



Non-Technical Summary (NTS) Official

**Application for three wind turbines, up to 180m, on land at Low
Drumclog, Drumclog, Strathaven, South Lanarkshire, ML10 6QE.**

February 2022

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1.0 Introduction

- 1 This Non-Technical Summary (NTS) accompanies a planning application by CleanEarth (CE) to South Lanarkshire Council for full planning permission to develop three wind turbines on Land at Low Drumclog, Strathaven, South Lanarkshire, ML10 6QE. The three proposed turbines are centred on the National Grid coordinates within the table below.

Table 1 - Turbine Locations

Turbine	Easting	Northing
Turbine 1 (T1)	263136	641040
Turbine 2 (T2)	262952	640478
Turbine 3 (T3)	262653	640813

- 2 The applicant looks to develop sites that have a reduced environmental impact by considering proximity and visual amenity to ‘sensitive receptors’ (residential dwellings), noise, ecological constraints, existing infrastructure, and locally designated areas and features; whilst providing a clean supply of electricity to large consumers, significantly reducing their operational costs and carbon footprint.
- 3 The proposed Low Drumclog scheme will comprise of: *‘Three wind turbines with a maximum blade tip height of up to 180m with a 3-bladed rotor design, and associated infrastructure including a crane pad, access track, and electrical housing. Supplementary elements include three permanent switchgear housing units (approx. 9m x 4m x 4m), underground cabling, access track, and temporary crane hard standing areas (approx. 45m x 65m)’*. It should be noted that the proposal is for a fixed term of 35 years, at the end of which the development will be removed and the land reinstated back to its original condition, or a condition agreed with the Local Planning Authority (LPA).
- 4 The turbine layout has been selected to minimise all negative impacts on the locality; situating the turbines as far from residential properties as possible – the nearest uninvolved dwelling is located approximately 690m northwest. The turbines have been located close to the operational wind turbines already in situ, such that they are viewed as additions to the existing turbine landscape.

2.0 The Proposed Development

- 5 The applicant proposes to install three wind turbines with a maximum blade tip height up to 180m, with a 3-bladed rotor design, and associated infrastructure including crane pads. Supplementary elements include three permanent switchgear housing units (approx. 9m x 4m x 4m), underground cabling, access track, and temporary crane hard standing areas (approx. 45m x 65m).
- 6 The proposed wind farm will generate electricity from a renewable source. This site has a viable wind speed, and from this CE predicts that the wind farm will generate over 65GWh per year, enough to power over 17,000 South Lanarkshire homes¹.
- 7 The Tall Wind Turbines – Landscape Capacity, Siting and Design Guidance², undertaken by SLC in 2019. Identified the area in which the proposal is sited as having a medium landscape capacity for turbines between 150m and 250m. Careful consideration of the existing turbine developments and the South Lanarkshire Capacity guidance led to the positioning and scaling of this scheme. A process of elimination was used to identify the best turbine locations, with the least amount of environmental and visual impact.
- 8 The site location accommodates the proposed scale and capacity when considered with the existing turbines in the landscape and will maintain amenity to receptors in the area. An optimal layout was created based on a variety of different factors. Further details can be found with the Layout Summary Document.

¹ <https://www.gov.uk/government/statistical-data-sets/regional-and-local-authority-electricity-consumption-statistics>

² https://www.southlanarkshire.gov.uk/downloads/file/13239/tall_wind_turbines_landscape_capacity_siting_and_design_guidance

3.0 Energy and Planning Policy Appraisal

- 9 The national policy context relevant to the proposed three turbine development on Land at Low Drumclog is described below. Other specific legislation and planning policy pertinent to the environmental studies required by South Lanarkshire Council to accompany and inform this supporting statement (noise, electro-magnetic interference, shadow flicker etc.) are provided in the respective technical sections of this document.
- 10 It has been the policy of successive Governments since 1991 to stimulate the exploitation and development of renewable energy sources wherever they have prospects of being economically attractive and environmentally acceptable. Whilst this policy has its foundations in environmental imperatives, and in particular concerns about carbon dioxide emissions and climate change, more recently concerns about the security and diversity of national energy supply, and the need for sustainable development, have endorsed this policy.
- 11 At a European level, the 2009 Renewables Directive places an obligation on the UK to generate 15% of its total energy requirements (i.e., not just electricity) from renewable energy by 2020. In the UK, the Climate Change Act 2008 establishes a framework to place the UK on an economically credible path to achieving a reduction in CO² levels to 80% of 1990 levels by 2050. Following this, the Low Carbon Transition Plan was launched in 2009, setting out how the UK will meet these target reductions of 34% in carbon emissions by 2020, and detailing actions for individual sectors of the economy, including the target of 40% of electricity to be supplied by low carbon sources including renewables. In addition, the 2007 Energy and Planning White Papers, and subsequent implementation of the 2008 Energy and Planning Acts developed frameworks and mechanisms to facilitate the consenting of national infrastructure projects that will contribute to the supply of energy from renewable sources.
- 12 However, in November 2015, it was revealed that the UK is predicted to fall short of these legally binding EU obligations. This therefore brings a greater sense of urgency in implementing renewable energy developments to meet these targets. Some policies have been improved to reach these net-zero targets across Europe by 2050, but progress has likely slowed due to the COVID-19 pandemic. Moreover, our proposal will contribute to reaching those targets both locally and nationally with an estimated annual yield in carbon savings of 13,750 metric tons. This will be achieved through providing 65GWh of energy annually, powering the equivalent of over 17,000 South Lanarkshire homes.

- 13 In addition, the UK Government recently took a large and progressive step in committing to reduce emissions following the 2015 global climate agreement struck at the United Nations Conference on Climate Change in Paris, ratifying the agreement in November 2016. This sets out a clear long-term goal of net-zero emissions by the end of the century, where advancement was independently assessed in 2018 and five years thereafter. This long-term goal sends a strong signal to investors, businesses, and policymakers about shifting to a low carbon economy. To date, 195 parties have signed and 189 have ratified the agreement, only emphasising the global movement towards climate action.
- 14 Prior to Glasgow's hosting of COP26 in November 2021, the UK set in law the world's most ambitious climate change target to cut emissions by 78% by 2035 compared to 1990 levels at the UN Climate Change Conference. This latest target enshrined in the UK's 6th Carbon Budget extends the net-zero commitment as the UK breaks the records in renewable electricity generation, which has more than quadrupled since 2010 while low carbon electricity overall now provides 50% of our total generation.
- 15 The following planning policy appraisals set out the current legislation and guidance relevant to the three-wind turbine proposal at Low Drumclog. Full details can be found within chapter 4 of the Environmental Statement. The policy appraisal includes:
- Climate Change (Scotland) Act 2019³;
 - Climate Change Plan 2018-2032 - Update⁴;
 - Scottish Energy Strategy 2017 (Position Statement 2021)⁵;
 - 2020 Route map for Renewable Energy – 2015 Update⁶;
 - Onshore Wind Policy Statement 2017⁷;
 - UN Climate Change Conference and The First Minister's speech;
 - National Planning Framework for Scotland (NPF3) 2014⁸;
 - Scottish Planning Policy (SPP) 2014⁹;
 - Regional Planning Policy and Guidance;
 - Strategic Development Plan 2017 – Clydeplan¹⁰;
 - South Lanarkshire Council, Landscape Character Assessment, November 2010¹¹;

³ <https://www.gov.scot/policies/climate-change/reducing-emissions/>

⁴ <https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/>

⁵ <https://www.gov.scot/publications/scotlands-energy-strategy-position-statement/>

⁶ <https://www.webarchive.org.uk/wayback/archive/20170104162211/http://www.gov.scot/Topics/Business-Industry/Energy/RoutemapUpdate2015>

⁷ <https://www.gov.scot/publications/onshore-wind-policy-statement-9781788515283/>

⁸ <https://www.gov.scot/publications/national-planning-framework-3/>

⁹ <https://www.gov.scot/publications/scottish-planning-policy/>

¹⁰ <https://www.clydeplan-sdpa.gov.uk/strategic-development-plan/current-plan/current-strategic-development-plan-july-2017>

¹¹ https://www.southlanarkshire.gov.uk/downloads/file/4146/landscape_character_assessment_-_final_report_november_2010

- South Lanarkshire Landscape Capacity Study, 2016¹²;
- South Lanarkshire Council, Tall Wind Turbines: Landscape Capacity, Siting and Design Guidance: Addendum to Landscape Capacity Study for Wind Energy, 2016¹³;
- South Lanarkshire Local Development Plan 2 – Volume 1 2018¹⁴
- South Lanarkshire Local Development Plan 2 - Volume 2 2021¹⁵
- South Lanarkshire Local Development Plan 2 - Supporting Planning Guidance 2021¹⁶;

Renewable Energy in the Context of the Application

16 The applicant expects that the wind turbine will make the following contributions to national energy and environmental policies:

- The proposed wind farm at Low Drumclog will save over 13,750 metric tonnes of carbon each year, compared to the equivalent fossil fuel production (depending on the UK energy mix at any one time);
- The wind farm is expected to generate in excess of 64.9GWh per year. This is enough electricity generation to power over 17,000 South Lanarkshire homes¹⁷. The Low Drumclog Wind Farm, will contribute to legally binding government targets for renewable electricity generation and emissions reductions; and
- The generation of renewable energy will contribute to the diversity and security of the UK's electricity supply.
- Energy Balance

17 An estimate of the energy payback for modern wind turbines is 3-10 months, depending upon the site wind speed and turbine model. Over a 35-year lifetime, a wind turbine would therefore generate at least 32 times the energy that was used in its manufacture and installation¹⁸.

¹²https://www.southlanarkshire.gov.uk/downloads/file/10362/part_1_sl_landscape_capacity_study_for_wind_turbines_february_2016

¹³https://www.southlanarkshire.gov.uk/downloads/file/13239/tall_wind_turbines_landscape_capacity_siting_and_design_guidance

¹⁴https://www.southlanarkshire.gov.uk/downloads/file/14534/lp2_volume_1_document

¹⁵https://www.southlanarkshire.gov.uk/downloads/file/14535/lp2_volume_2_document

¹⁶https://www.southlanarkshire.gov.uk/downloads/download/868/renewable_energy_supplementary_guidance

¹⁷<https://www.gov.uk/government/statistical-data-sets/regional-and-local-authority-electricity-consumption-statistics>

¹⁸https://www.vestas.com/content/dam/vestas-com/global/en/sustainability/reports-and-ratings/lcas/V1363%2045MW_Mk3a_ISO_LCA_Final_31072017.pdf.coredownload.inline.pdf

4.0 Landscape and Visual Impact

- 18 To assess the potential impact of the proposed development a landscape and visual impact assessment (LVIA) was prepared by Galpin Landscape Architecture. The full assessment is detailed within **Appendix D** of the Environmental Statement.
- 19 The purpose of the LVIA is to identify and outline the existing landscape character and visual amenity receptors within the study area. This assessment was prepared after site visits in August 2021 and evaluated the change to the landscape and visual amenity as well as the extent to which the proposed development influences perception and views to the landscape. The effects of potential landscape receptors and visual receptors were initially appraised within a study area - with a radius of 10km.
- 20 The LVIA and associated figures completed is detailed within **Appendix D** of the Environmental Statement. Wireframe diagrams and photomontages from viewpoint receptors were created to aid assessment. Visual representations accompanying this LVIA have been prepared, with all fourteen viewpoints (VPs) agreed with the LPA.
- 21 The effect on the landscape character during construction activities is deemed to be '**low**'.
- 22 Effect on the landscape character during operation - The proposed turbines would have a tip height of 180m which would be viewed in scale and proportion with the large-scale plateau moorland landform. The effect of the proposed turbines to the immediate landscape character would provide an additional vertical element and would have some association with other turbines within the landscape.
- 23 Scottish National Heritage (SNH) - The magnitude of change on the Landscape Character Type 214 - Plateau Moorland with Windfarms – Glasgow and Clyde Valley would be **Low**.
- 24 South Lanarkshire Council (SLC) - The magnitude of change on Landscape Character Type 6 - Plateau Moorland would be **Low** as there would be a perceptible indirect change in landscape characteristics over a localised area. There would be a **Low** to **Negligible** magnitude of change to the adjacent landscape character types: 5 Plateau Farmland, 6a Plateau Moorland Forestry, 6b Plateau Moorland Forestry Windfarm and 7 Rolling Moorland. All other adjacent landscape character types would experience either **Negligible** or **No Magnitude** of change.

- 25 Effect on Landscape Designations - The Scheduled Monument, Battle of Drumclog, is adjacent to the proposed turbines. There are no visible reminders on the open fields of the site and the Battle of Drumclog Monument is surrounded by woodland to the south. Due to the proximity, the magnitude of change would be **High**. All listed building will experience either a **Low** or **Negligible** impact as a result of the proposal. Further details are provided in **Appendix D** of the Environmental Statement. There would be **No Effect** on the Middle Clyde Valleys Special Landscape Area.
- 26 Overall, the effect of the proposed turbines on the landscape character would be **Low** when in closer proximity to the proposal and **Negligible** overall.

Visual Amenity Assessment

- 27 The short-term temporary nature of the construction activities on the views from the visual receptors would ensure that the overall visual impacts would be low. The assessment has identified key locations which have views towards the proposed site with magnitudes of change ranging between high to negligible and degrees of significance between moderate to slight / negligible. Visual receptors would include residents, recreational users, and road users. The overall visual effects of the proposed wind turbines on visual receptors would be noticeable in views within 1.5km and then of diminishing magnitude of change as the separation distance increases.

Cumulative Landscape and Visual Assessment

- 28 The locations of the proposed turbines have been carefully selected in an area that has capacity for large wind turbines. There would be 'Development Capacity' for the proposal with the restrictive number of three turbines which have been located within a contained area, near a farm and separated from settlements. There would be a low cumulative effect on the landscape character type 6 Plateau Moorland.

5.0 Ecology

- 29 Starling Learning conducted the ecological survey effort with the inclusion of an EIA to support the application. A desktop study was carried out prior to any fieldwork, collating any existing background information on ecological sensitivities of the site. This included a search for statutory and non-statutory sites designated for their nature conservation value and records of protected or notable species within the site or surrounding habitats which could be impacted by the scheme and habitats or features of interest. The search area for protected species records was determined by the particular species and ranged between 1 km and 10 km from the site boundary.
- 30 A series of habitat and species surveys were undertaken to inform this assessment, taking place from September 2017 through to October 2019 with some additional visits in 2020 and 2021.
- 31 To accurately assess the potential impacts from the proposed development, the baseline conditions of the site require establishment. This includes ecological features which have the potential to be affected by the proposal, both within and adjacent to the development area.
- 32 The Zone of Influence (ZOI) is identified as the area and resources which may be influenced by the development. It includes a radius around turbines, ancillary structures, borrow pits and access tracks of 500m for phase 1 habitat surveys and 100m for protected species surveys. A radius of 250m is used around deep excavations and 100m for shallow excavations when completing NVC surveys and assessment of Groundwater Dependent Terrestrial Ecosystems (GWDTEs).

Impact Assessment

Habitats

- 33 The impact assessment will indicate the potential habitats and species affected by the proposal. The key issues are:
- Loss of and disturbance to significant habitat;
 - Effect on hunting and foraging grounds, shelter and roost sites, breeding sites, corridors for migration and dispersal and stop over sites.
 - Effect on population cycles, survival rates, reproduction rates, and seasonal behaviour.
- 34 For habitats and most species, the majority of impacts relating to the development within the ZOI are associated with the construction phase. Loss or disturbance to significant habitats can have long-term impacts on species through potential loss of breeding and/or foraging ground, or

important wintering habitat. Potential impacts on protected species which could occur as a result of the operation of the wind farm are largely insignificant. There is some risk of collision to bats as well as birds.

- 35 There are also potential disturbance issues relating to noise of the operational turbines, as well as higher levels of disturbance resulting from an increase in visitors to the site. This could result in displacement of certain sensitive species from the area, resulting in a change in the local distribution and abundance of species. Operational impacts could occur over the lifetime of the wind farm, although some species may become habituated to the conditions on site so these impacts may reduce.
- 36 Approximately 4.7 ha of habitat will be lost as a result of the development. The direct impacts are considered generally to be **Low in Magnitude** and of **Low Significance** given the size of the study area of approximately 182 ha. The loss of important blanket bog, wet modified bog and dry modified bog is approximately 7.3% and therefore assessed as being of **Medium Magnitude**, of **Moderate Significance** and **Permanent**.
- 37 The direct impacts on all habitats are low with relatively small amounts of generally poor-quality habitat resource being lost. Direct impact on most of the other affected habitats is therefore considered to be minor, hence of minor significance, due to their small size or low conservation value. An exception is the very high percentage loss of bare ground, giving an impact of major magnitude, but in this case, of minor significance, since the value of that particular habitat is **Negligible**. There is no direct loss of GWDTE habitat.
- 38 The construction will result in both temporary and permanent implications. Many negative impacts will be negligible. However, there is potential to disrupt the flow of water within wetland habitats/GWDTEs and cause water pollution. The latter are considered to be **Negative**, of **Medium Magnitude**, **Permanent** and of **Moderate Significance** and **Reversible**.
- 39 Potential operational impacts include the disturbance of flora and fauna from the turbine operation, maintenance, and any changes in land management. An additional potential impact is run-off from the surfaces of access tracks which could contaminate watercourses and water bodies. It is considered that this impact will be of **Low Magnitude**, **Long Term** and therefore of **Minor** significance and **Reversible**.

Bats

- 40 Common and Soprano Pipistrelle bats were recorded using the site for foraging. As the infrastructure locations are of less significance, the construction work is normally undertaken during the months of autumn and winter, and that in the event of spring or summer working, bat activity is likely to take place outside of normal construction hours, any negative impact is likely to be a **Low Magnitude** and of **Negligible** significance.
- 41 At locations along the route of the proposed access track there are trees with potential bat roost possibilities. The negative impacts of tree pruning and/or tree felling construction are considered to be of **Medium Magnitude, Short Term** and of **Moderate Significance**.
- 42 Given the propensity of both species to utilise the more productive edge habitats, and the likelihood that the bats will fly a low height level above the low-growing bog vegetation, the risk to the foraging pipistrelles is considered to be low. Nevertheless, it remains likely that a small number of pipistrelles might be killed through collision with the turbines. This negative operational impact is considered to be of **Low Magnitude, Long Term** and **Minor Significance**.

Otters

- 43 Although otters have been recorded within the site, it is considered that this species is unlikely to suffer any significant negative impacts from the operation of the wind farm. As otters are mostly active at dusk and dawn there is unlikely to be any significant disturbance to this species due to an increase in visitor numbers.

Badgers

- 44 There is unlikely to be any significant loss of habitat due to construction of the turbine bases and access tracks, just a small loss of foraging habitat. No current setts will be disturbed. Therefore, the negative impact on Badgers due to habitat loss is considered **Low Magnitude, Long Term** and of **Minor Significance**.
- 45 There is potential for Badgers to become injured or trapped by falling into deep excavations associated with borrow pits or construction of turbine bases. It is therefore considered probable that the negative impacts could be of **Low Magnitude, Short Term** and of **Minor Significance**.

Brown Hare

- 46 Negative impacts of the development are considered **Negligible** during construction. The negative impacts of the operating wind farm will be **Negligible**.

Deer

- 47 Negative impacts to Roe deer during construction of the proposed wind farm resulting from noise and vibration associated with construction activities are possible. However, this is considered to be **Negligible**.

Common Lizard

- 48 The amount of direct habitat loss is small, and the impact is considered to be of **Low Magnitude, Long Term** and of **Minor Significance**.
- 49 There is also potential for negative impacts during construction of the proposed development due to site clearance works. If ground clearance is completed during early spring to late summer, there is the likelihood of disturbance to breeding habitat. If these works are completing in the autumn and winter months, there is a risk of disturbing hibernating animals. The impact is considered to be of **Medium Magnitude, Short Term** and of **Moderate Significance**.

- 50 It is likely that the negative impacts of the operating wind farm will be **Negligible**.

Amphibians

- 51 Effects of construction are considered to be of **Low Magnitude** and of **Minor Significance**. The effects of the operational wind farm are considered **Negligible**.

Butterflies and Moths

- 52 The loss of habitat for feeding adults and caterpillars will be **Negligible** and the effects of construction and operation are also considered to be **Negligible**.

Barn Owl

- 53 Barn Owl was recorded nesting or roosting at two locations within 2km of the development.
- 54 **Potential Construction Effects** -Distances of nests or roost locations from turbines are approximately 500m from the turbines. Nests are unlikely to be disturbed and as hunting generally takes place at night foraging is unlikely to be disturbed. The impact is considered to be **Negligible**.
- 55 **Potential Operational Effects** - No flights of Barn Owl were recorded, the impact of the development on risk of collision and displacement is considered to be of **Low Magnitude** and **Minor Significance**.

Golden Plover

- 56 Flocks of Golden Plover use the site for winter roosting and feeding and a total of 606 flights were recorded within the FRZ.
- 57 **Potential Construction Effects** - As most of the ground clearance will take place during winter months, there is risk of disturbance and displacement. The disruption is temporary and therefore the impact is considered to be of **Low Magnitude, Short Term** and of **Minor Significance**.
- 58 **Potential Operational Effects** - Collision risk was calculated to be 1 bird every 1.18 years. The risk of collision is considered to be **Negligible**. The likelihood of displacement is considered to be of **Low Magnitude** and of **Minor Significance**.

Curlew

- 59 Vantage point surveys recorded 183 flights by Curlew. One breeding territory was recorded.
- 60 **Potential Construction Effects** - There is potential for disturbance and displacement to nesting birds during construction. The magnitude of the impact will be higher if ground clearance and construction takes place during the breeding season. One territory will be affected and as a result the impact are considered **Negligible**.
- 61 **Potential Operational Effects** - Pearce Higgens *et al* (2009) suggested a 42.4% decline in breeding Curlews within 500 m of turbines⁸. The Curlew territory is closer to turbines than 500 m. There is a possibility that Curlews will collide with turbines. Collision risk has calculated that 1 bird will collide every 4.03 years. The estimated displacement of one territory is considered **Negligible** and the adverse effects of the operating wind farm are also considered to be **Negligible**.

Moorland and Woodland Species

- 62 Notable breeding moorland species recorded breeding on site include; Skylark, Meadow Pipit and Cuckoo. All breeding birds are likely to lose a small area for foraging and nesting habitat and there is a minor risk of collision. However, this is unlikely to make a difference to the population of most of these species. The main impacts are associated with ground clearance during construction when nests have the potential to be destroyed. If construction is during the breeding season, the impact is considered to be of a **Medium Magnitude, Short Term** and of **Moderate Significance**. If out with the breeding season, the impact is considered to be of **Low Magnitude, Short Term and of Negligible Significance**.

Mitigation

- 63 An Outline Habitat Management Plan (OHMP) has been written as part of a programme of mitigation measures associated with the construction and operation of the Land at Low Drumclog project. This has been designed to minimise any negative impacts on habitats and species. In addition, proposing areas for ecological improvements which will benefit the noted species onsite.
- 64 An Ecological Clerk of Works (ECoW) will be employed to ensure compliance with planning regulations and ensure protection of habitats and wildlife.
- 65 Prior to construction, species will be monitored to ensure protected structures and nest locations are identified.
- 66 Post-construction monitoring to determine the effectiveness of the mitigation measures implemented is a crucial element in assessing the true extent of impacts on birds from wind farm developments. Various bird species including Golden Plover will be monitored during construction, in the year following the completion of the works.
- 67 Following mitigation, negative impacts on habitats will be of varying magnitudes but the majority are of a **Low Magnitude**, possibly even **Negligible**, **Temporary** and **Not Significant**.
- 68 Incorporating good practice, the impacts on bats can be determined as **Low Magnitude**, **Minor Significance** and the potential for a positive **Impact**. Implications to badgers, otters, deer and common lizard are considered **Negligible** with the potential for **Positive** benefits to amphibians and invertebrates.
- 69 With good practise and mitigation at Low Drumclog, the residual effect on habitats and species is considered to be of **Low Magnitude** and of **Minor Significance**.

6.0 Archaeological and Historic Environment

- 70 AOC Archaeology Group, on behalf of the applicant, undertook a Heritage Impact Assessment with regard to the proposed development of three wind turbines (180m to tip) and their associated infrastructure at Land at Low Drumclog.
- 71 The aim of the assessment was to identify the archaeological and cultural heritage value of the site and to identify the potential for direct and indirect impacts which may result as a consequence of the development. It identifies the likely impacts upon archaeological and cultural heritage assets resulting from the construction of the proposed wind turbine scheme.
- 72 The assessment addresses all heritage assets located within a 1km radius of the site to help identify potential direct impacts, and also predicts the presence of any similar unknown archaeological remains that may exist within the site. It also assesses the archaeological and cultural heritage significance of the land on which the development is proposed. In addition, all designated heritage assets within 5km of the red line boundary, and nationally important designated assets within 10km, have been considered to assess potential for impacts upon their setting.
- 73 There are no remains or finds dating to the prehistoric period within the site or within 1km of the study area. Due to the distances between the known prehistoric assets, the potential for remains to survive onsite is deemed to be **Low**.
- 74 There are no heritage assets that date to the Roman period within the site or within 1km. There is evidence of Roman activity in the area but due to the distances to these assets from site and absence of remains, the potential for these remains to have survived is deemed to be **Low**.
- 75 No remains dating to the early historic or medieval periods are present within the site or at 1km distances. Given the distances to the proposal, the potential for remains to survive on site is deemed to be **Low**.
- 76 Although there are no post-medieval assets within the site, six assets are located within the 1km study area. It is judged there is **High** potential for post-medieval remains, and **Low** potential for modern remains to survive onsite.
- 77 The only known heritage asset within the site boundary is the Inventory Battlefield Battle of Drumclog located 52m south of turbine 2. The Battle of Drumclog, 1679 is included on HES's

Inventory of Nationally Important Historic Battlefields. There is considered to be a **High** potential for post-medieval remains or artefacts to be encountered within the proposed development, with the exception of possible evidence for the Battle of Drumclog (1679) - these remains are likely to be agricultural.

78 The assessment has identified that the site has remained predominantly undeveloped throughout history. The potential for archaeological remains dating to the prehistoric, Roman, early historic, medieval and modern periods are considered to be **Low**.

79 An archaeological investigation by intrusive or non-intrusive means to determine the nature and extent of any surviving archaeological remains within the site prior to development is recommended. This is likely to include a metal detecting survey of the access track, borrow pits and compound, focusing of the area within the Inventory Battle of Drumclog. Due to the proximity to the battlefield, it is suggested that the compound to the south of the access track be also subject to a metal detecting survey, prior to any ground works. This may be followed by a trial trenching or monitored strip of the access track and borrow pits within the area of the Inventory Battle of Drumclog prior to any ground-breaking.

7.0 Noise

80 A full noise assessment – considering noise impact as a result of the proposal - has been completed for the proposed wind turbine by Wardell Armstrong. This chapter details the calculation and assessment of the impact of the proposed wind turbines at the nearest noise sensitive receptors. See **appendix G** of the Environmental Statement for full details.

81 The noise assessment considers the following guidance;

- The Assessment and Rating of Noise from Wind Farms, 1997 (ETSU-R-97); and,
- Institute of Acoustics Guidance Document; A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise, 2013 (IOA GPG).

82 Wardell Armstrong LLP (WA) undertook a review of existing noise limits and predictions of existing wind farm noise at nearby properties. The findings of the review and the proposed approach to cumulative noise considerations were sent in a detailed consultation letter to the Environmental Health Officer (EHO) at South Lanarkshire Council in March 2020.

83 One candidate turbine has been considered for this assessment, the VENSYS V155 6.2 MW. This is judged to be representative of the model which would be installed.

84 The most sensitive location to cumulative noise is ESR2. At this location, the proposed Low Drumclog wind turbines are at least 10dB below total predictions and do not contribute to the cumulative wind turbine noise.

85 As total limits are not exceeded due to the addition of Low Drumclog, in accordance with ETSU-R-97 and the IOA GPG, operational wind turbine noise will not have a significant impact at the nearest sensitive receptors. All proposed site-specific limits are comfortably met with the proposed candidate turbine.

86 The proposed wind turbine therefore complies comfortably with all relevant guidance on noise, and as such, noise should not be considered a constraint in deciding the outcome of this planning application.

8.0 Hydrology, Hydrogeology and Geology

- 87 Fluid Environmental Consulting (Fluid) have assessed the potential hydrogeological, hydrological and geological impacts of the proposed wind turbine development.
- 88 Impacts are assessed based on the risk of: sedimentation and erosion; pollution; alteration of natural drainage patterns, runoff volumes and rates; flood risk; and alteration of the geological environment through the disturbance of peat. Mitigation, management, and monitoring measures are then discussed and the residual effects relevant to geology, hydrology and hydrogeology determined.
- 89 The significance of any impacts of the proposed development on baseline conditions is assessed as part of the impact assessment. The combination of the sensitivity of the receptor and the magnitude of the potential effect combine to determine the significance of that impact.
- 90 The assessment is based on a methodology derived from generic EIA regulation guidance, the Institute of Environmental Management and Assessment (IEMA) guidance and SNH publication Environmental Impact Assessment Handbook Version 5 April 2018. The methodology is also based upon relevant SEPA guidance including Assigning Groundwater Assessment Criteria for Pollutant Inputs (SEPA 2010). Sensitivity criteria are based on both the likely effect on a receptor due to a particular activity, as well as the designated value of the receptor. Further details are included within **Appendix H** of the Environmental Statement.
- 91 The assessment was predominantly based on a desk study – for full details see table 3 in **Appendix H**.

Site Sensitivities

- 92 Sensitive receptors identified for the site are:
- Surface watercourses - the Coldwakning Burn and Hall Burn;
 - The drinking water protected area, and
 - Peat in terms of volume and resource as detailed in chapter 10. Peatland habitat is considered under ecology.
- 93 Best practice techniques will be employed as standard at the Low Drumclog Wind Farm site during the construction and operation of the proposed development. These techniques have been

assumed when completing the risk assessment and are considered the standard that will be applied. Such techniques are not considered as mitigation. Mitigation measures are over and above these standards and will be specific to the source-pathway-receptor identified at risk.

94 The following tables describe elements of the proposal with the main potential for effects on hydrology, hydrogeology and geology. A magnitude of potential effect has been assigned to these based on their location and activity. This magnitude of potential effect takes into account the best practice and standard mitigation methods.

Table 2 - Inventory of turbine and crane hardstanding locations and their associated magnitude of potential effect

Turbine	Location	Description	Magnitude
Turbine 1	NGR 263136 641040	<ul style="list-style-type: none"> • Gradient: shallow. • Water feature proximity: just over 50m from a minor tributary to Halls Burn marked on the OS 1:50,000 map and within an area of extensive artificial drains • Flooding: all infrastructure is outside of the maximum extent of the SEPA flood risk area • Average peat depth: ~6m at turbine base. Volume of 5,850m³ of peat will be excavated. • Peat Slide Risk: very low susceptibility for bog burst • <u>Other sensitivities:</u> • No potential GWDTEs at turbine or crane pad footprint or on site. • Within drinking water protected area 	<ul style="list-style-type: none"> • Low for water drainage disturbance • Low for water quality: shallow gradient to watercourse • High for peat disturbance as on deep peat. • Low for peat slide risk • Low for groundwater disturbance • Low for GWDTE • Low for geology

Turbine	Location	Description	Magnitude
Turbine 2	NGR 262952 640478	<ul style="list-style-type: none"> • Gradient: shallow. • Water feature proximity: just over 50m from the Coldwakning Burn marked on the OS 1:50,000 map • Flooding: all infrastructure is outside of the Maximum extent of the SEPA flood risk area • Average peat depth: ~2.4m at turbine base. Volume of 1,318m³ of peat will be excavated. • Peat Slide Risk: Moderate susceptibility for bog burst • <u>Other sensitivities:</u> • No potential GWDTEs at turbine or crane pad footprint or on site. • Within drinking water protected area 	<ul style="list-style-type: none"> • Low for water drainage disturbance • Low for water quality • High for peat disturbance as on deep peat. • Medium for peat slide risk • Low for groundwater disturbance • Low for GWDTE • Low for geology

Turbine	Location	Description	Magnitude
Turbine 3	NGR 262653 640813	<ul style="list-style-type: none"> • Gradient: shallow. • Water feature proximity: ~200m from the Coldwakning Burn marked on the OS 1:50,000 map • Flooding: all infrastructure is outside of the Maximum extent of the SEPA flood risk area • Average peat depth: ~3.4m at turbine base. Volume of 3,203m³ of peat will be excavated. • Peat Slide Risk: Part of the crane hardstanding has a moderate susceptibility for bog burst • <u>Other sensitivities:</u> • No potential GWDTEs at turbine or crane pad footprint or on site. • Within drinking water protected area 	<ul style="list-style-type: none"> • Low for water drainage disturbance • Low for water quality: shallow gradient to watercourse • High for peat disturbance as on deep peat. • Medium for peat slide risk • Low for groundwater disturbance • Low for GWDTE • Low for geology

Table 3 -Inventory of track sections and their associated Magnitude of Potential Effect

Track	Description	Magnitude
New track from the public road to turbines – all three excavated sections	<p>Track: Excavated</p> <p>Gradient: Shallow to moderate (some sections are up to 5%, however these are not near watercourses)</p> <p>Watercourse proximity: >50m from 1:50,000 Ordnance Survey watercourses, except where crossing the Coldwakning Burn.</p> <p>Peat Occurrence: No peat.</p> <p>Peat Slide Risk: No peat therefore very low susceptibility</p> <p><u>Sensitivities:</u></p> <p>No potential GWDTEs along track footprint or on site.</p> <p>Within drinking water protected area</p>	<p>Low for water quality</p> <p>Low for drainage alteration</p> <p>Low for peat disturbance</p> <p>Low for peat slide risk</p> <p>Low for shallow groundwater disturbance</p> <p>Low for GWDTE</p> <p>Low for geology</p>

Track	Description	Magnitude
All floated track	Track: Floated Gradient: Shallow (less than 3%) Watercourse proximity: >50m from 1:50,000 Ordnance Survey watercourses, except on the very edge of the headwaters of the unnamed Avon Water tributary. Peat Occurrence: Ranging from 0.5m to >7.0m. All track on peat will be floated. Peat Slide Risk: Some sections of Moderate susceptibility to bog burst <u>Sensitivities:</u> No potential GWDTEs along track footprint or on site. Within drinking water protected area	Low for water quality due to proximity of watercourse and low gradient Low for drainage alteration Low for peat as track will be floated. Medium for peat slide risk Low for shallow groundwater disturbance Low for GWDTE Low for geology

95 A single watercourse crossing is required on site. There are several other minor watercourse crossings or drains that have been mapped along the route as well as other minor channels and drains. Culverts will be installed to allow any surface flows to pass without interruption by the floating track. In Scotland, works in, over or under a watercourse or works altering or repairing any structure in, over or under a watercourse must be authorised by SEPA through Controlled Activities Regulations. SEPA will be notified where required, and the appropriate GBR, authorisations or licences will be applied for. The magnitude of the watercourse crossing construction and operation will be **Low** if watercourse crossing design and construction adhere to best practice guidance.

Table 4 - Inventory of other infrastructure and their associated Magnitude of Potential Effect

Infrastructure	Description	Magnitude
Borrow Pit 1	<ul style="list-style-type: none"> • Borrow Pit: Excavated • Gradient: Shallow (less than 4%) • Watercourse proximity: >50m from 1:50,000 Ordnance Survey watercourses. • Peat Occurrence: No peat. • Peat Slide Risk: No peat therefore very low susceptibility for bog burst • <u>Sensitivities:</u> • No potential GWDTEs along track footprint or on site. • Within drinking water protected area 	<ul style="list-style-type: none"> • Low for water quality • Low for drainage alteration • Low for peat disturbance • Low for peat slide risk • Low for shallow groundwater disturbance • Low for GWDTE • Low for geology

Infrastructure	Description	Magnitude
Borrow Pit 2	<ul style="list-style-type: none"> • Borrow Pit: Excavated • Gradient: Shallow (less than 4%) • Watercourse proximity: >50m from 1:50,000 Ordnance Survey watercourses. • Peat Occurrence: No peat. • Peat Slide Risk: No peat therefore very low susceptibility for bog burst • <u>Sensitivities:</u> • No potential GWDTEs along track footprint or on site. • Within drinking water protected area 	<ul style="list-style-type: none"> • Low for water quality • Low for drainage alteration • Low for peat disturbance • Low for peat slide risk • Low for shallow groundwater disturbance • Low for GWDTE • Low for geology
Construction Compound	<ul style="list-style-type: none"> • Construction Compound: Excavated • Gradient: Moderate (~5%) • Watercourse proximity: >50m from 1:50,000 Ordnance Survey watercourses. • Peat Occurrence: No peat. • Peat Slide Risk: No peat therefore very low susceptibility for bog burst • <u>Sensitivities:</u> • No potential GWDTEs along track footprint or on site. • Within drinking water protected area 	<ul style="list-style-type: none"> • Low for water quality • Low for drainage alteration • Low for peat disturbance • Low for peat slide risk • Low for shallow groundwater disturbance • Low for GWDTE • Low for geology

Summary of Significance of Effect during Construction Phase

- 96 Based on the effect significance criteria developed regarding hydrology, hydrogeology and geology for the potential effects on surface water, groundwater and the geological environment, the likely effect from the various potential effects, using best practice techniques, is assessed as **Minor to Major**. The majority of the infrastructure is assessed as **Minor**. The infrastructure that will result in an overall significance of **Moderate** or **Major** for erosion/sedimentation of watercourses, for alteration of natural drainage patterns, run-off volumes and rates, and alteration of the geological environment by peat disturbance will require additional mitigation.
- 97 The elements that have been assessed as having a **Moderate** or higher significance of effect prior to mitigation is excavation of the peat resource (up to **Major**) and peat slide risk to personnel within the turbine excavation foundations (**Moderate**).

Summary of Significance of Effect during Operational Phase

- 98 During the operation and maintenance of the proposed development, the water environment will be subject to less potential adverse effects than during the construction phase. Access tracks will be complete and no regular substantial works on the site will be expected during the life of the facility other than periodic monitoring and maintenance. The potential for any additional sedimentation is low, therefore the likely effect from erosion and sediment transport, prior to mitigation and management, is considered to be Low on all receptors, thus the overall significance is **Low to Negligible**.
- 99 A number of possible operational effects on the water environment have been identified including the potential for spillage of oil and fuels from vehicles used for accessing and traversing across the site. Vehicle use however will be minimal and the likely effects from pollution, on all receptors, prior to mitigation and management, are assessed to be Low. The overall significance of effect is deemed to be **Minor**.
- 100 Although the turbine base and associated crane hardstanding are permanent, they represent only a small change to the hydrological characteristics of the site. The total area of all combined will be small in relation to the overall catchment area. The potential effects predicted for interference to natural drainage patterns by tracks and other infrastructure is therefore considered to be Low on all receptors. The overall significance is also **Minor**.

101 There is potential for the crossing of the Coldwaking Burn to become blocked if not maintained. Due to the terrain and size of the crossing, this could result in minor flooding. This stream is classified as **High** sensitivity due to its location within a Drinking Water Protected Area. The likely magnitude of potential effects on natural water flows due to unmaintained stream crossings in the operational phase, prior to mitigation and management, is assessed as Low thus the overall significance is **Minor**.

9.0 Peat Assessment

102 Fluid was commissioned to undertake probing and coring to comply with the SEPA peat probing guidance, Scottish Government, Scottish Natural Heritage and SEPA (2017) Peatland Survey Guidance on Developments on Peatland. Two survey campaigns were completed as the infrastructure has been refined due to various constraints including peat depth.

103 The SNH Carbon and Peatland Map 2016 (**Appendix H** of the Environmental Statement) shows the classifications of expected peat types. The southern part of the site contains Class 1 Peat Soils with peatland vegetation. Class 1 dictates soils to be nationally important, carbon-rich, contain deep peat and are priority peatland habitats. Class 5 peat has been identified in the north of the site and in some other small areas. Class 5 peat is noted where soil information takes precedence over vegetation and where there is no peatland habitat. These classifications were not consistent with either the habitat mapping or the peat depth probing which has been completed.

104 The proposed development will require the excavation of peat as identified by the peat depth survey. An Outline Peat Management Plan (OPMP) has been developed to demonstrate that peat can be reinstated on site in an appropriate manner to reduce the impact on the peat resource.

105 A detailed assessment of the peat instability for the proposed development has been completed. The review was completed by East Point Geo – see **Appendix H** of the Environmental Statement. The report details the assessment of peat instability through both a qualitative contributory factor-based approach and via further conventional stability analysis (through limit equilibrium or Factor of Safety (FoS) analysis).

106 An assessment conducted by Fluid has identified suitable drain blocking areas to support the mitigation measures advised by Starling Learning as part of the Habitat management Plan. One of the main aims of the HMP is restoration and enhancement through appropriate management techniques of bog habitats through controls in grazing levels, and implementation of drain blocking in key areas. The full Drainage Ditch Blocking Survey Report is located within **Appendix H – 9.4** of the Environmental Statement.

107 The survey data confirmed the following:

- Peat is present up to 7.8m depth, although this may be higher as a number of probes did not reach total depth, based on 2,321 depth of penetration probes and 18 cores.

- 16 cores out of 18 identified peat (organic rich soil greater than 0.5m in depth) to be present.
- Acrotelm thickness ranges from 0.10m to 0.25m with an average depth of 0.19 cm.
- The coring results have verified the depth of penetration probing to be representative of peat depth for the majority of locations.
- No amorphous peat was identified, however coring was not possible to depths greater than 5m.
- The mapping indicates that the site has highly variable peat depths and in the area of the turbine bases the peat is considered deep.

Outline Peat Management Plan (OPMP)

108 The OPMP addresses the management of peat during the construction period for the wind turbines, associated infrastructure and the restoration of the site once construction has been completed.

109 Further details and specific plans will be determined during the detailed design process and once further site investigations have been undertaken, post planning. These details will then be included in a detailed peat management plan in alignment with consultee requirements.

110 The design of the proposed wind turbine layout has been undertaken as an iterative process and has been designed to avoid higher value peat habitats and various other environmental constraints including peat slide risk.

111 Peat excavation volumes associated with the project have been calculated using the GIS package – ArcGIS. Further details can be found within **Appendix H – 9.2** of the Environmental Statement. The contoured surface of the peat map created has been used to determine the average depth of

peat under the excavation footprint. The total volume of peat to be excavated as well as the volume of acrotelmic and catotelmic peat has therefore been determined.

112 The total volume of peat required to be excavated for the project is about 22,550m³, however it is assumed that this will bulk out by 10% to a volume of 24,800m³.

Table 5 - Net Peat Balance

	Acrotelm volume (m ³)	Catotelm/ Amorphous volume (m ³)	Total Volume (m ³)
Excavated Peat (includes 10% bulking)	2,405	22,395	24,800
Peat Reuse	4,651	25,368	30,019
Total Balance	2,246	2,973	5,219

113 Based on the peat depth and characteristics across the area of proposed excavated infrastructure, all peat required for excavation is planned for reuse for restoration work during the construction phase.

114 The contractor will maintain a record of actual peat volumes excavated and the subsequent peat reuse to compare to the predicted excavated peat volumes. This record during the construction, operation, decommissioning and restoration phases of the proposed development will be made available for review by regulators and relevant consultees when required.

Peat Landslide Hazard and Risk Assessment (PLHRA)

115 To calculate risks, the potential consequences of a peat landslide must be determined. This requires identification of receptors including an assessment of the consequences for these receptors should a peat landslide occur.

116 Risk levels for environmental receptors have been calculated as a product of likelihood and consequence. The findings indicate that risks are calculated to be **“Low”** for environmental receptors linked to the seven potential source zones. No source locations have a **“Medium”** or **“High”** calculated risk to the environment. Risks to site personnel and the wind farm programme are calculated to be **“Medium”** based on a combination of moderate likelihood and very high

consequence. Based on the calculated risks, good practise measures should be sufficient to manage and mitigate construction induced instability risks.

117 Risks may be mitigated by:

- Site specific review of ground conditions contributing to moderate likelihoods which may result in a reduced likelihood and reduction in risk.
- Precautionary construction measures – including use of monitoring, good practice, and a geotechnical risk register.

118 It is considered that with proposed mitigation measures - risk is reduced to negligible with a very low likelihood of occurrence to construction personnel. Following the completion of construction activities, monitoring of key infrastructure locations should continue by full site walkovers to identify potential unexpected signs of ground disturbance.

Assessment of Significance of Effect

119 The elements that have been assessed as having a moderate or higher significance of effect prior to mitigation is excavation of the peat resource (up to major) and peat slide risk to personnel within the turbine excavation foundations (moderate).

120 No further earthworks or additional land take should be required, therefore no excavation of the peat would be necessary during the operation period. There is a potential for natural peat slide or bog burst albeit low within the proposed development area. Infrastructure may have the potential to trigger a peat slide during the operation period due to a longer-term effect from changes to the peat characteristics (drainage, loading, etc). The infrastructure and the wider area will be regularly monitored for features of movement, cracking, subsidence, bulging or slides. The overall significance is therefore deemed to be **Minor**. The proposed mitigation measures are

considered to reduce the impact on the peat resource with an overall residual effect as assessed to be **Minor** – it's deemed to be **Major** where the excavation of deep peat cannot be avoided.

10.0 Electro Magnetic Interference (EMI) and Aviation

121 Scottish Planning Policy (2014) states that proposals for energy infrastructure developments should always take into consideration impacts on aviation and defence interests, and impacts on telecommunications and broadcasting installations, particularly ensuring that transmission links are not compromised.

122 The following telecommunications and aviation organisations listed in *Table 10* below have been consulted.

Table 6 - Responses from telecommunications and aviation organisations that have been consulted

Consultee	Date of Consultation Initiated	Date of Consultation Received	Consultation Response
Ofcom	08.09.2021	N/A	Ofcom no longer consult
Atkins Global	08.09.2021	09.09.21	No objection
Joint Radio Company (JRC)	08.09.2021	14.09.2021	No objection
Ministry of Defence (MOD)	08.09.2021	22.10.2021	No objection

123 The proposed turbine development is located 30.4km south of Glasgow International Airport (GLA), falling outside the considered safeguarding zone. The maximum proposed tip height is approximately 437m Above Mean Sea Level. As a result of this, no further assessment has been completed at this stage.

124 Due to the positive consultation responses received, the applicant is confident that the proposed turbine is unlikely to adversely impact telecommunication links. The turbine can be fitted with

MoD-accredited visible or infrared aviation safety lighting should this be deemed necessary to mitigate any low-flying concerns.

11.0 Shadow Flicker

125A shadow flicker assessment has been prepared to support the planning application for a three turbine scheme (See **Appendix J** of the Environmental Statement for further detail).

126Shadow flicker strength decreases with distance from the source and it is generally accepted that shadow flicker becomes insignificant at distances greater than 10 times the turbine rotor diameter (10RD). For the purpose of this report, a candidate turbine which has a rotor diameter of 155m has been used resulting in a consideration area spanning 1.55km from the proposed turbine locations. The shadow flicker effects beyond this distance can be considered insignificant. In total, 19 properties were identified within the study area.

127The theoretical duration of shadow flicker calculated is nil at 11 of the 19 properties considered within the assessment. Modelling shows that there are 5 properties within the study area that could theoretically receive shadow flicker in excess of the 30 hours per year threshold, and 5 properties experiencing over 30 minutes on any day. In practice, for the majority of any given year, shadows would not be cast or would either be weak enough to not give rise to any flicker effects. In the UK, bright sunshine is typically known to occur for only 30%¹⁹ of daylight hours per annum. No other properties would encounter over 30 hours of shadow flicker per annum - outside of this test area, any shadow flicker will be sufficiently diminished so that no significant impacts will occur.

128The applicant would propose to install (at commissioning) a shadow flicker mitigation scheme within each turbine. The mitigation scheme will ensure that all shadow flicker impact can be completely avoided.

129The shadow flicker software gives very much the worst-case scenario ignoring the fact that Scottish skies can infrequently be grey, and do not fully consider the impact of natural screening (e.g. mature vegetation, trees, buildings).

130To conclude, shadow flicker modelling of the houses within 1550m of the wind turbine has shown that 19 properties may experience some shadow flicker. Due to the reality of sunshine hours, available screening and mitigation measures – the proposal will not cause a significant SF impact

¹⁹ Met Office, 2021. UK climate averages. [online] Met Office. Available at: <https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-climate-averages/gcuy0ce1v> [Accessed 16 September 2021].

on the receptors. Furthermore, real shadow flicker exposure would likely be significantly less due to a number of mitigating factors outlined.

12.0 Transport

131 The applicant has completed a Construction Transport Management Plan (CTMP), which shows the impacts associated with the construction of the proposed single wind turbine – including the movement of Heavy Goods Vehicles (HGVs) during the construction phase of the main building blocks to construct the wind turbine. The impact associated with the transport and construction of three wind turbines is modest in scale and duration.

132 The initial delivery phase will utilise the existing C136 Drumclog Highway turning off the A71 using the current road infrastructure. This route will only be used for a maximum of a 6-day period and will involve the movement of 12 HGV vehicles. The vehicles will deliver the necessary machinery and facilities to establish the borrow pits and initiate the processing of aggregate for the required access track and compound area. Once these works have been completed all other construction traffic will utilise the newly constructed site entrance from the A71, negating any need for further HGV traffic to use the C136 Drumclog Highway.

133 All construction activities have been considered and assessed within the CTMP - **Appendix K** of the Environmental Statement. This includes; turbine components, plant machinery, concrete deliveries, steel reinforcement and electrical cabling. In total 1,390 HGV deliveries are expected over the construction period.

134 King George V Docks in Glasgow is the proposed port of delivery. The route for all vehicle movements will start from the Docks and end at Land at Low Dumclog, with a total distance of 54.1km. The route is described below:

- The route will begin by exiting the Docks and onto Renfrew Road towards the M8.
- Joining the M8 at junction 26, the route continues on the M74 until junction 8.
- The route will cross the roundabout to join the A71 and continue down the single carriageway through Strathaven until turning off of the A71 and onto the newly constructed site entrance.

135 For the installation of these turbines. There will be a total of 54 abnormal load HGV movements for the main components and in total 1,390 HGV movements. Confirmation of the route and time

frame for the HGV movements will be agreed in writing with the LPA prior to commencement of works on site.

136 Consideration of adequate visibility splays have been provided, as well as the proposition of the required signage and traffic management procedures to ensure any potential impact to existing road users is minimised.

137 On the basis of the above, it is not deemed that the potential impacts relating to construction traffic would be significant. Any minor impacts would only have effect over a localised time-period.

13.0 Public Consultation

138 Although there is no statutory requirement in Scotland to hold public consultations for developments under 20MW, the applicant feels that it is important to meet members of the community before submitting an application, so they are informed about the proposal and have an opportunity to ask questions or seek further clarity about any aspect of the proposal.

139 A public consultation will be held on Wednesday the 2nd of February 2022 online to stay in line with the government guidelines of social distancing and staying within the local area. The aims of the public consultation are:

- To provide members of the community with information about the proposed turbine;
- To measure support and opposition to this proposed turbine; and
- To hear the local community's suggestions on how the proposal could be improved.

140 The primary means of consultation will take the form of an online public consultation event and will be held on the 2nd of February 2022 between 3:00-7:00pm online.

141 Public notices for the public consultation event have been placed within the Carlisle and Lanark Gazette on Wednesday 19th January 2022 for two consecutive weeks.

142 To ensure local residents were aware of the public consultation event, the applicant delivered invitations more than two weeks before the event to all properties within 1.5km of the site that may be impacted by the proposed turbine development. In total, 15 invitations were delivered. Invitations were also sent to Sandford and Avondale Community Council.

143 As a final means of advertisement, a project web page was also launched on CE's live projects website, displaying relevant information on public consultation events.

144 The aim of the consultation is for the applicant to communicate the proposed development to members of the local community and provide them with an opportunity to discuss views, opinions,

and concerns. Members of the public are encouraged to book their time slot for the consultation and submit a 'questionnaire'.

145 The exhibition itself will include around 20 display panels online as well as documents uploaded to the website for public viewing which provides detailed information on the proposal. Details are as follows:

- Proposed turbine location plan, and location relative to the existing wind turbines at Blantyre Muir;
- Proposed site layout plan;
- Turbine elevation plan;
- Proposal details;
- Photomontages of the proposed turbine;
- Zone of theoretical visibility maps for the proposal;
- Draft technical documents to be submitted with the planning application, including assessments for landscape, heritage, ecology, shadow flicker, and noise;
- Governing global, EU, Scottish and Local Policy supporting this proposal; and
- The key criteria to satisfy in the planning process.

146 Every effort was made to notify members of the community about the public consultation event which will be held on the 2nd of February 2022; the applicant invited all local residents within, and on the periphery of, 1.5km of the site and important local bodies to the event and arranged for an advertisement in the Carluke and Lanark Gazette for two weeks prior.

147 A proactive approach was used to ensure that all interested parties had the appropriate platforms in which they could raise their concerns. All questions and queries will be answered at the event. Furthermore, the project webpage and project-specific email address will remain live throughout the planning process through which local residents can continue to ask questions should they arise.

14.0 Conclusion

148 This Non-Technical Summary has identified and outlined a wide range of possible significant effects on the environment from the proposed wind turbine, and demonstrates that the proposed three wind turbines on land at Low Drumclog:

- Are in line with national guidance and is supported by national, regional and local policy on renewable energy and sustainable development;
- Will not give rise to significant additional landscape and visual impact;
- Will not adversely impact any habitats or species of nature conservation importance;
- Will have no adverse impacts on heritage assets and their settings;
- Will meet all noise criteria given in ETSU-R-97;
- Will not adversely impact hydrology;
- Will not adversely impact peat habitats;
- Will not adversely impact telecommunication links;
- Will in the unlikely event of disruption caused due unacceptable levels of shadow flicker on the residents of the properties located nearest to the proposed wind turbines, the applicant proposes to put mitigations in place;
- Will not have a significant impact on transportation networks.

149 This NTS has not established any exceptional circumstances that outweigh the legislation and planning policy relevant to this renewable energy development. Therefore, this planning application for three wind turbines at Low Drumclog should be granted planning permission, allowing the development to contribute to the national and local targets to produce renewable energy and contribute to the security of the UK's energy market.