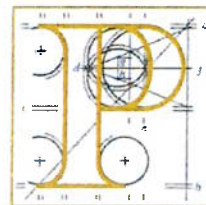


Our Case Number: ABP-317560-23



An
Bord
Pleanála

Theresa and Padraic Morrell
Carraun
Corballa
Co. Sligo
F26N156

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,

PP EGM

Lauren Murphy
Executive Officer
Direct Line: 01-8737275

PA09

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Lauren Murphy

From: Bord
Sent: Wednesday, January 17, 2024 9:28 AM
To: SIDS; LAPS
Subject: FW: Case Number ABP-317560-23
Attachments: Hydrogen Demand.docx; Finances.docx; noise.docx

Follow Up Flag: Follow up
Flag Status: Flagged

From: Teresa Reddington <[REDACTED]>
Sent: Wednesday, January 17, 2024 2:11 AM
To: Bord <bord@pleanala.ie>
Subject: Case Number ABP-317560-23

Carraun,

Corballa

Co. Sligo

F26N156

17th January 2024

Re: ABP -317560-2324

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

To Whom It May Concern:

Thank you for sending us the Jennings O'Donovan Consulting engineers' response to third party submissions and observations, planning application, reference Re: ABP -317560-23

Our house is HH15 on Figure 1.3 of the EIAR. We were not invited to any meetings organised by Mercury Renewables. We received the May 2022 and September 2022 newsletters. We did not receive any other correspondence from Mercury Renewables. We were not invited to the Hydrogen Plant Neighbours meeting in Muddy Burns on 25th May 2023 referred to on p53 response document.

There was no profile erected for the Hydrogen Plant buildings, and the virtual wireframe montage does not clearly represent the proposed development or topography. The scale of the building on the video on mercuryrenewables.ie/hydrogen is very misleading.

I am concerned that no design report was submitted for the junction N59 / L66121. This was cited by the TII and referred to on p49 of the response document. The applicant stated that the design of the N59 L66121 has been carried out. However this was not the case.

The applicant has only specified vehicles, transporting hydrogen, in relation to the quantity of hydrogen on board. It is their working assumption that lorries used will carry 1200kg of hydrogen. There are no specifications of the weight of these lorries loaded with cylinders of hydrogen. There are no dimensions given for these lorries. There is no road safety audit for these vehicles on the L66121 or N59. Traffic counts are based on this size vehicle only. These vehicles are not common and it cannot be assumed that they will be generally available and certified for use in Ireland/ Europe, before the hydrogen plant could be operational.

The working assumption is that the lorries holding 384kg will be used until such time as larger lorries will be available. In the case of these lorries 176 lorry movements will take place when the site is in full operation from the L66121 to the N59. No specifications re weight, or dimensions have been estimated for these either.

I am concerned as this traffic will make the N59 more dangerous for us exiting and entering our property from the N59

Concerns re devaluation of property were ignored by the applicant. There is no reference of this fact, when we query insurance in the future. Should any accident happen on site, it is an assumption that insurance prices may increase, or it may become impossible to get a quotation.

We are still concerned that the abstraction of water as we are avid gardeners

We are concerned for the wildlife in the area as we feel there could be a potential water loss in the Brusna and Dooeighney rivers.

Since the Dooeighney river passes close to our house, we are still not clear as to how the water storage or amounts of discharge will affect the groundwater in the area.

I am worried that the applicant also plans to use mains water when short of water on site. In the event of a water shortage, all customers will be required to reduce usage so we cannot understand how Mercury Renewables could be allowed to use water for hydrogen when drinking water for the population potentially could be reduced.

We use a telescope and enjoy viewing the night sky . We are concerned that there will be light pollution that will hinder this for us.

Market for Hydrogen: See attached file.

Dust. The applicant has admitted that there will be dust during the construction phase. We have health issues and are very concerned about this.

Figure 1.3 in the EIAR shows Hydrogen plant site house locations. This is referred to in the Noise and Vibration chapter 11 of the EIAR. However, due to inaccuracies re houses Hh10 and HH13 detailed in this chapter, (which don't exist) I fear that other information in this chapter may also be incorrect.

Hydrogen Production/Demand: See attached file.

Hydrogen Plant Operating Noise: See attached file.

Finances/Funding: See attached file.

This area of Co. Sligo is not zoned for industry. We request that An Bord Pleanála holds an oral hearing in relation to this planning application.

Please acknowledge receipt of this correspondence.

P. and T. Morrell.

Hydrogen Production/Demand

P.65.66

Hydrogen has less energy per unit than Jet-A1 fuel.

The use of Hydrogen in commercial aviation is a long way off. Protocols processes and procedures have yet to be developed for this sector and safety is a huge issue. Maritime applications are also years away.

Just to be clear the timeline of 2024-20226 is to develop a road map to bring net zero dispatchable power solutions to market by 2030. It does not mean that there is a guaranteed market for the product even then.

If Eir Grid is unable to accept the Wind Farm output and the surplus energy is diverted to the Hydrogen Plant, what is the Applicant going to do with all his Hydrogen until that point? He cannot store more than a day's output so would have to remove it off site to a storage area which itself will have a capacity limitation. Either that or shut down the Wind Farm temporarily. This does not make business sense, so where the financial data is to justify the investment.

Statement implies that some of the time, some of the wind farm energy will be diverted to the EirGrid to satisfy demand. Other times, some of? Will be diverted to the hydrogen plant so that the Wind Farm is not idle. The Applicant does not advise how this very complex procedure is to be managed ie., The Hydrogen Plant will receive variable amounts of energy throughout the day and its various electrolyzers will have to be shut down/started up as required. Is this technically feasible?

Item 12 Page 69 of Planning Statement

The Applicant seems to be advising that there is still a restriction in the EirGrid network? If so, there are no stated plans in the application to increase this capacity.

The Applicant advised that hydrogen fuel cells could be a potential market for his product. However, different applications demand different purities of hydrogen. The Applicant states the hydrogen produced will be 99.9% pure, this is a meaningless

figure as different applications can tolerate differing types of, and differing levels of, impurities, all of which can have different consequences.

In Chapter 2 Table 2.4 the Applicant has made no reference to ISO 14687-2019. "Hydrogen fuel quality Product specification" which sets out impurity levels for different applications. E.g. boilers that burn hydrogen will generally tolerate higher concentrations of impurities than a road vehicle that uses a polymer electrolyte membrane fuel cell (PEMFC)

The Applicant states that HGV's which will carry away the hydrogen tubes will be supplied and manned locally and expects the vehicles to use fuel cell technology fed from the output of Hydrogen Plant (when available- otherwise diesel HGV's will be used) Fuel-cell technology for HGV's is not mature. If Polymer electrolyte membrane fuel cell (PEMFC) technologies will be used they will require high-purity hydrogen, yet other anticipated markets such as industrial/domestic boilers or high-heat applications do not need such a high grade. The Applicant continuously quotes the mantra that Ireland has to produce more zero-emission products to meet Net Zero but this is not backed in the Application by the science of hydrogen production.,

Finances/Funding

It has not been possible to find a funding statement in the Planning Statement or Environmental Impact Assessment. This is a concern, for the Applicant has not carried out, or is not willing to divulge, a complete analysis of costs and profitability.

There is no sensitivity analysis to determine the project's vulnerability to volatilities in for example:

1. Demand for hydrogen
2. Comparative costs of hydrogen generation compared to other sources
3. Feed-in tariffs to EirGrid
4. Material costs
5. Currency exchange rate fluctuations

There is no detail of capital recovery, renewal costs (e.g. electrolyzers etc.) nor potential profit or loss assessment.

The Applicant has spent a lot of money in submitting the original Planning Application in 2013 (without actually building anything !) and has spent even more money in the current Application.

Chapter 1. Paragraph 1.10.5 also states – without a financial analysis:

Annual rates of between €650,000 – €780,000 payable to Mayo County Council over the Wind Farms 40 years of operation

Annual rates to Sligo County Council over the operational life of the Hydrogen Plant.

Are these costs included in the €200 million ?

Without a financial statement, we will never know, and that is why this project should never get the go-ahead. The Applicant has not provided any financial breakdown so clearly he is either incompetent or is hiding something.....

Community Benefit:

Chapter 1 paragraph 1.10.5 states “Establishing a community benefit fund of €500,000 per annum for the first 15 years of operation that will be administered by a management committee.

As identified in Section 2.3 the Applicant does not demonstrate how he could generate enough profit to be able to put €500,000 per annum into a community fund, local

communities or charities. Without a detailed financial analysis this could appear as an inducement, purely to undermine opposition to the Applicants proposals.

Furthermore, in Chapter 2 paragraph 2.10 the Applicant 'clarifies' by stating: The project has the potential (our emphasis) to make more than €500,000 available per annum in the local area for community funding for RESS period, consistent with Government Policy. However, the above figure is indicative only and will be dependent on the generation capacity of the wind farm which is influenced by a number of factors including:

1. Number and type of wind turbines permitted
2. Capacity and availability of energy production of the delivered turbines
3. Quantity of wind and wind conditions in any given year.
4. Timing of the electrolyser module phasing to full capacity as the hydrogen market
5. grows

In other words, the windfall is not guaranteed, and the Applicant has introduced a new dependency – the full capacity of the Hydrogen plant. If capacity is not achieved the Applicant may not be liable to distribute funds. **Potential get-out clause**

The Applicant must be made to provide more concrete assurances that can be secured in any future permission

The absence of a detailed financial analysis would indicate that this is not a serious submission. Any investor worth the title would walk away from such a proposal as it stands.

Finally, the source of funding could be an issue, should the end result be the export of significant profits to unfriendly jurisdictions.

Hydrogen Plant Operating Noise

15.1 Chapter 11 paragraph 11.27.42 states: “The noise model accounts for the topography of the existing and proposed land in the vicinity of the site, where it is proposed that the Proposed Development will sit at a lower ground level in comparison to the existing land, where the raised land surrounding the site effectively acts as a barrier. “ This is clearly untrue. Drawing 41035-1000-G1000 shows that the site has to be re-profiled, and that the whole of the south elevation is located on a 5m high slope. On the west elevation, The electrolyser plant has a low embankment in front of it, ranging from 3m at its highest point to ground level at the other end of the electrolyser building. From there, a gradual slope descends some 5m below the plant’s finished ground level. 15.2 A rough sketch is shown in Figure 3 below. This is not to scale. 15.3 Compared to the height of the electrolyser building, the low embankment (shown in green) will provide little noise attenuation, whereas the 5m slope (shown in brown) will only exacerbate the noise issue particularly to the south. 15.4 Chapter 11 Table 11.26 provides the output sound power level for site components and Figure 11.9 provides noise contours – presumably dBL Aeq ,24h because the plant will run continuously). The Applicant does not state how these contours have been modelled.

15.5 Mitigation measures are set out in Chapter 11.27.4.4 but are lacking in detail – see paragraphs below.

15.6 The metal-clad Electrolyser building will be fitted with insulation that – according to the Applicant -has a ‘minimum RW 3 of 35dB. However, this is a building some 130m long and 110m deep and 16m high that will contain equipment with an output noise level of 83dBA.

Given that it has doors, there are vents in the roof, and given that this is a metal clad-building with resonance potential, how can the Applicant be sure that 35dB attenuation will be achieved. ?

15.7 The noise contour for the Electrolyser building is shown as 40dB yet with perfect insulation and no resonance, this figure should be $83 - 35 = 48\text{dBA}$!15.8

Fin-fan coolers produce 102dBA and the Applicant advises that they will have an enclosure that attenuates by 12dB, giving a total of 90dB. Yet the highest noise contour shown on Figure 11.9 is 70dBA. The figure of 102dBA is similar to

the noise output of a wind turbine yet if one studies Figure 11.2 (Wind Turbine Noise Contour Map) the noise contours are much more spread out with the best part of half a kilometer between the 45dB and 40dB contours. There appears to be an anomaly in the way these contour maps are modelled.

15.9 Added to the Electrolyser building noise and the Fin fans, are the Compressors (60dBA =85dBA-25dB)., Transformer (88dBA), Water Treatment Pumps (85dBA) and Other Pumps, Fans etc. (85dBA). All this adds up to a considerable noise profile which Figure 11.9 does not fairly represent.

15.10 The palisade fence around the Plant is 2.4m high (compared to the electrolyser building at 16m) and is not an acoustic barrier therefore has little impact on noise emissions.

15.11 Consequently, Chapter 11 Table 11.26 Predicted Noise Level. Figures are not credible.

15.12 Chapter 11 Paragraph 11.27.4.6 states that “The level of ground vibration from the 3 (acoustic reduction figure) operation of the Hydrogen Plant is below human threshold of 0.2 mm/s for the operation of the plant including trucking from same”. There are no calculations to back up this claim, nor stated mitigation measures such as anti-vibration (AV) mounts for equipment.

Vibration is also dependent upon the construction of the concrete slabs and building.

There should be a formal system put in place as part of any permission stating exactly what the noise limits are, how they are monitored, how complaints are handled and what remedy/fines can be applied. It is a concern generally that there is so little proposed governance and over sight of this project during operational phase.

Lauren Murphy

From: Bord
Sent: Wednesday, January 17, 2024 2:35 PM
To: SIDS
Subject: FW: Case Number ABP-317560-23
Attachments: Hydrogen Plant elevations.jpg

From: Teresa Reddington <[REDACTED]>
Sent: Wednesday, January 17, 2024 1:33 PM
To: Bord <bord@pleanala.ie>
Subject: Case Number ABP-317560-23

Carraun

Corballa

Co. Sligo

F26N156

17th January 2024

To Whom it may concern:

We omitted to enclose the attached drawing of Hydrogen Plant elevations
Please find the said file attached.

Regards
P & T Morrell

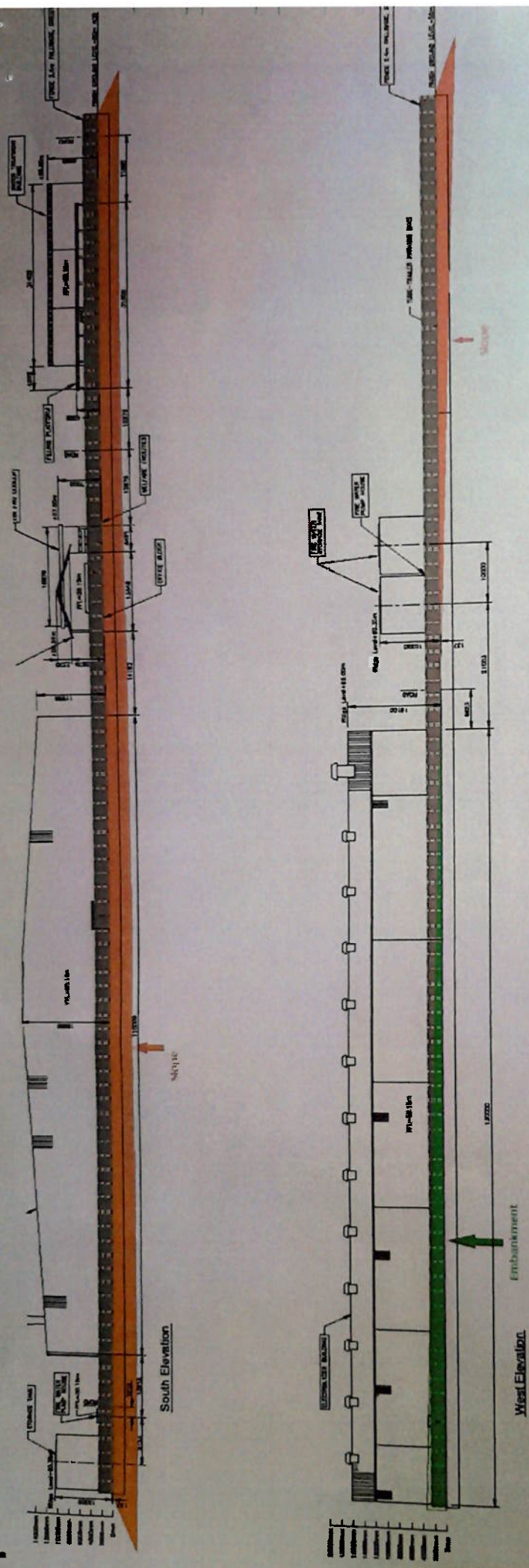


Figure 3: Hydrogen Plant elevations showing re-profiled landscape immediately adjacent