Contents

1 Introduction

1.1 Overview

1.1.1 This Non-Technical Summary (NTS) forms part of the Environmental Impact Assessment (EIA) Report that has been prepared to accompany an application for consent under Section 36 of the Electricity Act 1989 to construct and operate Killean Wind Farm (hereafter referred to as the Proposed Development). The Proposed Development is located approximately 2.5km east of Tayinloan, on the Kintyre Peninsula.

1.1.2 The EIA Report presents the findings of the EIA which aims to identify potentially significant environmental effects from the Proposed Development and where possible proposes suitable mitigation measures to address or minimise such effects. This NTS summarises the findings of the EIA Report in non-technical language.

1.2 Planning History

1.2.1 Planning permission (16/03400/S36) was refused by Scottish Ministers in December 2019 for a proposed 15 turbine Killean Wind Farm on the same site. The decision letter stated that the development was not in keeping with the established patterns of existing turbines in the area; and would have unacceptable adverse landscape and visual impacts.

1.3 The Applicant

1.3.1 RES is the world's largest independent renewable energy company active in onshore and offshore wind, solar, energy storage and transmission and distribution. At the forefront of the industry for over 40 years, RES has delivered more than 24GW of renewable energy projects across the globe and supports an operational asset portfolio of 41GW worldwide for a large client base. RES employs more than 4,500 people and is active in 21 countries working across onshore and offshore wind, solar, energy storage, green hydrogen and transmission and distribution.

From its Glasgow office RES has been developing, constructing and operating wind farms in Scotland since 1993. RES has developed and/or built twenty-one wind farms in Scotland with a total generation capacity of 597MW and has recently finished constructing Blary Hill Wind Farm in

Argyll and Bute. The Applicant has the necessary knowledge and experience in renewable energy to develop the Proposed Development.

1.4 The Proposed Development

1.4.1 The Proposed Development is located off of the A83, approximately 2.5km east of Tayinloan, on the Kintyre Peninsula. The site is entirely within the administrative boundary of Argyll and Bute Council (ABC). **Figure 1.1** of the EIA Report (Volume 2b) presents a general context for the location of the site within ABC.

1.4.2 The site extends to approximately 1,052 hectares (ha) and comprises upland plateau moorland and conifer forest, locally known as the Killean Estate. Within the site there are a number of small lochs; from north to south these include Loch Dirigadale, Loch a' Ghlinn Bhig, Loch Luireach, Loch Fionn-Ghleann and Loch na Naich. A number of watercourses also run through the site - primarily the tributaries of Allt Chaltuinn to the north and Killean Burn to the west. Killean Burn passes through the west of the site, and flows westwards into the Sound of Gigha, part of the Atlantic Ocean. The A83 passes northwards, approximately 1km to the west of the majority of the western boundary of the Site.

1.4.3 The Proposed Development would comprise up to 9 wind turbines, with a height to blade tip of up to 180m.

1.4.4 Associated permanent infrastructure would include wind turbine foundations, low to medium voltage transformers and related switchgear adjacent to each wind turbine, crane hardstand areas adjacent to each wind turbine, underground electrical and communication cabling, a substation compound containing electrical infrastructure, control building, welfare facilities and a communications mast, access tracks including watercourse crossings, turning heads and site entrances from the public road network, search areas for up to 6 borrow pits; a temporary batching plant; and a temporary construction compound.

1.4.5 It is anticipated that construction activities for the Proposed Development would take approximately 15 months, depending upon seasonal working and weather conditions. Once constructed, it is anticipated that the Proposed Development would have an operational life of up to 50 years.

1.4.6 The Proposed Development and associated infrastructure are shown on **Figure 1.3** of the EIA Report (Volume 2b). A more detailed description of

the site and the Proposed Development is provided in **Chapter 2** of the EIA Report.

1.5 Need for and Benefits of the Proposed Development

Renewable Electricity Generation

1.5.1 Both UK and Scottish Government energy policy recognises the need for substantial increases in renewable energy generation, in particular onshore wind, if the transition towards net zero is to be achieved. Furthermore, recent global events have also shed a spotlight once again in UK energy policy on the importance of having greater security over our future energy supplies and the importance of generating more of the UK's energy domestically.

1.5.2 The proposed wind turbines would have an anticipated nominal capacity of approximately 6.6MW. The annual generation from the wind turbines is therefore estimated at approximately 227.8 Gigawatt hours (GWh) based on a site derived capacity factor of 43.77%[1].

1.5.3 The proposed wind turbines will therefore supply renewable electricity equivalent to the approximate annual domestic needs of up to 70,316[2] average UK households.

1.5.4 Each unit of renewable electricity transmitted will displace a unit of conventionally generated electricity, therefore displacing carbon dioxide (CO_2) emissions. It is estimated that the proposed wind turbines will displace approximately 96,587[3] tonnes of CO_2 emissions per year, or 4,829,360 tonnes over the anticipated 50-year lifespan of the Proposed Development.

Effect on Greenhouse Gas Emissions

1.5.5 The First Minister of Scotland declared a climate emergency in April 2019. In response, the Scottish Government introduced amendments to the

[1] For example, using a 43.77% capacity factor, figures are derived as follows: 59.4 MW × 8,760 hours/year × 0.4377 (capacity factor) = 227,755MWh.

[2] Calculated using the most recent statistics from the Department of Energy Security and Net Zero (DESNZ) showing that mean domestic electricity consumption is 3,239kWh (as of January 2024). https://assets.publishing.service.gov.uk/media/65b12dfff2718c000dfb1c9b/subnational-electricity-and-gas-consumption-summary-report-2022.pdf

[3] Using DESNZ's all non-renewable fuels" emissions statistic of 424 tonnes of carbon dioxide per GWh of electricity supplied in the Digest of UK Energy Statistics (July 2023) Table 5.14 ("Estimated carbon dioxide emissions from electricity supplied"). https://www.gov.uk/government/statistics/electricity-chapter-5-digest-of-united-kingdom-energy-statistics-dukes

Climate Change (Scotland) Act 2009 through the Climate Change (Emission Reduction Targets) (Scotland) Act 2019. 1.1.5 The UK government set a net zero CO2 emissions target by 2050. In Scotland, The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 was passed in September 2019 which sets out a net zero target by 2045 and further interim targets of reductions in CO2 emissions of 56% by 2020, 75% by 2030 and 90% by 2040. However, in April 2024, the Scottish Government announced that the interim targets would be scrapped, following a report from the Climate Change Committee which warned that the 2030 target was "no longer credible". The Scottish Government's legal commitment to reach net zero by 2045 however remains, as does the Scottish Energy Strategy's (Scottish Government 2017) target of 50% of all energy (including transport, heat and electricity) being supplied from renewables by 2030.

1.5.6 The Proposed Development would reduce greenhouse gas emissions through replacing fossil fuel generation. The length of time a wind turbine needs to be in operation before it has, by displacing fossil fuel energy generation, avoided as much carbon dioxide as was released in its lifecycle is known as the carbon payback period.

1.5.7 A carbon balance assessment has been undertaken for the Proposed Development using the latest version of the Scottish Government's carbon calculator for wind farms (version 1.8.1). The results from the carbon calculator reveal that the net impact of the Proposed Development will be positive overall, as the calculations of total carbon dioxide emission savings and payback time for the Proposed Development indicates the overall payback period of the Proposed Development with 9 wind turbines with an average (expected) installed capacity of around 6.6MW each would be approximately 1.5 years, when compared to the fossil fuel mix of electricity generation

1.5.8 Over the expected 48.5 years that the Proposed Development is likely to be generating carbon-free electricity, this could result in around 4,829,360 tonnes of net carbon dioxide emission savings when replacing fossil fuel-mix electricity generation.

1.5.9 Overall, the Proposed Development would therefore lead to substantial net carbon savings and reduction of greenhouse gas emissions over its operational life.

Biodiversity Enhancement and Restoration

1.5.10 There would be some predicted habitat losses (including blanket bog (M17a/b, M19a), wet heath (M15b) and wet modified bog (M19a)) as a result of the Proposed Development. A Biodiversity Enhancement Management Plan (BEMP) will therefore be implemented to deliver a net gain in peatland habitat. A draft outline BEMP is included as EIA Report Technical Appendix 7.6. The BEMP will deliver benefits to the peatland habitats. It will include a total peatland enhancement area of 17.6ha. of peatland. The overall aims of this plan are to improve the overall quality of the peatland habitat. This will ensure that habitat losses are offset through an increase in peatland habitat quality. The BEMP will also include native woodland edge planting to benefit black grouse, provision of nesting rafts for red-throated divers and enhanced monitoring of Greenland white-fronted geese.

2 Site Selection and Design

2.1 Site Selection

2.1.1 The Applicant maintains a sophisticated Geographic Information System (GIS) model for site selection which seeks to mirror planning, environmental, technical and commercial constraints. Although the site had previously been identified as a suitable site, the model was run again as the GIS model is updated regularly when new data becomes available or when factors change. This site selection process took into account a number of potential environmental, technical and commercial constraints including, but not confined to:

- average wind speed;
- natural and built heritage constraints, in particular national and internationally designated assets;
- proximity to housing;
- slope constraint;
- national and local planning policy / development plans / spatial frameworks;
- MOD tactical training areas;
- electromagnetic links and utilities;
- proximity to other wind farm sites (pre-planning, consented and operational); and
- other information gleaned from maps or knowledge of the area such as masts, undesignated parks, tourist attractions, etc).

Key Issues and Constraints

2.1.2 Having re run the GIS model and found that the site was still identified as suitable, key issues and constraints for consideration in the design process were established through a combination of desk-based research, extensive field survey and consultation (through the EIA scoping process). The design process considered the following key issues and constraints:

- Wind speed data;
- Landscape and visual considerations, including the findings of the previous application decision;
- Distance to private dwellings;
- Natural and built heritage constraints and Archaeology;
- Slope, peat and soil constraints;

- Nearby wind farms;
- Grid connection distances and costs;
- Site access;
- Ecology and ornithology;
- Local development plan policies;
- Electromagnetic links and utilities;
- Aviation and MOD tactical training areas; and
- Local knowledge and other information about surrounding undesignated parks and tourist attractions etc.

2.1.3 Information in respect of the survey work to identify various key issues and constraints and how they have contributed to the layout design is provided in the technical chapters of the EIA Report **(Chapters 5 to 13).**

2.2 Design Strategy

Design Principles

2.2.1 As part of the iterative approach adopted by the Applicant, a number of design principles have been incorporated into the Proposed Development as standard practice, including consideration of the following constraints:

- Landscape designations and visual amenity and proximity of residential properties;
- Archaeological and cultural heritage assets;
- Sensitive fauna and habitats;
- Ornithology;
- Peat and soils;
- Watercourses, private water supplies and sensitive surface water features;
- Topography and ground conditions;
- Public road accessibility;
- Recreational and tourist routes;
- Acoustic;
- Shadow flicker;
- Aviation and defence constraints; and
- Presence of utilities.

2.2.2 The design of the Proposed Development is the result of a considered design process that has evolved over the course of four proposed layouts, from an initial scoping layout comprising 12 turbines with a proposed

blade tip height of up to 180 m, a layout consisting of 10 turbines with a blade tip height of up to 180 m and a further iteration which sought to further reduce the potential impacts arising from the scheme. The final 9 turbine proposed layout has been designed to respond to character and scale of the landscape, in addition to other environmental and technical constraints. The associated infrastructure has also been sited sympathetically so as to limit its influence on the surrounding landscape.

2.2.3 Full details of the site design process undertaken for the Proposed Development is provided in **Chapter 3** of the EIA Report.

3 EIA Approach and Technical Assessments

3.1 Introduction

3.1.1 The EIA has identified the likely effects of the Proposed Development on the environment and an assessment has been made as to whether any of these effects could be significant. Conclusions about significance are determined by the sensitivity of the baseline conditions (the sensitivity of the receptor) combined with the predicted degree of alteration (the magnitude of change) from the baseline conditions that will occur as a result of the construction, operation and decommissioning of the proposed wind farm. **Chapter 4** of the EIA Report sets out the EIA approach and methodology employed in more detail.

3.1.2 Good practice advises that EIA should be an iterative process rather a unique, post design appraisal. In this way the findings of the environmental assessments can be used to inform the design of the Proposed Development to respond to the environmental constraints and opportunities present. This approach has been adopted in respect of the Proposed Development; where likely adverse effects have been identified, consideration has been given to removing or reducing these through evolving the design of the Proposed Development.

3.1.3 This section provides a brief, non-technical summary of the main findings of the EIA as set out in the technical assessment chapters (chapters 5 to 13) within the EIA Report.

3.1.4 Consultation on the scope and methodologies for each of these technical assessment chapters was agreed through a formal EIA scoping opinion request to the Scottish Government Energy Consents Unit. In addition, there has been continued dialogue with relevant statutory and non-statutory consultees both before and after the scoping opinion request was submitted to the Scottish Government.

3.2 Landscape and Visual

3.2.1 **Chapter 5** of the EIA Report considers the likely significant landscape and visual effects associated with the construction and operation of the Proposed Development. It has been informed by field visits carried out on separate occasions at different times of the year and by consultation undertaken with statutory consultees.

Baseline

3.2.2 The existing landscape and visual baseline has been documented and the assessment has been supported by figures (presented in **Volume 2b**). Visualisations produced to NatureScot Visualisation Standards show representative views from locations consulted on at Scoping, illustrating existing and proposed views during daylight hours from all 17 LVIA viewpoints, and views during dark sky hours from a select number of viewpoint locations (presented in **Volume 2b**).

3.2.3 The Proposed Development is located off of the A83, approximately 2.5 km east of Tayinloan, on the Kintyre Peninsula in the administrative area of Argyll and Bute Council. The extents of the site of the Proposed Development are on indicated on **Figure 1.2**. The site is centred on National Grid Reference (NGR) E 172624 / N 644941 and covers an area of approximately 1,052 hectares (ha) with wind turbines proposed to occupy upland plateau moor and conifer forest locally known as the Killean Estate. The site is currently predominately utilised for commercial forestry plantation and open rough grazing for livestock.

3.2.4 There are no national landscape designations covering the site. The nearest national landscape designation is the North Arran National Scenic Area (NSA) situated approximately 11.7 km to the east. The nearest locally designated landscape is the West Kintyre Coast Local Landscape Area (LLA) located approximately 1.7 km to the west. A very small part of the application boundary overlaps the eastern edge of this LLA and a proposed turning area would be located within this area opposite the entrance to the site access track to allow large vehicles sufficient space to turn on the site access track.

3.2.5 The Proposed Development would be sited on an undulating, upland plateau flanked by hillslopes with extensive forest plantation that limits views of the Proposed Development from many of the more sensitive lower-lying coastal areas to the west and east of the upland plateau. The proposed turbines and associated infrastructure would be located within LCT 6 Upland Forest Moor Mosaic.

3.2.6 Appropriate offsets from all properties have been maintained to ensure that no property would experience an overbearing visual impact. Due to the height of the proposed turbines they would require visible aviation

lights. A reduced aviation lighting scheme has been agreed with the Civil Aviation Authority (CAA) meaning that four of the nine proposed turbines (T3, T6, T8 and T9) would require to be lit with visible lights on their hubs. It has also been agreed with the CAA that intermediate tower lighting would not be required. Further mitigation has been designed into the scheme to reduce the intensity of the 2,000 cd steady state lights in certain atmospheric conditions by reducing their intensity and attenuating the amount of vertical downwards lighting in order to reduce the visual impact experienced by receptors below the lights.

Potential Effects

3.2.7 As with almost any onshore wind farm development it is recognised that the Proposed Development would give rise to some localised significant effects on landscape character and visual amenity.

Effects on Landscape Character

3.2.8 The Proposed Development would result in direct and significant effects on the part of the landscape character type within which the Proposed Development is located. Indirect and significant effects would extend to approximately 5.7 km to the north east, 5 km to the east and south east, 5 km to the south and 1.6 km to the west within LCT 6 Upland Forest Moor Mosaic.

Visual Effects

3.2.9 In relation to visual effects, it is accepted that the Proposed Development would be visible from several nearby properties and settlements as well as parts of the surrounding road and footpath network, local ferry routes and the islands of Gigha and Arran.

3.2.10 It has been assessed that there would be significant visual effects experienced at six of the 17 representative viewpoints during daylight hours and at three viewpoints during the hours of darkness.

Effects on Visual Receptor Groups

3.2.11 In relation to settlements, the assessment found that none of the settlements within 5 km (Killean and Tayinloan) would experience significant visual effects during daylight or dark sky hours. Ardminish, located at between 5 and 10 km distance would experience significant visual effects during daylight hours and Pirnmill, located between 10 and

20 km from the Proposed Development would not experience significant effects during daylight hours or the hours of darkness.

Effects on Roads

3.2.12 The assessment of roads found that receptors travelling along the A83 to the west of the site would not experience significant effects. Receptors travelling on the Ardminish to Tayinloan Ferry would also experience significant effects during daylight hours but travellers on the other ferry routes would experience effects that would not be considered significant.

Effects on Long Distance Routes

3.2.13 The assessment of routes found that receptors would experience significant effects from parts of Core Path C094 – Tayinloan-Carradale East-West link, parts of the Kintyre Way (with the significant effects occurring over the same sections as Core Path C094) and Core Paths C095, C096, C539 on the Isle of Gigha.

Effects on Designated Landscapes

3.2.14 In terms of effects on the West Kintyre Coast LLA, the assessment found that there would be very localised significant effects in the location of the proposed turning area that overlaps the eastern edge of the LLA opposite the site entrance and indirect significant effects on views that would extend to approximately 5 km to the north and west but the addition of the Proposed Development would not undermine the understanding or appreciation of the underlying landscape of the LLA or its key qualities.

3.2.15 The assessment of effects on the Special Landscape Qualities of the North Arran NSA (see **Technical Appendix 5.8**) found that of the two special qualities assessed in detail, they would experience no greater than a moderate level of effect during daylight hours and a minor moderate effect during daylight hours, neither of which would be considered significant and that effects that would occur would not be of such a scale to undermine the overall integrity of the NSA.

Effects on Residential Properties

3.2.16 In terms of the effects on the 12 residential properties within 2 km of a proposed turbine, one property is uninhabitable, eight would not experience any theoretical visibility and two would experience very limited effects that would not be considered significant. It is concluded that when the experience from the remaining property is considered in the

round, the effects would not result in an overbearing or overwhelming effect on visual amenity such that it would become an unattractive place in which to live.

Cumulative Effects

3.2.1 It is acknowledged that wherever more than one wind farm is visible at any given location in the landscape, there will be a greater overall or cumulative effect on landscape character and visual amenity than if just one wind farm was visible in the landscape. Likewise, it is acknowledged that the more wind turbines that are constructed in any given landscape, the greater the magnitude of overall (or combined) change to the landscape character or views.

3.2.2 At the time of preparing this LVIA, there were 18 other wind farms within the detailed 20 km cumulative study area which were either operational, under construction, or in planning. Of these, the only scheme which the Proposed Development would have the potential to give rise to significant cumulative effects in combination with is the Clachaig Glen Wind Farm, where a revised application has been submitted which would supersede the consented scheme. The cumulative wirelines included with the visualisations illustrate the relationship between the sites and show that in the majority of views, both schemes would be seen simultaneously.

3.2.3 Were Clachaig Glen included in the baseline landscape alongside the Proposed Development there would be the potential for additional localised significant cumulative effects on the landscape character of LCT 19 Coastal Plain and LCT 22 Coastal Parallel Ridges. The Clachaig Glen turbines would also reinforce the significant effects also identified for parts of LCT 6 and on visual receptors in close proximity to the site, including the settlement of Ardminish on Gigha, receptors travelling on the Ardminish to Tayinloan ferry and a short section of the Kintyre Way, which corresponds to Core Path C094 – Tayinloan-Carradale East-West link.

3.2.4 Consideration has also been given to the overall totality of the cumulative landscape and visual effects when the Proposed Development is considered alongside the other operational and proposed schemes. Collectively the operational and proposed schemes would serve to result in wind energy being seen as a periodic feature across the wider landscape of the Kintyre Peninsula in all directions surrounding the site, with significant effects to localised areas of landscape character and some visual

receptors. The addition of the Proposed Development would serve to reinforce this pattern, particularly in combination with the proposed Clachaig Glen scheme.

Conclusion

3.2.5 It is important to acknowledge that localised significant effects on landscape character and visual amenity are inevitable as a result of commercial wind energy development anywhere in the UK. Whilst the LVIA identified some significant landscape and visual effects it is considered that the landscape has the capacity to accommodate the effects identified, particularly when the consented but as yet unbuilt wind farms in the surrounding landscape are taken into account.

3.2.6 Wind turbines give rise to a wide spectrum of opinions, ranging from strongly adverse to strongly positive, with a wide range of opinions lying somewhere between these two positions. Some people view wind turbines as incongruous or industrial structures whilst others view them as aesthetically pleasing, elegant structures and a positive response to climate change. In the case of the Proposed Development the turbines and associated ancillary development may be viewed by some as a symbol of continued progress by society towards a low carbon future.

3.2.7 However, in considering the effects of the Proposed Development, a precautionary approach has been adopted and it is therefore assumed that the effects identified will be adverse in nature even though it is recognised that for some people the impacts could be perceived to be beneficial.

3.2.8 There are no definitive quantifiable thresholds of acceptability in landscape and visual impact assessment. The identified effects on landscape character and visual amenity therefore need to be balanced against the other benefits of the Proposed Development in the overall planning balance.

3.3 Archaeology and Cultural Heritage

3.3.1 **Chapter 6** of the EIA Report outlines the cultural heritage context of the Proposed Development, and assesses its potential effects on cultural heritage assets. The desk-based assessment is supported by earlier walkover surveys (CFA 2016 and Birch 2018), has been informed by consultation with Historic Environment Scotland and West of Scotland

Archaeology Service (WoSAS) (who act as advisors to Argyll and Bute Council).

3.3.2 Fifty-one assets of cultural heritage interest were identified within the Inner Study Area (EIA Report Figure 6.1; Appendix 6.1). The majority of these assets are related to post-medieval, pre-improvement period agricultural use of the landscape, such as a group of 17 shieling huts (**6**) assessed as being of regional heritage importance and medium sensitivity. A prehistoric hut-circle (**19**) and nine cup-marked rocks (**7**, **8**, **13-18** and **23**) were also identified, and are assessed as being of regional importance and medium sensitivity.

3.3.3 The assessment of the known cultural heritage resource within and in the immediate vicinity of the Inner Study Area, understood alongside current and past land-use, indicates that there is a low potential for as yet undetected archaeological remains to survive both within the area of commercial forestry, and within the higher ground to the east of the forestry. There is a low to negligible potential for as yet undetected archaeological remains to survive along the proposed site access route.

3.3.4 The layout of the Proposed Development has been designed to avoid areas of heritage sensitivity, and there are no significant construction (direct) impacts predicted for known cultural heritage assets within the Inner Study Area. Two old quarries (**4-5**) of modern date and negligible heritage value may receive direct impacts of high magnitude and minor significance. The potential for significant direct effects on buried archaeological remains is considered to be low.

3.3.5 Moderately significant indirect effects on the settings of four groups of cultural heritage assets are predicted. These predicted effects arise as a result of the visibility of the Proposed Development in the landscape surroundings of three groups of cup-marked rocks and a group of shielings. The introduction of the Proposed Development would not, however, result in a change that would be so significant as to reduce the cultural significance of the assets.

3.3.6 Cumulative impacts upon the settings of cultural heritage assets are predicted, arising from the Proposed Development in combination with the proposed Clachaig Glen Wind Farm. These impacts would be upon cup-marked rocks at Braids, Drumnamucklach, Lagloskine and Clachaig Water, with all of the latter lying within the proposed area of the Clachaig Glen

Wind Farm. This combined cumulative impact would, however, be no greater than the effect of the Proposed Development alone; that is: of medium magnitude and moderate significance (significant in EIA terms). The predicted change would not be so significant as to reduce or adversely affect the cultural significance of the assets.

3.4 Ecology

3.4.1 Assessments of the relevant potential effects on ecology are presented in **Chapter 7** of the EIA Report. The ecological assessment considers the potential significant effects of the Proposed Development. The assessment discusses the methods used to establish the ecological species and communities present in the vicinity of the site, together with the process used to determine their nature conservation value. The ways in which birds could be affected (directly or indirectly) by the construction and operation of the Proposed Development are explained, and an assessment is made with regards to the significance of these effects.

3.4.2 Desk-based studies and field surveys were carried out in and around the site over respective 'study areas' to establish baseline conditions and the species and communities present. The proposed development is not located within any ecological designation.

3.4.3 Four high sensitivity (EU Habitats Directive Annex 1) habitats would be affected by the Proposed Development: blanket bog, wet heath, wet modified bog and acid/neutral flush. Though a small loss of these habitats will occur, implementation of the proposed Biodiversity Enhancement Management Plan (BEMP) will offset these losses.

3.4.4 Additional measures will be put in place during the construction phase to protect key species and are detailed in the Construction Environment Management Plan (CEMP), BEMP and Species Protection Plan. An Environmental Clerk of Works (ECoW) will be appointed to monitor adherence to such plans.

3.4.5 Potential impacts on fisheries will be mitigated by using best practice protocols to address potential fish access issues, silt management and pollution risks.

3.4.6 The only operational phase ecological impact identified was collision risk to bats. There was a low site risk, and all species were recorded at only

low activity levels, so there would be only a low risk overall. No bat species would be likely to be significantly affected by the Proposed Development

3.4.7 Overall, there are not likely to be any significant impacts on ecology resulting from the Proposed Development, assuming that the mitigation measures referred to within Volume 2, EIA Report Chapter 7: Ecology, are adopted (and which are required to ensure compliance with the nature conservation legislation). In relation to the key NatureScot wider countryside test, the Proposed Development would not affect the favourable conservation status of any species/community of conservation importance within the Natural Heritage Zone (NHZ) 14 Argyll West and Islands, either alone or in-combination with other schemes. It would also not contribute to any Likely Significant Effect on any Special Area of Conservation (SAC) qualifying interests. No effects would result in any breach of the Habitats Regulations.

3.5 Ornithology

3.5.1 Assessment of the relevant potential effects upon ornithology is presented in **Chapter 8** of the EIAR. The assessment discusses the methods used to establish the bird species and populations present in the vicinity of the site, together with the process used to determine the nature conservation value of the birds that used the site. The ways in which birds could be affected (directly or indirectly) by the construction and operation of the Proposed Development are explained, and an assessment is made with regards to the significance of these effects.

3.5.2 Desk-based studies and field surveys were carried out in and around the site over respective 'study areas' to establish baseline conditions and the bird populations present. The Proposed Development is not located within any ornithological designation.

3.5.3 The focus of the ornithological impact assessment were the key bird species, identified by NatureScot (NS) as being at potential risk of impact from wind farms, that were recorded at the site. Only one species was found breeding within the potential disturbance zone, black grouse (up to two pairs).

3.5.4 Key species recorded using the potential disturbance zone outside the breeding season included whooper swan, Greenland white-fronted goose,

greylag goose, barnacle goose, black grouse, golden eagle, white-tailed eagle, red kite, marsh harrier, hen harrier, golden plover, lapwing, curlew, herring gull, peregrine and merlin.

3.5.5 Key species recorded at risk of collision (i.e. flying through the site at rotor height) included whooper swan, Greenland white-fronted goose, greylag goose, red-throated diver, black grouse, golden eagle, white-tailed eagle, red kite, osprey, hen harrier, golden plover, herring gull, peregrine and merlin.

3.5.6 Whilst there are no significant effects predicted, additional controls will be put in place during the construction phases and will be detailed in the Construction Environment Management Plan (CEMP) and Breeding Bird Protection Plan. The detailed measures will be implemented during construction to protect species within the site, and an Environmental Clerk of Works (ECoW) will be appointed to monitor adherence to such plans.

3.5.7 The operational ornithological impacts of the Proposed Development will be mitigated (in order to deliver a net gain in line with NPF4) through a combination of the enhancements that will be delivered through the HMP. These will include low-density woodland edge planting for black grouse, nesting raft provision for red-throated divers and enhanced monitoring of Greenland white-fronted geese.

3.5.8 Overall, there are not likely to be any significant impacts on ornithology resulting from the Proposed Development, assuming that the mitigation measures referred to within Volume 2, EIA Report Chapter 8: Ornithology, are adopted. In relation to the key NS wider countryside test, the Proposed Development would not affect the favourable conservation status of any bird species of conservation importance within the Natural Heritage Zone (NHZ), either alone or in-combination with other schemes. It would also not result in any adverse effect on the integrity of any SPA qualifying interests. No effects would result in any breach of the Habitats Regulations.

3.6 Hydrology, Hydrogeology, Geology and Soils

3.6.1 **Chapter 9** of the EIA Report presented an assessment of the likely impacts of the Proposed Development on the hydrological, hydrogeological, geological environment within a defined study area (comprising land

within 500 m of the site boundary). The assessment has considered site preparation, construction, operation and decommissioning of the Proposed Development.

3.6.2 Following the identification and assessment of the key receptors, taking into account the potential effects listed above, a comprehensive suite of embedded mitigation and good practice measures has been incorporated into the design, including avoidance of areas of deep peat and inclusion of extensive water buffer areas. In addition, a site-specific CEMP as well as detailed design of infrastructure and associated mitigation will be implemented to protect the groundwater and surface water resources from pollution and minimise changes to the hydrological environment.

3.6.3 The impact assessment has taken into account the hydrological regime, highlighting that the principal effects will occur during the construction phase. Following the successful design and implementation of mitigation measures the significance of construction effects on all identified receptors are not defined as significant. The assessment of predicted operational effects has determined that the significance of effects on all receptors to be of no significance.

3.6.4 Good practice design and construction of the Proposed Development delivered through a skilled team of competent workers, with mitigation and compliance monitored in collaboration with SEPA, ABC and other engaged stakeholders, will result in a risk that is considered to be not significant in terms of the EIA Regulations.

3.6.5 A summary of assessed effects and identified mitigation measures required to reduce the potential effects to acceptable levels are identified in Table 9.10.

3.7 Climate and Carbon Balance Assessment

3.7.1 The results of the Climate and Carbon Balance Assessment (**Chapter 13, Other Issues and Technical Appendix 13.2 Carbon Payback and CO_2 Emissions**) reveal that the net impact of the Proposed Development will be positive overall.

3.7.2 Peatland is an important carbon store, and the Proposed Development has potential to impact peat, despite mitigations proposed to limit disturbance to peat and bog habitats. A carbon balance assessment report has been produced and Scottish Government's online carbon calculator

tool completed to determine the carbon payback time for the Proposed Development (see EIA Report Chapter 13, Other Issues and **Technical Appendix 13.2** Carbon Payback and CO_2 Emissions or full details). The results from the carbon calculator reveal that the net impact of the Proposed Development will be positive overall, as the calculations of total carbon dioxide emission savings and payback time for the Proposed Development indicates the overall payback period of a development with 9 wind turbines with an average (expected) installed capacity of around 6.6MW each would be approximately 1.5 years, when compared to the fossil fuel mix of electricity generation.

3.7.3 This means that the Proposed Development is expected to take between 0.6 and 1.9 years to repay the carbon exchange to the atmosphere (the CO_2 debt) through construction of the wind turbines; the Proposed Development would in effect be in a net gain situation following this time period and would contribute to national CO_2 reduction targets.

3.7.4 The Proposed Development therefore illustrates a significantly positive net impact in terms of its contribution towards the reduction of greenhouse gas emissions from energy production.

3.8 Traffic and Transport

3.8.1 **Chapter 10** of the EIA Report considered traffic and transport impacts and potential significant environmental effects resulting from the construction of the Proposed Development in accordance with IEMA Guidelines for 'Environmental Assessment of Traffic and Movement July 2023' and the scope agreed with Transport Scotland.

3.8.2 Operational and decommissioning traffic is considered to be much lower than during the construction phase, and its effect would not be significant, therefore the effects to traffic and transport during these phases of the Proposed Development require no further assessment.

3.8.3 The construction programme associated with the Proposed Development is anticipated to cover a 15-month period. During this period, a total of 5,396 heavy goods vehicles (HGVs) would access the site, which equates to 57 two-way HGV trips per day during the worst-case month during the construction programme. In addition to HGV movements, it is expected that 20 personnel would be on site at any one time.

3.8.4 A robust assessment has been undertaken using the worst-case scenario for two-way traffic movements. The impact of total construction traffic (personnel and HGV) along the road links within the study area ranged from:

- A83 (T) - 1-3%; and
- A816 – 1-3%.

3.8.5 The percentage increase in HGV movements associated with the worst-case month of the construction period ranged from:

- A83 (T) - 16-34%; and
- A816 – 8-25%.

3.8.6 It is important to note that these increased traffic levels are associated with the construction period only and are therefore temporary in nature. They also represent the generated traffic during the busiest month of the construction programme, and generated traffic during other months will be considerably lower than what has been assessed.

3.8.7 The predicted increase in HGVs on the section of A83 (T) between the site access and Campbeltown triggered the requirement for a full assessment of effects on this section of road. The significance of the predicted effects on traffic and transport during the construction period have been assessed, and focussed on:

- severance;
- driver delay;
- pedestrian delay and amenity;
- fear and intimidation;
- road safety; and
- dust and dirt.

3.8.8 The assessment does not predict any significant effects, and as a result no mitigation is required to address any predicted environmental effects associated with the increased traffic generated during the construction period.

3.8.9 While not necessary to address any environmental effects, the applicant intends to implement industry standard ‘good practice’ measures to reduce traffic and transport effects during construction in the form of a Construction Traffic Management Plan (CTMP). These mitigation measures have been successfully implemented at other wind farms across Scotland.

3.8.10 The assessment also concluded residual and cumulative effects in respect of traffic and transport are **Not Significant**.

3.9 Noise

3.9.1 The acoustic impact for the operation of the Proposed Development on nearby residential properties has been assessed in accordance with the guidance on wind farm noise as issued in the DTI publication 'The Assessment and Rating of Noise from Wind Farms', otherwise known as ETSU-R-97, and Institute of Acoustics Good Practice Guide (IoA GPG), as recommended for use by relevant planning policy.

3.9.2 To establish baseline conditions, background sound surveys were carried out at two nearby properties and the measured background sound levels used to determine appropriate noise limits, as specified by ETSU-R-97 and the IoA GPG. The results of four further sound surveys were included within this assessment which were conducted in support of the planning application for Clachaig Glen Wind Farm.

3.9.3 Operational noise levels were predicted using the recommended noise propagation model. The predicted noise levels for the Proposed Development are within the derived noise limits at all considered wind speeds. The Proposed Development therefore complies with the relevant guidance on wind farm noise and the impact on the amenity of all nearby residential properties would be regarded as acceptable.

3.9.4 Construction noise has been discussed with reference to BS 5228 and it has been determined that on-site construction noise levels are highly unlikely to exceed typical limiting noise criteria at nearby residential properties although appropriate mitigation measures will be adopted as a matter of due course. The access route for the Proposed Development is expected to pass reasonably close to residential properties and with some upgrade works to existing access tracks and public roads potentially occurring in close proximity to some of these residential properties. In these instances, the level of noise generated by construction works could be close to typical limits for relatively brief periods. As a result, typical and enhanced construction noise mitigation measures are provided within the chapter which aim to minimise noise as far as reasonably practicable and/or reasonable.

3.9.5 Vibration and air overpressure due to blasting are not expected to have a significant impact on nearby residents should the mitigation measures described within the chapter be adopted.

3.9.6 An assessment of the noise impact from both the construction and operation of the Proposed Development was undertaken taking into account the identified nearest residential properties. The assessment is presented in **Chapter 11** of the EIA Report and concludes no significant effects in relation to noise.

3.10 Socioeconomics, Recreation and Tourism

3.10.1 BiGGAR Economics was commissioned to undertake the socio-economics, recreation and tourism elements of the Proposed Development. Socio-economic and tourism assessments of onshore windfarms over the last decade have found no significant socio-economic effects in EIA terms. Since there is no reason to expect significant effects in the presence of the Proposed Development, socio-economics, tourism and recreation was scoped out of the EIA Report.

3.10.2 Nevertheless, socio-economic and tourism issues are of interest to key stakeholders and local authorities, and so an assessment of potential effects in relation to Socioeconomics, Recreation and Tourism is presented in **Appendix 13.1** of the EIA Report.

Socio-Economic Impact

3.10.3 The Proposed Development could deliver a series of economic benefits during the phases of development and construction and following operations. In particular, it was estimated that during its development and construction, the Proposed Development could generate:

- £5.9 million Gross Value Added (GVA) and 80 jobs in Argyll and Bute; and
- £18.1 million GVA and 260 jobs in Scotland.

3.10.4 During its operations and maintenance, each year the Proposed Development could generate:

- £0.3 million GVA and three jobs in Argyll and Bute; and
- £1.1 million GVA and 12 jobs across Scotland.

3.10.5 Through local partnerships, the Applicant will support communities to develop the skills sought after within the onshore wind sector, to secure

jobs and optimise the opportunities associated with the Proposed Development. The Applicant has also committed to prioritise local companies in the provision of contracts during the development and construction, and operational phases.

3.10.6 The Proposed Development will also contribute to public finances through the payment of non-domestic rates, which could amount to £0.7 million annually, or £35.6 million over a 50-year operational lifetime. This will support the funding of local public services in the context of challenging public sector finances.

3.10.7 To support local ambitions and needs, it has become common practice to offer community benefit funding, with Scottish Government guidance suggesting £5,000 per annum per installed MW. This level of funding would generate around £0.3 million every year for the local economy, equivalent to £14.9 million over the lifetime of the wind farm and could support up to five jobs locally.

3.10.8 The local area will also have the opportunity to take part in the Applicant's Local Electricity Discount Scheme, reducing the household energy bills in the community, as well as shared ownership options.

3.10.9 As well as generating economic impacts regionally and nationally, the Applicant's commitment to ensuring the local community benefits from the Proposed Development would support wider economic and social impacts. By committing to prioritising local contractors and supporting local skills, as well as the Applicant's innovative approach to community benefits, shared ownership, and the Electricity Discount Scheme, the Proposed Development will support local economic development and enable the community to support projects and address the priorities of the area.

Tourism and Recreational Impacts

3.10.10 Over time, research evidence has consistently found that there is no relationship between onshore wind developments and tourism activity in Scotland. In 2021, BiGGAR Economics produced a report analysing the relationship between the construction of onshore wind farms and tourism employment at the local, regional and national level. The report concluded that there was no pattern or evidence suggesting that the development of onshore wind farms in Scotland had any negative effects on the tourism economies of the country as a whole, local authority areas

or the immediate areas surrounding wind farms. This report also includes an updated area-specific analysis of the relationship between wind farms and tourism in Argyll, which found the same conclusion.

3.10.11 Although tourism assessments usually focus on tourism assets which are located within 15 km of the Proposed Development, this assessment has extended the radius to 25km to incorporate the west coast of Arran and other areas identified in the zone of theoretical visibility. It found that the wind farm proposals are not expected to affect the local accommodation providers, recreation trails and core paths, and tourism attractions.

3.11 Aviation, Radar and Defence

3.11.1 The Proposed Development will potentially impact the NATS En Route Ltd radar at Lowther Hill, and the Instrument Flight Procedures (IFP) at Campbeltown Airport. For the Lowther Hill radar, a mitigation has been identified and it is expected that an RMA agreement will be agreed. HIAL has accepted the findings of an independent consultant report that the Proposed Development will have no impact on the airport's IFPs. Infrared lighting will be agreed with the Defence Infrastructure Organisation (DIO) for the MOD low flying requirements and a visible lighting scheme has been agreed with the CAA.

3.12 Other Issues

3.12.1 The Proposed Development does not directly affect fixed links and is considered to have no significant effects with respect to other television or radio communication networks.

3.12.2 There are no habitable dwellings within 1,650m of any proposed wind turbine, and therefore no shadow flicker effects are predicted from the Proposed Development.

4 Next Steps and Further Information

4.1 Next Steps

4.1.1 The Scottish Government Energy Consents Unit will process the application on behalf of Scottish Ministers. At this stage, there will be an opportunity to make representations on the application to:

Scottish Government

Energy Consents Unit

5 Atlantic Quay

150 Broomielaw

Glasgow

G2 8LU

Email: representations@gov.scot

4.2 Further Information

4.2.1 The EIA Report comprises the following:

- Volume 1 EIA Report;
- Volume 2a-b Figures;
- Volume 3 Technical Appendices; and
- Volume 4 Non-Technical Summary;

4.2.2 Printed copies of the NTS and EIA Report (including figures and appendices) may be obtained from:

RES,

Third Floor,

STV,

Pacific Quay,

Glasgow,

G51 1PQ

Email: danny.mclean@res-group.com

4.2.3 Hard copies of the NTS and EIA Report will be available for viewing in the following location:

- Campbeltown Library, Aqualibrium, Kinloch Road, Campbeltown, PA28 6EH (during normal opening hours); and

- Tayinloan Village Hall, Tayinloan PA29 6XG (by appointment via tayinloanvillagehall@hotmail.com).

4.2.4 The Non-Technical Summary is available free of charge, and a limited number of hard copies of the EIA Report is available for £1,500 per copy. The price of the hard copy reflects the costs of producing the Landscape and Visual visualisations.

4.2.5 Alternatively, a DVD or USB memory stick containing PDF files of the EIA Report are available for £15 per CD. These PDF files can also be downloaded for free from the Killean Wind Farm project website page at: https://www.killean-windfarm.co.uk/