Email to:
The Rt Hon Graham Stuart MP
The Department for Energy Security and Net-Zero
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London
SW1H 0NE

Cc
Ragne Low, The Scottish Government, ragne.low@gov.scot
[Regulation 11(2)] , The Scottish Government, [Regulation 11(2)]

24 April 2023

Dear Mr Stuart,

Noise Guidance for onshore wind turbines: industry assurance from Scottish Renewables and RenewableUK and concerns with BEIS commissioned review of Onshore Wind Noise Guidance ETSU-R-97

As the voices of the UK's renewable energy industry Scottish Renewables (SR) and RenewableUK (RUK) write to you with significant concerns relating to the recent publication of a report commissioned by The Department of Business, Energy and Industrial Strategy (BEIS) *'A Review of Noise Guidance for Onshore Wind Turbines'*, published in October 2022.

Written by the engineering firm, WSP as part of a review of current noise guidance for onshore wind (ETSU-R-97), the review included a survey asking respondents whether the framework for assessing and rating noise from wind farms in the UK, as recommended in current national guidance, was still 'fit for purpose' or whether it required review?

Our members firmly believe that **any review of ETSU-R-97 is unnecessary** and that the current assessment (ETSU-R-97) and associated guidance continue to provide fit-for-purpose advice and proposed changes risk-creating guidance that is less effective than the existing tried, tested and clarified guidance.

1. **There is no evidence of a need to review the guidance** - in its current form, the Guidance continues to enable the delivery of UK wind farms and has worked well to deliver community-friendly projects. Together with the associated good practice guidance from the Institute of Acoustics (IOA), it has clearly demonstrated long-term success in mitigating noise issues. The conclusion drawn by WSP was based upon a survey with significantly under-represented views from industry and stakeholders with recent and active experience of onshore wind development.
2. **A review would risk delaying critical renewable energy projects -** reviewing a key piece of onshore wind guidance which is working very well, is not only an unnecessary, costly, and time-consuming exercise but there is a significant risk the uncertainty will cause delays to projects. This is at a time when we need onshore wind in Scotland in particular, to help drive down consumer costs and progress towards legally binding net-zero targets.

3. **Guidance can be improved without a full review, alongside a clear statement that current guidance remains in place should there be updates -** where areas of guidance require updating, it is significantly more efficient and less potentially damaging to the progress of the industry to undertake improvements through further guidance akin to that issued in 2015. For example, advice on the assessment and rating of excess amplitude modulation of noise generated by turbine blades can be done with additional guidance only and does not require a complete review of the Guidance.

We trust that The Department for Energy Security and Net-Zero will consider these points carefully and conclude that the current noise guidance for onshore wind (ETSU-R-97) does not require review.

It is essential that the UK Government provide timely clarity on their intentions so that uncertainty affecting investment, jobs and social benefit amongst all stakeholders, including supply chains, can be reduced, or avoided altogether.

Scottish Renewables and RenewableUK are keen to engage further with this critical agenda and would be happy to discuss our response with your Department in more detail.

Yours sincerely,

[Regulation 11(2)]

[Regulation 11(2)]

Senior Policy Manager | Onshore Wind & Consenting

[Regulation 11(2)]

Scottish Renewables

[Regulation 11(2)]

[Regulation 11(2)]

Senior Policy Analyst – Planning and Environment

[Regulation 11(2)]

RenewableUK

Appendix

<u>About us</u>

Scottish Renewables (SR) and RenewableUK (RUK) are the voices of the UK's renewable energy industry. Our vision is for the UK, and Scotland, to lead the world in renewable energy. We work to grow the UK, and Scotland's renewable energy sector, including wind farms, and sustain its position at the forefront of the global clean energy industry. SR represent over 330 members, and RUK over

450 organisations that deliver investment, jobs, social benefit and reduce the carbon emissions which cause climate change.

Our members work across all renewable energy technologies in Scotland, the UK, Europe and around the world, ranging from energy suppliers, operators and manufacturers to small developers, installers, and community groups, as well as companies throughout the supply chain. In representing our respective members, we aim to lead and inform the debate on how the growth of renewable energy in Scotland and across the UK can provide solutions to help sustainably heat and power the UK's homes and businesses.

Background

The Department for Energy Security and Net-Zero's (DESNZ) predecessor The Department of Business, Enterprise and Industrial Strategy (BEIS) commissioned WSP to do a review of current noise guidance for onshore wind in 2021. The WSP report *'A Review of Noise Guidance for Onshore Wind Turbines'*, report number 70081416-001-03-03 was published in October 2022.

One aspect of the review, a survey asked respondents whether the framework for assessing and rating noise from wind farms in the UK, as recommended in current national guidance, was still 'fit for purpose' or whether it required review? This framework is defined by *'The Assessment and Rating of Noise from Wind Farms'*, published by the Department of Trade and Industry (DIT) in 1996, and updated in 2015, and usually referred to by its report number – ETSU-R-97, together with the Good Practice Guide to its use published by the Institute of Acoustic (IOA) in 2013 and the accompanying or later Supplementary Guidance Notes.

Key Concerns

1. The Guidance continues to enable the delivery of wind farms which do not cause operational noise issues for neighbours. While there were a limited number of noise complaints, principally in England, in the first decade of this century they resulted from factors not addressed (or not properly addressed) in ETSU-R-97. The excellent work of the IOA resulted in the Good Practice Guide and Supplementary Guidance Notes (SGNs) noted above. Since then, there have been minimal complaints about wind farm noise. Therefore, there is no evidence of a need to review the Guidance based on operational concerns. Nor is there any case for reviewing the Guidance simply because the base document is of some age. It may be noted that in not one single appeal or Section 36 case in over 20 years has a Scottish Reporter recommended a position against the advice in the Guidance. And challenges at public inquiries in Scotland to the Guidance on technical grounds have all failed, the most recent case being Pauls Hill 2 (DPEA reference WIN-300-3). The same applies in England and Wales, but there have been very few decisions outside Scotland in the last ten years.

2. In the absence of any need to review the Guidance it would seem perverse and unnecessary to do so. It may well be that, as is the case with most technical documents, the advice in the Guidance can be improved, but that is not reasonable grounds to set forth on what will be a time-consuming process at public expense. Our members agree that indulging in a review of a key piece of advice for onshore wind development, which has served all stakeholders well, is not justified by a real need triggered by evidenced operational concerns.

3. It is noted that a statement has been issued by the IOA endorsing the need to review the Guidance. This view was given by officers of the IOA without consulting its members, and

without any reference to the group within the IOA responsible for the 2015 Good Practice Guide to the use of ETSU and SGNs published in 2015. In contrast, this letter is endorsed by some members of that group now advising on onshore wind projects.

4. WSP concluded that the Guidance required review by considering responses to the 2021 survey and a review of research evidence. It can be argued that the results of the survey were skewed and unrepresentative of the balance of responses received. Each response and vote was given equal weight, but the UK, Scottish and Welsh Governments were given 3, 2 and 1 votes respectively, and while the 20 responding local authorities (the Environmental Health Officers) were each given one vote, the onshore wind industry was given only two votes (by Scottish Renewables and RenewableUK). Had a more balanced approach been taken the conclusion would have been different, and arguably the conclusion of WSP.

5. If improvements to the Guidance are thought to be appropriate from time to time then this be achieved through the issue of further guidance akin to that issued in 2013. For example, it may be thought appropriate to prepare advice on the assessment and rating of excess amplitude modulation of noise generated by turbine blades. But this does not require a complete review of the Guidance.

END

Onshore wind turbine noise guidance

Communications, Lines to Take

Top lines

- Onshore wind is a mature, efficient and low-cost technology.
- Onshore wind is an important part of the energy mix, accounting for around a quarter of installed renewable capacity in the UK.
- The costs of onshore wind have fallen dramatically and it is around 50% cheaper than in 2015. It is now the second cheapest form of electricity generation in the UK today, behind utility-scale solar.
- As set out in the Energy White Paper and Net Zero Strategy, a low-cost net zero system of the future will be predominantly comprised of wind and solar. To achieve this we will require a sustained increase in locally supported onshore wind to 2030 and beyond, alongside other renewables such as solar and offshore wind
- Noise from onshore wind turbines is limited, but we recognise that it can be a concern for communities and we have ensured that this is controlled through the planning process. The proximity of a planned wind turbine to occupied dwellings must be considered when assessing noise impacts and before granting planning permission. In addition, we have worked closely with acoustic experts and leading UK scientists to ensure that planning authorities have access to the best guidance, so that they can measure and take account of noise emissions when making planning decisions.

Q&A

1. **Why have you undertaken this work?**

- As set out in the Government's Energy White Paper and recent Net Zero Strategy, we will require sustained increase of locally supported onshore wind in the 2020s and beyond if we are to meet our Carbon Budget 6 target and our net zero ambitions.
- Government is committed to ensuring that decision makers have access to the best guidance, enabling onshore wind to be built whilst also balancing potential impacts.
- Current guidance for the assessment of noise from onshore wind turbines across the UK dates back to 1997. In light of the changes in context since 1997 we commissioned research to consider whether the existing guidance could be refreshed.

2. **What are you going to do about this?**

- We welcome the research conducted by WSP and are carefully considering the recommendations made in their report.
- The report indicates that short-term updates could be made to bring the guidance into line with the most up to date evidence and policy. Government is considering how best to make these updates.
- However, the current ETSU guidance remains suitable for assessing wind turbine noise and should continue to be applied accordingly.

3. **How can you say ETSU is still fit for purpose when the report found that so many things need to be changed?**

- The report does not conclude that ETSU is currently not fit for purpose, but that it may benefit from updating specific sections.
- A substantial body of evidence and research has been published since the ETSU-R-97 guidance and the Institute of Acoustics Good Practice Guidance were published. In light of this new research, there is value in re-visiting the guidance to bring it in line with the most up to date evidence.

4. **The report suggested it was a high priority to update ETSU – when will we hear more about how you plan to do this?**

- Government is carefully considering the recommendations made in the report to determine the most appropriate next steps.
- We anticipate the next stage of this work will commence in 2023.

5. **The report indicated that the underlying approach used for measuring wind turbine noise in ETSU is out of line with current govt policy on measuring noise. Do you intend to address this when you revise the guidance?**

- Government is carefully considering the recommendations made in the report to determine the most appropriate next steps.

6. **If you update ETSU, will it make it harder or easier to deploy onshore wind?**

- As set out in the government's Net Zero Strategy, we need to see a sustained increase in onshore wind deployment by 2030 to meet our net zero ambitions. We want to ensure the guidance for wind turbine noise remains as useful as possible to aid deployment of suitable onshore wind power projects, whilst ensuring noise impacts continue to be robustly controlled.
- The update to ETSU is taking place in light of advancements in turbine technology and acoustic measurement technology. The guidance is technical in nature and will not seek to make it easier or harder to deploy onshore wind.

7. **How did you choose which stakeholders to involve in the study/ why wasn't I invited to contribute?**

- This was a technical scoping review to determine if ETSU requires updating on the basis of advancements in acoustic and turbine technology. As this was a technical review, all those on our stakeholder engagement list were those who have detailed knowledge of acoustics, wind turbine technology, or who have direct use and experience of ETSU e.g., planning authorities, public health agencies, developers.

8. Doesn't noise cause health problems?

- We recognise that the noise from wind turbines can be a worry for communities and we have ensured that this is controlled through the planning process.
- However recent studies have found no evidence of a link between turbine noise and health problems.[1]
- The World Health Organisation have concluded that noise from wind farms can be “a source of above average annoyance” but found little to no evidence of associated physical or psychological health impacts.
- We will continue to monitor the academic and scientific literature on the subject, but we would like to reassure the correspondent that wind farms are a safe way to generate electricity.

[1] https://pubmed.ncbi.nlm.nih.gov/29665463/ - Poulsen et al., (2018), ‘Long-term exposure to wind turbine noise at night and risk for diabetes: A nationwide cohort study’; https://ehp.niehs.nih.gov/doi/10.1289/EHP3340 - Poulsen et al. (2019), ‘Long-Term Exposure to Wind Turbine Noise and Risk for Myocardial Infarction and Stroke: A Nationwide Cohort Study’, Environmental Health perspectives; March 2019; https://pubmed.ncbi.nlm.nih.gov/30216773/ - ‘Long-term exposure to wind turbine noise and redemption of antihypertensive medication: A nationwide cohort study’.

From:	[Regulation 11(2)]
To:	[Regulation 11(2)]
Subject:	RE: Noise and Health LTT
Date:	Friday, 04 July 2025 15:46:00
Attachments:	image001.png image002.jpg

OFFICIAL

Hi [Regulation 11(2)] ,

The noise consultation is now live. As promised, you can find our Top Lines on the noise guidance update and consultation below.

Top Lines

ONW Noise Guidance Update

- Government is committed to ensuring that decision makers have access to the best guidance, enabling onshore wind to be built whilst also balancing potential impacts.
- Current guidance for the assessment of noise from onshore wind turbines across the UK is called ETSU-R-97 and dates back to 1996. A substantial body of evidence and research has been published since the ETSU-R-97 guidance. In 2021 Government commissioned a technical scoping review to consider whether the guidance could be refreshed.
- The Scoping Review concluded in 2023 and we have carefully considered the recommendations from the formal report. We concluded that the ETSU-R-97 guidance would benefit from targeted updates to bring into line with the most up to date evidence and policy.
- Over the last year we have been working with a specialist acoustic consultancy to update the ETSU guidance. During this process, we have worked closely with noise policy leads, academics and professionals at the Institute for Acoustics, expert acoustic consultants with experience in the field of wind turbine noise assessment, and wind industry acoustic engineers.
- The proposed updates to ETSU aim to bring guidance in line with available evidence on turbine noise emissions, developments in turbine technology and wind turbine noise assessment methodologies, and government policies on noise and Net Zero. We are now seeking views on the proposed updates through a consultation.
- We aim to issue a formal government response to the consultation in autumn 2025. In the meantime, the current ETSU guidance remains suitable for assessing wind turbine noise and should continue to be applied accordingly.

WSP Scoping Report

- In 2021, we commissioned a specialist engineering consultant (WSP) to undertake a technical scoping review into existing onshore wind noise guidance.
- Since existing noise guidance was introduced, there has been a change in the context. This includes, for instance, developments in acoustic measurement technology, changes in the size and shape of wind turbines and a general increase in the body of research and evidence into onshore wind turbine noise emissions. We therefore wanted to know whether existing guidance could be updated and, if so, how.
- In February 2023 WSP published their final report on their website, which can be found here: https://www.wsp.com/en-gb/insights/wind-turbine-noise-report
- WSP set out a number of recommendations for the Government to consider, ranging from short-term updates to the guidance to more comprehensive programmes of research needed to address gaps in the evidence base.
- The Government carefully considered the recommendations from the scoping review and concluded that ETSU-R-97 guidance would benefit from targeted updates to bring into line with the most up to date evidence and policy.
- It should be noted, however, that the findings of the WSP review do not invalidate the current guidance for the assessment of noise from onshore wind turbines, which remains suitable for use and should continue to be applied accordingly.

Consultation

- Government is committed to ensuring that decision makers have access to the best guidance, enabling onshore wind to be built whilst also balancing potential impacts.
- We are now seeking views on the proposed updates through a consultation. The consultation and Draft Assessment and Rating of Wind Turbine Noise Guidance can be found here: Assessment and rating of wind turbine noise guidance: proposed updates - GOV.UK
- This consultation will run between 4 July and 29 August 2025, after which we will review and analyse the responses. We will formally respond to the consultation in Autumn 2025.
- Noise from onshore wind is distinct in nature from other forms of industrial noise. A complex framework is used to determine noise limits for onshore wind developments. Therefore, this

consultation is likely to be of particular interest to those with previous experience in the measurement and assessment of wind turbine noise. This includes (but is not limited to) the energy industry, local panning authorities, and acousticians and acoustic engineers involved in project development and assessment.
- It is important to note, the draft guidance update does not represent a final position from government. It should not be used by local planning authorities during or after the consultation period in relation to ongoing planning applications. Following this consultation, we will analyse responses and issue a formal government response. Until this time the current guidance remains suitable for assessing wind turbine noise. As is typical, planning authorities should continue to use existing guidance. Planning authorities are advised not to delay planning decisions on the basis of this consultation.

Impacts of Noise on Communities
- Noise from onshore wind turbines is limited. Noise from contemporary wind turbines is primarily caused when the rotating blades displace air – leading to an audible swoosh. At a distance of about 500m a well-built modern wind turbine will emit sounds that are roughly equivalent in decibel level to a quiet air conditioning unit. When inside a building, the noise is reduced even further.
- In the large majority of instances, well sited onshore wind turbines will not be built in close proximity to dwellings and will therefore have minimal noise impacts. Furthermore, onshore wind projects are located where the wind speed is higher than average. Unless in direct proximity (such as standing underneath the turbine itself) therefore, the "background" noise of the wind tends to "mask" any sounds that might be produced by operating wind turbines – especially because the turbines only run (and emit noise) when the wind is blowing.
- Nevertheless, we recognise that there can be exceptions to the rule, and that noise can be a concern for communities when this is the case. That is why we have worked closely with acoustic experts and leading scientists to ensure that planning authorities from across the UK have access to the best guidance, so that they can measure and take account of noise emissions when making decisions on onshore wind infrastructure.

Concerns About Impacts of Noise on Health
- Noise from contemporary wind turbines is primarily caused when the rotating blades displace air – leading to an audible swoosh – as opposed to the steady emission of sound from an engine or gearbox. As a result, we use distinct guidelines for noise from wind turbines as opposed to using BS4142, which is the standard guidance for assessing many other forms of industrial or commercial sound.
- Our updated noise guidance sets decibel levels that are in line with the recommendations made by the World Health Organisation (WHO). In their 2018 report on Environmental Noise Guidelines for the European Region, the WHO was unable to find any evidence of substantial physical health impacts from wind turbine noise (such as cardiovascular disease or hearing impairment, for instance). The report did conclude that noise from wind farms can be “a source of above average annoyance” with potential impacts on sleep disturbance. The WHO recommended that policy makers implement suitable measures to reduce noise levels produced by wind turbines to below 45dB. Our updated guidance does this.
- The WHO rated the evidence base of turbine noise impacts on annoyance and sleep disturbance as “low quality” due to the potential of self-reported bias in study results. A Government commissioned scoping review, published in 2023, could not find any studies published since the WHO report that were able to demonstrate a stronger link between turbine noise, annoyance and sleep disturbance.
- Government wishes to keep this under review. To assess the evidence further, the Inter-Departmental Group for the Costs and Benefits of Noise (IGCB(N)) has commissioned a review of the latest evidence on noise from wind turbines and health effects. The review will recommend whether the evidence is sufficiently robust to conduct a meta-analysis of data on self-reported annoyance and sleep disturbance to generate exposure-response relationships {applicable to the UK}.

Hope helpful!

Thanks, [Regulation 11(2)] .

OFFICIAL

From: [Regulation 11(2)]
Sent: 19 June 2025 12:25
To: [Regulation 11(2)]
Cc: [Regulation 11(2)] @energysecurity.gov.uk>
Subject: Noise and Health LTT

[Regulation 11(2)]

Thanks for our chat just now. As promised, you can find our LLT on noise and health impacts, agreed with DEFRA, below.

I am just finalising our LTT specifically on the noise consultation – I'll send these over to you once they're ready!

<u>How does this guidance protect against the potential health effects from wind turbine noise?</u>

- *Noise from contemporary wind turbines is primarily caused when the rotating blades displace air – leading to an audible swoosh – as opposed to the steady emission of sound from an engine or gearbox. As a result, we use distinct guidelines for noise from wind turbines as opposed to using BS4142, which is the standard guidance for assessing many other forms of industrial or commercial sound.*
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Thanks,

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