UK Government

Consultation on an Updated Approach to Managing Onshore Wind Turbine Interference with Eskdalemuir Seismic Array

Safeguarding the Array whilst Delivering Clean Power

Closing date: 17 July 2026

Department for Energy Security and Net Zero (2026)

Contents

Introduction

The Government is committed to delivering a clean, secure and affordable energy system by 2030. The Clean Power 2030 Action Plan, published in December 2024, set out a clear pathway to achieving this ambition. Delivering our Clean Power mission will help boost Britain's energy independence, protect bill-payers, support high-skilled jobs, and tackle the climate crisis.

Under the Clean Power 2030 Action Plan, government identified onshore wind as a key technology that is mature, efficient, and cost-effective. Onshore wind has a vital role to play in decarbonising our electricity system, enhancing our energy security and supporting economic growth. Having more low-cost renewables like onshore wind on the system reduces Great Britain's exposure to volatile global fossil fuel prices, protecting consumer electricity bills against future price shocks.

To accelerate onshore wind deployment, government published an Onshore Wind Taskforce Strategy in July 2025, which focused on actions for government and industry to remove barriers and help reach our 2030 Clean Power target. In the Strategy, government committed to consult on an updated approach to managing onshore wind seismic interference with the Eskdalemuir Seismic Array ('the Array'). This consultation is therefore, seeking views on a proposed approach and potential alternatives.

The Array is a seismological monitoring station in the Southern Uplands of Scotland that was established in 1962 to detect seismic signals from nuclear explosions. Continuously operating and safeguarding the Array ensures that the UK can comply with its international obligations under the Comprehensive Nuclear Test Ban Treaty (CTBT), if and when it is ratified.[1] The Array is the UK's primary asset for monitoring underground nuclear tests. In addition to supporting the UK's international obligations under the CTBT, the Array is also used to inform ministers on possible nuclear testing and explosions by countries of interest.

In 2005 a technical report was commissioned into the nature of wind turbine interference with the Array ('The Styles Report'). The Styles Report found that some of the rotational energy that is generated from a wind turbine transfers through the column of the turbine and into the ground, and that the resultant Seismic Ground Vibrations (SGVs) can have an adverse effect on the detection capabilities of the Array. To safeguard the Array against excessive SGVs, the Ministry of Defence (MOD) were made a statutory consultee for all wind turbine developments within a 50km radius of the Array. Due to the higher impact of SGVs from nearby wind turbines, the MOD routinely objected to all planning applications for wind turbine development that fell within 10km of the Array, thereby creating a de facto 'exclusion zone'. Where wind turbine development was proposed within the wider 50km 'Consultation Zone', the MOD assessed proposed developments against a threshold of cumulative SGVs from wind turbines

[1] The CTBT opened for signature in 1996, however it cannot come into force until all countries have signed and ratified it. The UK signed the CTBT in 1996 and ratified it in 1998. The Nuclear Explosions (Prohibition and Inspections) Act 1998 ("1998 Act") implements the CTBT into domestic law. The 1998 Act will not enter into force until the CTBT itself does.

which, if breached, would represent an intolerable degradation to the Array's detection capabilities ('the Threshold'). The Threshold was set at 0.336 nanometres ("nm").

In January 2018, the MOD was notified of the proposed Faw Side Wind Farm, and modelling of the predicted SGV resulted in breach of the Threshold. Since then, the MOD has safeguarded the Array by objecting to all proposed wind turbine developments within the Consultation Zone. In 2020-2021, a windfarm developer raised judicial review proceedings against the MOD to challenge their approach to managing the Threshold. The Court noted that the effect of the MOD's approach was to afford developers of larger wind farm developments an opportunity to be considered, and allocated a budget in the Threshold, by the MOD at an earlier stage of the process than developers of smaller developments. It found that approach to be unlawful.[2]

Against this background, the Scottish Government, MOD and Department for Energy Security and Net Zero (then the Department of Business, Energy and Industrial Strategy) agreed to reconvene the Eskdalemuir Working Group (EWG) in June 2018 to consider whether updates to the approach could release headroom within the Threshold and therefore enable more onshore wind to be built within the 50km Consultation Zone. In 2019, the EWG commissioned Xi Engineering to undertake a series of five technical studies ('the Xi Studies') in relation to the seismic impact of wind turbines in the Consultation Zone. The studies made a series of recommendations to the EWG, details of which are published online[3].

The EWG provisionally agreed to the recommendations produced by the Xi Studies and escalated consideration of next steps to the Onshore Wind Industry Taskforce.[4] This consultation asks questions about the EWG proposals, and is published alongside a draft Technical Guidance Document which sets out how the EWG proposals could work in practice. The consultation also seeks views about alternative approaches.

It should be noted that:

- Available headroom is subject to the project pipeline at the point the regulations come into force, should they be made.
- The draft Technical Guidance Document 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.
- The updated approach as described in the draft Technical Guidance Document would be in addition to, and does not impinge on, existing planning processes under the Electricity Act 1989 and Town and Country Planning (Scotland) Act 1997 in Scotland, and the Planning Act 2008 and Town and Country Planning Act 1990 in England.

[2] The MOD undertook to the court to consult on an updated approach and have since published their response here: court-of-session-judgement-energiekontor-uk-ltd-against-first-advocate-general-for-scotland-on-beha…
[3] https://www.scottishrenewables.com/membership/policyupdates/policy-making-process/onshore-wind/eskdalemuir-working-group
[4] Onshore Wind Industry Taskforce - GOV.UK

General information

Why we are consulting

DESNZ and the Scottish Government are seeking to implement an enduring solution to onshore wind interference with the Eskdalemuir Seismic Array, a national and global seismological monitoring asset for which the MOD is responsible. A new framework for safeguarding the Array could unlock onshore wind capacity in the pipeline, while preserving the Array's crucial detection capabilities. Without a change in approach, no new projects are likely to be consented within 50km of the Array. The proposed new framework aims to open this area to new onshore wind development, and maximise the potential generation capacity. However, it is likely that not all projects that have been proposed by developers will obtain consent and nothing in this document pre-empts or constrains any further decisions to be taken by Ministers or by the relevant planning authorities. This consultation is seeking views on a potential updated approach to the management of seismic interference from wind turbines. This would work alongside the MOD's safeguarding approach, and the draft Technical Guidance Document (published alongside this consultation) sets out how this could work in practice for planning applications. Briefly, the proposed approach would:

- Extend the Exclusion Zone around the Array from 10km to 15km;
- Introduce a new methodology for the measurement of cumulative Seismic Ground Vibrations from wind turbine developments proposed within 50km of the Array;
- Apply a Seismic Impact Limit on individual turbines that are proposed within 50km of the Array; and
- Examine potential alternative models as part of a possible longer-term solution.

Consultation details

Issued: 20 March 2026

Respond by: 17:00 on 17 July 2026

Enquiries to: onshorewind@energysecurity.gov.uk

Consultation reference: Consultation on an Updated Approach to Managing Onshore Wind Turbine Interference with Eskdalemuir Seismic Array

Audiences:

We welcome responses from all interested parties, including planning experts and planning authorities, defence experts, academics, statutory consultees, trade bodies, residents of the area near to the Eskdalemuir Seismic Array, developers and prospective developers, and energy system professionals. Responses will help ensure that any changes made to the Array's safeguarding approach are effective and informed by a wide range of perspectives.

Territorial extent:

The proposals in this consultation are relevant to Scotland and England, as the safeguarding zone around the Eskdalemuir Seismic Array includes land within both.

How to respond

We are inviting responses to this consultation via the online e-consultation platform, Citizen Space.

When responding, please state whether you are responding as an individual or representing the views of an organisation. Your response will be most useful if it is framed in direct response to the questions posed, though further comments and evidence are also welcome. Wherever possible, please use data and evidence to support your answers.

Using the online service greatly assists our analysis of the responses, enabling more efficient and effective consideration of the issues raised. Therefore, we strongly encourage responses via Citizen Space. Please contact us if you intend to respond using an alternative method.

We advise that you do not send responses by post to the department at this time, as we may not be able to access them.

Respond online at: energygovuk.citizenspace.com/energy-development/eskdalemuir-seismic-array/

or

Email to: onshorewind@energysecurity.gov.uk

Confidentiality and data protection

Information you provide in response to this consultation, including personal information, may be disclosed in accordance with UK legislation (the Freedom of Information Act 2000, the Data Protection Act 2018 and the Environmental Information Regulations 2004).

If you want the information that you provide to be treated as confidential please tell us, but be aware that we cannot guarantee confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not be regarded by us as a confidentiality request.

We will process your personal data in accordance with all applicable data protection laws. See our privacy policy.

We may share responses (but not personal information) with other departments and Devolved Governments who have an interest in this consultation. Please also be aware that Artificial Intelligence (AI) may be used during data processing.

We will summarise all responses and publish this summary on GOV.UK. The summary may include a list of names of organisations that responded, but not people's personal names, addresses or other contact details.

Quality assurance

This consultation has been carried out in accordance with the government's consultation principles.

If you have any complaints about the way this consultation has been conducted, please email: bru@energysecurity.gov.uk.

Restricted and Exclusion Zones

This section explains the rationale for re-designating safeguarding zones around the Eskdalemuir Seismic Array. It outlines the evidence supporting a proposed 15km Exclusion Zone and 15–50km Restricted Zone and sets out how these zones could operate in planning and consenting processes.

Background

The 2005 Styles Report identified that 50km was the critical distance within which SGVs from wind turbines could be reasonably estimated to affect the detection capabilities of the Array, and therefore SGVs within this distance should be measured and controlled for. In addition, the Styles Report found that wind farm development constructed within 10km of the Array would disproportionately erode its detection capabilities. The Report recommended that no wind farm development should be allowed within 10km of the Array.

In May 2005, Scottish Ministers issued the Ministry of Defence (Eskdalemuir Seismic Recording Station) Technical Site Direction 2005 ("the 2005 Technical Direction"). A Direction in the same terms was issued by the UK Government. These Directions made the MOD a statutory consultee for all wind turbine developments with a 50km radius of the cross over point of the seismic sensor array (specified with grid references in the 2005 Technical Direction). The area within this 50km radius is currently known as the 'Consultation Zone'. In addition, the MOD routinely objected to all planning applications for wind turbine development that fell within 10km of the Array, resulting in a de facto 10km exclusion zone.

The more recent Xi Studies sought to quantify the amount of SGV detected by the Array according with the distance of turbines from the Array. Data from the Xi Studies indicated that a single turbine installed at 10km from the Array has, on average, the equivalent interference of 5500 turbines at 50km away. The amount of additional capacity that could be delivered within the 50km zone is therefore highly sensitive to wind turbines placed close to the Array.

To better optimise the finite SGV within the Threshold, the Xi Studies recommended formalising and increasing the Exclusion Zone around the Array from 10km to 15km; further detail on this can be found in Xi Work Study 4[5]. This could prevent deployment of around 0.8GW of the onshore wind pipeline located between 10-15km (of which up to 0.4GW could have been built before 2030 assuming an optimistic deployment timeline), but enables more projects to deploy beyond 15km, optimising overall capacity, subject to planning decisions. We acknowledge that some potential projects would be negatively impacted by this policy, but the proposed changes aim to better balance Array safeguarding with the potential for increased onshore wind deployment within the broader 50km zone.

[5] https://www.scottishrenewables.com/membership/policyupdates/policy-making-process/onshore-wind/eskdalemuir-working-group

Proposals

We are proposing to:

- Establish a formal Exclusion Zone, within which no wind turbine development shall be built. This formal Exclusion Zone would include anywhere within a 15km radius of the Array (an increase from the existing 10km de facto exclusion zone);
- Re-designate the existing Consultation Zone as a 'Restricted Zone', comprising the area within a 15-50km radius from the Array, within which a new process for assessing and managing seismic impacts (outlined in the following chapters) would apply; and
- Measure both the Restricted and Exclusion Zones as extending in a radius from the crossover point of the seismic sensor array system, according with the definition of the Array and spatial maps provided as Annex 2.

Questions

Q1. Do you agree with the proposal to establish an Exclusion Zone (anywhere within a radius of 15km) and Restricted Zone (anywhere between 15-50km) around the Array? Please explain your answer, including (if needed) reference to any affected projects, their current status and expected capacity.

Q2. Does the draft Technical Guidance Document, and in particular the definitions of the Eskdalemuir Seismic Array and the spatial map (Annex 2), provide enough information for developers and Determining Authorities to accurately site their wind turbine developments and ensure the relevant requirements are undertaken?

Revising the Approach to Measuring Seismic Ground Vibrations, and Introducing a Seismic Impact Limit

This section describes proposed updates to the methodology used to calculate Seismic Ground Vibrations (SGVs) from wind turbines. It introduces the Seismic Impact Limit (SIL) as a tool for managing headroom within the existing threshold and explains the process by which developers would be required to demonstrate compliance.

Background

To calculate the total SGV of a proposed wind turbine development within the existing Consultation Zone, the MOD employ a predictive model developed in the 2005 Styles Report and updated in 2014. The 2014 model is the methodology currently employed by the MOD to calculate the cumulative SGV produced by onshore wind developments in the existing Consultation Zone.

The 2014 model uses data on location, wind turbine hub height and rotor diameter, as provided by developers of onshore wind projects in their scoping or planning applications, to estimate the maximum possible ground vibrations produced by wind turbines. This ‘worst-case’ approach assumes that any given turbine produces both blade-pass and structural resonance seismic vibrations and includes a safety factor of ~20% to account for uncertainty in the seismic output of different turbines.

Following the 2018 breach of the Threshold and reconsideration of the technical and policy elements of threshold management by the EWG, the Xi Studies aimed to establish whether the 2014 predictive model overestimates the actual seismic ground vibrations of wind turbines; and, if so, develop a new methodology for predicting seismic ground vibrations. The new methodology would aim to optimise onshore wind development within the Restricted Zone without compromising the detection capabilities of the Array.

By conducting a seismic survey of the ground waves produced at seven operational wind farms within 50km of the Array, and then comparing extrapolated data against the cumulative amplitude of all turbines which were operational and in planning, the Xi Studies concluded that the current 2014 predictive model had the potential to over-estimate the cumulative SGV of wind turbines by as much as 36.1%. To predict the SGV values of proposed wind turbines more accurately, the Xi Studies recommended updating the 2014 methodology to incorporate data generated on the seismic impact of specific turbine models; this would make predictions more accurate to the proposed development, and remove the need for the ~20% safety factor.

Against this finding, the MOD completed a baseline audit of all operational onshore wind farms and sites that have had planning permission consented, but are not yet operational within the

Restricted Zone. By applying an updated 2026 algorithm (developed by Xi, reviewed by the Atomic Weapons Establishment, and approved by the EWG which includes the MOD), and taking into account only those developments which have been consented and/or constructed, the Xi Studies concluded there is between 0.206324 – 0.245040nm of headroom available within the Threshold of 0.336nm, depending on attrition levels within the pipeline. Available headroom is subject to the project pipeline at the point the regulations come into force, should they be made. To recreate the 2026 algorithm, please consult the LATT coefficients (annex 5) alongside the output of EWG work (annex 12) and the updated phase 4 report (annex 13).

In addition, the Xi Studies recommended applying a cap on the maximum predicted Seismic Ground Vibration that could be produced per turbine. The Seismic Impact Limit (SIL) would be designed to encourage the selection and siting of turbines such that they do not consume a disproportionate amount of the remaining available headroom for the amount of additional capacity they represent. The SIL is expressed as a formula applied to individual turbines. It quantifies a turbine's consumption of available seismic headroom, expressed in nanometres per square root of megawatts (nm/√MW), by calculating the amplitude of the groundwave generated by the given turbine (in nanometres) relative to the output power (in megawatts).

Figure 1.0: Formula for Calculation of the Seismic Impact Limit

$$Seismic\ Impact\ Limit = \frac{Amplitude\ at\ Eskdalemuir\ seismic\ array}{\sqrt{Power}}$$

More information on the Seismic Impact Limit can be found in Xi Work Study 5.[6]

Depending on the available headroom at the point of government response, the EWG recommend that the SIL is set at a single point between 0.004614 – 0.005479 nm/√(MW). Based on evidence to date, we are minded-to set the SIL at a single point within this range. However, if evidence at the point of government response indicates a SIL outside this range would be more appropriate, we retain the flexibility to set the SIL accordingly.

A SIL of 0.004614 nm/√(MW) would make it challenging to deploy turbines between 15-23km of the Array, and somewhat challenging to deploy turbines between 23-28km of the Array, but would allow for deployment of around 3-5GW between 28-50km of the Array, depending on the SGVs of the selected turbine model. In the current pipeline, around 0.8GW (up to 0.1GW pre-2030) is located between 15-23km and around 0.4GW (up to 0.4GW pre 2030) is located between 23-28km. Comparatively, around 2.4GW (up to 1.5GW pre-2030 assuming an optimistic deployment timeline[7]), is located between 28-50km. To secure 1.5GW by 2030, this policy would need to be in place by mid-2026 and requires a rapid deployment timeline. Note that these capacity figures are indicative only; actual deployment remains dependent on individual planning decisions. For further detail, please see the Analytical Annex.

[6] https://www.scottishrenewables.com/membership/policyupdates/policy-making-process/onshore-wind/eskdalemuir-working-group

[7] Optimistic Deployment timeline is based on an <4-year deployment timeframe for projects in the application stage. This timeline was based on shared developer experiences on deployment timelines for onshore wind projects.

A SIL of 0.005479 nm/√(MW) would make it challenging to deploy turbines between 15-20km of the Array, and somewhat challenging to deploy turbines between 20-25km of the Array, but would allow for deployment of around 4-6GW between 25-50km of the Array, depending on the SGVs of the selected turbine model. In the current pipeline, around 0.4GW (up to 0.1GW pre-2030) is located between 15-20km and around 0.5GW (up to 0.1GW pre 2030) is located between 20-25km. Comparatively, around 2.6GW (up to 1.7GW pre-2030 assuming an optimistic deployment timeline), is located between 25-50km. To secure up to 1.7GW by 2030, this policy would need to be in place by mid-2026 and requires a rapid deployment timeline. For further detail, please see the Analytical Annex.

Based on the results of the Xi Studies, the EWG recommended a new process to more accurately assess the predicted cumulative SGV of a proposed onshore wind turbine development, deduct this from the additional available headroom that has been identified within the Threshold, and ensure that no development is using a disproportionate amount of the available headroom.

This process is laid out in more detail in the draft Technical Guidance Document, and the flowchart in Annex 3. Briefly, the recommended process would work as follows:

1. Developers of onshore wind projects within the Restricted Zone, including applications which have been submitted but not determined, should select the desired turbine model(s) for their development, and submit the location coordinates of each turbine placement, through an open access industry tool (hosted on Scottish Renewables).

2. If a developer wishes to propose the use of a turbine that is not registered in the open access tool, then they would be required to expense the testing of the seismic ground vibrations emitted by that model. This would need to be approved by an MOD Approved Contractor and uploaded into the open access industry tool, including the LATT, according with point 1 (above).

3. Where a developer wishes to use any kind of engineered or technical mitigation to reduce their seismic impact, this must be agreed with the MOD prior to the submission of their application (for more detail, please see the draft Technical Guidance);

4. The developer must submit a Seismic Ground Vibration Report to the Determining Authority, generated by the open access industry tool. This would include a calculated value of the proposal's cumulative SGV, and confirm whether or not each turbine is compliant with the SIL;

5. If the proposal includes any wind turbines that exceed a pre-determined SIL value, then the Determining Authority must decline to determine or accept the application until such time that the applicant ensures all turbines are compliant;

6. Where all proposed turbines are compliant with the SIL, the MOD should calculate the total cumulative SGV of a proposed onshore wind development using the 2026 Algorithm, to test if the proposed development breaches the Threshold;

7. Where the proposed development does not breach the Threshold, headroom would be attributed by the MOD based on a 'first come, first served' model. The attribution of available headroom would be based on the date on which the relevant MOD office receives notification of the application as a statutory consultee.

8. Any wind turbine development with a cumulative SGV that breaches the Threshold will be refused consent.

The EWG also discussed how repowering should be treated under the new process. The MOD's current safeguarding approach deems that applications for the repowering of existing wind turbines will be considered as a new planning application. As such, repowering applications would be subject to the same 'first come, first served' model for attributing available headroom which applies to new planning applications. Note, however, that this does not pre-judge how any individual repowering application would be determined.

The EWG also considered whether there may be a case for varying the process as outlined above in certain circumstances. Specifically, the EWG recommended that applications to vary existing consents, where the variation would not affect the seismic impact of a site (e.g. an extension to operating times only), should not be subject to the new process.

Under the 2005 Technical Directions, there is no scope to require that an onshore wind developer submits information in their planning application relevant to the seismic impacts of their proposed turbines on the Array, nor to require the developer to comply with a SIL. Therefore, to ensure that adequate and compliant information on the SIL is submitted, and that the detection capabilities of the Array are safeguarded with confidence, the EWG has recommended that legislation is brought forward that requires developers of onshore wind planning applications within the Restricted Zone to submit information relevant to the seismic impact of the turbine models selected and to comply with the SIL, as set out in draft Technical Guidance.

Proposals

We are proposing to:

- retain the overall Threshold at 0.336nm
- update the predictive model which currently calculates SGVs to account for turbine-specific SGV data
- set a Seismic Impact Limit for turbines at a single point between 0.004614 – 0.005479 nm/$\sqrt{}$(MW), in order to unlock potential additional capacity within the Restricted Zone. If evidence at the point of government response indicates a SIL outside this range would be more appropriate, we retain the flexibility to set the SIL accordingly.
- introduce regulations that would require developers of planning applications for wind turbine developments within the 15-50km Restricted Zone to submit seismic impact information for consideration alongside their planning application.

Questions

Q3. Do you agree that the predictive methodology should be updated to incorporate turbine-specific SGV data? Please explain your answer.

Q4. Do you agree with the process for generating and maintaining turbine-specific SGV data, as set out in Chapter 3 of the draft Technical Guidance Document? Please explain your answer.

Q5. Do you agree that the SIL value should be set at a single point between 0.004614 – 0.005479 nm/√(MW), to allow for the optimisation of onshore wind capacity within the Restricted Zone whilst safeguarding the Array's detection capabilities? Please explain your answer.

Q6. Do you agree that new regulations should require developers to submit information on their seismic impact and comply with the SIL, as laid out in the draft Technical Guidance Document? Please explain your answer.

Q7. Does the draft SGV report in the draft Technical Guidance Document provide enough information for developers and Determining Authorities to ensure that these requirements have been fulfilled? Please explain your answer.

Q8. Do you agree that these new process requirements should not apply to applications to vary consent, where the variation would not have any impact on the seismic impact of the development (e.g. where the application relates only to extending the operating period of a consented or operational wind farm)?

Q9. Do you agree that SIL and seismic impact reporting requirements should apply to all repowering applications as if they were new applications?

Q10.Do you agree that headroom should be attributed by MOD on a 'first come, first served' model, based on the date on which the relevant MOD office receives notification of the application as a statutory consultee. If you disagree please set out why?

Consenting and Determination

This section sets out proposed legislative changes to strengthen how MOD safeguarding advice is treated in the planning system. It explains how Determining Authorities would be required to act where projects would breach the seismic threshold, Exclusion Zone, or other relevant limits. The proposals laid out in this section would apply to all planning decisions for wind turbine developments within 50km of the Array which are made under the Scottish TCPA, English TCPA, NSIP or Electricity Act regimes.

Background

Under the 2005 Technical Directions, the MOD is a statutory consultee for onshore wind planning applications submitted within a 50km radius of the Array. When consulted on a proposed onshore wind development, the MOD would either signal an objection to a project on the grounds of breach of the Threshold, or advise the Determining Authority that they had no objection. Under this system, the MOD's consultation response to a planning application is considered a 'material consideration' and, as such, has to be weighed against other material considerations as part of the determination process. On this premise, a Determining Authority could choose to consent an application within the 50km Consultation Zone which the MOD had objected to on the basis that it could pose a threat to the detection capabilities of the Array.

While instances of this are rare, and in general a Determining Authority will heed an MOD objection, the Eskdalemuir Working Group considered that preservation of the detection capabilities of the Array was a responsibility for MOD seismic and nuclear experts. Therefore, to ensure that the detection capabilities of the Array are safeguarded with confidence, the Eskdalemuir Working Group has recommended that legislation is introduced that requires Determining Authorities to refuse consent for onshore wind farms where the MOD have objected on the basis of breach of the Threshold. This would remove planning authority discretion to approve onshore wind farms where they could pose a threat to the Array's detection capabilities.

In addition, the powers in the Planning and Infrastructure Act 2025 mean that government could introduce new legislation requiring a Determining Authority to refuse or decline to determine or accept applications for wind turbine developments which would clearly contradict the proposed safeguarding approach. This could apply where applications include turbines which would be situated within the Exclusion Zone or would breach the SIL. In effect, this would simplify the process for applications within the Exclusion Zone, where these would be subject to an MOD objection at the point of determination in any case (and under the recommendation above, would then need to be refused by the Determining Authority). It would also ensure that no application could be approved where it would use up a disproportionate amount of the Threshold.

We envisage that new regulations and technical guidance would apply to all projects which have not yet been consented at the point at which it becomes live. Where an application has

been submitted, but not yet determined, by the time any new regulations are made, developers would need to create an SGV report and submit it to the Determining Authority as supplementary or additional information relevant to the application. This would then need to be used by the Determining Authority and MOD in the determination of the application.

Proposals

We are proposing to bring forward legislation that requires the Determining Authority to:

- Decline to determine or accept applications for wind turbine developments within the Exclusion Zone (within 15km of the Array);
- Decline to determine or accept applications for wind turbine developments within the Restricted Zone (between 15-50km from the Array) where any proposed turbine would breach the Seismic Impact Limit of a single point between 0.004614 – 0.005479 nm/√(MW); and
- Refuse applications for wind turbine developments in the Restricted Zone where the MOD has objected to the application on grounds relating to seismic impact (such as breach of the Threshold).

Questions

Q11. Do you agree with the proposal to introduce legislation that requires the Determining Authority to refuse, or decline to determine or accept, applications for wind turbine developments in order to protect the Array, under the circumstances outlined in this chapter? Please explain your answer.

Q12. Do you have views on the proposed transitional arrangements for applications that have already been submitted but not yet determined at the point at which new regulations or guidance come into force? In particular, we welcome feedback on:

a) Whether, and in what circumstances, additional seismic information (such as an SGV report) should be requested for live applications

b) How applications currently in the planning system should be treated where they include turbine models or layouts that may not comply with any future requirements; and

c) Whether any specific transitional provisions are needed for repowering or variation applications.

Alternative Approaches

This section invites views on other potential solutions for mitigating seismic interference from onshore wind turbines. It acknowledges ongoing joint MOD–DESNZ exploration of alternative technical options and seeks evidence from respondents on feasible alternatives.

Background

We welcome participation and innovative ideas in our pursuit of Clean Power 2030. Whilst government acknowledges that the proposals put forward by the Eskdalemuir Working Group are grounded in 7 years' worth of expert scientific research, we also recognise the fact that this is a highly technical and sensitive policy area and that there may be alternative solutions available for consideration.

The powers that government has made available through the Planning and Infrastructure Act 2025 do not preclude government from pursuing an alternative approach if, following consultation, we find that there is a more efficient, timely, and effective solution that adequately supports onshore wind deployment through the safeguarding of the Array. In parallel with this consultation, we have initiated a short joint MOD-DESNZ appraisal of potential alternative mitigation solutions, with a view to publishing findings in a similar timeframe to the government response to this consultation. This enables us to optimise rollout in line with Clean Power 2030, whilst also gathering evidence on other potential solutions.

One possible alternative solution we plan to review is the use of boreholes, which involves placing sensors deep below ground level to reduce the background seismic 'noise' detected at the Array, and to increase the seismic signal-to-noise ratio of signals of interest. The Comprehensive Test-Ban Treaty Organisation[8] notes that this is a commonly used, but site-specific, method of mitigation.

We welcome any evidence and suggestions on alternative solutions, including the use of boreholes, which could support the work of this review.

Questions

Q13. Please provide details and evidence of any alternative solutions that, if implemented, could adequately mitigate against the interference that onshore wind turbines can cause to the detection capabilities of the Array.

[8] 20240618-CTBTO 25th Anniversary booklet Final LRes.pdf. p.46

Q14. Please provide site-specific details and evidence of how alternative solutions would adequately mitigate against the interference that onshore wind turbines can cause to the detection capabilities of the Array.

Next steps

This consultation will run for 8 weeks and remain open until 17:00 on 17 July 2026. All responses will be analysed by the Department for Energy Security and Net Zero. Some responses may be shared with the Scottish Government, the Ministry of Housing, Communities and Local Government and/or the Ministry of Defence, who also have an interest in this consultation.

Government will aim to publish a response to this consultation in Summer 2026, within 12 weeks of the consultation closing.

This publication is available from: www.gov.uk/government/consultations/eskdalemuir-seismic-array-managing-onshore-wind-turbine-interference

Any enquiries regarding this publication should be sent to us at:
onshorewind@energysecurity.gov.uk

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