UK Government

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

Analytical Annex

Department for Energy Security and Net Zero (2026)

Introduction

To evaluate the impact of this policy, analysis has been conducted on the pipeline of projects in the Eskdalemuir region.

This Analytical Annex is provided for illustrative and analytical purposes only. It presents scenario-based estimates and indicative mapping to inform consultation on the proposed approach. The material herein must not be read as pre-judging, pre-empting, or indicating the outcome of any future consenting decision to be taken by Ministers or by the relevant planning authorities. All projects identified, capacity figures, timelines, distance bands, headroom indications and deployment ranges are non-determinative, do not imply any presumption in favour of or against consent, and remain subject to case-by-case assessment under the applicable statutory planning regimes.

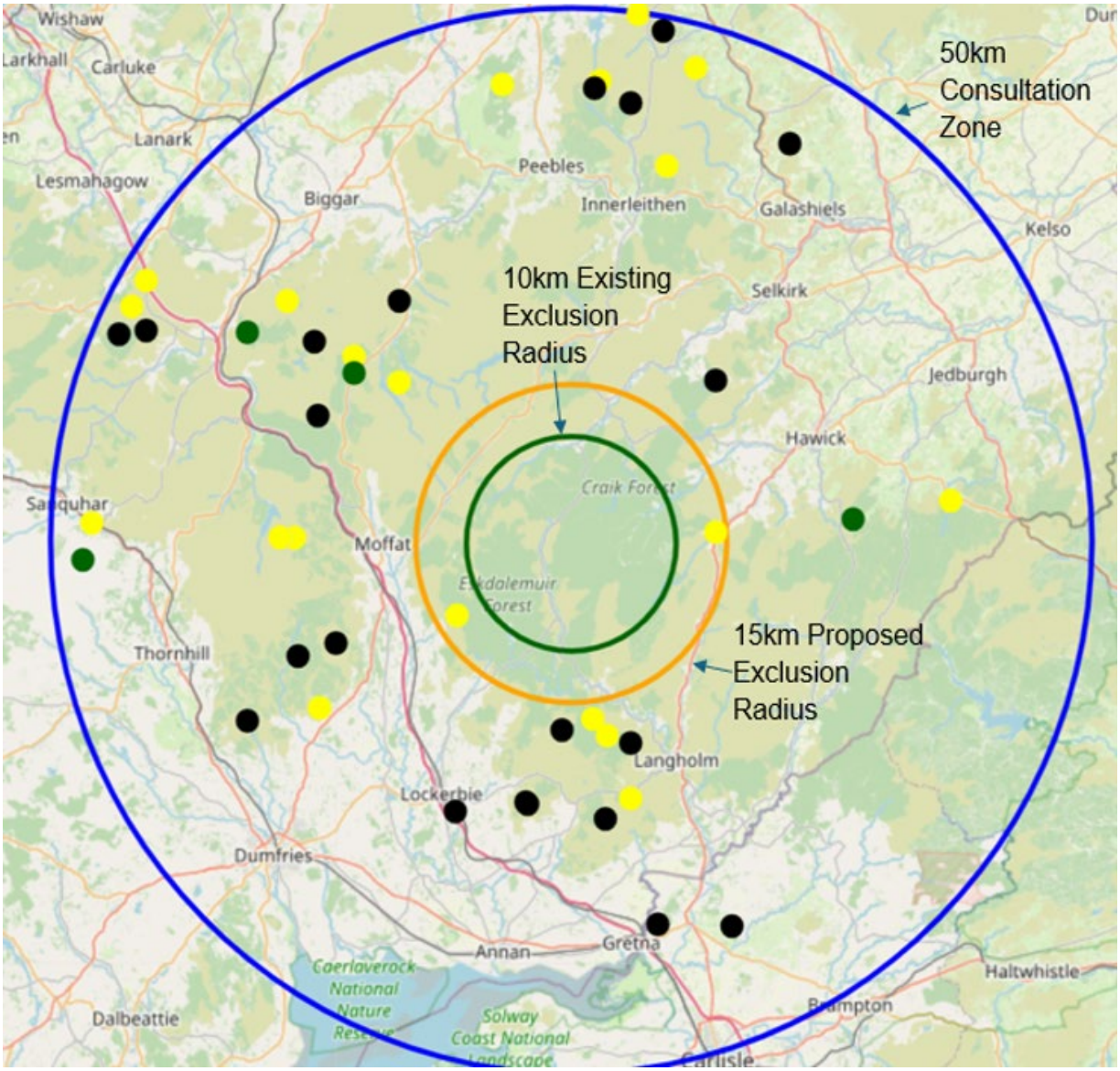
Data sources and project attributes (including distances from the Array, project status and capacities) reflect information available at the time of drafting and may contain approximations; they do not confer priority, queue position, or likelihood of consent. Maps, tables and charts are illustrative, and inclusion or omission of a project should not be taken as a policy signal. Where the Annex refers to potential capacity “enabled” under particular scenarios (e.g., at different SIL values), these figures are indicative only and contingent on future individual planning decisions, environmental and technical considerations, developer choices, and any subsequent guidance or legislation.

This analytical annex includes:

- **Pipeline analysis** – This section provides information on the pipeline of projects located in the Eskdalemuir region. It contains two maps of the Eskdalemuir region showing projects within the 50km consultation zone and 15km exclusion zone (Figures 2.0 & 2.1). Additionally, this section contains information outlining the amount of capacity located at various distances from the Array, as well as their stage of project development (Figures 3.0 & 3.1 & Tables 1 & 2). This section demonstrates the capacity impact that extending the exclusion zone out to 15km will have.
- **Monetised benefits -** This section outlines the potential monetised economic impacts arising from enabling the deployment of significant levels of onshore wind capacity within the Eskdalemuir consultation zone, through changes to the policy governing the management of onshore wind turbine interference with the Array.
- **Non-Monetised benefits -** This section outlines the non-monetised impacts arising from enabling the development of onshore wind capacity in the Eskdalemuir region. This section covers the potential business, innovation & skills and local benefits impacts that could result from the policy.
- **List of projects impacted -** This section provides a list of projects that are expected to be impacted by this policy.

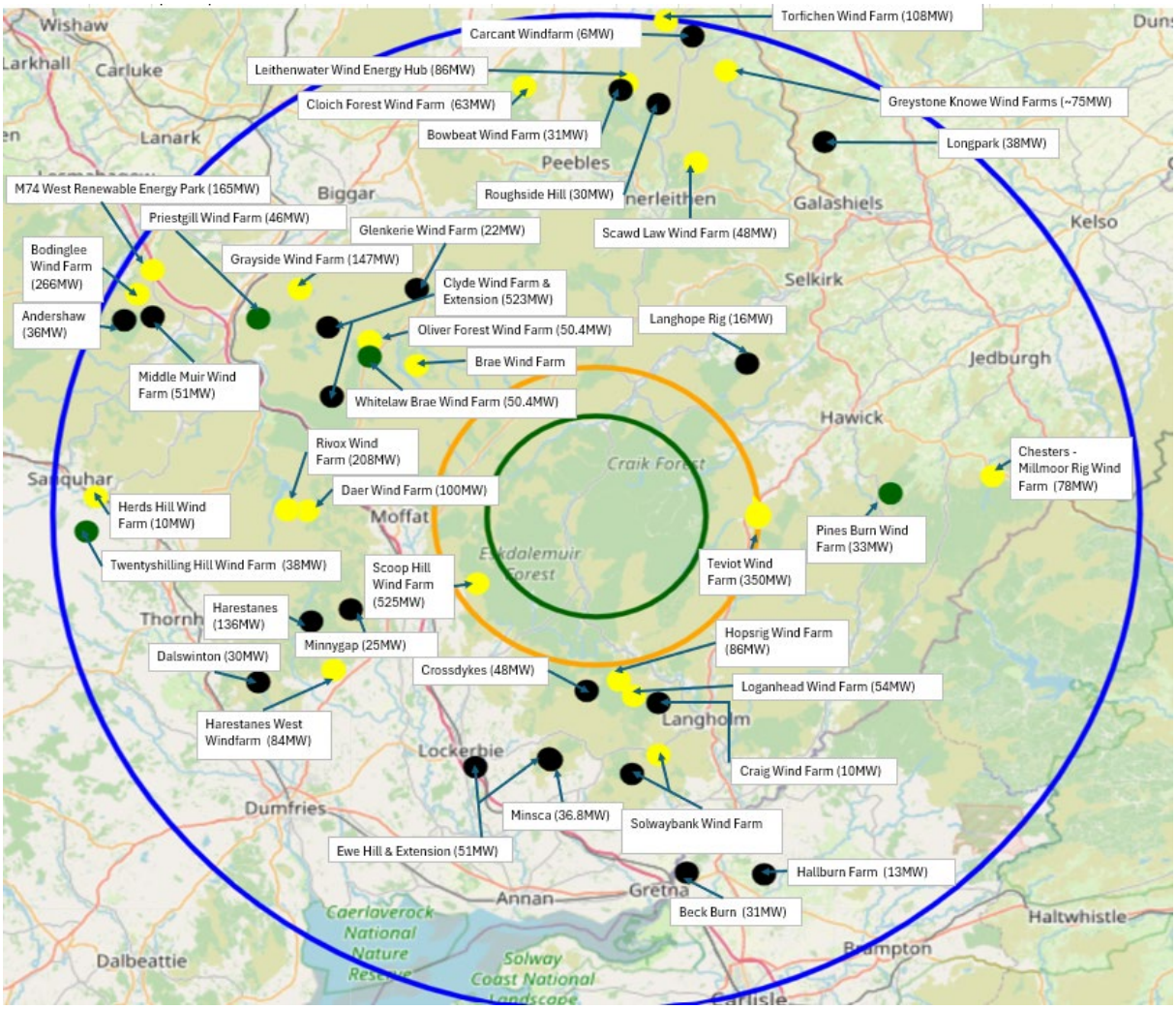
Pipeline Analysis

Figure 2.0: Map of Eskdalemuir Region with Projects Flagged[1]



[1] **The points placed on the map are indicative estimates of the location of wind farm sites, due to the difficulty in precisely mapping large site areas, the points placed should be used as a general indicator of the site's location**. Black points represent operational projects; green points represent projects that are under construction or awaiting construction and yellow points represent projects that have submitted their application. The inner green circle represents the existing 10km exclusion zone, the orange circle represents the proposed 15km exclusion zone, and the blue circle represents the 50km consultation zone. Renewable Energy Planning Database: quarterly extract - GOV.UK

Figure 2.1: Map of Eskdalemuir region with projects labelled[2,3]



[2] Location and capacity data collected from the REPD Renewable Energy Planning Database: quarterly extract - GOV.UK. These figures are subject to change.
[3] As of 5th February 2026, Scoop Hill Wind farm has had its application refused.

Figure 3.0: Chart of projects by distance and development stage for the lower SIL[4]

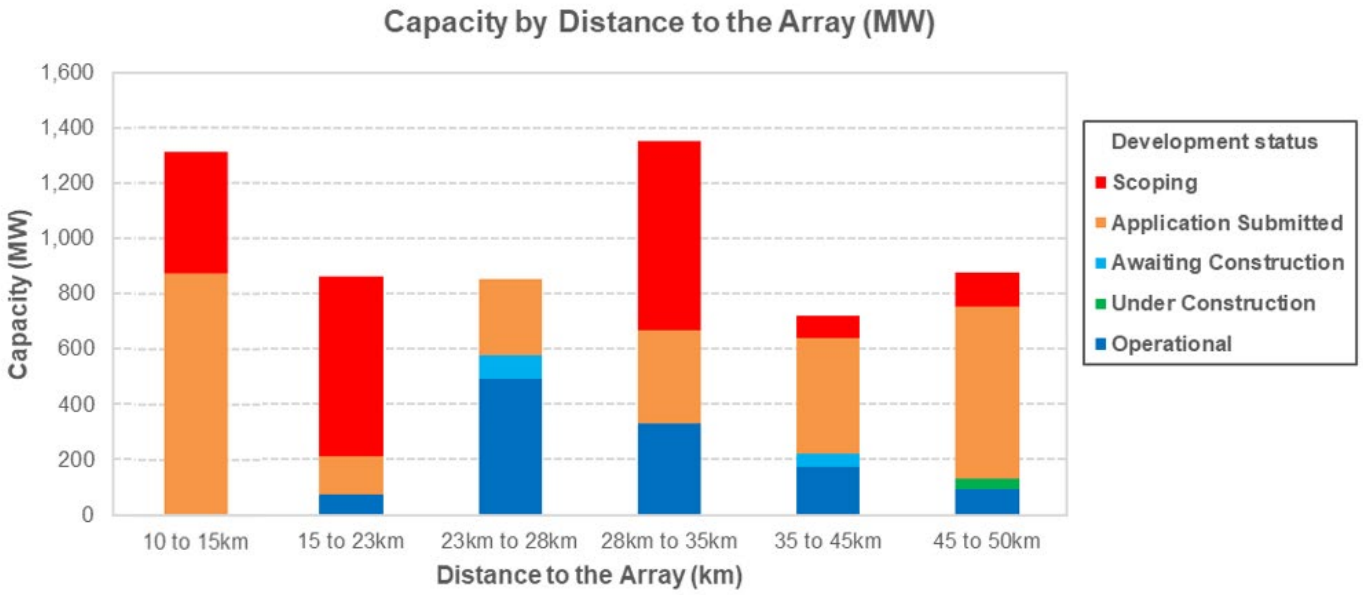
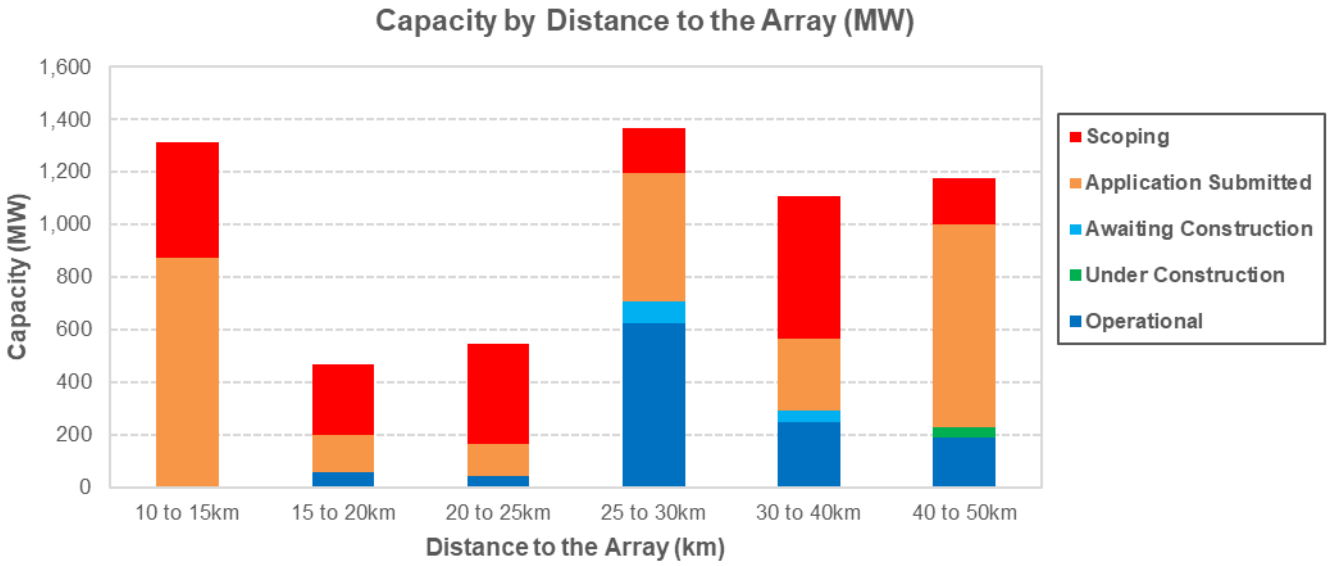


Figure 3.1: Chart of projects by distance and development stage for the higher SIL



The amount of seismic interference detected by the Array is highly sensitive to the proximity of developments. Data indicated that a single turbine installed 10km from the Array has, on average, the equivalent interference of 5,500 turbines at 50km. To prevent turbines, close to the Array consuming a disproportionate share of the available seismic headroom, and therefore to optimise development in the 50km zone, the EWG recommended increasing the exclusion zone around the Array from 10km to 15km. This would prevent deployment of around 0.8GW (up to 0.4GW of potential 2030 ready capacity) of the onshore wind pipeline

[4] Derived from the Renewable Energy Planning Database, Renewable Energy Planning Database: quarterly extract - GOV.UK
Includes projects that are in the scoping stage.

located between 10-15km, but enables more projects to deploy beyond 15km, optimising overall capacity.

Analysis for the lower SIL

Should the SIL be set at 0.004614 nm/√(MW), it would be challenging to deploy turbines within 15-23km of the Array, and somewhat challenging to deploy turbines within 23-28km of the Array, but would allow for a further deployment of around 3-5GW of onshore wind capacity between 28-50km, depending on the SGVs of the selected turbine model. Of the current pipeline, around 0.8GW (up to 0.1GW pre-2030) is located between 15-23km and around 0.4GW is located between 23-28km (up to 0.4GW pre-2030). This could be challenging to deploy under this policy, but around 2.4GW (up to 1.5GW pre-2030) is located between 28-50km and would be enabled by this policy, with more that could come forward after 2030. We determine that the policy would need to be in place by mid-2026 to secure up to 1.5GW by 2030 should deployment follow an optimistic deployment timeline[5]. Note that these capacity figures are indicative only; actual deployment remains dependent on individual planning decisions. See Table 1.

It is important to note that there is a considerable deployment risk for this capacity by 2030, as this capacity reflects an optimistic deployment timeline. The total CP2030 capacity enabled by this policy could be lower than the 1.5GW in Table 1.

Table 1: Distribution of the Eskdalemuir region pipeline at different distances & availability by 2030

Distance	Pipeline	Pre-2030 pipeline
10-15km	0.8GW	Up to 0.4GW
15-23km	0.8GW	Up to 0.1GW
23-28km	0.4GW	Up to 0.4GW
28-50km	2.4GW	Up to 1.5GW

Analysis for the higher SIL

Should the SIL be set at 0.005479 nm/√(MW), it would be challenging to deploy turbines within 15-20km of the Array, and somewhat challenging to deploy turbines within 20-25km of the Array, but would allow for deployment of around 4-6GW between 25-50km, depending on the SGVs of the selected turbine model. Of the current pipeline, around 0.4GW (0.1GW pre-2030) is located between 15-20km and around 0.5GW is located between 20-25GW (0.1GW pre-2030). This could be challenging to deploy under this policy, but around 2.6GW (up to 1.7GW pre-2030) is located between 25-50km and would be enabled by this policy, with more that

could come forward after 2030. We determine that the policy would need to be in place by mid-2026 to secure up to 1.7GW by 2030 should deployment follow an optimistic deployment timeline[6]. See Table 2.

It is important to note that there is a considerable deployment risk for this capacity by 2030, as this capacity reflects an optimistic deployment timeline. The total CP2030 capacity enabled by this policy could be lower than the 1.7GW in Table 2.

Table 2: Distribution of the Eskdalemuir region pipeline at different distances & availability by 2030

Distance	Pipeline	Pre-2030 pipeline
10-15km	0.8GW	Up to 0.4GW
15-20km	0.4GW	Up to 0.1GW
20-25km	0.5GW	Up to 0.1GW
25-50km	2.6GW	Up to 1.7GW

Monetised Benefits

An indicative deployment of around 3GW of onshore wind capacity in the Eskdalemuir region would be expected to secure up to £2 billion in investment into UK-based services, strengthening domestic supply chains and creating high-value jobs in the green energy sector.

Additionally, based on the recommended community benefit rate of £5,000 per MW per year, 3GW of ONW projects could deliver £15 million annually to communities in the Eskdalemuir region. Over a 25-year operational life, this would equate to a cumulative value of £375 million in direct community investment, fostering local economic resilience and social benefits.

Non-Monetised Benefits

In addition to the monetised benefits from deploying onshore wind capacity in the Eskdalemuir region, this policy could create a number of non-monetised benefits.

Business Impacts: We would expect this policy to provide considerable benefits to both onshore wind developers and their ancillary industries. This policy could lead to direct benefits to firms engaging in the planning, engineering, construction and management of projects in the Eskdalemuir region.

[6] An optimistic deployment timeline assumes that projects with applications submitted take less than 4 years to become operational. This is based on developer perspectives of a fast deployment timeline.

Additionally, due to the deployment of onshore wind projects in the region, the onshore wind sector could see increased confidence in the UK's renewable energy policy, which could in turn encourage the industry to invest in further long-term projects. Furthermore, as a result of the UK government signalling support for the onshore wind industry, financial institutions may be more likely to support onshore wind projects in the UK. This could lead to further benefits to the industry from increased support in financing and investing in new projects.

Innovation & Skills: As the enactment of this policy could unlock a significant amount of onshore wind capacity in the UK, onshore wind developers are likely to encourage and invest in upskilling their workforce and invest in innovative techniques and technologies. This investment is likely to lead to spillover benefits to the wider economy.

Local Benefits: As a result of increased onshore wind deployment in the Eskdalemuir region, this policy is expected to enable a significant level of benefits to the local region and its communities from the increased economic activity occurring locally. This could lead to indirect benefits for local SMEs via local supply chain participation and support for local community projects by investment from onshore wind developers.

There would likely also be direct regional impacts through community benefit spending from onshore wind developers to secure community support for wind projects in the region.

List of Projects Impacted

This is a reference list of the projects currently in the onshore wind pipeline expected to be impacted by this policy. New regulations, if enacted, would apply to all applications that have not yet been determined or consented at the point when the regulations and technical guidance become live. Where projects are operational or have already received planning approval or development consent by the time any new regulations come into force, they would not be directly impacted unless or until they make an application to vary their consent. At this point, the application to vary consent would be subject to the new regulations.

The list below only includes projects that are operational or have submitted a planning application. Projects in earlier stages of planning are not included for commercial sensitivity reasons.

Project	Project Capacity (MW)	Project Stage
Penicuik, Moorfoot Hills - Torfichen Wind Farm	108	Application Submitted
Carcant Windfarm	6	Operational
Bodinglee Wind Farm	266	Application Submitted

Andershaw	36	Operational
M74 West Renewable Energy Park	165	Application Submitted
Twentyshilling Hill Wind Farm	38	Under Construction
Herds Hill Wind Farm - Wind Turbines	10	Application Submitted
Greystone Knowe Wind Farm - Wind Farm	75	Application Submitted
Middle Muir Wind Farm	51	Operational
Leithenwater Wind Energy Hub - Wind Farm	86	Application Submitted
Cloich Forest Wind Farm	63	Application Submitted
Longpark	38	Operational
Bowbeat Wind Farm	31	Operational
Roughside Hill	30	Operational
Hallburn Farm	13	Operational
Rivox Wind Farm - Wind farm	208	Application Submitted
Priestgill Wind Farm	46	Awaiting Construction
Beck Burn	31	Operational
Chesters - Millmoor Rig Wind Farm & Battery Energy Storage	78	Application Submitted

Scawd Law Wind Farm	48	Application Submitted
Grayside Wind Farm	147	Application Submitted
Dalswinton	30	Operational
Clyde Wind Farm Extension (Clyde 2)	173	Operational
Harestanes South Windfarm Extension	45	Application Submitted
Harestanes West Windfarm	84	Application Submitted
Harestanes	136	Operational
Glenkerie Wind Farm	22	Operational
Ewe Hill	14	Operational
Ewe Hill (extension)	37	Operational
Tweed Valley, Southern Uplands - Oliver Forest Wind Farm	50	Application Submitted
Pines Burn Wind Farm	33	Awaiting Construction
Clyde Wind Farm	350	Operational
Daer Wind Farm	100	Application Submitted
Minsca	37	Operational
Whitelaw Brae Wind Farm	50	Awaiting Construction
Solwaybank Wind Farm	30	Operational

Bloch Wind Farm & Battery Storage (Solway Bank Extension)	126	Application Submitted
Minnygap	25	Operational
Brae Wind Farm - 3 Wind turbines	No capacity Provided	Application Submitted
Langhope Rig	16	Operational
Craig Wind Farm	10	Operational
Loganhead Wind Farm	54	Application Submitted
Crossdykes	48	Operational
Hopsrig Wind Farm	86	Application Submitted
Teviot Wind Farm	350	Application Submitted
Scoop Hill Wind Farm	525	**Application Refused**

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

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

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