moreover, battery power would be required during night hours or when there is poor sun during daylight hours.
108. **Biomass:** usually refers to plants, which are specifically grown as a crop for the purposes of energy generation. **Often available in the form of wood pellets that can be produced from crops of plants such as willow. Given the existing Moneypoint Power plant in County Clare, there is potential to convert this plant from burning coal (fossil fuel) to burning biomass.**
109. **Biofuels:** Biofuels have been proposed as an alternative by some commentators. Bioethanol is made by fermenting plant materials and biodiesel is made from vegetable oils, animal fats or recycled grease. Biofuels typically include Biodiesel and Ethanol. In 2008 biofuels provided a mere 1.8% of the world's transport fuel. Bioethanol production relies on the cultivation of large amounts of plant material. A major issue with biofuels is that arable land would have to be taken out of food production to produce bio fuels. Given that the human population of the world is increasing at a rate never before seen, little of no land could be made available for production of biofuels. Moreover, there is a danger that more tropical rain forest would disappear to satisfy the demands for same.
110. **Hydrogen:** Hydrogen can be used to power future transportation and may be the power of the future given that hydrogen is the most common element in the Universe. Power can either be through the use of electric motors powered by fuel cell technology or by improved internal combustion engines. In both cases emissions would be zero. The difficulty is that Hydrogen power is currently prohibitively expensive, but progress is being made in the technology to achieve this. A big challenge is to source the hydrogen from renewable resources. Honda has produced the first 'commercial' hydrogen powered vehicle in the form of the Honda FCX Clarity, although this has limited availability.
111. **Tidal:** Tidal energy capture usually consists of the construction of barrage dam type structures is being examined as a means of converting tidal movements into energy. Turbines installed in the barrage wall generate power as water flows in and out of the estuary basin, bay, or river. There are downsides to this though, the most obvious one being that the structures in themselves are visually obtrusive. There are also ecosystem considerations as the flooding of mud-flats within the estuary together with altered saltwater flow which changes the hydrology and salinity within. That said, they are not near as visually obtrusive as large land based wind turbines.
112. **Wave:** Wave Energy refers to the capture of energy from the motion of surface waves of the ocean. This is still a developing science, which is still in experimental stage but looks promising.
113. **Hydroelectric:** Hydroelectric: the capture of energy from running water such as in a river is perhaps among the oldest of the alternative energy's as was seen in the 17-1800's when countless water mills were erected on river banks to power massive mechanical apparatus. In the 1900's this was developed into a far more commercial scale energy capture with the construction of massive dams. Examples being the famed Hoover Dam on the Colorado River in the USA, The Three Georges Dam on the Yangtze River in China, the Golden Dam situate on the Golden River, in Tasmania, Australia and Ardnacrusha power plant situate on the Shannon River in Ireland.
114. **Geothermal:** Geothermal: work on this form of energy generation is much more advanced than other alternatives. Energy capture ranges from installing a series of pipes in the upper layers of the earth's crust typically about a meter deep in domestic type situations. On a commercial basis, exploitation of hot springs, which often occur on fault lines is usually indicative of thermal energy close to the surface.

115. **Deep Bore Geothermal:** This is essentially 'free' energy contained within the earth's crust. Briefly, it entails boring to depths of between 2 and 3 miles and harnessing energy from the natural heat contained within the earth's crust where temperatures of between 100°C and 200°C can be easily achieved. This is done by circulating water down and back up (rather like a heating system). A very small plant is all that is required on the surface to convert the energy into electricity. There are many examples around Paris, Austria, Germany, Iceland and so on. The Eden Project in Cornwall published plans for such a plant in October of 2019. See: <https://www.dailymail.co.uk/sciencetech/article-7571129/Eden-Project-ahead-17m-geothermal-energy-revolution.html>
116. **Wind at Sea:** There is a far more constant wind flow at sea which makes siting them at sea far more advantageous than on land. In addition and subject to appropriate siting, there isn't near the same visually obtrusive issues. There is also the advantage of utilizing the bedrock and cutting out the cost and wastage of vast amounts of concrete. Apart from fixing them to the seabed as in the case of the Arklow Bank, County Wicklow, there is also the possibility of floating wind farms. See appended article: -
117. Having regard to the foregoing, it is manifestly obvious that wind energy is not a long-term runner and is currently being artificially driven by significant grants, which serve only to create a rush for grants by investors and corporate's driven purely by 'returns' piggybacking on the 'Green' label.
118. Moreover the siting of the wind turbines in a county that markets itself on its heritage is utterly crazy and unacceptable. The midlands have significant populations, together with significant heritage sites, which is of enormous touristic potential.
119. **If one were to persist with wind energy (even in some small manner), they should at the very least be prohibited in the populated and predominantly flat landscape of the midland counties.**
120. We can understand why Wind Energy became the front-runner as it was perhaps the most visually obvious. However, when all the facts are viewed objectively, it is utterly crazy to persist with this strategy. As we have seen above, this is badly flawed. Moreover, the emphasis on wind is largely derived from a lack of public consultation early on in this debate, which is contrary to basic democratic principles and more recently to the Aarhus convention and the Public Participation Directive.

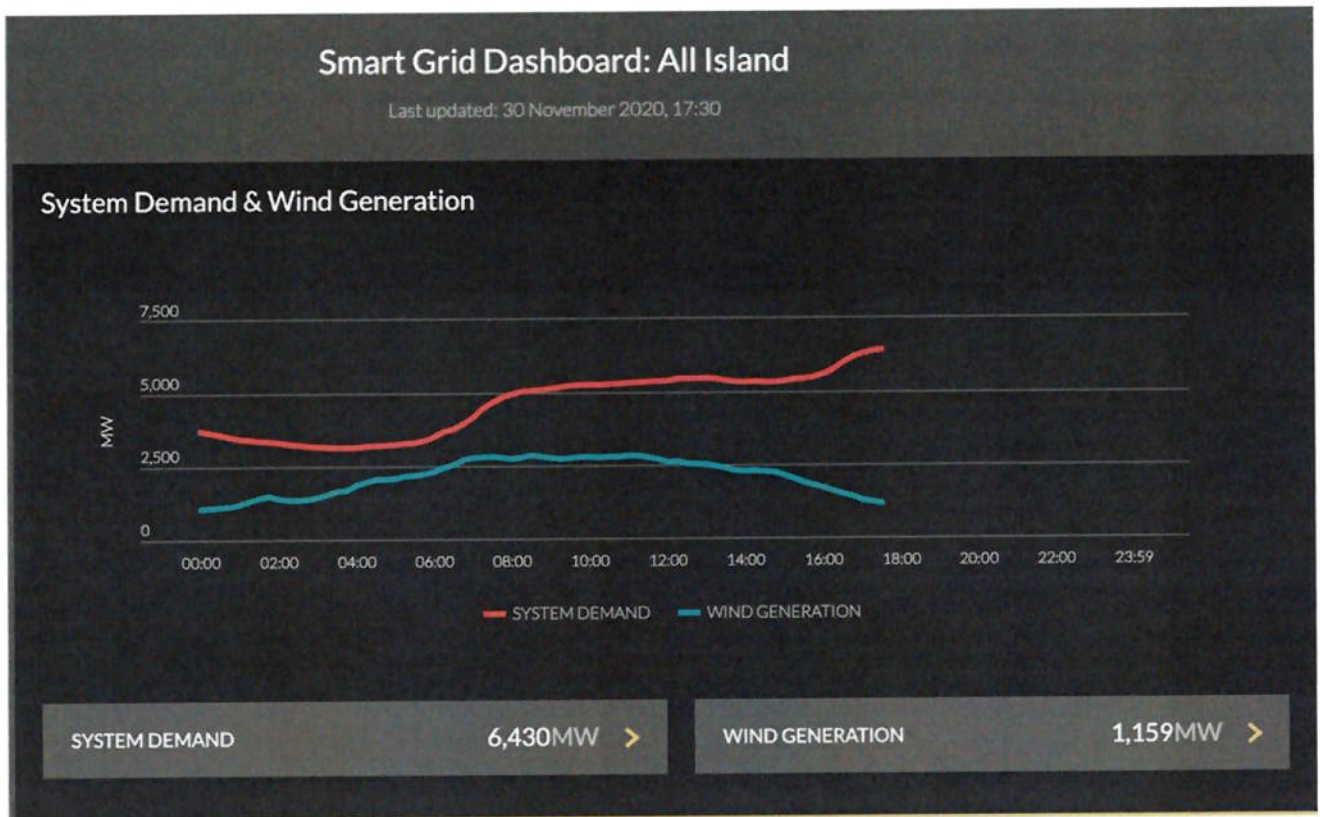
DEEP BORE GEOTHERMAL

121. Off all the points listed above, Deep Geothermal is extremely promising and warrants further discussion having regard to the local context. Our research as shown this to be by far the most promising. For compression purposes, we thought it would be helpful if we compare Deep Bore Geothermal Energy.
122. This is essentially 'free' energy contained within the earth's crust. Briefly, it entails boring 2 boreholes to depths of between 2 and 3 miles. It is dependant on the existence of a particular type of rock to conduct water from A to B. The water coming back up is superheated to temperatures of between 100°C and 200°C. A very small plant is all that is required on the surface to convert the energy into electricity. There are many examples around Paris, Austria, Germany, Iceland and so on. There is comparatively small investment in this energy when compared with that required to site a wind turbine.
123. The Caledonian fault line traverses the Irish and English landscape in a rough line from Limerick Dundalk – Newcastle in the UK. Either side of this, there are two different rock formations on two different tectonic plates. The differences in rock fossils in Scotland and England are well documented. Thermal energy tends to be much closer to the surface on such fault lines. In Ireland a fault line stretching from Limerick to Louth [the Caledonian fault line] where this heat is much closer to the earth's surface than elsewhere. This is where two tectonic plates collided many millions of years ago. All along this fault line there are numerous mines, the most notable being 'Tara Mines' in County Meath. Indeed the management at Tara have shared their knowledge on temperatures/ rock formations, etc to researchers of Deep-geothermal which was most helpful. The correct rock formation [Kentstown Rock Formation] lies beneath this area. Moreover there are numerous 'hot springs' all along this line and there is in fact a townland near Enfield, County Meath known as 'Hotwell'. At times of significant rainfall events, water comes up boreholes at c.22°C, such is the geothermal activity beneath.

124. The irony with the current planning proposal is that alternative energy is virtually underneath the proposed sites. Moreover, as an energy source, it's far more stable and reliable than wind energy. This has been used as an energy source in Austria and other countries. We can inform that legislation is currently being drafted to facilitate this energy source in an Irish context. Therefore, leaving aside all the other planning and related issues, it is submitted that the erection of turbines in the current context is rather ironic. It is unlikely that there would be the same challenging issues re **RoCoF** with the use of Deep Geothermal
125. GT Energy (a specialist Geothermal energy company) had raised capital investment and was ready to begin work here in Ireland in 2011, but due to a minor legal technicality they were unable to proceed. The legislation was to be changed to facilitate this, but sadly this has not thus far happened.
126. The ADVANTAGES of Deep Geothermal over Wind are many and may be summarised as follows:
- a. no visually obtrusive issues,
 - b. no property devaluation,
 - c. no health issues,
 - d. no fluctuations in the availability of energy,
 - e. no spinning reserve (backup) requirement,
 - f. no wastage of finite natural resources such as sand and gravel, steel and so fourth.
 - g. There are numerous suitable geological bedrock areas in Ireland.
127. There has been major progress in the UK regarding this form of energy and I refer the reader to the following links: -
- Eden Project: Drilling starts for geothermal power
The 450-tonne research rig is working to drill down 4.5km (2.8 miles) into granite to test potential power at the Cornwall site as part of a £17m scheme.
19th May 2021
<https://www.bbc.com/news/uk-england-cornwall-57171058>
- Scientists searching for 'Holy Grail' of energy begin drilling into Earth's crust to power Eden Project
Geothermal energy is energy generated and stored in the earth's crust and the Eden Project site could heat 4,000 local homes.
Thomas Moore
Thursday 20 May 2021
<https://news.sky.com/story/scientists-searching-for-holy-grail-of-energy-begin-drilling-into-earths-crust-to-power-eden-project-12311065>
- UK Geothermal: boiling beneath the surface?
By Scarlett Evans
11 Dec 2019
A new report from the British Geological Survey (BGS) says that the only way the UK can reach its target of net zero emissions by 2050 is to explore below the earth's surface - harnessing geothermal energy to achieve its goal. But just how much geothermal energy is the UK sitting on? We investigate.
<https://www.power-technology.com/features/uk-geothermal-boiling-beneath-the-surface/>
<https://pubs.geoscienceworld.org/pg/article-lookup?doi=10.1144/petgeo2019-084>
-

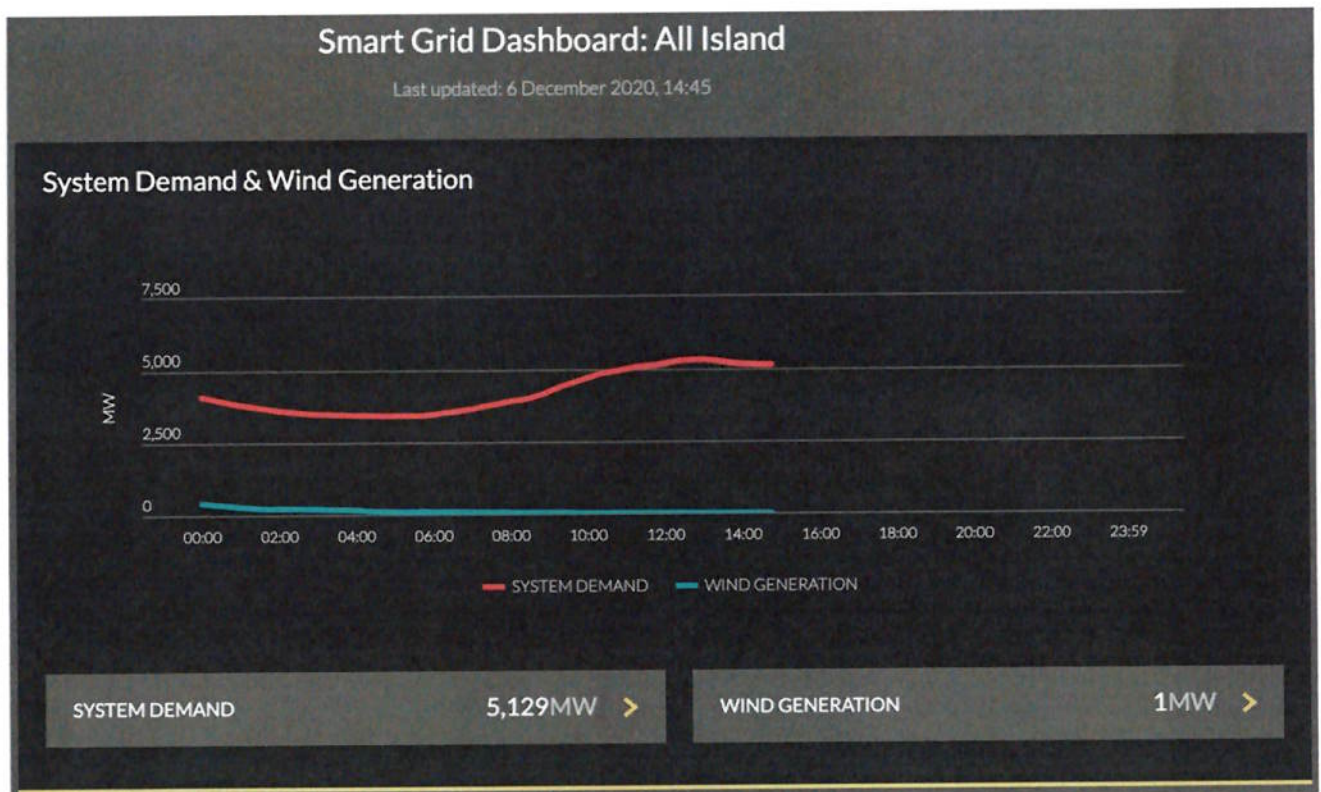
ENERGY MATRIX on RANDOM DATES

To demonstrate just how undependable and unsustainable wind is, I am attaching photographs from various dates since November 2020 which were taken from the Eirgrid Dashboard and which show the system demand together with the contribution from wind energy. [<https://www.smartgriddashboard.com>]



30th November 2020. ©

Note that the demand for electricity was increasing while at the same time wind supply was decreasing.

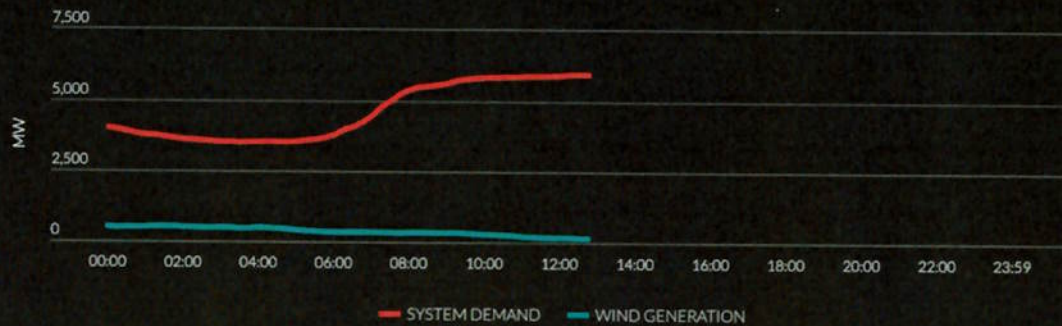


6th December 2020: Weather conditions were freezing fog, which lasted for some days. ©

Smart Grid Dashboard: All Island

Last updated: 7 December 2020, 12:45

System Demand & Wind Generation



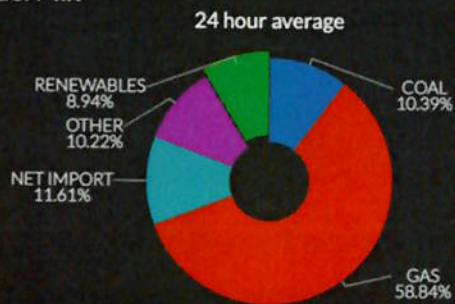
SYSTEM DEMAND

5,944MW >

WIND GENERATION

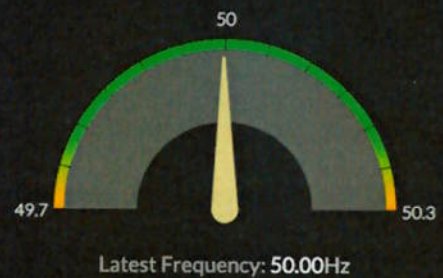
146MW >

Fuel Mix



VIEW FUEL MIX

Frequency



VIEW FREQUENCY

SYSTEM GENERATION

4,990MW >

NET INTERCONNECTION

970MW >

IMPORTING

MARKET PRICE

€0.00 / £0.00MW/h >

CO2 INTENSITY

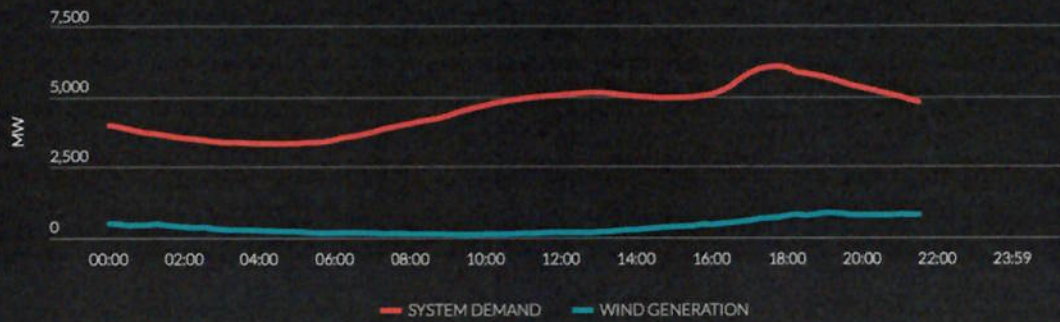
479gCO2/kWh ⓘ >

7th December 2020 ©

Smart Grid Dashboard: All Island

Last updated: 30 December 2020, 21:30

System Demand & Wind Generation



SYSTEM DEMAND

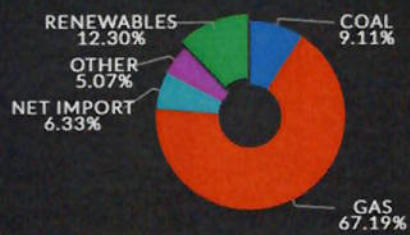
4,803MW >

WIND GENERATION

789MW >

Fuel Mix

24 hour average



[VIEW FUEL MIX](#)

Frequency



Latest Frequency: 50.04Hz

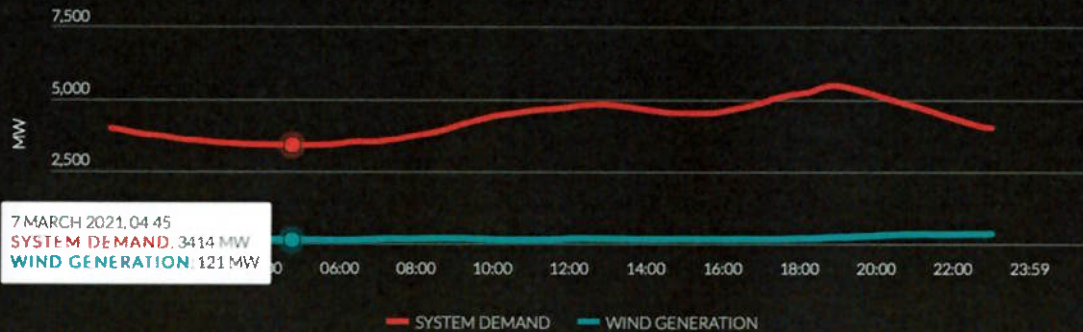
[VIEW FREQUENCY](#)

30th December 2020 ©

Smart Grid Dashboard: All Island

Last updated: 7 March 2021, 23:00

System Demand & Wind Generation



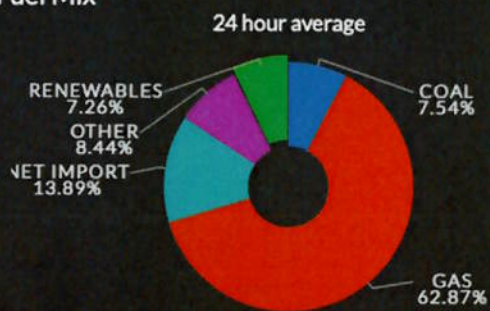
SYSTEM DEMAND

4,036MW >

WIND GENERATION

355MW >

Fuel Mix



[VIEW FUEL MIX](#)

Frequency



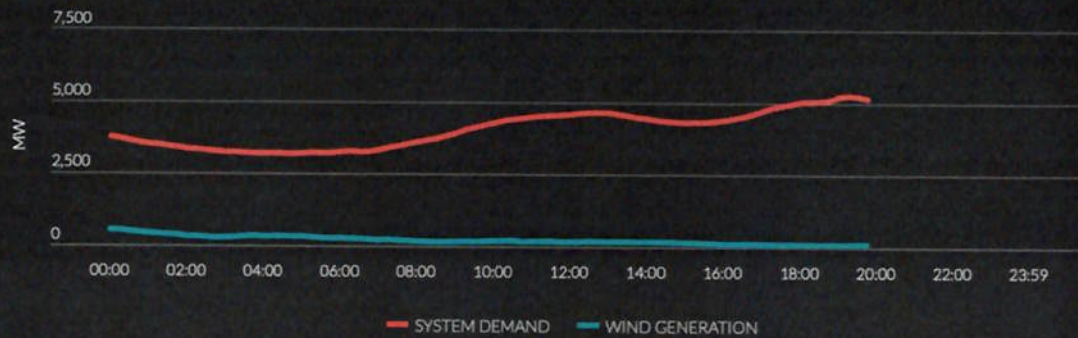
[VIEW FREQUENCY](#)

7th March 2021 ©

Smart Grid Dashboard: All Island

Last updated: 21 March 2021, 19:59

System Demand & Wind Generation



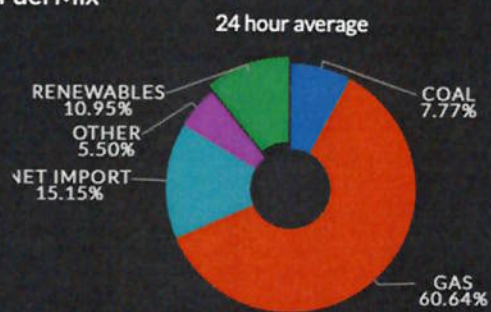
SYSTEM DEMAND

5,149MW >

WIND GENERATION

101MW >

Fuel Mix



[VIEW FUEL MIX](#)

Frequency



[VIEW FREQUENCY](#)

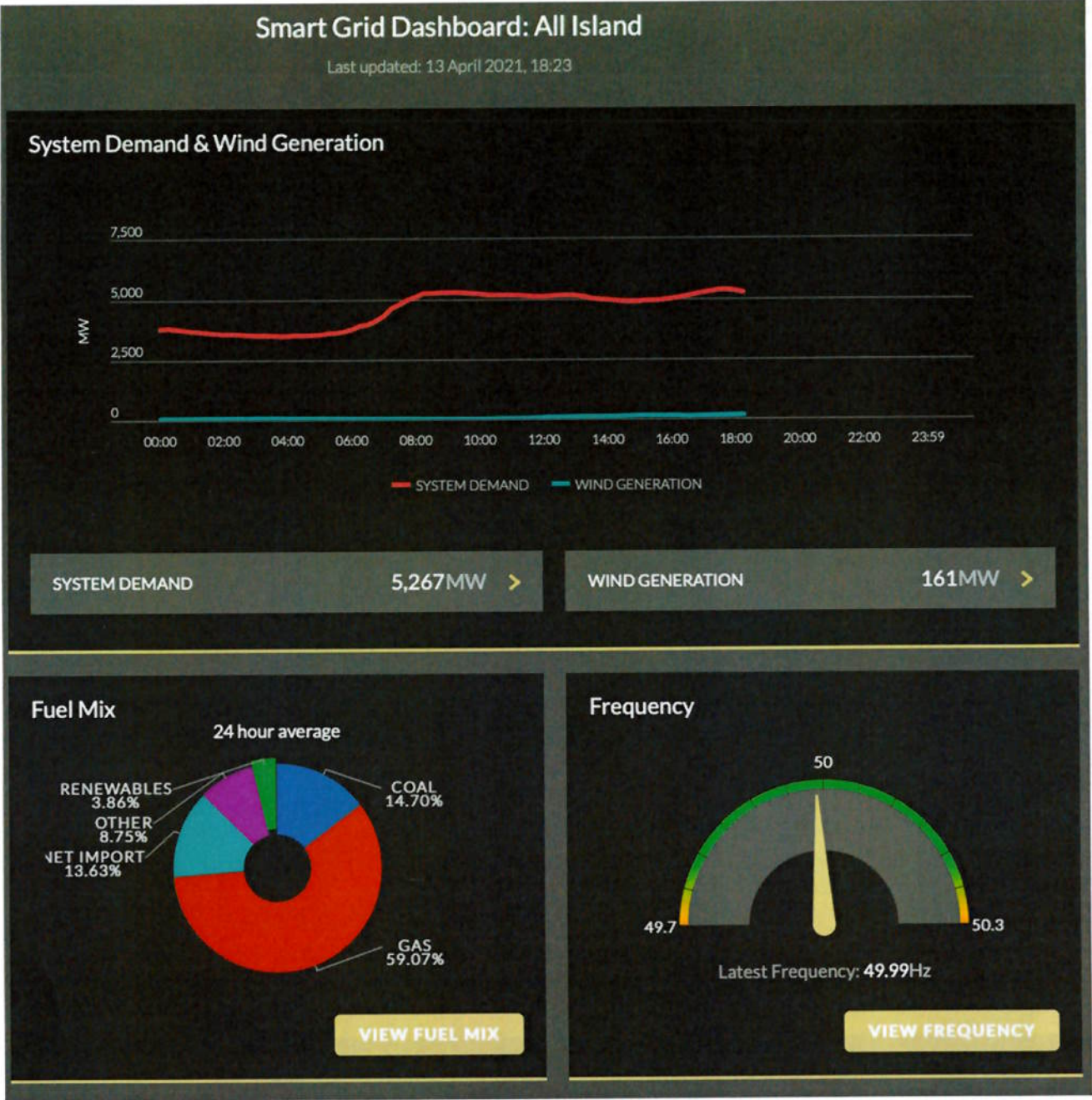
SYSTEM GENERATION

4,192MW >

NET INTERCONNECTION

946MW >

21st March 2021 ©

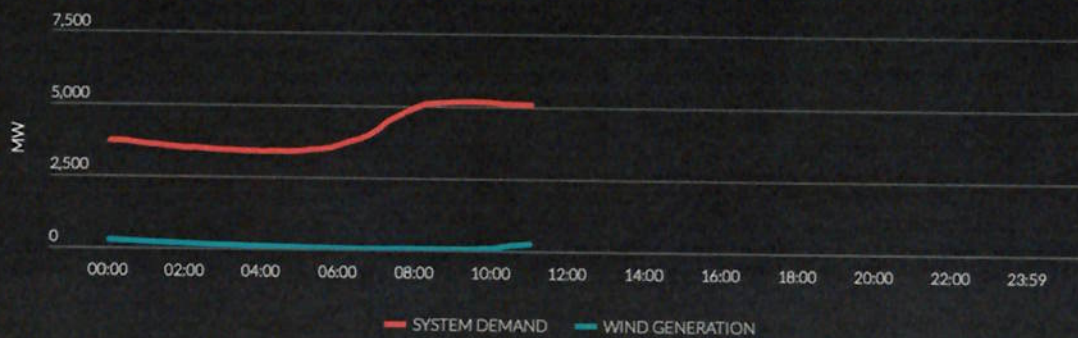


13th April 2021 ©

Smart Grid Dashboard: All Island

Last updated: 20 April 2021, 11:03

System Demand & Wind Generation



SYSTEM DEMAND

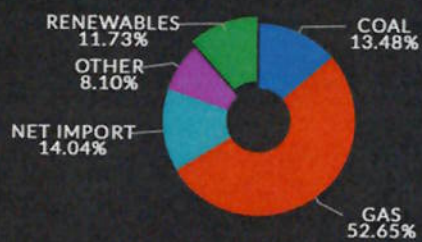
5,090MW >

WIND GENERATION

237MW >

Fuel Mix

24 hour average



VIEW FUEL MIX

Frequency



VIEW FREQUENCY

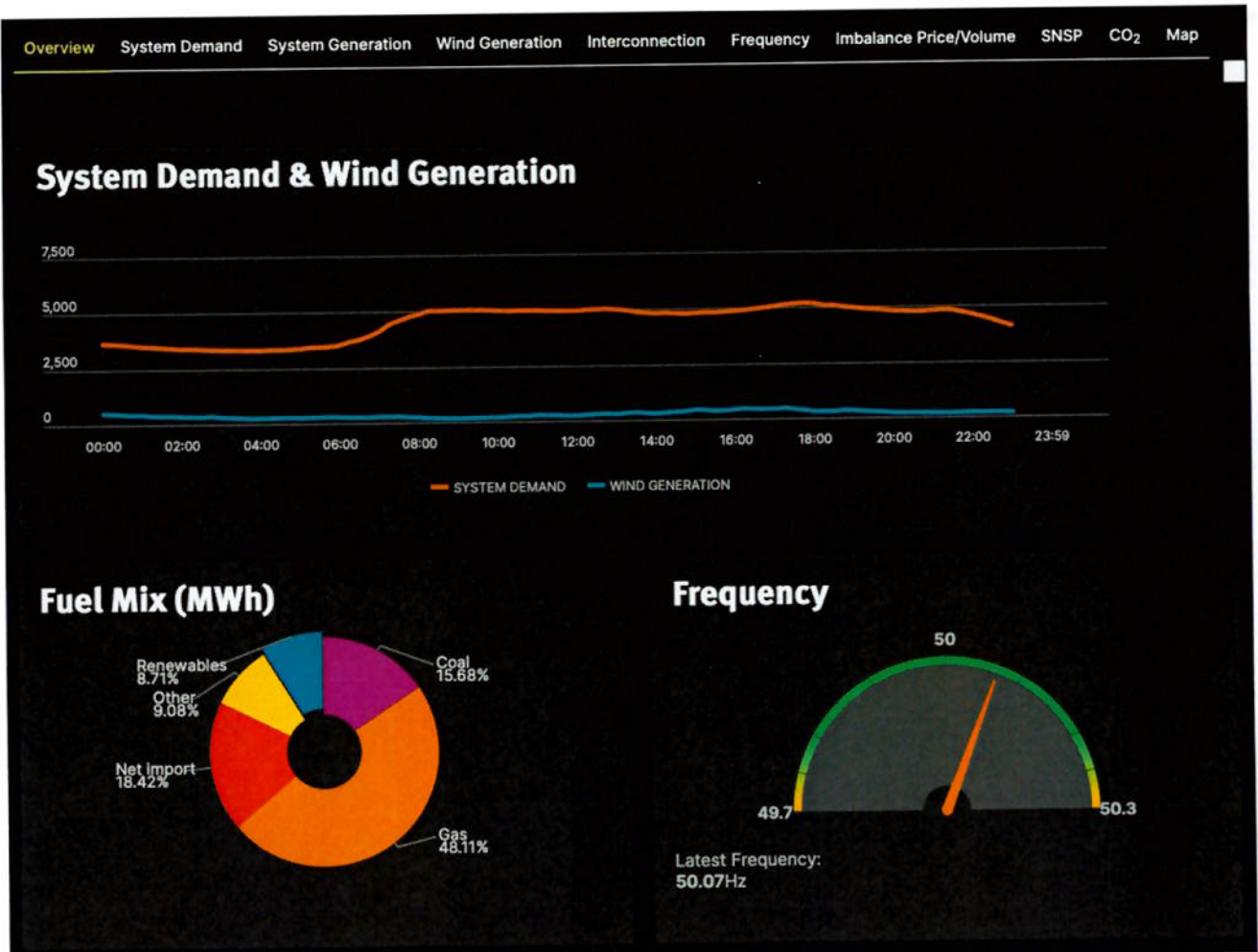
SYSTEM GENERATION

4,105MW >

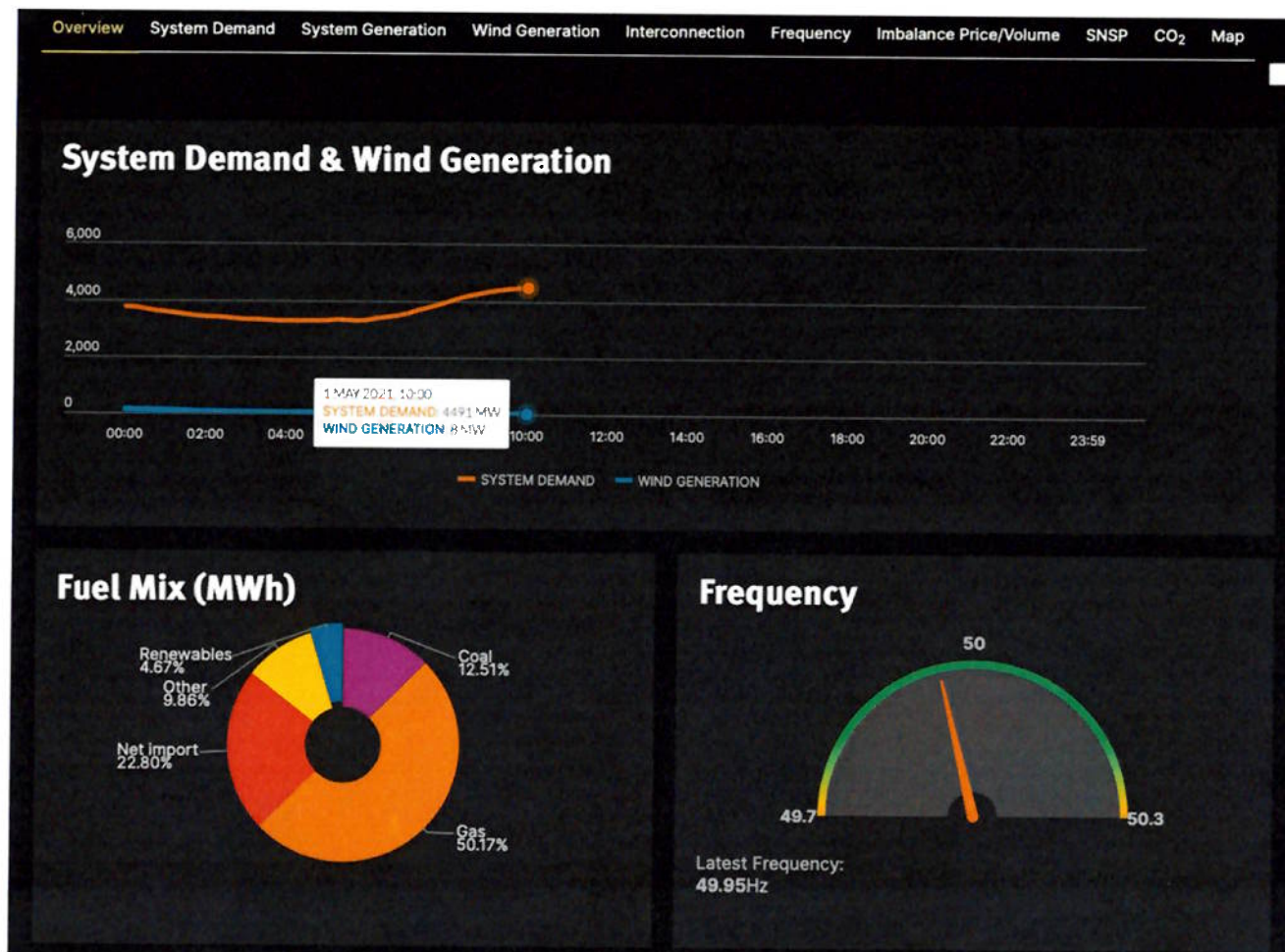
NET INTERCONNECTION

976MW >

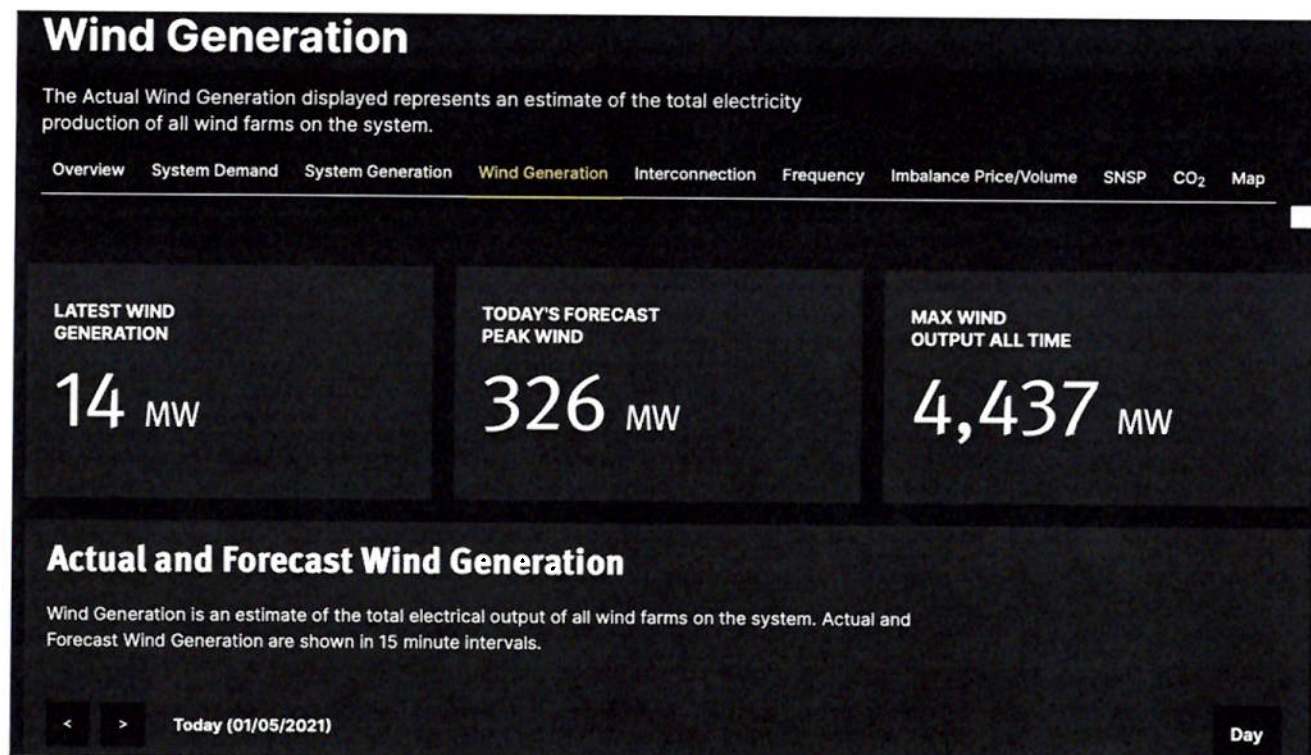
20th April 2021 ©



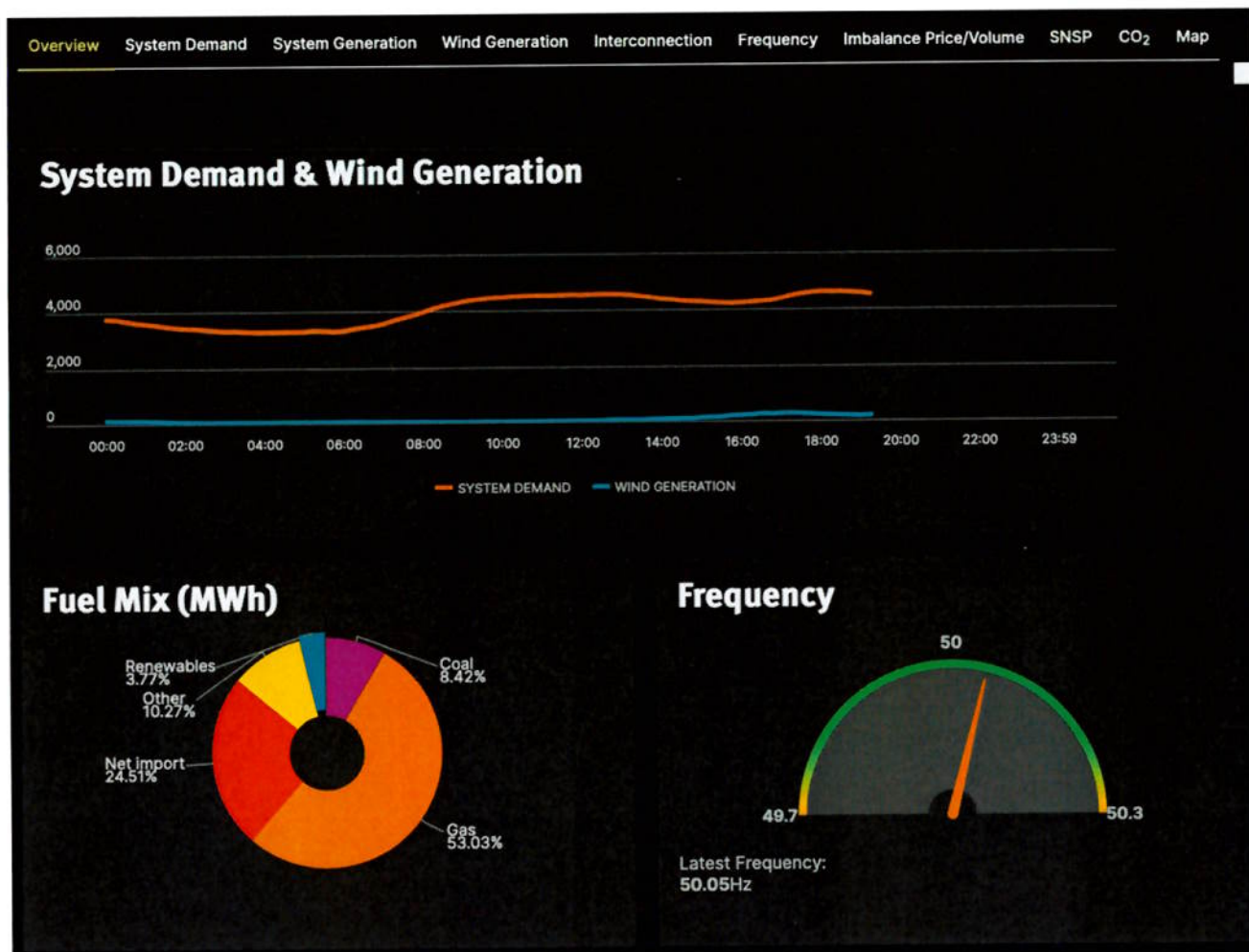
29th April 2021 ©



1st May 2021 ©



1st May 2021 ©



1st May 2021 ©

128. It is remarkable that during times of frosty weather when electricity is at a premium, wind delivers little or nothing. The same can be said when the country is basking in sunshine and there is little or no wind. The converse then occurs with heavy demand on Air Condition units put a heavy draw on electricity and it having to be provided by gas fired plants. This is a ludicrous situation.

129. It is inappropriate that wind should be prioritised over other forms of renewable energy. Why not for example Deep Bore Geothermal energy which is less invasive on humanity and the environment?

PLANNING ENFORCEMENT/ POLICING

130. Without prejudice to the main rationale advanced in this submission that the current proposal is contrary to numerous planning principles, we are obliged to point out that it has been our experience in a long course of dealings with the enforcement departments of numerous municipal authorities, that enforcement of the planning laws has been poor and lethargic.

131. We regularly, encounter a plethora of conditions pertaining to a given planning permission, which are not enforced or followed up on. This continues to be the case even after specific concerns and issues have been raised. It follows that we would have similar concerns in the current context and other future developments.

132. Moreover, the concept of self-policing, which is where operators are mandated to submit various results to planning authorities on a specified regular basis, has also proved to be extremely problematic. Our experience has been that compliance with such requirements has been poor. Therefore it would be remiss of us not to express similar concerns for this and all other proposed developments of a significant or industrial nature.

CONCLUSIONS

133. Having regard to the foregoing it is manifestly obvious that wind energy is not a long-term runner and is currently being artificially driven by significant grants, which serve only to create a rush for grants by investors and corporate's driven purely by 'returns' piggybacking on the 'Green' label.
134. Moreover the sighting of the wind turbines in a county that markets itself on its heritage is utterly crazy and unacceptable. The midlands have significant populations, together with important heritage sites, which are of enormous touristic potential.
135. When all the facts are viewed objectively, it is utterly crazy to persist with this current wind energy policy, which having regard to the above is badly flawed. As we have seen above, this is badly flawed. Moreover, the emphasis on wind is largely derived from a lack of public consultation early on in this debate, which is contrary to basic democratic principles and more recently to the Aarhus convention and the Public Participation Directive.
136. Notwithstanding the above, it is considered that all existing roof space should be utilised before using valuable landmass and this important bog land habitat. As such, this application is considered inappropriate for this site.

ENDS