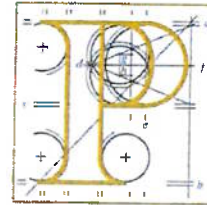


Our Case Number: ABP-317560-23



An
Bord
Pleanála

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

Date: 18 January 2024

Re: Proposed windfarm development including 13 no. wind turbines in Bunnyconnellan, Co. Mayo and hydrogen plant in Castleconnor, Co. Sligo.
Carrowleagh, Bunnyconnellan, Co. Mayo and Curraun, Castleconnor, Co. Sligo.

Dear Sir / Madam,

An Bord Pleanála has received your submission in relation to the above mentioned proposed development and will take it into consideration in its determination of the matter.

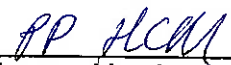
The Board will revert to you in due course in respect of this matter.

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 or email sids@pleanala.ie quoting the above mentioned An Bord Pleanála reference number in any correspondence with the Board.

Yours faithfully,


Lauren Murphy
Executive Officer
Direct Line: 01-8737275

PA09

Tell
Glao Áitiúil
Facs
Láithreán Gréasáin
Ríomhphost

Tel
LoCall
Fax
Website
Email

(01) 858 8100
1800 275 175
(01) 872 2684
www.pleanala.ie
bord@pleanala.ie

64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

Lauren Murphy

From: Bord
Sent: Thursday, January 18, 2024 9:57 AM
To: SIDS
Subject: FW: PA16.317560 - Mercury Renewable (Carrowleagh) Limited
Attachments: 2024-01-17-EA to ABP-PA16.317560-HYDROGEN.pdf

Follow Up Flag: Follow up
Flag Status: Completed

-----Original Message-----

From: Eco Advocacy <info@ecoadvocacy.org>
Sent: Thursday, January 18, 2024 9:44 AM
To: Bord <bord@pleanala.ie>
Subject: PA16.317560 - Mercury Renewable (Carrowleagh) Limited

Dear Sir/ Madam

Please find attached [invited] submission in respect of the above referenced planning application.
Kindly acknowledge receipt of same.

Sincerely,
Kieran Cummins
Eco Advocacy



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

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

17th January 2024

INVITED OBSERVATION

Reference: ABP: PA16.317560
Reference: ABP: <https://www.pleanala.ie/en-ie/case/317560>
Application lodged: 6th July 2023 (Thursday)
Applicant/s: Mercury Renewable (Carrowleagh) Limited
Dev. Address: Proposed windfarm development including 13 no. wind turbines in
Bunnyconnellan, Co. Mayo & hydrogen plant in Castleconnor, Co. Sligo
Submission Fee: N/A

Dear Sir/ Madam

Further to yours of the 12th December last wherein you provided us with correspondence received from the applicants and invited us to consider and provide observations. Accordingly, please find our observations and comments set out hereunder.

At the outset, we reiterate our belief that this application is **premature** pending satisfactory **guidelines** for utility scale hydrogen instillations. It is further considered that this premature pending a full **national led SEA assessment** of utility scale wind and hydrogen instillations together with the loss of finite agricultural land together with natural habitat.

Note that there are **9 pages** in total to this submission inclusive of the cover page.

Yours sincerely,

Kieran Cummins

Observation re PA16.317560 (Mayo and Sligo County Council's)

1. We note that Coillte made submissions asserting that the minimum distance between turbines and adjoining properties should be less than two rotor blades. It is submitted that this is erroneous. We submit that the distance should be a minimum of 7 times tip height.
 2. Curiously the applicants take issue with the Coillte suggestion and go into all sorts of arguments to refute this. We believe these arguments do not stand up to scrutiny and should be disregarded. We note that they also rely on '**Wind Energy Ireland**' to support their proposition. **Wind Energy Ireland** is the trade association of the wind lobby. Reliance on assertions from a lobby group of any kind would be foolhardy and we strongly discourage this.
 3. Significant submissions were made regarding the issue of sustainability. These have not been adequately dealt with or addressed at all. It remains the case that wind is an intermittent form of energy, which is not dispatchable and needs to be backed up.
 4. **Ecology:** We made significant submissions re the issue of Ecology. We note the response, but they fail to satisfactorily address our concerns and appear to merely reiterate much of what was already stated in the EIAR. There are significant archaeological artifacts and tombs and we are also very concerned that archaeological issues need further evaluation.
 5. We again recommend that a full cost/ benefit analysis be conducted to establish value for money given the resources required taking into account the intermittent nature of solar energy. 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.
 6. We note at a short paragraph on Rare Earth Metals at 4.2.5. This seems to be confined to the Hydrogen element of the proposal and apparently ignores the issue of rare earth metals re the proposed wind turbines. What about **neodymium** and **cobalt** for example? We were also unable to find any discourse on the resources required to give effect to the proposals; i.e. concrete, steel, hardcore, etc. This is particularly significant having regard to the wind turbine element of the application. The applicant goes into a some discourse on **Gallium**. That isn't even listed as a rare earth metal; rather a chemical element. The applicants fail to address the issue of rare earth metals which will be used in the implementation of the proposals. We are alarmed at the approach adopted by the applicant. This is in our opinion somewhat of a straw man type argument. Please note that submissions by the public / NGO's are usually made on an altruistic basis by people with little time or resources. It is not good enough that applicants should then seek to find fault with a submission and use one issue (in this instance; Gallium) so as to discuss this and avoid discussing the various other pertinent issues. This kind of attitude is a slap in the face to meaningful public participation.
7. There are 17 rare earth metals. These may be summarised as: Scandium [Sc], Yttrium [Y], Lanthanum [La], Cerium [Ce], Praseodymium [Pr], Neodymium [Nd], Promethium [Pm], Samarium [Sm], Europium [Eu], Gadolinium [Gd], Terbium [Tb], Dysprosium [Dy], Holmium [Ho], Erbium [Er], Thulium [Tm], Ytterbium [Yb], Lutetium [Lu]. The applicant should be required to identify each and every rare earth metal which will be used in the planning proposals together with the quantity required. They should also provide full details on how each of these elements are sourced and mined together with the implications for humans in the vicinity.
8. The applicants should also be required to provide a full inventory of all resources required to implement their proposals. This should include quantities of Concrete, Steel, roofing materials, aggregate, hardcore, fossil fuels (diesel, petrol, kerosene, etc), etc. This is not an exhaustive list.

9. Given the attitude of the applicant, we are now obliged to provide information on sustainability.

THE PROPOSAL / SUSTAINABILITY

10. **Developer Led:** the proposal is a developer led proposal. 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 planned and not developer led. This proposal is inappropriately developer led acting without any proper national and location selection strategy.
11. **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.
12. **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.
13. 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

14. It is considered helpful to provide a short analysis of some of the components of wind turbines, which we will now outline.
15. **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.
16. **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 known as concrete. For the turbines currently being proposed, upwards of 200 lorry loads of readymix concrete are required to anchor each turbine (in addition to lots of reinforcing steel).
17. **ROADS:** Infill for access roads: sourced from crushed rock derived from quarrying are also required.
18. **RARE EARTH 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.

19. **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.

- a. 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.'*
- b. 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 China's most polluted city.
- c. 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 China's 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>

20. 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>

21. Neodymium is but one example of a rare earth metal. The applicants should be able to provide a full assessment of ALL rare earth metals used and provide a full and frank discourse. This is essential information if we are to properly assess this application.

22. **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 referenced articles should be supported in any way.
23. **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.
24. **Where does the aggregate come from?**
- a. 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.
 - b. 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!
25. **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.
26. **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 frequently on this issue. You may also find evidence from *Bruce Rapley*, *Huub Bakker* and *Rachel Summers*. Curiously we were unable to find any reference in the EIAR to 'Infrasound'.
27. There have been many newspaper reports about the safety of industrial wind turbines and indeed many can be seen 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>

28. Spinning Reserve:

- a. 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.
- b. 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. '
- c. 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]
- d. 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.'*

29. Efficiency of Wind Turbines:

- a. *'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]
- b. *'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

30. Grants/ Subsidies:

- a. 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.
- b. 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.**

RoCoF

31. **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':
- a. *'Loss of Mains (or islanding) occurs when part of the public utility network (incorporating generation) loses connection with the rest of the system*
 - a. *If LOM is not detected, then the generator could remain connected, causing a safety hazard within the network.*
 - b. *Automatic reconnection of the generator to the network may occur causing damage to the generator and the network*
 - c. *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.*
 - d. *LOM performance requirements – stability*
 - e. *LOM should be stable under remote faults cleared by the utility system.*
 - f. *It is undesirable to issue a false trip as it leads to the unnecessary disconnection of the generator.'*

OTHER SOURCES OF ALTERNATIVE ENERGY

32. **Alternative Energy Sources:** Renewable Energy comes in many forms including: -

- a. Solar Energy,
- b. Biomass,
- c. Biofuels,
- d. Tidal Energy,
- e. Wave Energy,
- f. Hydroelectric,
- g. Geothermal,
- h. Hydroelectricity, etc.

It is appropriate that we should give a brief analysis of each below.

33. **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. It is important to state that we only support solar on rooftops. The use of finite agricultural land for solar is an unacceptable use of finite resources.
34. **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.**
35. **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 or 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.

36. **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.
37. **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.
38. **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.
39. **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.
40. **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>
41. **Deep Geothermal in a local context:** Of 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.
 - a. 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.
 - b. 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.
 - c. 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.
 - d. The irony with the current planning proposal is that alternative energy is virtually underneath the proposed sites.
 - e. 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.
 - f. We understand that legislation is currently being drafted to facilitate this energy source in an Irish context.

- g. 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.

42. The ADVANTAGES of Deep Bore Geothermal over Wind are many and may be summarised as follows: -

- a. no visually obtrusive issues,
- b. no fluctuations in the availability of energy and dispatchable,
- c. no property devaluation,
- d. no health issues,
- e. no noise,
- f. no infrasound,
- g. no spinning reserve (backup) requirement,
- h. minimal wastage of finite natural resources such as sand and gravel, steel and so fourth.
- i. There are numerous suitable geological bedrock areas in Ireland.

PLANNING ENFORCEMENT/ POLICING

- 43. 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.
- 44. 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.
- 45. 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.
- 46. 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.

ENDS

ENCLOSURES: -

- 1. None