



**MERCURY RENEWABLES
(CARROWLEAGH) LIMITED**

**FIRLOUGH WIND FARM, CO. MAYO
AND
HYDROGEN PLANT, CO. SLIGO**

**RESPONSE TO THIRD PARTY SUBMISSIONS
AND OBSERVATIONS
PLANNING APPLICATION REFERENCE
ABP-317560-23
Áine McCann**

April 2024

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FIRLOUGH WIND FARM AND HYDROGEN PLANT
RESPONSE TO SUBMISSIONS RECEIVED
AINE McCANN

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1 INTRODUCTION

This document provides a response to the Submission made by Áine McCann in response to the Submissions Response Document, which was submitted in response to the original submissions received on the Strategic Infrastructure Development Application Reference ABP-317560-23 made to An Bord Pleanála by Mercury Renewables (Carrowleagh) Limited, for the construction of a wind farm and hydrogen plant and related works. The responses on behalf of the Applicant are in blue while submission text is in black.

2 ÁINE MCCANN'S SUBMISSION AND RESPONSE

1. Introduction

According to Mercury's own response in their third-party submissions and observations document submitted to An Board Pleanála in November 2023 page 5 and I quote.

'All planning applications have to be determined on their individual merits with due consideration given to the overall planning balance of a scheme'

Such merits include attention to and accuracy of information, an ability to demonstrate an understanding of the area the company wishes to operate in; to include regulated functions Such as compliance with government and industry standards. An understanding of the Irish planning application process.

I propose that mercury have in this instance field to demonstrate all the above in failing to complete their application for the proposed developments in a correct manner and with numerous errors making this a flawed process and rendering the planning application invalid.

To allow it to proceed on the basis of incomplete documentation and inaccurate information would be an affront to the planning system and leave the board open to judicial review.

I will not reiterate the litany of environmental governance, legislation, past and present protocols at all levels as, well as regional, county, local area development plans which feed into even the most basic of planning applications in order for us to maintain proper, cohesive, and strategic planning for correct functioning of our country's infrastructure.

This is of even more importance where Strategic Infrastructure development (SID) application is concerned. The above have been listed *ad nauseam*, unduly focused on in both the applicant's planning application and response document as if these factors in and of themselves give rise to an automatic right to planning permission on this basis alone, or even that a lack of adherence to the correct procedures involved in the SID process should be overlooked to achieve Government objectives (2030 & 2050 CO2 reduction emission figures); 'meeting the target at any cost'.

Response;

The Planning Statement submitted with the application sets out the planning policy context relevant to the Proposed Development by providing an overview of the international, national and regional legislation and policy of relevance, as well as a detailed review of the planning policy framework within which the application will be assessed. Throughout the Planning Statement, renewable energy is identified as being required to play a vital role in mitigating climate change by transitioning to a low carbon economy and society.

Consultations with An Bord Pleanála identified that the Project constituted Strategic Environmental Development (see section 1.11 of Chapter 1 Introduction in the EIAR). The processes and procedures for SID were followed for the Project.

The development process adopted by the Applicant has represented a best practice approach to a renewable energy scheme design, minimising the potential impact through multiple design iterations and modifications to minimise the impact on the receiving environment, and ensuring compliance with the suite of planning policies and objectives of the International, National and Regional Policies.

The EIAR submitted with the planning application was prepared in accordance with the EIA Directive as amended by the 2014 EIA Directive, as well as the national implementing legislation, in particular, the Planning Acts and the Planning Regulations as amended. The function of the EIAR is to provide information to allow the competent authority to reach a reasoned conclusion on the effects of a development and inform subsequent decisions, such as planning. The EIAR also included the conclusions of the competent and qualified experts as to the significance of any such environmental effects, to assist the competent authority to comply with Article 8a of the 2014 EIA Directive.

Environmental Impacts have been considered within the EIAR and through the process of assessment, embedded mitigation, and additional proposed mitigation outlined in the EIAR, NIS, CEMP and Habitat Enhancement Plan it has been shown that the Proposed Development can be constructed and operated without significant effects arising, demonstrating the acceptability of the proposal.

Since the application has been submitted some minor errors have been identified, these include two derelict houses being mapped 500m to the west of their actual position, a small derelict property being missed off the property mapping, the name of the road at the Hydrogen Plant entrance/exit being incorrectly named in the submission response (the correct location was used in all assessments), a drawing with an error in the location of a storm discharge pipe and an error on the return of the welfare constructed wetland to the process constructed wetlands and an error in a table in the noise chapter relating to wind speeds (which reduced the impact when corrected). These small errors have been addressed in the additional information submitted as part of the Oral Hearing. These minor error did not change the significance of the impacts as assessed in the EIAR and we are satisfied that the materials presented in the EIAR are accurate and the analysis robust. No further data was required to remediate these errors.

There will always be geopolitical concerns such as wars and fuel shortages both of which we have many times previously for example the fuel crisis of 1973 & 1979, these are outside of our remit and control as a nation and do not form the basis for us to breach protocol with regard to proper planning, for projects to be shunted through and adherence to the submission to the correct documentation for an application to be set aside.

Response;

The protocol with regard to proper planning has not been breached. The Planning Statement considers the Proposed Development in accordance with the principles of Proper Planning and Sustainable Development, having regard to Government, Regional and County-level planning policies and plans including the Mayo and Sligo County Development Plans, together with relevant statutory guidelines. The Planning Statement outlines how the Proposed Development is compliant with International, European and National policy on energy security, emissions reductions and

renewable energy production. It reviews policy for the Northern and Western region and local Mayo and Sligo County policies and finds the Proposed Development complies with key renewable energy, landscape and environmental policy objectives.

This project has been in development for more than 2 years. The application has not been rushed.

The National Energy Security Framework identified energy security as the uninterrupted availability of energy sources at an affordable price and is a response to the challenges of ensuring the ongoing and long-term security of affordable energy supply. See Section 2.3.5 of the Planning Statement submitted with the planning application.

Ireland has one of the highest rates of importing fuel in Europe with energy import dependency increasing to 80% in 2021 according to the SEAI¹ (see Section 1.6 of Chapter 1 Introduction; Need for the Development in the EIAR). By increasing our domestically produced energy we bring energy security in to the 'remit of our control' for current and future generations and can avoid fuel crisis in the future. By producing renewable energy, the development not only contributes to energy security but displaces heavily polluting fossil fuels which is endangering our climate and world ecosystems.

Such actions have been seen in other applications to An Board Pleanála such as the recent application for what would have seen the largest Bio-gas plant in Ireland being built near the town center of Gort in Co Galway. Due to the developers and those hired by the developers, inability understand the process they were undertaking inaccurate calculations were submitted regarding gas contained at the plant. This was further compounded by the ABP inspector highlighting the inaccuracies and adding to the problem by also miscalculating the amount of gas held at the plant and acting outside his brief as he is not a COMAH or HSAI advisor and applying the incorrect HSA and COMAH criteria to the site. The inability to complete basic mathematical calculations coupled with an inability by the ABP inspector to seek expert opinion is extremely worrying. We can only assume these actions were not deliberate, to underestimate the gas stored on site had the potential to cause grievous and possibly death to many persons as the plant was subsequently recategorized as a tier 1 COMAH site from having on risk level at all.

This application was subject to judicial review and conceded on the basis of inaccuracies and incomplete information in areas other than this example given above, that is an incomplete planning application as we see in this instance.

Inaccurate and misleading information in relation to another biogas plant in county Offaly was sited and accepted by ABP in material contravention of the local development plan and incorrectly reinforced by an ABP inspector resulting in the planning decision being overturned in the High Court (11/01/2024 Grafton Group vs ABP). Irrelevant matters were also considered in relation to the application.

I note there is no ABP inspectors report available for this application.

¹ SEAI. (2022). ENERGY IN IRELAND. https://www.seai.ie/data-and-insights/seai-statistics/key-publications/energy-in-ireland/?gclid=EAAlQobChMI-LH_o6r8_QIV09_tCh23YAykEAAAYASAAEqJipvD_BwE Accessed 29/03/2023

Response;

This is a separate planning application which is not related to the one before The Board.

Use of language is very important and the company continually throughout the planning application and response two third party submissions and observation document continually and repeatedly use the phrase 'as the project matures' as if it was some kind of cheese. This clearly demonstrates a lack of understanding of the planning process as a planning application particularly of a SID level should be finalized before submission to ensure all parameters and mitigation measures can be met.

Response;

The Applicant has gone to considerable lengths to ensure that the Project as a whole, including the Wind Farm, Hydrogen Plant and indeed functionally interdependent development not part of the planning application has been assessed in the EIAR. The Applicant firmly believes that it has presented a comprehensive EIAR which has addressed all the likely significant impacts of the Project as a whole on the environment.

The development process adopted by the Applicant has represented a best practice approach to a renewable energy scheme design, minimising the potential impact through multiple design iterations and modifications to minimise the impact on the receiving environment, and ensuring compliance with the suite of planning policies and objectives of the International, National and Regional Policies.

'As the project matures' refers to the next stages of the Project, which will involve the detailed design phase and tender stage where planning conditions will be complied with prior to construction and contracts put in place with manufacturers, suppliers and sub contractors.

The Project Parameters are set out in Chapter 1 Introduction, Section 1.9.4 (Wind Farm) and 1.9.5 (Hydrogen Plant) of the EIAR and outline the full extent of the Project. By assessing the worst case version of these impacts the smaller impacts are captured and assessed. The chapters of the EIAR take this a step further and assess the range of impacts from within these project parameters.

Mitigation measures to avoid or reduce the impacts identified are set out in each Chapter and in the Natura Impact Statement (NIS) and Construction and Environmental Management Plan (CEMP). The chapters also identify and assess the residual impacts of the Development considering the mitigation measures set out i.e. what impacts remain once mitigation measures have been implemented.

Environmental Impacts have been considered within the EIAR and through the process of assessment, embedded mitigation, and additional proposed mitigation outlined in the EIAR, NIS, CEMP and Habitat Enhancement Plan it has been shown that the Proposed Development can be constructed and operated without significant effects arising, demonstrating the acceptability of the proposal.

No timeline is included for the upscaling of the project to give certainty of when exactly the 'green hydrogen' will be available and have an impact on reducing Irelands CO2 emissions. This is of importance as throughout the documents the company uses government targets for CO2 reduction in 2030 and 2050 to justify the need for the project. However, we are not told at any point when the project will reach full production and contribute in its full capacity to the reduction targets for CO2 emissions.

Response;

The Wind Farm will be built in its entirety in one phase and will begin producing renewable energy and contributing to carbon reduction targets. The Hydrogen Plant production capacity will be scaled up to the maximum 80 MW capacity, to meet demand for green hydrogen in the Irish market. As the Hydrogen Plant is being scaled up the renewable energy produced by the wind farm will be split between the Hydrogen Plant and the grid. An assessment of the CO₂ saving due to fossil fuel displacement during the phase up period is set out in Chapter 10; Air and Climate of the EIAR in Section 10.3.4.3; Carbon Savings. These savings help to contribute to carbon reduction, renewable electricity and green hydrogen/renewable gas targets.

It also tries to justify itself by stating that energy generated from the wind farm will be fed back into the national grid. While this is welcome it is not the reason for the existence/planning of the windfarm its purpose is to make the production of the Hydrogen gas (H₂) a green one so it would appear that this is an afterthought.

Response;

The Project is a Wind Farm and Green Hydrogen Plant, both aspects of the project are equally important.

As per my submission of this were a truly 'green design' instead of dissipating the considerable energy from the fin fan coolers it would have fed that energy back into the plant in the form of heating for water or buildings. It is unreasonable to suggest as the applicants have that this method to achieve this does not exist at this time of writing, it was simply not considered demonstrating a lack of understanding of sustainable energy use.

Response;

This was addressed in Section 4.3 of the Submissions Response Document.

The lack of clarity around the so-called maturing of the project raises further concerns that means in effect the application is incomplete and should not be considered. The applicant had sufficient time and expert advice on placing the application so it should have been carried out correctly and submissions of further documents to the board should not be accepted.

Response;

The Applicant has gone to considerable lengths to ensure that the Project as a whole, including the Wind Farm, Hydrogen Plant and functionally interdependent development not part of the planning application has been assessed in the EIAR. The Project has been under development for over two years. The Applicant firmly believes that it has presented a comprehensive EIAR which has addressed all the likely significant impacts of the Project as a whole on the environment.

A further factor of allowing the Hydrogen plant to 'mature' is the lack of decision making in and around key processing equipment for the Hydrogen including the size of the tanks to hold the compressed hydrogen calculations cannot be carried out in relation to serious issues such as traffic movement which has implications for the junction to the N9, an accident black spot, as well as COMAH and HSA regulations regarding gas storage and noise I will address these issues further in the document.

Response;

Section 4.2.2 of the Submissions Response Document addressed Hydrogen Tanker Safety and Number of Movements. Tube trailers are currently used to transport a number of compressed gas products on Ireland's roads including natural gas, compressed air, nitrogen and oxygen. The Specific model to be used will be selected at final design stage. All Tube trailers will comply with current road transport regulations including in size and gross weight – the S.I. 5 of 2003 Road Traffic Construction and Use of Vehicles Regulations (as amended). The maximum number of tube trailers of 26 round trips (52 trailer movements) was used in the traffic assessment in Chapter 15 of the EIAR. Queries regarding the safety of the Hydrogen Plant junction were addressed in Section 4.6.2 of the Submissions Response Document, those in relation to COMAH and HSA regulations in Section 4.4.1. The Developer commits to these maximum traffic movements being set as a condition of the planning permission.

As an island nation we should strive to become fuel independent and efficient as well as meeting our ecological commitments.

Geologically Ireland has been left with very little resources to draw for these purposes and while wind and water are in abundance particularly on the West Coast of Ireland it is incumbent on us to ensure that as we strive to meet our looming emissions targets in 2030 and 2050 we leave behind a well-planned functioning system from an ecological, societal, and business perspective.

Response;

Ireland, especially the northwest, has abundant wind energy resources, a renewable form of energy. The Irish Wind Atlas, produced by the Sustainable Energy Authority of Ireland, shows that wind speeds on the Wind Farm Site are consistent with those that can facilitate a windfarm development (8.2 m/s at 75 m, 8.7 m/s at 100 m and 9.6 m/s at 150 m). This is evidenced by the area's designation as "Preferred Large Wind Farms" in the Renewable Energy Strategy for County Mayo 2011-2022 and the location of the neighbouring Carrowleagh Wind Farm.

Ireland currently imports a high proportion of energy needed to meet demand. Increasing domestic production of renewable energy will assist Ireland becoming fuel independent.

Sustainable Development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs². There are three pillars to sustainable development which are economic, social and environmental. The Proposed Development could not be a better example of sustainable development, enshrined in the National Planning Framework. How the Project interacts with the three pillars of sustainability is outlined in Table 3.1 in the Planning Statement submitted with the application.

To make this possible it is imperative that companies wishing to engage in any 'green energy activity' complete their planning applications fully and correctly in line with all planning requirements clearly demonstrating an understanding of the process they are undertaking so as to ensure the safety of the residents of the surrounding area as well as the ecology for generations to come.

While every business must be profitable monetary gain seems to be an over ridding incentive in the 'green energy rush'.

² Our Common Purpose: Bruntland Report, 1987

Article 5(3) of the 2014 EIA Directive states that, in order to ensure the completeness and quality of the EIAR, the Applicant shall ensure (a) the EIAR is prepared by competent experts; (b) the competent authority shall ensure that it has, or has access to, sufficient expertise to examine the EIAR, and (c) where necessary, the competent authority shall seek from the Applicant any supplementary information, in accordance with Annex IV (the information to be contained in the EIAR), which is directly relevant to reaching the reasoned conclusion on the significant effects of the Proposed Development on the environment.

The experts involved in the preparation of this EIAR and planning application are competent, having regard to the task they have performed, taking account of the scope of the study for which he or she undertook the work the expert/s possess sufficient training, experience and knowledge appropriate to the nature of the work.

The EIAR and Planning Application was prepared by Jennings O'Donovan & Partners Limited (JOD), Consulting Engineers, Finisklin Business Park, Sligo, F91 RHH9, on behalf of The Developer. JOD are one of the longest established and most reputable multi-disciplinary engineering consultancies in Ireland. Established in 1950, it has grown to be the largest engineering consultancy in the north-west of Ireland. JOD have been an established presence in the Renewable Energy Wind Farm Sector since 1997. To date, the company has a portfolio of project involvement extending to over 2,500 MW of power in Ireland and Northern Ireland and is a recognised market leader in the area of Wind Energy development.

The experience of the technical experts that contributed to assessing the risks associated with the Hydrogen Plant are outlined in Section 1.3 of the Submissions Response Document and in Section 1.7.2.4 and 1.9.2 of Chapter 1 Introduction of the EIAR.

The Planning Statement submitted with the application outlines how the Project is fully and correctly in line with planning requirements and relevant policy.

The safety of residents and protection of the environment has been fundamental to the design of the Project. Design standards specific to hydrogen production facilities (NFPA 2, NFPA 55, ISO 22734, ISO 19880 and ISO 15916 as shown in Table 2.4 of the EIAR) have been used throughout the preliminary design phase and regulations and separation distances required by industry good practice have been incorporated into the design. Site specific safety measures in accordance with COMAH, ATEX, Safety, Health and Welfare at Work Act and Regulations and other relevant standards and codes will be in place for the full life of operation. An outline Major Accident Prevention Policy has been prepared and is included in Appendix 16.2. An Emergency Response Plan (recommended, not required for lower-tier COMAH sites) will be produced for the plant. A risk management programme, ATEX Assessment and Safety Management System will be in place for the Proposed Development. The risks of the Project contributing to or being vulnerable to Major Accidents and Natural Disasters is assessed in Chapter 16 of the EIAR. The chapter states that: A Quantitative Risk Assessment (the "TLUP QRA") has been prepared by Risktec Solutions Ltd, an independent and specialist provider of risk management consulting, resourcing, learning and inspection services, in accordance with the guidelines set out in the HSA's Technical Land Use Planning Guidelines.

The Hydrogen Plant Site location is a significant distance from receptors. The public would have no access to the Hydrogen Plant. The nearest public road L-6611-1 is 600 m to the west and the nearest

buildings which are not associated with the Hydrogen Plant are 299 m away.

Using my own document, I shall address the issues listed above and cite other areas of concern supplemented by submissions and observations made by other third parties.

2. Areas of Concern

2.1 Traffic

As mentioned in the introduction the company has rendered it impossible to gain any accurate information on the number of traffic movements per day during the operations phase of the project (leaving aside the lack of information on traffic movements in the construction phase) this is due to a lack of clarity on which equipment to be used to store the compressed gas at the plant as well as the undefined timeline for the upscaling of the project to its true operational potential to meet the government needs to drop its CO2 emissions.

Due to the vagaries contained within the planning application and response to third party submissions and observations we are left with a range of figures relating to truck movements in and out of the hydrogen plant during its operational phase.

Response;

Section 4.2.2 of the Submissions Response Document addressed Hydrogen Tanker Safety and Number of Movements. The maximum number of tube trailers of 26 round trips (52 traffic movements) was used in the traffic assessment in Chapter 15 of the EIAR. These numbers will be lower during the scale up and during periods of lower wind. These will not be exceeded during the operational phase.

11.27.4.6 Road Traffic 'Site Access Road

During operations, the maximum number of trucks to the Hydrogen Plant Site will be 26 per day which equates to 52 movements per day. Distributed over a 12-hour period (07.00- 19.00hrs) this equates to 4.3 movements per hour. The average movement is taken as 5 trucks per hour. EIAR

Source: Mercury submission document.

4.2.2 Page 64

'The Hydrogen Plant electrolyser will be built in phases to match the growth of demand for hydrogen in Ireland. Initially a 10 MW electrolyser will be installed, with a maximum daily hydrogen production of 4,000 kg of Hydrogen. Tube trailers currently in operation in the U.K. can hold 384 kg of hydrogen at 380 bar, this gives a maximum daily number of hydrogen trailers, filled with hydrogen, leaving the Hydrogen Plant Site of 11 during this initial phase.

The capacity of the hydrogen tube trailers currently offered by vendors but are not common in the UK and Irish market at the time of writing is 1,200 kg of hydrogen at 380 bar pressure.

It is a working assumption that as the hydrogen market develops, the tube trailer market will also evolve. This results in a maximum predicted number of tube trailers filled with hydrogen leaving the Hydrogen Plant Site per day of 26 when the full capacity of 80 MW is installed.'

EIAR 15.5.14

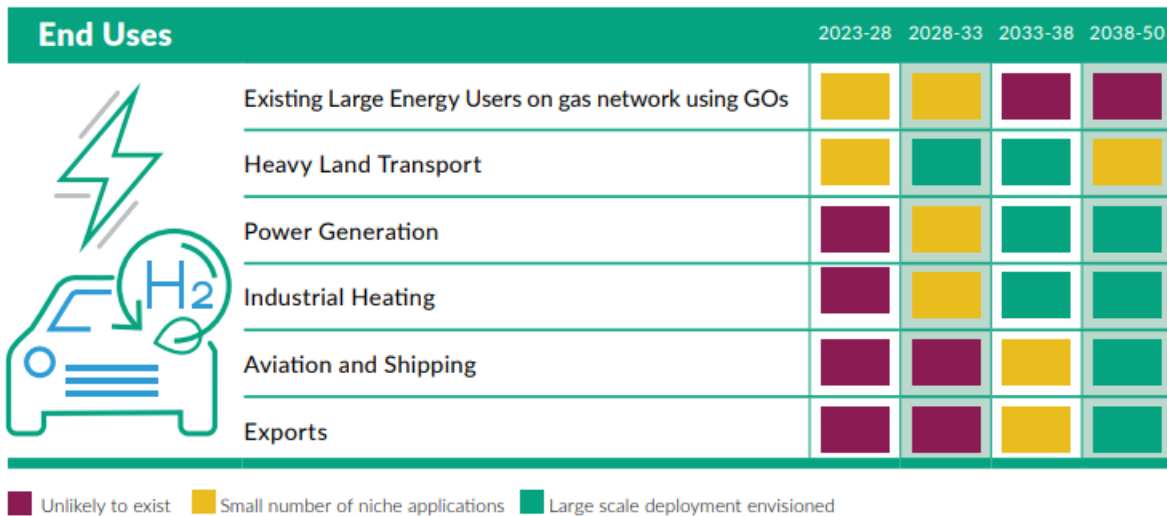
'There will be a maximum of 26 tube trailers filled with gaseous hydrogen and then transported away from the plant everyday (see Section 15.7.2). Typically, regular staff will be using the facility on an on-going basis and staff parking has been incorporated into the design. Approximately 10 cars can be allowed for as working traffic to the Hydrogen Plant.'

Again, it should be noted that no time scale for phased growth is offered or projections for the transfer of heavy goods vehicles from diesel to 'green Hydrogen' (H2) as this is the target market for this product.

Response;

The Wind Farm will be built in its entirety in one phase and will begin producing renewable energy and contributing to carbon reduction targets. The Hydrogen Plant production capacity will be scaled up to the maximum 80 MW capacity, to meet demand for green hydrogen in the Irish market. 26 tube trailers is the maximum daily number of tube trailers leaving the site. During the scale up phase, this will be lower.

Ireland's National Hydrogen Strategy is outlined in Section 2.1 of the Submissions Response Document. The strategy notes that initial hydrogen applications are likely to utilise compressed tankering solutions for transport. The Proposed Development will use this technology. The below graphic is from the National Hydrogen Strategy and identifies that heavy land transport is likely to be one of the initial end uses for green hydrogen during the 2028-2033 period.



Application fails to include movement of persons working at the plant in the daily traffic movements.

Response;

This is included in the assessment of traffic impacts in Chapter 15 of the EIAR in section 15.5.14.

We can assume from the above figures that during the darkest months of the year the maximum traffic flows on to a busy national road where a number of accidents have already occurred.

Response;

Section 4.2.2 of the Submissions Response Document addressed Hydrogen Tanker Safety and Number of Movements. The maximum number of tube trailers of 26 round trips (52 traffic movements) was used in the traffic assessment in Chapter 15 of the EIAR. The redesigned junction has been upgraded and improved. The proposed junction has been subject to a Stage 1 road safety audit carried out by an independent audit team approved by the TII. The junction has been designed to TII specification, autotrack analysis has been used to replicate the turning movements of vehicles, land acquisition has been under taken to accommodate junction realignment / visibility splays, these, combined with the road safety audit process, have resulted in a safe and serviceable junction.

According to Mercury's own figures it will be the 1'200kg tanks which will be used on their site as they have listed.

Truck movements using the larger 1'200kg pressurised tanks.

4'000kg per day / 1'200kg tank = 3.33 fills * 2 = 6.66 truck movements per day at 10MW capacity.

4'000 * 8 = 32'000kg gas per day @ full production 80MW

32'000kg / 1'200kg = 26.6 tank fills per day * 2 = 53.2 total truck movements in and out of plant per day at maximum 80MW capacity.

Truck movements per day using smaller 348kg pressurised tanks.

4'000kg per day / 384kg tank = 10.41 tank fills per day * 2 = 23 total truck movements in and out of plant per day at 10MW capacity

4'000 * 8 = 32'000kg gas per day at full production 80MW

32'000kg/384kg = 83.33 tank fills per day * 2 = 166.66 truck movements per day at 60MW capacity

Capacity	Daily truck movements using 384kg tanks	Daily truck movements using 1'200kg tanks
10MW	23	7
80MW	167	53
Operational staff (10*2)	20	20
Total daily traffic movements	210	80

If it is predicted, according to the given information by Mercury above, that: 'It is a working assumption that as the hydrogen market develops, the tube trailer market will also evolve.' and we will see the smaller 384kg compression tanks being used resulting, according to their own figures, more traffic movements onto the N59.

Response;

The above table is not from the EIAR. The maximum number of tube trailers is 26 round trips (52 traffic movements). This was used in the traffic assessment in Chapter 15 of the EIAR. These numbers will be lower during the scale up and during periods of lower wind. The Developer is happy to agree to a condition limiting the number of traffic movements to 26 tube trailers leaving the site per day should the Board choose to impose one.

This will increase the risk of accidents with HGV's, especially during dark rainy winter months. It also invalidates the assumptions made in relation to the ability of this junction to manage this type of traffic flow. The intersection from the site onto the smaller local road L-66121 is not considered. See below.

EIAR 15.5.14

There will be a maximum of 26 tube trailers filled with gaseous hydrogen and then transported away from the plant everyday (see Section 15.7.2). Typically, regular staff will be using the facility on an on-going basis and staff parking has been incorporated into the design. Approximately 10 cars can be allowed for as working traffic to the Hydrogen Plant. This means that the N59 at the L-6612-1 Junction is predicted to be running at 618 AADT at this junction, which is approximately 5.3% of its capacity and therefore has the capacity to accommodate the Hydrogen Plant operational traffic.

Response;

Queries relating to the safety of the Hydrogen Plant junction were assessed in Section 4.6.2 of the Submissions Response Document. The maximum number of movements were used in the Traffic Impact Assessment in Chapter 15. The proposed junction has been subject to a Stage 1 road safety audit carried out by an independent audit team approved by the TII. The junction has been designed to TII specification, autotrack analysis has been used to replicate the turning movements of vehicles, land acquisition has been undertaken to accommodate junction realignment / visibility splays, these, combined with the road safety audit process, have resulted in a safe and serviceable junction.

Concerns from Local residents over N59/L-6611 / N59/L-66121 staggered junction.

Janice and Wes Moran, local residents of the area (Eircode F26A584) submitted observations with respect to the staggered junction where the proposed roundabout is to be placed. They cite this location has been on a hill with existing line of sight issues. There are also hollows where vehicles disappear out of sight completely. This submission is in line with other observations with regard to this junction. There have been a number of accidents at this location in which local people have been involved in trying to turn off the N59. Also comment on the added danger in this area at nighttime due to the topography which gives rise to the site issues and the dips and hollows in the road. As mentioned previously gas tanker traffic, HGVs, will be at its height during the winter months when visibility is affected by low light levels and inclement weather.

Response;

The L6611 is located approximately 90m from the L66121 local road junction leading to the Hydrogen Plant. The L66121 junction was analysed in isolation due to the restricted width of the L6611 single lane carriageway, proximity of the L6611 to the R297 and the low volume of traffic using the L66121 local road. During the morning peak hour traffic counts two vehicles entered the junction from the N59 and three vehicles exited the junction. During the evening peak hour four vehicles entered the junction from the N59 and no vehicles exited the junction onto the N59.

L6611 and R297 vehicles passing the L66121 junction are recorded in the traffic count data. No delays were observed on the N59 in the vicinity of the L66121 during the traffic count period which was carried out at the N59 / L66121 junction on Wednesday 25th January 2023. The traffic counts were carried out between the hours of 08:00 to 09:00 and 16:00 to 17:00. A traffic analysis of the N59/L66121 junction using TRL PICADY software was carried out using the traffic count data to check the capacity of the junction for the following scenarios:

- *2023 Existing Traffic flows*
- *2025 Projected traffic flows with hydrogen plant construction traffic.*
- *2026 Projected traffic flows with hydrogen plant operational traffic – Year of opening.*
- *2046 Projected traffic flows with hydrogen plant operational traffic – 20 Years after opening.*

The traffic analysis carried out for the N59 / L66121 junction shows that the junction will continue to operate within capacity for all scenarios including the 2046 scenario with the proposed Hydrogen Plant development fully operational. The results of the analysis show that the effect of traffic associated with the operation of the Hydrogen Plant on the existing public road network will be imperceptible due to the improved N59 / L66121 junction layout, traffic profile with development traffic distributed throughout the day, low volumes of traffic generated during operation of the development and vehicle turning movements with all development HGV traffic exiting the N59 / L66121 junction in an eastbound direction and approaching in a westbound direction on the N59. Full details of the traffic analysis for the N59 / L66121 junction are shown in Appendix 1.

During the construction of the Hydrogen Plant, HGV's will be prohibited from using the local road network which does not form part of the works and will not use the L6611 to access the site. During the construction stage of the project, traffic management will be in place at the N59 / L66121 junction in accordance with Chapter 8 of the Traffic Signs Manual to maintain the safe operation of the road network during the construction process.

During the operation of the Hydrogen Plant, operational HGV traffic will exit the N59 / L66121 junction in an eastbound direction towards Sligo and approach the junction in a westbound directional. Operational HGV traffic will not pass the L6611 junction or travel through the town of Ballina. It is proposed as part of the development to modify the existing N59 / L66121 junction to facilitate HGV traffic. The modifications will include statutory signs and road markings, increased road width on the L66121 and increased junction radii to prevent conflict between vehicles at the junction and to prevent vehicles encroaching into opposing traffic streams when turning at the junction. The proposed modifications at the junction have been subject to a Stage 1 road safety audit carried out by a TII approved auditor, independent of the design team (see Appendix 15.3 of the EIAR). The recommendations of the audit team have been implemented into the final junction design. The junction has been designed to TII specification, autotrack analysis has been used to replicate the turning movements of vehicles, land acquisition has been undertaken to accommodate junction realignment / visibility splays, these, combined with the road safety audit process, have resulted in a safe and serviceable junction.

2.2 Transport Infrastructure Ireland Response

I note that according to Transport Infrastructure Ireland's (TII) submission on the proposed development, no design plan has been submitted for the N59/L-66121 junction which is a serious omission and demonstrates the lack of attention to detail and an awareness of how regulated bodies function, the necessity to have the planning application complete prior to submission as it is not a retrospective process. I am unsure how the public are to have faith in a company who omits such a document at a time of increasing road deaths in Ireland. According to page 40 of the nontechnical summary document consultation was carried out in conjunction with Mayo County Council on design of the proposed roundabout at the N59/L-66121 junction.

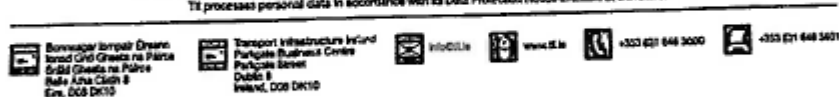
'The Hydrogen Plant Site has one site entrance, located 600 metres off the N59. The haul route includes 10 metres of local road L-6612-1 and an entrance to the N59 in the townland of Carraun

which will, be subject to improvement works, including a new round about and a junction that has been designed in consultation with the County Council Roads Department to provide safe entrance and egress to the facility. These will remain throughout the operational phase of the Proposed Development.'

It is however Beyond the scope of the County Council roads department or Mayo County Council to grant permission to a change in the use of a primary national route they would have been acting beyond their remit, It is surprising at this consultation stage that the developers were not made aware of the need to apply to transport infrastructure Ireland order to place a roundabout at the junction of N59/L-66121.

The Board will be aware that TII has a range of specific functions under The Roads Act 1993 (as amended) to support the general function of providing a safe and efficient national road network. Specifically relevant to this Strategic Infrastructure Development application and in particular the proposed alterations to the N59/L66121 Junction, Section 19(1)(e) provides the authority to TII to specify standards in relation to design, construction or maintenance works to be complied with by a person, road authority or public authority carrying out works to a national road. Such standards are set out in the suite of technical design standards collectively referenced as TII Publications.

TII has no record that a Design Report has been submitted in relation to the proposed alterations to the N59 Junction with the L66121. TII Acceptance of a Design Report is required as set out in TII Publication GN_GEO_03030 (www.tiipublications.ie). TII considers that this matter should be resolved in advance of any decision on the application.



application in the interests of road user safety and to ensure appropriate design and safety standards are applied to the proposed development and can be reflected in conditions of any decision to grant permission.

No serious planning application can possibly be expected to take an ad hoc 'wait and see approach' to such a large development.

Response;

The Design Report required under NH-GEO-03030 for local improvement was scheduled to be submitted during the detailed design phase, which is standard. This has now been completed and can be found in Appendix 1; N59 / L66121 Priority Junction Design Report of the Second Response to Submissions.

2.3 Concerns over Inconsistencies highlighted in other submissions regarding mislabelling and incorrect roads being audited.

Many of the roads are labelled incorrectly in the planning application. An example of this is the Stage 1 Safety Audit carried out by CST Group.

CST Group sought and were given permission/approval by TII to carry out a stage 1 road safety audit. It would seem however that the incorrect junction was surveyed.

The proposed junction to be used to turn off the national road network (N59) onto the secondary road is the N59/L-66121 there then is a 10m drive to the proposed site entrance on the L-66121

not the junction of the N59/L-6612 which is further up the road. The L6612 links onto the L-66121 before joining the N59.

See approval from TII for road survey team below as well as two maps showing location and relationship of L-66121 and L-6612 to each other and to the N59.

Response;

The Road Safety Audit was undertaken at the correct location and based on the planning drawings submitted with the application. The audit was carried out at the N59/L66121 Junction.

Appendix B TII Approval of RSA Team

From: TII Systems Notification <noreply@tii.systems>
Sent: Tuesday 12 July 2022 15:53
To: smolloy@jodireland.com
Cc: roadsafetyaudits@nra.ie; Fiona.Bohane@corkrdo.ie; Alastair.DeBeer@TII.ie; Bryan.Kennedy@TII.ie; LCurtis@Kerrycco.ie; Kevin.O'Flynn@TII.ie; Frank.Healy@TII.ie; Stuart Summerfield | CST Group <ssummerfield@cstgroup.ie>; pjgallagher20@hotmail.com
Subject: RSAAS - Road Safety Audit Approvals System - Audit Approval 28421293/29194/Stage 1
Importance: High

Sean Molloy
Finiskin Business Park
Sligo

Date: 12/07/2022

Our Ref: 28421293/29194/Stage 1

re: N59 Carraun Road (L6612) - N59 Junction

APPROVAL OF ROAD SAFETY AUDIT TEAM, Stage 1

Dear Sean Molloy,

The following members of the proposed road safety audit team are approved to carry out the Stage 1 road safety audit of N59 Carraun Road (L6612) - N59 Junction.

1. Stuart Summerfield - CST Group Consulting Engineers - Leader
2. PJ Gallagher - CST Consulting Engineers - Member

A copy of all audit reports, design team response and exception reports must be uploaded through RSAAS. Successful upload of these reports and completion of the audit approval process is necessary for any further audit approval on this scheme.

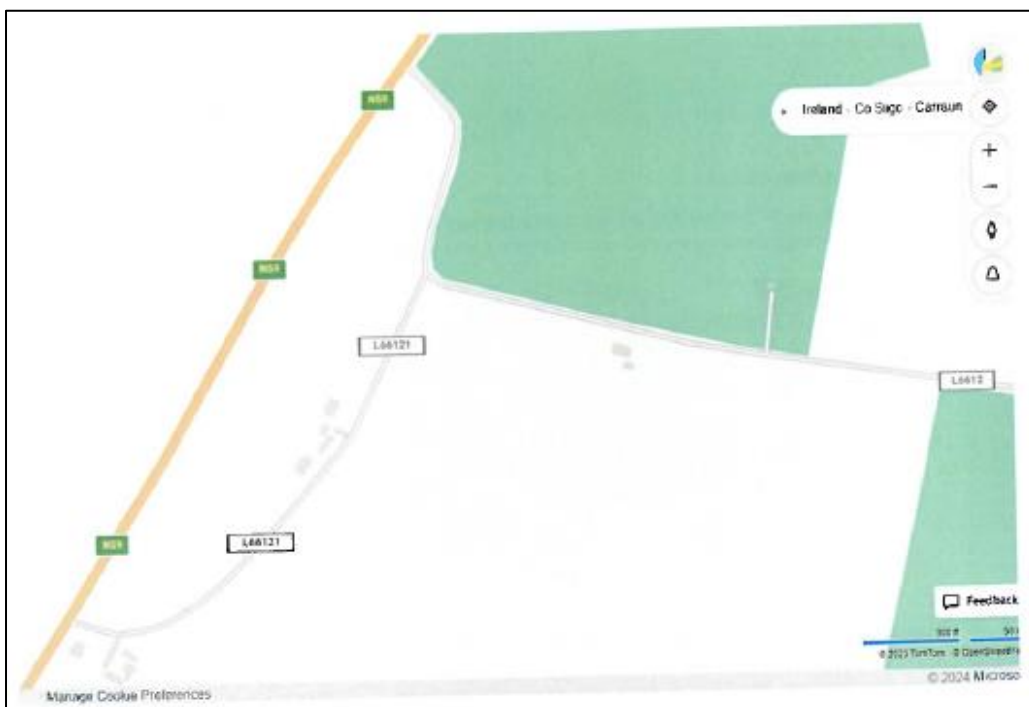
Yours sincerely,

Lucy Curtis

Regional Road Safety Engineer
roadsafetyaudits@tii.ie



Above junction N59/L-6612



Junction N59/L-6612 to lower left-hand corner. Proposed entrance according to submitted plans. As a result, this road safety audit is invalid.

Response;


The Road Safety Audit was undertaken at the correct location and based on the planning drawings submitted with the application. The audit was carried out at the N59/L66121 Junction.

Conflicting plans for the roundabout at the junction on N59; stage 1 road safety audit do not match the roundabout schematics submitted to EIAR section 15 Traffic and Transport section.

See below.

4.1.7 Roundabout Entry Curves

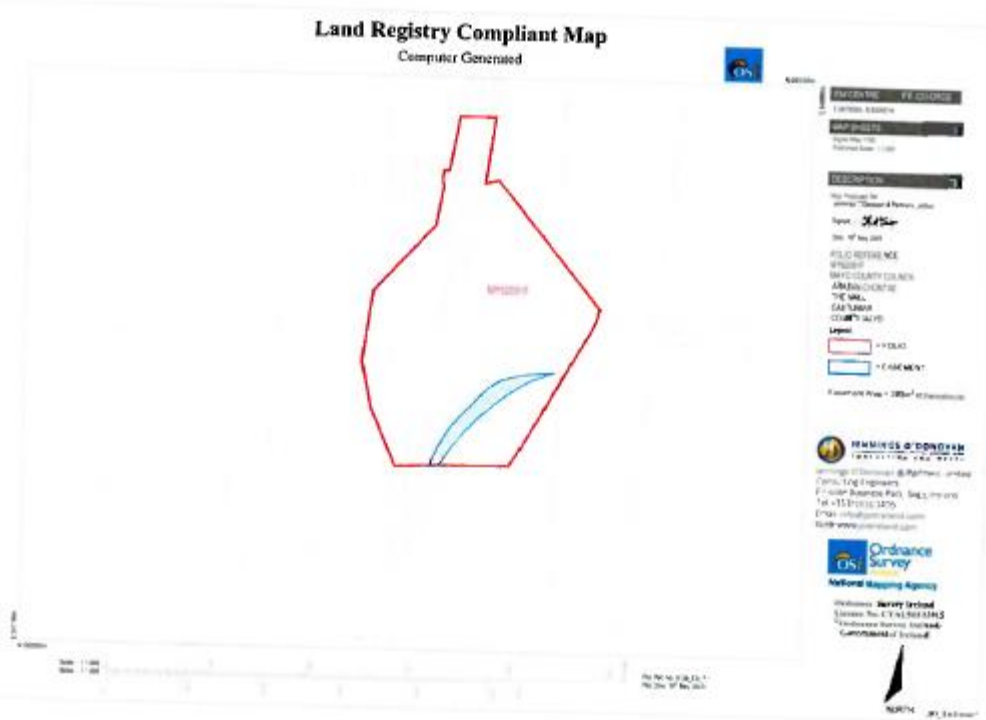
Problem: The entry / exit curves do not have a uniform radius. Trailing wheels of long vehicles may over-run the verge and drag detritus onto the carriageway surface.



Hazard: Following vehicles may skid / lose control on this detritus.

Recommendation: Provide a uniform radius from the roundabout entry to the exit.

Land Registry Compliant Map
Computer Generated



Map details:
Scale: 1:1000
Date: 11/08/2024
OS: Ordnance Survey
National Mapping Agency
Jennings O'Donovan & Partners Limited
Consulting Engineers
First Floor Business Park, Salsburgh
Tel: +353 (0)16 32705
Email: info@jodp.com
Web: www.jodp.com

These inconsistencies related to the roads have been highlighted in other submissions and observations.

Response;

The design of the N59 L6612-1 junction has been carried out in accordance with TII specifications and has been subject to a stage 1 Road Safety Audit carried out by auditors approved by TII. A Design Report for the proposed junction has been completed by the design team as part of the preliminary junction design process to ensure compliance with TII standards. The recommendations of the auditors have been accepted by the design team as shown in the audit feedback form appended to the audit report and the recommendations of the audit have been incorporated into the final junction design.

The design report influenced the final designs, i.e. it recommended changes which were then made to the roundabout/junction design. These are not inconsistencies between the figures, they are a record of the recommendations and changes. The final design is shown in the drawings.

Locations of the wind farm and the hydrogen plant are continually being mixed up in key documents for example the flood risk management plan from RSK cites the incorrect address of the hydrogen plant giving it as Firlough.

Response;

The Project is called the Firlough Wind Farm and Hydrogen Plant. Section 3 of the Hydrogen Plant Flood Risk Assessment is titled Site Description and includes the specific location of the Hydrogen Plant. The correct location was assessed.

2.4 Failure to address impacts on planned development at site entrance.

The company failed to acknowledge and address the impacts their development will have on Planning application No 20297 Mayo CoCo. mentioned in my submission which is a family dwelling (local family) due to be built at the entrance of the plant. The number of traffic movements related above will increase noise and reduce safety for the family as well as affecting the price of their home.

Response;

Section 4.12.2 of the Submissions Response Document; New House Permission 20297 addresses this query. The landowner and applicant of planning reference 20297 (HH6) has met with the Applicant and is supportive of the Project, he has not made any submissions in relation to the Firlough Wind Farm and Hydrogen Plant. This house was included in the List of Projects for Cumulative Assessment in Appendix 2.3 of the EIAR. This list was used during cumulative assessments throughout the EIAR.

2.5 Preliminary Hazard Log (PHL) ISO standards.

My submission pointed out the hazard log in relation to the development was only a preliminary one. It is concerning given the combustive nature of hydrogen gas that engagement with the HSA to confirm COMAH status of the plant was left to such a late date. This demonstrates a lack of understanding of the nature of the business the company is about to engage in and puts the surrounding homes at risk as the preliminary Hazard log remains preliminary and must do so until all equipment and safety features such as alarm systems are identified.

My submission listed a number of ISO standards Some specific to the production storage and use of hydrogen gas with a specific emphasis on hydrogen embrittlement. The company has attempted to address these issues between pages 72-74. Hydrogen embrittlement is the leading

cause of not only pipe failure but coupling failure and therefore accidents in hydrogen plants the company's response once as follows, 'The preliminary hazard log focused on identifying high level causes such as piping failure, rather than specific reasons like hydrogen embrittlement.' It should be noted as per my initial submission that hydrogen embrittlement is the leading cause of explosions in hydrogen plants and as I had demonstrated by example in my submission that even when maintenance and safety checks have been carried out and all things in order hydrogen embrittlement can cause quite extensive explosions. See examples cited in my original submission.

It is not unusual in a planning application to be specific about such hazards for example in the case of biogas plants particles 2-5 microns in size and calls wear and tear own gas engines and turbines so screens are fitted to prevent this happening as part of the downstream application. The issue of siloxane deposition on gas equipment is also addressed in biogas planning applications, Siloxane was an abrasive white powder of silicone oxide to be formed on gas equipment problems. Salicaceous deposits on valves, cylinder walls and liners can cause extensive damage by erosion and blockage. Silicon compounds reaching into components using oil can also result in more oil changes. These are an example of some of the reasons that gave rise to causes of health and safety concerns within real gas plants that are addressed and they're planning applications, so it is not unreasonable to expect a plant which main production is hydrogen gas two focus and address the main health and safety concern which is widely known in relation to the production and storage of that gas.

Response;

This was addressed in Section 4.4.1 of the Submissions Response Document.

2.6 Green and grey Hydrogen.

While the Mercury response to submissions document states that Hydrogen has been around for 100 years and the dangers in relation to it are widely known and understood, the reason it has not been used to date as a primary fuel source the world over given that it originates from water which is ubiquitous throughout the planet is not expanded upon. The reason for this is its highly explosive nature. It is true to say that Hydrogen in its gas form (H₂) is more efficient than crude oil based combustion engines as they burn at a ratio of 20/25:75/80 energy used:heat loss from the engine, whereas a H₂ burning combustion engine is the converse.

Response;

Hydrogen is a multi-million-dollar industry globally will a demand of between 70 and 90 million tonnes per year worldwide. Section 4.4.1 of the Submissions Response Document addresses queries related to precautions and safeguarding against fire and explosion.

It is only true to say that using H₂ as an energy source for HGV engines is of benefit to the environment when the H₂ is derived from a 'green source' so it is concerning when mentioned in the report to read that at times of low wind electricity may be used from the grid as this would mean that the H₂ is no longer 'green' but in fact 'grey' and should be labelled so during these times of production as this is then a high CO₂ based activity as well as adding to the financial cost of production.

Response;

No reports submitted with the application state "that at times of low wind electricity may be used from

the grid". While agreements can be put in place to certify hydrogen as green when using grid derived electricity, this is not the case for the Project. The Hydrogen Plant will produce hydrogen via electrolysis powered by renewable wind energy and thus be considered green hydrogen with zero greenhouse gas emissions. The Wind Farm configuration consists of 13 wind turbines, with an overall installed capacity of 65-78 MW. The electrolyser has been designed to consume the full output of the Wind Farm once built to full capacity.

A further gross misunderstanding and misapplication is of the term 'renewable' (pages 67-68). In response to hydrogen efficiency the company mislabels H₂ gas itself as renewable demonstrating a lack of understanding of scientific terms and principles of energy production. Examples of renewable energy are wind, sun, geothermal and tidal as the source is not depleted when used, the energy is simply harnessed. This is not the case of H₂ gas as a significant volume of energy is required to separate the Hydrogen molecules from the Oxygen.

Water has a high geothermal capacity as anyone who has ever waited for the kettle to boil will know and although H₂ production an electrical process significant amounts of energy are still required. H₂ gas can go on to reform a water molecule, H₂O, but this in the first instance was not an energy source itself unless it is under the influence of tidal movement or flowing in a river/waterfall, lakes are passive bodies of water as there is no gradient. To describe H₂ gas as a renewable energy source is a misnomer, totally incorrect and to further justify its using a geopolitical response i.e. the current war in Ukraine, is a weak argument (page 69). Hydrogen gas produced solely using a renewable energy source such as wind power can be described as 'Green Hydrogen' and by no other name.

Response;

On 10 February 2023, in line with the requirements of the Renewable Energy Directive, the Commission adopted defining rules on renewable hydrogen production³. Renewable hydrogen can be obtained via electrolysis using renewable electricity to split water into hydrogen and oxygen and is referred to as 'renewable fuels of non-biological origin'.⁴

The below table from the European Commission helps to set out the definitions of the types of hydrogen. Green Hydrogen is produced with renewable electricity through electrolysis and is defined as renewable hydrogen.

Blue Hydrogen, also defined as Low Carbon Hydrogen, is produced using natural gas with carbon capture and storage (CCS).

Grey Hydrogen, also defined as Fossil Based Hydrogen (without CCS) is produced using fossil fuels such as natural gas and coal.

The yellow column identifies that electricity from the grid can fall into each of the three types, depending on the origin of electricity on the grid.

³ [https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/747085/EPRS_BRI\(2023\)747085_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/747085/EPRS_BRI(2023)747085_EN.pdf)

⁴ https://energy.ec.europa.eu/topics/energy-systems-integration/hydrogen/renewable-hydrogen_en

Table 1 – Colour definitions compared to new definitions

Hydrogen by new definitions	Hydrogen by colour	
Renewable hydrogen (sometimes referred to as clean hydrogen)	Green hydrogen (renewable electricity through electrolysis)	Electricity from grid (electrolysis)
Low-carbon hydrogen	Blue hydrogen (natural gas with CCS)	
Fossil-based hydrogen (without CCS)	Grey hydrogen (natural gas), brown hydrogen (brown coal), black (black coal)	

Data source: Author's compilation based on [Hydrogen in the Energy Transition](#), Florence School of Regulation, July 2022.

*The hydrogen produced at the Project is made using **renewable** wind energy. The electrical current, from the Wind Farm, splits water (H₂O) into its basic components, hydrogen (H₂) and oxygen (O₂), in an electrolyser.*

The Firlough Wind Farm and Hydrogen Project, as it uses renewable electricity for electrolysis, produces Green Hydrogen, also known as Renewable Hydrogen or Clean Hydrogen.

It is noted in the description of the project, pages 4-5 that planning is sought for the lifetime of the Hydrogen plant, its substation and grid connection but it is only intended to be a ‘Green energy’ source for as little as 40 years before moving to a grid connection and becoming the more expensive CO₂ derived ‘Grey Hydrogen’.

Response;

40 years is the proposed operational lifetime of the Wind Farm. Section 2.9 of Chapter 2 Project Description, outlines what happens to the Hydrogen Plant once the Wind Farm reaches the end of its 40 year proposed operational phase;

“It is the intention that the Hydrogen Plant will continue operations indefinitely. The source of electricity for the Hydrogen Plant would change upon the decommissioning of the Wind Farm and be changed to one of the following options;

- Subject to planning consents, the repowering of Firlough Wind Farm.*
- Reinforced electricity network with a corporate Power Purchase Agreement with a green electricity producer.*
- Connection to an offshore wind power generator off the west coast.*

If these alternatives are not viable then the process equipment would be decommissioned; all plant, machinery and equipment will be emptied and dismantled to be sold or recycled or, where these are not possible, disposed of through a licenced waste contractor. If required, all machinery will be cleaned prior to removal and all necessary measures implemented to prevent the release of contaminants. All waste will be removed from the facility and recycled wherever possible, disposal operations will be controlled by licenced waste contractors. The buildings and infrastructure would be retained and repurposed.”

The National Hydrogen Strategy for Ireland states that;

“Hydrogen can be produced from electrolysis by either directly connecting to a renewable electricity source, or alternatively by using power from the national electricity grid. When using the latter, the emissions intensity of the hydrogen is determined by the sources of electricity feeding the national grid. In 2021, 23.9% of Ireland’s primary energy inputs to electricity came from renewables. However, with our target of 80% renewable electricity by 2030 and long-term ambitions to achieve a near net zero power system by 2035, grid electricity ultimately has a pathway to becoming a zero-carbon source of electricity.”

The European Commission has set criteria under which grid electrolysis can be deemed to be renewable, this includes Power Purchase Agreement with a green electricity producer.

Between now and 2064 (i.e. after the 40 years of the Firlough Wind Farm operation) the electricity on Irelands grid should, according to renewable energy targets and the Irish Government, and if we have any hope of mitigating the catastrophic impacts of climate change, be mainly renewable energy. In this case then a Power Purchase Agreement with a green electricity producer may be a viable option for the continuation of the Hydrogen Plant.

The decision between the options outlined above will depend on the grid and energy supply of Ireland in 40 years.

2.7 Noise and disturbance to surrounding homes.

Incorrect location given as site of Hydrogen plant.

11.18 HYDROGEN PLANT

11.18.1 Introduction

The Hydrogen Plant is located in Castleconnor, Co. Sligo, approximately 4 km north-east of Ballina, 5.5 km west of the wind farm and within 0.6 km of the N59 National Primary Road.

Response;

The noise chapter has assessed the Hydrogen Plant based on the correct location as per the planning drawings.

As with the incorrect road safety assessment and the flood assessment there are many errors in the survey documents, so we are unsure if measurements have been taken from the correct location.

Response;

The Flood Risk Assessment for the Hydrogen Plant was undertaken at the correct location.

The Road Safety Audit was undertaken at the correct location and based on the planning drawings submitted with the application. The audit was carried out at the N59/L66121 Junction.

The noise and disturbance the factory will cause to the surrounding homes was avoided in the response document from Mercury.

Response;

Queries related to Noise and Vibration are addressed in Section 4.11 of the Submissions Response

Document, including impacts to the dwellings surrounding the Hydrogen Plant. The impacts of the Hydrogen Plant on houses in the area is assessed in section 11.27.4 in Chapter 11; Noise and Vibration of the EIAR.

As pointed out in my initial submission document they are unable to offer a proper analysis of the noise in this relatively quiet country area as they have not determined the machines they will use.

Response;

Queries related to Noise and Vibration are addressed in Section 4.11 of the Submissions Response Document including impacts to the equipment being used and combined noise levels from all machinery. The baseline noise survey identified the prevailing background noise levels of the surrounding area. This is described in Section 1.24 of Chapter 11; Noise and Vibration in the EIAR. The main components onsite which will generate noise are presented in Table 11.25 of Chapter 11.

Examples of noise levels from one piece of each machine have been cited in their application where there will be multiples generating layers industrial noise in an agricultural area.

Response;

Queries related to Noise and Vibration are addressed in Section 4.11 of the Submissions Response Document. The noise assessment in Chapter 11 of the EIAR assumes all components are on all the time, with the number of units based on the site layout.

If it is possible to give estimates for one piece of each type of machinery it is then possible it is not unreasonable to estimate overall expected noise levels for the factory at both 10MW and at full capacity 80MW.

In the response to submissions document Mercury offer no clarification on noise levels the surrounding homes will be subject to at 10MW or 80MW production.

It is impossible to offer mitigation or assess possible impacts if the parameters are unknown or an estimation of same are not offered.

Response;

Queries related to Noise and Vibration are addressed in Section 4.11 of the Submissions Response Document, The noise assessment in Chapter 11 of the EIAR is based on the Hydrogen Plant operating at maximum capacity and assumes all components are on all the time, with the number of units based on the site layout. This captures the worst-case scenario impacts, which were assessed and mitigated for. The maximum predicted noise levels are well within the noise limits for areas of low background as recommended by the EPA's NG4 for day, evening and night-time.

3. Conclusion

While this project represents a positive opportunity to introduce what is termed 'Green Hydrogen' into the Irish energy market it should be noted that we are an under industrialised nation and while the land in question may not have zoning, we must be mindful of location.

Response;

Queries related to hydrogen demand in the Irish market was addressed in Section 4.2.4 of the

Submissions Response Document. Zoning and the location of the Hydrogen Plant was addressed in Section 4.12.1 of the Submissions Response Document and in the Alternatives chapter of the EIAR.

It is hoped that this plant will be operational for at least 40 years. Ballina and its surrounds will have developed and the N59 will have become a much busier road as it has become since Ireland has prospered economically over the preceding 40 years.

Response;

Modern economies and societies depend on reliable and secure supplies of electricity⁵. The UN Sustainable Development Goals include goal 7 Ensure access to affordable, reliable, sustainable and modern energy for all. The north and west of Ireland has been downgraded to a "lagging region" by the European Commission after becoming significantly poorer relative to the European average over recent years. The region, which covers both County Sligo and County Mayo in which the Proposed Development is located, was downgraded from "more developed" status to a "transition region" and is the only NUTS 2 region in Ireland viewed as a "Lagging Region" by the European Parliament's Committee on Regional Development. The region's GDP per head of population has fallen from 82 per cent of the EU average between 2015 and 2017 to an estimated 71 per cent now.

In order to economically prosper, energy security is needed. The Proposed Development is a renewable energy enterprise, investing up to €200 million into the northwest Region. It will provide renewable electricity and green hydrogen in the vicinity of the IWAK Strategic Development Zone and Economic Growth Clusters and an area the European Commission considers "lagging" in terms of economic development. This could attract new enterprise to the county, bringing jobs and economic growth.

The proposed location of the roundabout on the N59 is an accident black spot on a staggered of low visibility on a hill with dips and hollows. Imposing such a junction with up to 52 HGV movements as well as 20 staff vehicles will increase the probability of accidents occurring at a time of increasing road deaths in Ireland.

Response;

Traffic impacts were assessed in Chapter 15 Traffic and Transport in the EIAR and in Section 4.6 of the Submissions Response Document. The traffic analysis carried out for the N59 / L66121 junction shows that the junction will continue to operate within capacity for all scenarios including the 2046 scenario with the proposed Hydrogen Plant development fully operational. The results of the analysis show that the effect of traffic associated with the operation of the Hydrogen Plant on the existing public road network will be imperceptible due to the improved N59 / L66121 junction layout, traffic profile with development traffic distributed throughout the day, low volumes of traffic generated during operation of the development and vehicle turning movements with all development HGV traffic exiting the N59 / L66121 junction in an eastbound direction and approaching in a westbound direction on the N59.

During the operation of the Hydrogen Plant, operational HGV traffic will exit the N59 / L66121 junction in an eastbound direction towards Sligo and approach the junction in a westbound directional. Operational HGV traffic will not pass the L6611 junction or travel through the town of Ballina. It is proposed as part of the development to modify the existing N59 / L66121 junction to facilitate HGV traffic. The modifications will include statutory signs and roadmarkings, increased road width on the

⁵ SEAI 2022. Energy In Ireland 2022. <https://www.seai.ie/publications/Energy-in-Ireland-2022.pdf>

L66121 and increased junction radii to prevent conflict between vehicles at the junction and to prevent vehicles encroaching into opposing traffic streams when turning at the junction. The proposed modifications at the junction have been subject to a Stage 1 road safety audit carried out by a TII approved auditor, independent of the design team (see Appendix 15.3 of the EIAR). The recommendations of the audit team have been implemented into the final junction design.

There are many inaccuracies in assessment documents and one of these relates directly to the road audit which was carried out at the incorrect junction.

Response;

The Road Safety Audit was undertaken at the correct location and based on the planning drawings submitted with the application. The audit was carried out at the N59/L66121 Junction.

Geopolitics and the plethora of ever mounting EU and Government policies in relation to CO2 emissions are not a reason for bad planning decisions. We are the custodians of this country on for the benefit of future generations and it is incumbent on us to ensure planning laws are enacted correctly, adhered to no matter the pressure and that further environmental disaster is averted by ill thought-out planning.

Response;

The Planning Statement considers the Proposed Development's accordance with the principle of Proper Planning and Sustainable Development, having regard to Government, Regional and County-level planning policies and plans including the Mayo and Sligo County Development Plans, together with relevant statutory guidelines. The Planning Statement outlines how the Proposed Development is compliant with International, European and National policy on energy security, emissions reductions and renewable energy production. It reviews policy for the Northern and Western region and local Mayo and Sligo County policies and finds the Proposed Development complies with key renewable energy, landscape and environmental policy objectives.

Environmental Impacts have been considered within the EIAR and through the process of assessment, embedded mitigation, and additional proposed mitigation outlined in the EIAR, NIS, CEMP and Habitat Enhancement Plan it has been shown that the Proposed Development can be constructed and operated without significant effects arising, demonstrating the acceptability of the proposal.

The applicants have failed to consider the impacts this development will have on the home of a local family which is to be built at the gate of the site. The home was devalued before it was built by the submission of these plans.

Response;

Section 4.12.2 of the Submissions Response Document; New House Permission 20297 addresses this query. The landowner and applicant of planning reference 20297 (HH6) as referred to above has met with the Applicant and is supportive of the Project, he has not made any submissions in relation to the Firlough Wind Farm and Hydrogen Plant. This house was included in the List of Projects for Cumulative Assessment in Appendix 2.3 of the EIAR. This list was used during cumulative assessments throughout the EIAR.

The applicant has failed to demonstrate that the noise from the factory will not affect the surrounding homes as an overall estimate of noise level based on amount and type of equipment to be used was not offered. The location for the noise test was incorrect.

Response;

It is inaccurate to suggest the location of the noise assessment was incorrect. The noise impacts of the Project have been assessed in Chapter 11 Noise and queries received were addressed in Section 4.11 of the Submissions Response Document.

3 CONCLUSION

The Proposed Development will contribute to supplying the demand for renewable energy, which in the context of the pressing climate emergency is an urgent Irish national priority that must be given significant weight considering the wealth of supporting national and international policy.

There is a pressing need for renewable energy in light of the climate crisis and since the invasion of Ukraine by Russia and the related supply issues and cost implications for energy in Ireland. The wider National and European policy as outlined in the Planning Statement submitted with the EIAR reiterates the pressing need to accelerate the deployment of renewable energy projects such as the Firlough Wind Farm and Hydrogen Plant application.

Having regard to the energy targets set out in The Climate Action Plan 2023, The Climate Action Act, local and regional planning policy and the National Hydrogen Strategy presented and assessed within this response, it is imperative that renewable energy developments which are acceptable in planning policy terms, such as the Proposed Development, are given consent.

The development process adopted by the Applicant has represented a best practice approach to a renewable energy scheme design, minimising the potential impact through multiple design iterations and modifications to minimise the impact on the receiving environment, and ensuring compliance with the suite of planning policies and objectives of the International, National and Regional Policies. The EIAR submitted with the planning application was prepared in accordance with the EIA Directive as amended by the 2014 EIA Directive, as well as the national implementing legislation, in particular, the Planning Acts and the Planning Regulations as amended. The function of the EIAR is to provide information to allow the competent authority to reach a reasoned conclusion on the effects of a development and inform subsequent decisions, such as planning. The EIAR also included the conclusions of the competent and qualified experts as to the significance of any such environmental effects, to assist the competent authority to comply with Article 8a of the 2014 EIA Directive.

Environmental Impacts have been considered within the EIAR and through the process of assessment, embedded mitigation, and additional proposed mitigation outlined in the EIAR, NIS, CEMP and Habitat Enhancement Plan it has been shown that the Proposed Development can be constructed and operated without significant effects arising, demonstrating the acceptability of the proposal.

Having regard to the objections raised, the Applicant respectfully submits that these objections were addressed in the planning application submission and again in the Response to Submissions Document.

Planning permission should be granted for this development for all the reasons set out above.