## Sinead White

**From:** Appeals2
**Sent:** Wednesday 29 October 2025 10:53
**To:** Marine
**Cc:** Sinead White
**Subject:** FW: An Coimisiún Pleanála - Case reference: 323448-25
**Attachments:** NEHS_Response_5203.pdf

**Follow Up Flag:** Flag for follow up
**Flag Status:** Flagged

**From:** Arlene Ward <arlene.ward@hse.ie>
**Sent:** Wednesday, October 29, 2025 10:48 AM
**To:** Appeals2 <appeals@pleanala.ie>
**Subject:** An Coimisiún Pleanála - Case reference: 323448-25



Dear Sir/Madam,

Please find the attached response from the National Environmental Health Service in regard to the above said application.
If you have any queries please do not hesitate to contact this department.

Kindest Regards
Arlene Ward

**Arlene Ward**
**Sláinte Chomhshaoil | FSS Seirbhís Náisiúnta Sláinte Comhshaoil**
**Environmental Health Officer | HSE National Environmental Health Service**

**FSS Seirbhís Náisiúnta Sláinte Comhshaoil, Halla Ashbourne, Páirc Gnó Ashbourne, Bóthar an Duga, Luimneach V94 NPEO**
**HSE National Environmental Health Service, Ashbourne Hall , Ashbourne Business Park , Dock Road, Limerick V94 NPEO**

061 461502 | 087 388 2910 | arlene.ward@hse.ie

Má fuair tú an ríomhphost seo trí dhearmad, bheadh muid buíoch dá gcuirfeá in iúil don Deasc Seirbhísí ECT ar an nguthán ag +353 818 300300 nó ar an ríomhphost chuig service.desk@hse.ie agus ansin glan an ríomhphost seo ded' chóras."

"Information in this email (including attachments) is confidential. It is intended for receipt and consideration only by the intended recipient. If you are not an addressee or intended recipient, any use, dissemination, distribution, disclosure, publication or copying of information contained in this email is strictly prohibited. Opinions expressed in this email may be personal to the author and are not necessarily the opinions of the HSE.

If this email has been received by you in error we would be grateful if you could immediately notify the ICT Service Desk by telephone at +353 818 300300 or by email to service.desk@hse.ie and thereafter delete this e-mail from your system"

An Coimisiun Pleanala
64 Marlborough Street
Dublin 1

28th October 2025

**Planning ref PAX91 323448**
**NEHS ref: ID5203**

**Construction of 9 No. wind turbines, a permanent Met Mast, an on-site 110kV Substation with a 'loop in' Grid Connection to the existing 110kV OHL between Charleville and Limerick and all ancillary works.**
Located in the townlands of Garrane, Ballynagoul, Creggane and Charleville, Co. Limerick

Applicant: Garrane Green Energy Ltd. a subsidiary of Greensource Sustainable Developments Limited (Greensource Ltd.)

Enclosed are the observations of the National Environmental Health Service (NEHS) on planning application 323448-25.

Any clarification on the contents of this submission should be made, in the first instance, pehclimerick@hse.ie quoting NEHS ID5203.

Eugene Monahan
Principal Environmental Health Officer

**National Environmental Health Service Submission Report**

**Date:** 28th October 2025

**Our reference:** ID5203

**Report to:** An Coimisiún Pleanála
Ref 323448

**Type of Consultation**: SID with EIAR

The following HSE stakeholders were notified of the application on 3rd October 2025:

- Emergency Planning
- National Capital Estates Office
- Director of National Health Protection
- REO West & North-West

The NEHS submission report is based on an assessment of documentation submitted with the planning application, particularly the accompanying EIAR.

All commitments to future actions in the planning application, including mitigation and further testing, have been taken as read and all data results have been accepted as accurate, unless specifically highlighted in the submission.

No additional investigations/measurements have undertaken by the NEHS.

This report refers only to those sections of the application documents that are relevant to the HSE which have likely significant Environmental Health or Public Health impacts

## General

The HSE is a statutory consultee under Article 28 of the Planning and Development Act 2000 (as amended) and has a remit to make observations on a planning application accompanied by an EIAR with regard to any likely significant effects on Public or Environmental Health. The NEHS can make observations on any planning application as a statutory consultee.

The objective of any observations by the NEHS are to inform the Planning Authority on any likely significant effects on Public or Environmental Health and give an opinion on any proposed mitigation to protect Public and Environmental Health. Any observations made are to inform and assist the decision making of the Planning Authority in the planning process.

This submission is the observations and comments of the NEHS based on the submitted planning application and the accompanying Environmental Impact Assessment Report (EIAR). The NEHS does not carry out any independent environmental monitoring or validation of any measurements or data reproduced in an EIAR.

## Criteria for Consideration of Likely Significant Effects on Public Health

The NEHS considers likely significant effects on Public and Environmental Health as per the EPA issued National Guidance (known as the EIAR Guidance): ***Guidelines on the information to be contained in Environmental Impact Assessment Reports,*** 2022 https://www.epa.ie/publications/monitoring--assessment/assessment/EIAR_Guidelines_2022_Web.pdf

Particularly section 3 of the EIAR Guidance on Human Health which is reproduced below:

***Human Health***

The recitals to the 1985 and 2011 Directives refer to 'Human Health' and include 'Human Beings' as the corresponding environmental factor. The 2014 Directive calls this factor 'Population and Human Health'.

While no specific guidance on the meaning of the term Human Health has been issued in the context of Directive 2014/52/EU, the same term was used in the SEA Directive (2001/42/EC). The Commission's SEA Implementation Guidance states 'The notion of human health should be considered in the context of the other issues mentioned in paragraph (f)'. (Paragraph (f)[47] lists the environmental factors including soils, water, air etc). This is consistent with the approach set out in the 2002 EPA EIS Guidelines where health was considered through assessment of the environmental pathways through which it could be affected, such as air, water or soil, namely:

> 'The evaluation of effects on these pathways is carried out by reference to accepted standards (usually international) of safety in dose, exposure or risk. These standards are in turn based upon medical and scientific investigation of the direct effects on health of the individual substance, effect or risk. This practice of reliance upon limits, doses and thresholds for environmental pathways, such as air, water or soil, provides robust and reliable health protectors (protection criteria) for analysis relating to the environment.'

In an EIAR, the assessment of impacts on population & human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in the EIAR e.g. under the environmental factors of air, water, soil etc.. The Advice Notes provide further discussion of how this can be addressed.

Assessment of other health & safety issues are carried out under other EU Directives, as relevant. These may include reports prepared under the Industrial Emissions, Waste Framework, Landfill, Strategic Environmental Assessment, Seveso III, Water Framework Directive, Floods or Nuclear Safety Directives[48]. In keeping with the requirement of the amended Directive, an EIAR should take account of the results of such assessments without duplicating them.

The NEHS therefore considers likely significant effects within a population and Human Health context that uses a source – pathway- receptor model, based on emissions through environmental media and population exposure. The exposure of populations, if any, is then considered against recognised health protection criteria.

Whilst EIAR Guidance recognises the requirement to identify sensitive receptors within the assessment process, the Planning Authority should be clear that it is within a Population health approach.

A Population Health approach to the sensitivity of receptors would not consider individual specific sensitivity of a human receptor, but the sensitivity of the established land use or service provision. For example, a school would be considered a sensitive receptor within a Population Health approach, but an individual student who was particularly sensitive to noise attending the school would not be specifically considered in the assessment criteria. A health care facility that provided services for people with recognised noise sensitivity would be considered in its entirety as a particular noise sensitive location.

The Population Health approach therefore has important differences in how likely significant effects on Population and Human Health are considered in EIA. The assessment should consider established land development and use and service provision and activities within communities and not individual members of communities.

**It is recommended that the Planning Authority also follows this method when consider Public Health in their decision making.**

**Project Specific Guidance for Wind Energy Development**

The current Guidelines for Wind Energy Development are: Wind Energy Development Guidelines (2006) https://www.gov.ie/en/publication/f449e-wind-energy-development-guidelines-2006/

It is recognised that the nature of wind energy development has significantly changed since the publication of these Guidelines. Particularly the size of the turbines and the proximity to centres of populations and the cumulative effects with other wind energy development. There has also been substantial increases in the body of knowledge around the likely significant effects of the operation of wind farm development on Population Health, in particular around the characteristic of the noise emissions and health effects of shadow flicker.

A revision of the 2006 GWED commenced in 2013 and Draft Revised Wind Energy Development Guidelines were issued in December 2019.
https://www.gov.ie/en/publication/9d0f66-draft-revised-wind-energy-development-guidelines-december-2019/
These are yet to be adopted.
The Revised WEDG 2013 states 'the revised guidelines will provide greater consistency of approach in planning for onshore wind energy development, as well as providing greater certainty and clarity to the planning system, to the wind industry and to local communities'

The NEHS is aware of the High Court decision in ***Webster/Rollo V Meenaclogher (Wind) Limited (2024 IEHC 136) 8th March 2024***, and details of the judgement. The judgement that the noise from the wind farm was a Private Nuisance is a predominately health based assessment, in that the elements that were deemed to create the nuisance were directly related to health effects on the complainants. It is the understanding of the NEHS that assessment of compliance with health protection conditions set in the consent process was not a material consideration in the judgement. The judge did state that she could consider nuisance irrespective of any compliance with consent conditions, particularly in the absence of up to date national Policy and Guidance in the area. The Judgement also states the revised Draft Guidance has been withdrawn. There is no public indication this is the case. It is still on the Department's website as of the date of this submission.

Nuisance from noise is fundamentally a subjective assessment based on 'reasonable' perception and reaction of the effects of the noise exposure. This perception and reaction depends on situational specific conditions and land use. This

was recognised in the Judgement after 51 days of evidence and consideration of the specific facts. It also the understanding of the NEHS that the Judgement did not make an order as to the level or characteristic of the noise that would abate the nuisance.

If the Planning Authority are now considering that they are under a duty to incorporate the likelihood of a Private Nuisance into their decision making, then they should consider the judgement in ***Webster/Rollo V Meenaclogher (Wind) Limited (2024 IEHC 136) 8th March 2024.*** This judgement identified, in the absence of Irish Guidance, the usefulness of UK Guidance in the investigation of wind farm noise as a statutory nuisance. This is, of course, a reactionary methodology where specific noise exposure is known and not a predictive methodology for the likelihood of a Private Nuisance.
https://assets.publishing.service.gov.uk/media/5a795184e5274a3864fd5f82/pb-13584-windfarm-noise-statutory-nuisance.pdf

**Non-Technical Summary**

The Non-Technical Summary of the EIA (NTS) is an important document that facilitates public access and understanding of the proposed development.

It should accurately summarise the likely significant impacts, proposed mitigation and the residual impacts after mitigation has been implemented, that are attributable to the proposed development.

This should be done in non-technical language and relate accurately to the specific chapters of the EIAR. The NTS should identify all sensitive receptors that are likely to be significantly impacted and clearly state the significance of the effects on them.

**Chapter 5 Population and Human Health**

The NEHS has considered chapter 5 of the EIAR.

Consideration of Population and Human Health should be done in a proportionate manner that is specific to the proposed development and any likely significant effects the proposal might have on Population Health.

**Observations of the NEHS**

The main consideration for protection Population and Human Health within an Environmental and Public Health remit is a source – pathway- receptor with regard to

emissions into the environment during construction and operation of the proposed development.

Particularly:

a) Any likely significant effect from exposure to noise during construction and operation .
b) Any likely exposure to shadow flicker during operation,
c) Any likely significant reduction in air quality during construction, particularly dust emissions,
d) Protection of ground and surface water during construction activities from contamination with hydrocarbon spillages or sedimentary run off.

It is the opinion of the NEHS that the EIA has identified these areas for assessment, and they are reported in the EIAR. It is noted that the EIAR references the HSE scoping submission in table 5.3. as a basis for the assessments.

**Consideration of Shadow Flicker Chapter 14**

**From the EIAR section 14.2.2:**
**'The assessment herein is based on compliance with the current DoEHLG Guidelines limit (30 hours per year or 30 minutes per day). However, it should also be noted the Project will be brought in line with the shadow flicker requirements of the 2019 Draft Wind Energy Development Guidelines through implementation of the mitigation measures outlined herein'.**

**Observations of the NEHS**
The draft 2019 Guidelines proposed a planning condition of:

The adopted DoEHLG 2006 Guidelines are currently under review. The Draft DoEHLG 2019 Guidelines recommend local planning authorities and/or An Bord Pleanála impose conditions to ensure that:

> *"no existing dwelling or other affected property will experience shadow flicker as a result of the wind energy development subject of the planning application and the wind energy development shall be installed and operated in accordance with the shadow flicker study submitted to accompany the planning application, including any mitigation measures required."*

The Draft DoEHLG 2019 Guidelines are based on the recommendations set out in the '*Proposed Revisions to Wind Energy Development Guidelines 2006 – Targeted Review*' (December 2013) and the '*Review of the Wind Energy Development Guidelines 2006 – Preferred Draft Approach*' (June 2017).

In the interest of the protection of public Health the proposed condition in the 2019 Draft Guidance should be implemented if consent is given for the development. The technology has advance since the publication of the 2006 Guidance and it is a reasonable health protection measure to be included in any conditioning of a wind farm development. The mitigation measures that will eliminate exposure to shadow flicker are identified in the EIAR. This mitigation should be implemented irrespective of whether the current guidance is updated.

The NEHS recommends the Planning Authority consider Chapter 5 in the context of our previous recommendations in this submission, i.e. emissions into the environment and exposure of populations to the emissions and an evaluation against recognised health protection standards.

**Likely Significant Effects from Noise and Vibration (Chapter 11 of EIAR)**

The NEHS has considered Chapter 11 of the EIAR and the accompanying appendix on the noise impact assessment and makes the following observations:

a) The 2006 Guidelines include guidance on how to derive noise limits for daytime and night-time periods, which can be summarised as: daytime limits take account of existing background noise levels and include a fixed limit of 45 dB, or background + 5 dB, whichever is the greater, except in low background noise environments where a fixed minimum limit in the range 35-40 dB should be considered.
b) This criteria is therefore that turbine noise at noise sensitive locations should not exceed for daytime periods:
40 dB(A) where background noise levels are below 30 dB; and,
45 dB(A) or background noise plus 5 dB, whichever is the greater, where background noise levels are greater than 30.
c) This criteria can potentially see a predicted increase of up to 15 dB(A) change in the noise environment as compliant with the criteria. Any change in the noise environment of this magnitude is highly likely to cause complaints and/or nuisance. ***BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound*** identifies an increase of 10 dB above existing rated noise levels will have a significant adverse impact and is highly likely to cause complaints.
d) From the 2006 Guidelines ***"However, in very quiet areas, the use of a margin of 5dB(A) above background noise at nearby noise sensitive locations is not necessary to offer a reasonable degree of protection and may unduly restrict wind energy developments which should be recognised as having wider national and global benefits. Instead, in low noise environments where background noise is less than 30dB(A), it is recommended that the daytime level of the LA90, 10min of the wind energy development be limited to an absolute level within the range of 35 – 40dB(A)."*** There is no evidence base to support the statement that this limit is not necessary to offer a reasonable degree of protection in low nose background areas.
e) The evaluation of significance of the effect should be based on the most up to date scientific knowledge and data. The EIA process specifically requires the

assessment to be 'the likely significant effects' and if the knowledge on an evaluation criteria for significance has developed since the publication of a guidance, then it is reasonable and correct to use the developed knowledge base in assessing the significance of any effect. This is particularly relevant to the protection of Public Health. Statutory Guidance issued under the Planning Development Act 2000 (as amended) has to be considered by the Planning Authority when making a decision, but it is not a consideration that precludes all other evidence and knowledge. In in ***Webster/Rollo V Meenaclogher (Wind) Limited (2024 IEHC 136) 8th March 2024*** the Judgement supports this position, in that the judgement makes it clear that compliance with the current Planning Guidance does not preclude a private noise nuisance.

**f)** In the opinion of the NEHS, tabulation of the predicted change in the noise environment from the proposed development and the cumulative change in the original baseline noise environment before any wind farm development in the area is the most informative way of reporting the likely effect of operational noise in an EIAR.

g) The NEHS would consider the most appropriate criteria for assessing significance of the predicted noise would be consideration of the ***ENVIRONMENTAL NOISE GUIDELINES for the European Region, 2018*** The 2018 WHO Guidance set health protection levels from environmental noise.https://iris.who.int/bitstream/handle/10665/279952/9789289053563-eng.pdf?sequence=1

h) Whilst section 12 (page 12-13) of the EIAR does not accept the above position of the NEHS, the use of the 2006 Guidance with regards to noise exposure, and in particular the 'balance between development and protection of public health' stated in ETSU R-97 are resulting in a significant volume of complaints from communities exposed to noise from wind turbines post development. This position that the absolute noise exposure limits set in the 2006 Guidance do not necessarily protect Public Health in specific development situations is now supported by Judgements of the Irish Courts, as reference previously in this submission.

***i)*** It should also be noted that the EIAR states with regard the draft 2019 Guidelines that '***It is important to note that during the public consultation on the Draft Guidelines (DoHPLG, 2019), several concerns relating to the proposed approach to noise assessments of wind farms in the Draft Guidelines (DoHPLG, 2019) have been expressed by various parties***' These concerns were in fact due to assessment methodology and not the proposed standards set to protect health. In the response from the Institute of Acoustics they specifically state: ***'The Group agreed and stressed in their responses that they believe the setting of suitable noise limits is a matter for Government policy. The Group was only concerned with aspects of technical accuracy and clarity'.***

Wind Energy Development Guidelines (WEDG) for consultation for Irish Department of Housing, Planning, Community and Local Government (DHPLG) | Institute of Acoustics

## From the EIAR

*11.2.3.2 An Coimisiún Pleanála*

An Coimisiún Pleanála Decisions

Recent decisions by ACP gave limits (ABP-309306-21, dated 26 September 2022, ABP-



319216, dated 2 April 2025, ABP-312659, dated 25 February 2025) in accordance with the 2006 Guidelines and were as follows:

*(a) between 7am and 11pm:*

*(i) the greater of 5 dB(A) L90,10min above background noise levels, or 45 dB(A) L90,10min, at wind speeds of 5m/s or greater,*

*(ii) 40 dB(A) L90, 10min, at all other wind speeds.*

*(b) 43 dB(A) L90,10min, at all other times.*

The most recent conditions (ABP-318689-23 from June 2025) presents a variation on the noise limits in Condition 11. The noise limits are similar, but this decision incorporates the requirement for a noise monitoring programme:

*11. Noise levels generated by the windfarm following commissioning by itself or in combination with other existing or permitted wind energy development in the vicinity, when measured externally at noise sensitive location the windfarm following commissioning by itself or in combination with other existing or permitted wind energy development in the vicinity, when measured externally at noise sensitive locations, shall not exceed:*

*a) For the daytime period 0700 to 2300, in quiet environments, where background noise is less than 30dB(A)L90 T10, a maximum noise level of 40dB(A)L90T10.*

*b) For daytime periods, 0700 to 2300, where the background noise level exceeds 30dB(A)L90 T10, the greater of 45dB(A)L90 T10, or 5dB(A) above background Levels*

*c) For the nighttime period 2300 to 0700, for all noise environments, 43dB(A)L90T10*

**NEHS observations on the above section of EIAR section 11.2.3.2**

The method of conditioning of noise from wind farm development as per the above two examples have issues for the protection of health and prevention of nuisance when the turbines are operating.

The first condition gives two absolute noise exposure limits depending on the prevailing wind speed between 7am and 11pm and then a different fixed absolute exposure limit between 11pm and 7am not dependent on wind speed. When using absolute noise exposure criteria, the significant issue for those exposed to noise, that is above the existing background level, is not the actual background level but the noise they are exposed to. If the 40 dB L90 10 mins is a health protection standard at wind speeds below 5m/s then it is still the health protection standard a wind speeds higher than this where the wind farm noise is greater than background. It is hard to see a rationale within a health protection context to permit greater exposure to noise because the background noise, which isn't the dominate noise source, changes. If the prevailing background level is above the absolute exposure level permitted or above the level created by the wind turbines, then the wind turbines are not the dominate noise source and do not have to be subject to any control levels.

**Section 11.2.3.5 World Health Guidelines (WHO) 2018**

Comparison between the 2018 WHO Guidelines and the Irish WEDG 2006
The section concludes:
**'Based on this, we consider that compliance with the limit levels in the WEDG is consistent with the recommended levels in the 2018 WHO document.'**

The research to support this conclusion is references as MGE0713RP0001F01, Draft Wind Energy Guidelines – Wind Turbine Analysis, RPS Nov 2018. This links to the Draft Wind Energy Guidelines but in the section on the WHO 2018 Guidance the NEHS could not find reference to the comparative study or the methodology employed. Of particular interest is the text in the EIAR in section 11.2.3.5 that states:

The limit levels in the WEDG are a worst-case limit when a turbine is operating at full power, while the WHO limits are average levels. RPS considered the percentage of times when the turbines were operating at their maximum levels, based on typical Irish wind speed measurements and concluded:

> *It is reasonable to conclude from both these calculations that the annual average noise output from wind turbines in Ireland will be sufficiently lower than the maximum rated sound power to be consistent with the WHO guidelines.*

## NEHS Observations

Background Noise Measurement

The background measurements are reported in table 12.9

And the predicted noise at NSL against a derived limit is reported in table 11.11. and the derived criteria shown in table 11.17

There is no tabulation of the predicted changes in the noise environment from existing background. This is important because there are a significant number of NSL which are predicted to have noise increases above their existing noise environment of a magnitude over 10 dB,

There are low background NSL (as defined by ETSU R-97), for example NML3 where if the lower end of the 35 to 40 criteria set in ETSU R-97 for low background areas was adopted there would be predicted exceedances.

There is no rationale in the EIAR given for adopting the higher criteria for low background levels in the range 35 to 40 dB.

The changing of some of the NSLs from a low background to a non-low background at different wind speeds and consequently the criteria for noise exposure changes

For example, at NML3 if the wind speed increases from 6m/s to 7m/s the adopted criteria to protect health in the day increases by 5 dB.

**Consideration of the predicted noise exposure from construction of the proposed development**

The NEHS makes the following comments:

a) The NEHS is of the opinion that there is no requirement for additional noise mitigation measures during the construction phase providing those measures identified in the in the EIAR are implemented in full.
b) It is the opinion of the NEHS that conditioning hours of construction activity is an important element of the protection of Public Health. Particularly to prevent sleep disturbance. The recommended hours of construction are:
**Monday to Friday 08.00 to 19.00**
**Saturday 09.00 to 14.00**
**No work on Sunday or Bank Holidays**

**Exceptionally work outside these hours at the express permission of the Planning Authority.**

**This recommendation is made in the interest of the protection of Public Health**

**Chapter 10 Water**

The NEHS has considered chapter 10 in the context of the protection of ground and surface water and any drinking water sources.

*10.5.2.8 Potential Effects on Groundwater Quality in Local Supplies* private well

The most significant risk to groundwater wells will be due to groundwater contamination due to the accidental release of hydrocarbons and cement-based products as a result of construction activities within the Site.

We have completed an assessment of private wells within 2km of the Site, following the assumption that all dwellings are likely to have a private groundwater well. There are 166 sensitive receptors within 2km of the proposed turbines. This includes 3 no. commercial properties, 6 No. derelict houses and 157 No. residential receptors of which 5 no. are involved in the Project (refer to Figure 10.10). A number of private dwelling houses were identified along the local roads in the lands surrounding the Site. The dwellings are located along the N20 to the west of the Site and the L1537 to the east. Local topography in the area slopes towards the Charleville Stream and the River Maigue and the N20 and L1537 are located upgradient of all the proposed works areas. The closest inhabited dwelling not involved in the Project is located 702m from the nearest turbine (T8). The closest dwelling involved in the Project is located 529m from T3.

Furthermore, there are no dwellings within 500m of any proposed turbine locations. The closest dwelling to a proposed turbine is located approximately 529m from T3.

The NEHS notes the proposed mitigation and control measures identified in Chapter 10 and in the schedule of mitigation in Appendix 18.1 and the Construction and Environmental Management Plan in Appendix 2.1, for the protection of drinking water sources and surface and ground water and is of the opinion that if these are implemented in full there is adequate protection of surface and ground water.

## Construction and Environmental Management Plan (CEMP)

The NEHS has considered the draft CEMP appendix 2.1.
The plan is detailed (269 pages) and it is the opinion of the NEHS that there is adequate protection of Public and Environmental Health during the construction phased if all mitigation measures identified are implemented in full.

Additional considerations in the interest of the protection of Public Health:

a) All drinking water and water used for the preparation of food in the temporary construction compounds should meet the requirements of S.I. No. 122/2014 - European Union (Drinking Water) Regulations 2014, It is noted that it proposed to bring drinking water onto site.
b) There should be no direct emission to ground or surface water of any foul wastewater. All waste water should be contained and taken off site to a

licensed treatment facility. The proposals in section 4.4 to meet this requirement are noted.

c) Site drainage should ensure the protection of surface and ground water during the construction phase. These are detailed in the CEMP section 5 and the NEHS has no additional comments.

d) The dust monitoring is a monthly average standard. Compliance with standard can incorporate short periods of very high levels of dust deposition followed by low levels and still be compliant. It is therefore important that dust minimisation is continually implemented, and any complaints are investigated and responded to.

**Schedule of Mitigation**

The NEHS has considered the schedule of mitigation in Appendix 18.1 in the context of the Protection of Public and Environmental Health, and in particular the protection of any drinking water sources and emissions into the environment that could have a significant effect on Population Health.

As previously stated, technology advancement (detailed in the shadow flicker assessment) means no sensitive receptor should be exposed to any shadow flicker.

The NEHS has no additional observations on the proposed mitigation measures and considers there will be adequate protection of Public and Environmental Health during the construction phased if all mitigation measures identified are implemented in full.

Andrew Sulley
Senior Environmental Health Officer