Item: 5.1.

Planning Committee: 20 January 2021.

Erect Two Wind Turbines (maximum height of 150 metres, maximum capacity 8.4 magawatts total), Substation, Hydrogen Production Facility and Welfare Building, Construct Access Tracks, Create Borrow Pits and Associated Infrastructure at Hammars Hill, Evie.

Report by Executive Director of Development and Infrastructure.

1. Summary

1.1.

The proposal is for an extension to the existing Hammars Hill Wind Farm comprising two, three-bladed wind turbines, each with a maximum blade tip height of 150 metres, with a combined maximum installed capacity of 8.4 megawatts, together with a hydrogen production facility, at Neigarth by Hammars Hill, Evie. The development also includes an electrical substation, a borrow pit, access routes to each of the turbines, a crane pad and assembly area adjacent to each turbine foundation, underground cabling connecting the turbines to the substation, borrow pit, a temporary construction compound, welfare building and building to house the hydrogen production facility.

1.2.

One objection has been received from a member of the public and an objection from a non-statutory consultation body has been received.

1.3.

The development is considered in relation to National Planning Framework 3 (in the context of the subsea cable transmission link) and Scottish Planning Policy, as well as the Orkney Local Development Plan 2017 and relevant Supplementary Guidance.

1.4.

Issues considered in the report include:

- Shadow flicker.
- Noise.
- Traffic.
- Tourism and recreation.
- Peat and carbon rich soils.
- Water environment.
- Aviation, defence and communications.

- Visual amenity.
- Ecology and nature conservation.
- Ornithology.
- Historic environment.
- Landscape and visual impact.
- Employment.
- Energy output and carbon considerations.

1.5.

Many issues are considered to have no unacceptable impact as proposed or, subject to mitigation, could be controlled by planning conditions, or a combination thereof. Consideration is balanced between the benefits and any residual adverse effects. On balance, employment creation, socio-economic benefits, carbon displacement and contribution towards the needs case for the subsea transmission cable are considered to outweigh landscape and natural heritage concerns. As such, the application is recommended for approval.

Application Number.	20/112/TPP.
Application Type.	Planning Permission subject to EIA (wind energy and industrial).
Proposal.	Erect two wind turbines (maximum height of 150 metres, maximum capacity 8.4 MW total), a substation, hydrogen production facility and welfare building, construct access tracks, create borrow pits and associated infrastructure.
Location.	Hammars Hill, Evie.
Applicant.	Hammars Hill Energy Limited and Eneus Energy Limited, c/o Mr Alistair Gray, Ridgeways, Back Road, Stromness, KW16 3DS.
Agent.	Green Cat Renewables, c/o Ana Martin, Stobo House, Roslin, Edinburgh, EH25 9RE.

1.6.

All application documents (including plans, consultation responses and representations) are available for members to view at the following website address:

https://www.orkney.gov.uk/Service-Directory/D/application_search_submission.htm (then enter the application number given above).

2. Site Description

2.1.

The application site is on land by Hammars Hill within the catchment of the Burn of Woodwick, Evie. The setting of the main body of the site is in an area of transition

from improved agricultural ground to upland heath in the upper valley of the Burn of Woodwick with rising ground to all sides, other than to the west, where the land drops towards the A966 and the coast. Wind turbines from the existing Hammars Hill wind farm are significant within the local landscape, comprising a line of five wind turbines, height 67 metres to blade tip. The proposed development is wholly contained on improved ground within an agricultural setting of fields and the steading of Neigath and the property of Savisgarth. Neigarth is a collection of agricultural buildings and subject to application, in part to accommodate the proposed hydrogen facility building, welfare building and substation. The development site area extends to approximately 10 hectares, and the two proposed wind turbines are referred to as T6 and T7, in sequence with the existing turbines T1 to T5 of the existing Hammars Hill wind farm. The proposed turbines sit at an elevation of 91 metres Above Ordnance Datum (AOD) at their highest point; this is in comparison to turbines T1 to T5 which sit at 150 metres AOD. A location plan showing the proposed site in context is attached as Appendix 1 to this report.

2.2.

No residential properties are located within the bounds of the defined application site. One residential property, Savisgarth, is located in close proximity to the application site, and it is intimated within the application documentation that change of use from residential to business is intended; however, this house and its domestic curtilage are not included within the defined planning application boundary. Properties in the wider area are generally associated with the improved agricultural ground lower in the valley of the Woodwick Burn and along the coastal plain to the west.

2.3.

There are no national or international cultural heritage designations, and no national or international natural heritage designations within the site boundary. The development is however close to the boundary of the West Mainland Moorlands Site of Special Scientific Interest (SSSI) and the Orkney Mainland Moors Special Protection Area (SPA) to the west of the application site. In relation to the Heart of Neolithic Orkney World Heritage Site, whilst the development is located within the Sensitive Area of this designation, which covers the wider area of West Mainland, the proposal is situated outwith the inner sensitive zone and is not located on a recognised sensitive ridgeline. The turbines would be visible from parts of the inner sensitive zone of the Heart of Neolithic Orkney World Heritage Site. These matters are further considered within the Environment Impact Assessment Report (EIAR) as submitted and discussed within the Landscape and Visual Impact Assessment undertaken.

3. Description of Proposed Development

3.1.

The proposal is for the extension of Hammars Hill wind farm. For the purposes of assessing the application and in recognition of Supplementary Guidance: Energy definitions, the development is considered a commercial windfarm as it comprises

two wind turbines, each with a maximum blade tip height of 150 metres and a combined maximum installed capacity of 8.4 megawatts. Planning permission is also sought for an associated hydrogen production facility with associated infrastructure. Whilst intimated within submitted documentation that the house and associated domestic curtilage at Savisgarth forms part of the development, it has been omitted from the defined area of the application within submitted plans; Savisgarth has therefore not been considered as an element subject to application at this time, albeit that the proposed development would have a direct bearing on the nature, use and enjoyment of Savisgarth. The property is within the overall landownership boundary denoted by the application and would require either a change of use or otherwise cease to be used as a residential unit to avoid unacceptable amenity impacts arising. A change of use could be pursued by separate application and appropriate planning condition(s) may be applied to avoid amenity impacts arising by virtue of this application.

3.2.

The specific turbine manufacturer and model have not yet been selected, and a 'candidate turbine' has been submitted. This has been stated as an Enercon-115 machine. The candidate turbine has a height to tip of 149.85 metres, a rotor diameter of 115.7 metres and a height to hub of 92 metres. This is standard industry practice, allowing for the typical time delay between consent and construction of turbines of the scale proposed, and resultant availability of specific models and advances in technology. For the purposes of the EIAR and consideration of the application, the operational attributes of the candidate turbine submitted set a maximum development scenario for the potential turbine model, including the maximum height to blade tip of 150 metres. Final details of the design and operation of the development would be controlled by planning condition.

3.3.

In total, the development comprises the following:

- Wind farm extension:
  - Two three-bladed, horizontal axis wind turbines measuring up to 150 metres to blade tip height.
  - Turbine foundations.
  - Hardstanding areas for cranes at each turbine location.

- Hydrogen production facility:
  - Electrolyser unit.
  - Air separation unit.
  - Haber-Bosch synthesis unit.
  - Electrical plant room.
  - Ammonia storage tanks.
  - Welfare and office building.

- Upgrading of existing farm tracks.

- New access tracks as required.
- Drainage works.
- An on-site electrical and control network of buried cables for on-site use.
- Associated ancillary works.
- A temporary construction compound, including parking, and welfare facilities.
- An electrical substation measuring 17.6 x 4.2 metres, housing on site usage transformer room, welfare, metering and switch room.
- Drainage works.
- Formation of a borrow pit of 3,937 square metres.
- Engineering operations.

3.4.

A micro-siting allowance is typically considered for significantly scaled wind turbines to allow for local ground conditions or other environmental constraints revealed by pre-construction surveys. This is standard industry practice. A planning condition would control micro-siting, to control environmental impacts and the layout and appearance of the development were the application to be subject to approval.

3.5.

A description of the rationale and design iterations of the proposed development is provided in the 'Volume IIa: Design Statement' accompanying the application. This document provides a case for the background and 'need' for the development, with an overview of the development, site selection, alternatives considered, site constraints and site design. Significant to the background of the development is the change from the originally envisaged three 3.5 megawatt turbines at a maximum height of 125 metres, which was subject to EIA scoping, to the current proposal of two 4.2 megawatt turbines, with a maximum blade tip height of 150 metres, together with the addition of the hydrogen production facility.

3.6.

The combined nature of the development, electricity generation and hydrogen production, is based on the premise of using renewable electricity to produce hydrogen, which can be used as an alternative fuel for storage, heat and transport rather than simply providing further electrical generation capacity. Electricity supply is currently constrained in Orkney and awaits additional electricity transmission infrastructure. Without capacity to export generated electricity, an alternative use is required. The proposal is considered as a unitary development, with electricity generation and hydrogen production operating in tandem. This is anticipated by the developer to supply an emergent demand for hydrogen, significantly at the local level within Orkney.

3.7.

The buildings proposed in relation to the hydrogen facility are unremarkable in the context of a collection of agricultural buildings. The proposed facility welfare building is single storey, 'L' plan form with profile metal sheet roof and harled walls. The more

significant building housing the hydrogen production facility would be a windowless, gable ended, rectilinear building of 35.2 by 18.4 metres, with an eave height of 6 metres and ridge height of 8.626 metres, with a footprint of 647.68 square metres.

3.8.

The development is novel in an Orkney context, in that it is designed to harness wind energy to provide electricity which in turn would be utilised for hydrogen production, which is based on electrolysis of water, powered by the electricity generated. Hydrogen can then be processed using a Haber-Bosch synthesis loop to produce ammonia. Ammonia can in turn then be used as the carrier for the hydrogen to allow ease of handling, storage and transportation, owing to ammonia: being in a liquid state at ambient conditions; high volumetric and gravimetric energy density; and low propensity to create lethal hazards when transported, stored, and used. It is recognised that green ammonia can be considered as a non-carbon, renewable fuel in its own right. The proposed submission recognises Orkney as a location familiar with the production and use of hydrogen, noting the 'Surf 'n' Turf' and 'Big Hit' projects which grew from the utilisation of surplus electricity at times of grid constraint.

4. Relevant Planning History and Procedure

4.1. Site History.

Reference.	Proposal.	Location.	Decision.	Date.
18/245/SCO	Scoping opinion request for 3 x 3.5MW turbines (maximum height 125m).	Hammars Hill, Evie.	Scoping Opinion adopted.	13/08/2018
16/424/VR	Variation to condition 11 of permission 08/138/PPF to extend the period of consent to 25 years.	Savisgarth, Evie.	Grant subject to conditions.	04/11/2016
13/037/SCO	Scoping opinion request to erect 1 x 900kW wind turbine (max height 67m) and 3 x 3MW wind turbines (max height 120m)	Hammars Hill Wind Farm (Land Near), Evie.	Scoping Opinion adopted.	29/03/2013
08/138/PPF	Erect five wind turbines (max. height 67m) and construct access and switching gear station.	Savisgarth, Evie.	Grant subject to conditions.	05/10/2008

4.2. Site Selection

4.2.1.

The developer notes that the existing Hammars Hill Wind Farm, in its tenth year of operation with commensurate records and data, has been found to be one of the most productive wind farm sites in Scotland and as such is an attractive commercial development opportunity noting the emergence of viable subsidy-free wind farms. A proposed extension of wind energy development in the area is an appealing proposition given the proximity to an extant wind farm, thereby optimising the use of existing infrastructure. Owing, in part, to improvements in wind turbine technology, larger wind turbines are being pursued which were not deemed appropriate on the Hammars Hill ridgeline given issues of prominence and cumulative effects with the existing wind turbines. Operationally, greater separation distances are also required for modern wind turbine technology to reduce wake effects which can impact on turbine efficiency and longevity.

4.2.2.

Other reasons provided for identifying Hammars Hill as suitable include: the wind resource on the site; viable access route to the site; avoidance of significant environmental impacts; proximity to grid connection; compliance with technical constraints and planning policy. The consideration of alternatives, as required by EIA legislation, includes alternative design iterations for the site in question, in larger part as an extension to an existing wind farm, factoring site layout, design, turbine height and turbine numbers, and the environmental effects of those options.

4.2.3.

The siting of the hydrogen facility utilises the site of existing agricultural buildings at Neisgarth. This location was selected as near the proposed wind turbines, accessible to allow for transportation of ammonia/hydrogen offsite and utilises a previously developed site. The nature and scale of the buildings are not dissimilar to what could reasonably be expected within a modern agricultural holding albeit a different use and function.

4.2.4.

The site of the borrow pit was chosen owing to the proximity to site, availability of material, not located within a deep peat area, distance from watercourses and would not have a direct impact on Groundwater Dependent Terrestrial Ecosystems (GWDTE). The use of an on-site borrow pit is also expected to reduce importation of required aggregate by 90%, thereby significantly reducing road haulage.

4.3. Scoping Opinion

4.3.1.

A request to adopt a scoping opinion was submitted to the Planning Authority in June 2018, for the development of three 3.5 megawatt turbines (maximum height 125 metres), submitted in accordance with Regulation 17 (10) of The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (‘the

2017 EIA Regulations'). Having considered the characteristics of proposed development and environmental features likely to be affected by the development, the Planning Authority adopted a scoping opinion in August 2018. The scoping opinion included information from the Planning Authority and statutory and non-statutory consultation bodies.

4.3.2.

The development under consideration was not subject to a dedicated EIA scoping submission. The relationship between the development subject to scoping opinion and the final design iteration was discussed with the developer in advance of submission and it was accepted that the matters arising and likely environmental effects for a revised scheme of two 8.4 megawatt (150 metres to tip) wind turbines and a hydrogen production facility did not require a further scoping opinion. This approach can be accommodated within EIA legislation; it is however at a developer's risk in the event that matters critical to addressing the 2017 EIA Regulations are omitted within the submitted EIAR in support of the planning application.

4.3.3.

The EIAR as submitted has taken account of responses from the Council and consultation bodies in relation to the previous scoping opinion. This is in combination with desktop studies and site surveys, some of which have been undertaken during consideration of the application and as a reaction to consultation body comments. Notwithstanding the restrictions of the COVID-19 pandemic, the developer commissioned and provided supplemental information including additional archaeological and environmental field survey work.

4.4. Pre-Application Consultation

4.4.1.

The Town and Country Planning (Hierarchy of Development) (Scotland) Regulations 2009 applies to all applications for planning permission and describes 'classes of development'. The wind farm element of the proposed development as submitted, defined as 'Electricity Generation', is below the threshold to be classed as a 'major development'.

4.4.2.

Informal pre-application advice was pursued prior to submission of the apploication. The general concept of the proposal was discussed, including the relationship between electricity generation and hydrogen production on site.

4.5. Planning Application and Environmental Impact Assessment Report

4.5.1.

The developer has confirmed that the proposed site layout was developed to take account of site conditions, physical constraints, potential environmental impacts and technical considerations. The planning application was submitted in March 2020,

accompanied by an EIAR prepared in accordance with the 2017 EIA Regulations. The submitted EIAR has been subject to third party peer review on behalf of the Planning Authority. The submitted application and its accompanying EIAR have been subject to consultation and advertisement within the period of consideration of the application, in April/May 2020 following submission, and again in November 2020 as a result of additional information being submitted, significantly as a consequence of the EIAR review and comments from consultation bodies. The EIAR is considered robust to be compliant with the requirements of the 2017 EIA Regulations.

4.5.2.

Following submission of the planning application and EIAR, consultation responses were received, with the Royal Society for the Protection of Birds Scotland (RSPB), objecting on the basis RSPB considers that the submission "has not demonstrated beyond reasonable scientific doubt that there will not be an adverse effect on the integrity of the Orkney Mainland Moors SPA, North Orkney pSPA, or West Mainland Moorlands SSSI" and citing "serious concerns regarding impacts to other species of conservation concern". Matters in relation to ornithology are considered further within Chapter 9 of the EIAR and form a significant part of Habitats Regulations Appraisal (HRA) noting Appendix 3.

5. Representations

5.1.

One objection has been received from:

- Jim and Maureen Leitch, Feolquoy, Evie, Orkney.

5.2.

The representation has stated the following matters as reasons for objection:

- Proliferation of wind turbines exceeding the carrying capacity of the surrounding area.
- The height of the proposed turbines being in excess of 120 metres, exceeding the maximum parameters as stated within The Orkney Local Development Plan.

5.3.

The objector has also referred to several other matters which have not been considered as material to the determination of the application. These matters include the method of revision of planning guidance, public scrutiny in the process of adoption of revised planning guidance, and the role of the Planning Authority within the Council.

6. Consultations

6.1. Statutory Consultation Bodies.

6.1.1.

The following agencies are the statutory consultation bodies as prescribed by the 2017 EIA Regulations:

- Historic Environment Scotland (HES).
- Scottish Water (SW).
- Scottish Environmental Protection Agency (SEPA).
- Scottish Natural Heritage (SNH) (also referred to as NatureScot).

6.1.2.

In addition to those listed above, the following is a statutory consultation body as prescribed by the 2013 Development Management Regulations:

- OIC Roads Services (as roads authority).

6.2. Other Non-Statutory Consultation Bodies.

6.2.1.

- Arqiva (telecommunications company, providing infrastructure and broadcast transmission facilities).
- Civil Aviation Authority.
- Highlands and Islands Airports Limited.
- Joint Radio Company (industry-owned spectrum management consultancy and spectrum management organisation).
- Kirkwall Airport – Senior Pilot.
- Ministry of Defence.
- NATS (the main air navigation service provider in the UK).
- Ofcom (UK government-approved regulatory and competition authority for the broadcasting, telecommunications and postal industries).
- OIC Airfield Superintendent.
- OIC County Archaeologist.
- OIC Environmental Health.
- OIC Engineering Services.
- OIC Development and Marine Planning – Policy, Environment, Historic Environment.
- Royal Society for the Protection of Birds Scotland (RSPB Scotland).
- Orkney Heritage Society (West).

6.2.2.

As noted above, one objection has been received from a non-statutory consultation body:

- RSPB Scotland, Orkney Office, 12-14 North End Road, Stromness, KW16 3AG.

6.2.3.

No other objections have been received, and all other matters raised in consultation responses can be addressed by mitigation and monitoring, and planning conditions.

7. Legal Aspects

7.1.

Section 25 of the Town and Country Planning (Scotland) Act 1997 ("the Act") states that in making determinations under the Planning Acts the determination should be in accordance with the development plan unless material considerations determine otherwise.

7.2.

Where a decision to refuse an application is made, the applicant may appeal under section 47 of the Act. Scottish Ministers are empowered to make an award of expenses on appeal where one party's conduct is deemed to be unreasonable. Examples of such unreasonable conduct are given in Circular 6/1990 and include:

- Failing to give complete, precise and relevant reasons for refusal of an application.
- Reaching a decision without reasonable planning grounds for doing so.
- Not taking into account material considerations.
- Refusing an application because of local opposition, where that opposition is not founded upon valid planning grounds.

7.3.

An award of expenses may be substantial where an appeal is conducted either by way of written submissions or a local inquiry.

8. Relevant Planning Policy and Guidance

The full text of the Orkney Local Development Plan 2017 and supplementary guidance can be read on the Council website at:

https://www.orkney.gov.uk/Service-Directory/D/Planning-Policies-and-Guidance.htm

The following policies, supplementary guidance and planning policy advice are relevant to this application:

- Orkney Local Development Plan 2017:
    - Policy 1 – Criteria for All Development.

- Policy 2 – Design.
- Policy 4B – Business – In the Countryside.
- Policy 7C – Energy – All Renewables and Low Carbon Energy Developments.
- Policy 7D – Energy - Onshore Wind Energy Development.
- Policy 8A – Historic Environment and Cultural Heritage – All Development.
- Policy 8B - Historic Environment and Cultural Heritage – Specific Policy Considerations.
- Policy 9A – Natural Heritage and Landscape - Natural Heritage Designations.
- Policy 9B – Natural Heritage and Landscape - Protected Species.
- Policy 9C – Natural Heritage and Landscape - Wider Biodiversity and Geodiversity.
- Policy 9D – Natural Heritage and Landscape - The Water Environment.
- Policy 9E – Natural Heritage and Landscape - Peat and Soils.
- Policy 9G – Natural Heritage and Landscape - Landscape.
- Policy 13 – Flood Risk, SuDS and Waste Water Drainage.
- Policy 14 – Transport, Travel and Road Network Structure.

- Supplementary Guidance and Planning Police Advice:
  - Supplementary Guidance – Energy (9 March 2017).
  - Development Management Guidance: Energy Clarification following the declaration of a Climate Change Emergency by the Council in May 2019
  - Supplementary Guidance – Historic Environment and Cultural Heritage (9 March 2017).
  - Supplementary Guidance – Natural Environment (March 2017).
  - Planning Policy Advice - Heart of Neolithic Orkney World Heritage Site (December 2010).
  - Planning Policy Advice – Landscape Capacity Assessment for Wind Energy in Orkney (July 2015).

- National Policy and Guidance:
  - Scottish Planning Policy (2014).
  - National Planning Framework 3 (2014).

- Scottish Government Advice:
  - PAN 60 Planning for Natural Heritage 2008.
  - PAN 1/2011 Planning and Noise.
  - PAN 2/2011 Planning and Archaeology.

  - PAN 1/2013 Environmental Impact Assessment.
  - Onshore Wind Turbines 2014.
  - Scottish Government Good Practice Principles for Shared Ownership of Onshore Renewable Energy Development 2016.
- SNH Publications:
  - Assessing the Cumulative Impact of Onshore Wind Energy Developments (2012).
  - Spatial Planning for Onshore Wind Turbines – Natural Heritage Considerations (2015).
  - Siting and Designing Windfarms in the Landscape Version 3a (2017).
  - Visual Representation of Wind Farms Version 2.2 (2017).

9. Assessment

9.1. National Policy Context

9.1.1. National Planning Framework 3

The National Planning Framework 3 (NPF3) provides a statutory framework for Scotland's long-term spatial development. It is the spatial expression of the Scottish Government's (the Government) Economic Strategy and plans for development and investment in infrastructure. The Government's vision for Scotland is presented as: a successful, sustainable place; a low carbon place; a natural, resilient place; and a connected place.

9.1.2.

The introduction to Chapter 3 of NPF3 states the Government's ambition "to achieve at least an 80% reduction of greenhouse gas emissions by 2050". Paragraph 3.7 acknowledges the varied opinions in relation to wind energy, "Whilst there is strong public support for wind energy as part of the renewable energy mix, opinions about onshore wind in particular locations can vary. In some areas, concern is expressed about the scale, proximity and impacts of proposed wind energy developments. In others, it is recognised as an opportunity to improve the long-term resilience of rural communities."

9.1.3.

Paragraph 3.8 states the Government's aim by 2020 to reduce total final energy demand by 12%, and to meet at least 30% of overall energy demand from renewables, noting that the Scottish Energy Strategy published December 2017 sets two reviewed targets for the Scottish energy system, including the equivalent of 50% of the energy for Scotland's heat, transport and electricity consumption to be supplied from renewable sources by 2030. Continuing to capitalise on Scotland's wind resource is stated.

9.1.4.

Under the heading that ‘Rural communities will benefit from well-planned renewable energy development’, paragraph 3.23 makes reference to the balance between allowing appropriate development and protecting the most sensitive landscapes: “Onshore wind will continue to make a significant contribution to diversification of energy supplies. We do not wish to see wind farm development in our National Parks and National Scenic Areas. Scottish Planning Policy sets out the required approach to spatial frameworks which will guide new wind energy development to appropriate locations.”

9.1.5.

More generally, in relation to maintaining a flexible strategy for diverse places, and coastal and island hubs, NPF3 makes reference to Kirkwall and Orkney, stating “…Ambitious plans for wave and tidal energy, together with the wider area’s importance as a strategic location for shipping and energy infrastructure, provide significant new opportunities for the town…Improved grid connection will be a vital component in the future success of Orkney’s marine energy sector. As part of this, there will be opportunities to develop new technologies and approaches to harness renewable power generation on and around the islands…”

9.1.6.

The ‘Orkney Waters’ are identified as an ‘Energy Hub’ and an area of co-ordinated action, and NPF3 acknowledges current electricity grid constraints at paragraph 3.40, “Strengthening the electricity grid will be essential in unlocking renewable resources, both onshore and offshore. Interconnectors to the Western Isles, Orkney and Shetland and onshore connections for offshore renewables on other parts of the coast are all required to fully realise the potential for diverse and widely distributed renewable energy development.”

9.1.7.

The proposal presents an opportunity to utilise renewable electricity generated on site to power an on-site hydrogen facility The proposal therefore provides opportunity to harness wind energy for electricity generation which is not affected by grid constraints, whilst potentially serving emergent local demand and aiding the drive towards a low/zero carbon future as expressed in the Council’s declaration on climate emergency.

9.1.8. Scottish Planning Policy

Scottish Planning Policy (SPP) sets out national planning policies which reflect Scottish Ministers’ priorities for the operation of the planning system and for the development and use of land and is a statement of Government policy on how nationally important land use planning matters should be addressed across the country. As a statement of Ministers’ priorities, the content of SPP is a material consideration that carries significant weight, though it is for the decision-maker to determine the appropriate weight in each case. SPP sits alongside NPF3, which provides a statutory framework for Scotland’s long-term spatial development.

9.1.9.

The Government's 'Purpose' is stated as creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth, and national outcomes articulate how that 'Purpose' is to be achieved. Three of those outcomes are of particular relevance:

- Outcome 1: A successful, sustainable place – supporting sustainable economic growth and regeneration, and the creation of well-designed, sustainable places.
- Outcome 2: A low carbon place – reducing our carbon emissions and adapting to climate change.
- Outcome 3: A natural, resilient place – helping to protect and enhance our natural and cultural assets and facilitating their sustainable use.

9.1.10.

In relation to Outcome 2, SPP states that NPF3 will facilitate the transition to a low carbon economy, particularly by supporting diversification of the energy sector. Paragraph 18 references the Climate Change (Scotland) Act 2009 and its targets to greenhouse gas emissions by at least 80% by 2050, with an interim target of reducing emissions by at least 42% by 2020. Paragraph 18 also reminds the duty set out in Section 44 of the Act for every public body to act:

- In the way best calculated to contribute to the delivery of emissions targets in the Act.
- In the way best calculated to help deliver the Scottish Government's climate change adaptation programme.
- In a way that it considers is most sustainable.

9.1.11.

Under the heading of 'Policy Principles', SPP introduces a "presumption in favour of development that contributes to sustainable development." Paragraph 29 confirms that policies and decisions should be guided by a list of principles, including the following:

- Giving due weight to net economic benefit.
- Responding to economic issues, challenges and opportunities, as outlined in local economic strategies.
- Supporting good design.
- Supporting delivery of infrastructure, for example transport, education, energy, digital and water.
- Supporting climate change mitigation and adaptation including taking account of flood risk.
- Having regard to the principles for sustainable land use set out in the Land Use Strategy.
- Protecting, enhancing and promoting access to cultural heritage, including the historic environment.

- Protecting, enhancing and promoting access to natural heritage, including green infrastructure, landscape and the wider environment.

9.1.12.

Under the heading of 'A Low Carbon Place', paragraph 153 addresses the delivery of renewable energy development, "Terrestrial and marine planning facilitate development of renewable energy technologies, link generation with consumers and guide new infrastructure to appropriate locations. Efficient supply of low carbon and low cost heat and generation of heat and electricity from renewable energy sources are vital to reducing greenhouse gas emissions and can create significant opportunities for communities. Renewable energy also presents a significant opportunity for associated development, investment and growth of the supply chain…Communities can also gain new opportunities from increased local ownership and associated benefits."

9.1.13.

Paragraph 154 states that the planning system should:

- Support the transformational change to a low carbon economy, consistent with national objectives and targets, including deriving:
    - 30% of overall energy demand from renewable sources by 2020.
    - 11% of heat demand from renewable sources by 2020.
    - The equivalent of 100% of electricity demand from renewable sources by 2020.
- Support the development of a diverse range of electricity generation from renewable energy technologies – including the expansion of renewable energy generation capacity – and the development of heat networks.
- Guide development to appropriate locations and advise on the issues that will be taken into account when specific proposals are being assessed.

9.1.14.

Paragraph 161 requires planning authorities to set out a spatial framework identifying areas "that are likely to be most appropriate for onshore wind farms as a guide for developers and communities", as well as setting out the criteria that will be considered in deciding all applications for wind farms of different scales. Planning authorities are required to identify where there is strategic capacity for wind farms, and areas with the greatest potential for wind development.

9.1.15.

With reference to the interconnector and improved grid connection stated in NPF3, paragraph 165 of SPP confirms that grid capacity should not be used as a reason to constrain decisions on individual applications for wind farms, and that it is for wind farm developers to discuss connections to the grid with the relevant transmission network operator. It is stated in the application as presented that the proposal

incorporates a hydrogen production facility, in part, owing to concerns regarding grid connection.

9.1.16.

Paragraph 169 confirms that proposals for energy infrastructure developments should always take account of spatial frameworks for wind farms, and for the purposes of determining applications for planning permission, considerations are likely to include:

- Net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities.
- The scale of contribution to renewable energy generation targets.
- Effect on greenhouse gas emissions.
- Cumulative impacts.
- Impacts on communities and individual dwellings, including visual impact, residential amenity, noise and shadow flicker.
- Landscape and visual impacts, including effects on wild land.
- Effects on the natural heritage, including birds.
- Impacts on carbon rich soils, using the carbon calculator.
- Public access, including impact on long distance walking and cycling routes and scenic routes identified in the NPF.
- Impacts on the historic environment, including scheduled monuments, listed buildings and their settings.
- Impacts on tourism and recreation.
- Impacts on aviation and defence interests and seismological recording.
- Impacts on telecommunications and broadcasting installations, particularly ensuring that transmission links are not compromised.
- Impacts on road traffic.
- Effects on hydrology, the water environment and flood risk.
- The need for conditions relating to the decommissioning of developments, including ancillary infrastructure, and site restoration.

9.2. Orkney Local Development Plan 2017

9.2.1. Spatial Strategy

In accordance with paragraph 161 of SPP, the Orkney Local Development Plan 2017 (the LDP) includes a Spatial Strategy Framework for windfarm development. The application site is within an area identified as ‘Areas with Potential for Wind Farm Development’, which is identified in Policy 7 of the LDP as an area of least constraint to wind energy development, where wind energy development is likely to be supported in principle subject to the proposed development complying with the Development Criteria set out in Supplementary Guidance: Energy (the SG) and other material planning considerations. The final point is reemphasised in the SG, which clarifies that “It is not guaranteed that development within these areas will be

technically feasible or appropriate and each application will be judged on its merits against the Development Criteria".

9.2.2. Development Criteria

There are nine Development Criteria in the SG, against which all developments are assessed, as follows:

- Development Criterion 1 – Communities and Amenity.
- Development Criterion 2 – Landscape and Visual Impact.
- Development Criterion 3 – Natural Heritage.
- Development Criterion 4 – Historic Environment.
- Development Criterion 5 – Tourism and Recreation.
- Development Criterion 6 – Peat and Carbon Rich Soils.
- Development Criterion 7 – Water Environment.
- Development Criterion 8 – Aviation, Defence and Communications.
- Development Criterion 9 – Construction and Decommissioning.

9.2.3.

Paragraph 1.11 of the SG makes a general statement regarding the balance between negative and positive impacts of wind energy development, "In the assessment of planning applications, the Council will strive to balance both positive and negative factors associated with a proposal prior to making a determination. Where there are significant adverse impacts on known constraints, the onus will be on the developer to demonstrate that the positive impacts, including net economic impact, the scale of contribution to renewable energy generation targets and the effects on greenhouse gas emissions, outweigh these."

9.2.4.

The proposed development has been assessed in relation to each of the SG Development Criteria, in the order set out. From the outset it was acknowledged that the proposed development would likely have some significant adverse effects, so consideration was not to establish any such effects, but to assess acceptability of impacts, balanced against other factors.

9.3 Shadow Flicker

9.3.1.

The Government's document 'Onshore Wind Turbines' (2014) notes that in "certain combinations of geographical position, time of day and time of year, the sun may pass behind the rotor and cast a shadow over neighbouring properties. When the blades rotate, the shadow flicks on and off; the effect is known as 'shadow flicker'. It occurs only within buildings where the flicker appears through a narrow window opening. The seasonal duration of this effect can be calculated from the geometry of the machine and the latitude of the potential site."

9.3.2. Policy context

Paragraph 169 of SPP notes “impacts on communities and individual dwellings, including … shadow flicker” as a consideration for wind energy development. LDP policy 7D (i. a.) notes that wind energy developments will be assessed against various factors, including communities and amenity. Policy 1 (iv) requires development to protect amenity and have no unacceptable adverse impact on the amenity adjacent or nearby properties/users. Development Criterion 1 of the SG states Government advice that that there is unlikely to be a problem with shadow flicker with a separation of 10 times the wind turbine’s rotor blade diameter from a dwelling house to the proposed location of a wind turbine, and that if turbines are proposed to be closer, the developer is required to demonstrate that there would no adverse impacts on the amenity of residential properties.

9.3.3.

Shadow Flicker has been considered within chapter 7 of the EIAR in consideration of the wind turbines. The shadow flicker study area is a distance of 10 rotor diameters (1,150 metres) and 130 degrees either side of north, relative to each turbine. The assessment of shadow flicker identifies any receptors which may potentially be affected and the risk of shadow flicker calculated. The magnitude of shadow flicker effects varies both spatially and temporally, and depends on multiple environmental conditions coinciding at a particular point in time, which include the following:

- The direction of the residence relative to the turbine(s).
- The distance from the turbine(s).
- The turbine hub-height and rotor diameter.
- The time of year.
- The proportion of day-light hours in which the turbine operates.
- The frequency of bright sunshine and cloudless skies (particularly at low elevations above the horizon).
- The prevailing wind direction.

9.3.4.

The EIAR confirms that there is no UK statutory guidance relating to the acceptable levels of shadow flicker but cites best practice guidelines used in several European countries suggesting a limit of 8 hours of realistic shadow flicker impacts per year for residential properties. The desk-based assessment, using OS address data and mapping, identified three potentially sensitive residential receptors: Upper Jubidee, Pulkitto and Lower Henly at a distance of 1,100 metres, 1,110 metres and 1,115 metres respectively from the nearest turbine. Both Savisgarth and Evie Surgery have been considered sensitive commercial receptors at a distance of 250 metres and 1,240 metres from the nearest turbines respectively, noting that the owners of Savisgarth are financially involved in the project with the expectation that conversion from dwelling to business use will be pursued, and that Evie Surgery is beyond the defined shadow flicker area of study. Graemeshall is located beyond the study radius and in any case is screened by Hammars Hill, whilst Neigarth and Bruar are uninhabited with no existing residence at Gallowhill. The EIAR assessment uses the

generally accepted quantitative guidance which adopts maximum limits of 30 hours per year, noting that only the property at Savisgarth exceeds the 30 hours per year threshold at 71 hours of shadow flicker a year whilst all other properties are predicted to experience less than 8 hours of shadow flicker per year either theoretically or realistically. The model results indicate that the predicted duration of shadow flicker that may be experienced by the identified receptors in the study area is significantly below the stated threshold of 30 hours per year, or 30 minutes per day on the worst affected day. The shadow flicker effect for all receptors is therefore assessed as being not significant.

9.3.5.

A model, using 'ReSoft' software, was used to model the shadow flicker effects of the development. The programme uses simple geometric considerations: the position of the sun at a given date and time; the size and orientation of the windows that may be affected; and the size of the turbine that may cast the shadows. This is a conservatively modelled approach which would consider the 'worst' case by assuming that the turbines would be facing the sun at all times of the day, that it is always subject to sunshine, the turbines are always operational, and there is no local screening. Predictions made note the potential number of hours per year, and minutes per day, each of the identified receptors may experience shadow flicker. The study has also considered cumulative assessment with no properties identified that would be impacted by both the existing Hammars Hill turbines and the proposed turbines in combination.

9.3.6.

The applicant has noted their willingness to accept a suitable planning condition to mitigate this issue in the unlikely event of shadow flicker proving to be problematic and that 'one or other of the turbines could be programmed to automatically shut-down when environmental conditions are measured by a turbine mounted light sensor to be conducive to shadow flicker at an affected property.' The developer would be required to provide a written Shadow Flicker Protocol, setting out a procedure for addressing any complaint received from a receptor within the study area, and mitigation options available to address any such complaint.

9.4. Noise

9.4.1. Policy context

Policy 1 (iv) requires development to protect amenity and have no unacceptable adverse impact on the amenity adjacent or nearby properties/users. The SG notes there are two distinct noises generated from wind energy developments: mechanical noise and aerodynamic noise, and that an assessment of noise is required. Noise impacts arising are considered in relation to two distinct phases of development, construction and operation. In terms of operational noise the turbines are considered the more significant element given that the ammonia plant, as a component of the hydrogen facility, is not expected to produce audible break-out noise at a distance of more than approximately 50 metres from the plant building; the nearest third party receptor is located 860 metres from the proposed facility.

9.4.2.

Baseline noise surveys were undertaken to establish the pre-existing sound levels at six locations to characterise the prevailing background noise environment of the area, representative of the nearest properties to the proposed and existing wind farm development. An assessment has been carried out according to the recommendations of ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms', as referred to within Government web-based planning guidance, and the best practice guidance published by the Institute of Acoustics 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise' and its associated Supplementary Guidance documents. The Technical Advice Note: Assessment of Noise, Scottish Government (2011) and 'An Analysis of How Noise Impacts are considered in the Determination of Wind Farm Planning Applications', Department of Energy and Climate Change (2011) was also referenced in addressing the requirements given in the SG.

9.4.3.

The methodology and baseline measurement locations were agreed with Environmental Health and are as stated in Chapter 6 of volume III of the EIAR which also identifies the six noise monitoring stations, in figure 6.1. Background data was measured through shut-down periods of the existing Hammars Hill Wind Farm. All locations are predicted to receive L90 noise levels well below 35dB(A), the maximum being 31.0dB(A) at Lower Henly. Predicted noise levels were also considered in relation to cumulative impact with the operational turbines at Hammars Hill, as well as small scale (<20 kilowatt) turbines in the vicinity. Both daytime and night-time limits were considered acceptable with quiet daytime noise limits met by a minimum margin of 0.8dB and night-time noise limits by a minimum margin of 6.6dB. The property at Savisgarth was not assessed as an independent residential property given the intention to change the use from residential to business, linked to the operation of the proposed development. This would require a further application for change of use and/or the cessation of use of the property as a residential dwelling. Plans confirm the property is in the control of the applicant.

9.4.4.

The noise assessment provided states that ETSU-R-97 noise limits would be met at all locations and all wind speed scenarios without recourse to operational mitigation, other than to ensure the turbines operate in the stated mode of operation. Environmental Health has no objections, subject to appropriate planning condition(s) to control noise. Noise during construction and decommissioning could also be controlled by relevant planning condition.

9.5. Traffic Associated with Development

9.5.1.

An access study has been undertaken denoted as Volume 11b: Access Study of the EIAR, dated February 2020, to assess the impact arising in relation to traffic and access management required for the project, inclusive of the critical phases of construction, operational management and decommissioning. This is inclusive of both wind turbine and hydrogen facility construction details in relation to access and

likely impact on the public road network and access works within the site. An Abnormal Load Route analysis has been undertaken with 18 ‘pinch’ points on the road network assessed, primarily associated with the wind turbine components. The study also outlines construction phases, works timetable and operational traffic. The anticipated delivery route for turbine components is from Hatston Pier to the site, following a route which has been historically successful for transportation of turbine components of a similar size.

9.5.2.

The minimum separation distance between wind turbines and a public road or public right of way should be no less than the overall height of the wind turbine to blade tip, as required by Roads Services and Development Criterion 1 of the SG, and the overall height plus 10%, recommended as good practice by the trade association for the Renewable Industry, Renewable UK. Both wind turbines would exceed overall height plus 10%, 165 metres, from any public road.

9.5.3.

Several access improvements and works are proposed on site to accommodate the transport and access needs to facilitate development. These works are detailed within the submitted access study. In addition to the technical detail of road works required, it is notable that use of the onsite borrow pit is projected to provide 90% of the aggregate required for the project thereby substantially reducing HGV movements on the public road, to 70 deliveries.

9.5.4.

A range of mitigation measures are proposed, which could be secured through the implementation of a Construction Traffic Management Plan which would be controlled by planning condition. The purpose of that Plan would be to minimise effects of severance, driver delay, pedestrian delay, pedestrian amenity, fear and intimidation and accidents and safety to non-significant levels. Subject to submission of that Plan, to include details specified by Roads Services in the scoping opinion and in the consultation response, Roads Services has no objections. In addition, the developer would meet the costs of any additional maintenance and road repairs required on any access routes, resulting from the increase in traffic during the construction phase.

9.5.5.

The wind turbine element of the development is the key source of the abnormal loads. Six separate blade turbine deliveries would be required, with a total vehicle length of 60 metres in each instance, whilst the widest load would be the generators at 6 metres. There are also abnormal loads involved in the movement of the five separate sections of each wind turbine, including the hub and nacelle delivery vehicles. For each turbine installation, use of a 750 tonne main crane and a 200 tonne support crane would be required.

9.5.6.

Operational traffic would be limited to on-site maintenance and the movement of tanker trucks in relation to the hydrogen production facility. This has been stated as two liquid tanker movements per week. The wind farm would largely rely on off-site monitoring. Maintenance to both elements of the proposal has been stated as a single vehicle which would not require specific traffic management.

9.5.7.

Decommissioning traffic has also been subject to consideration and is envisaged to mirror the construction phase with approximately 12 articulated low loader vehicle movements per turbine and use of 750 tonne and 200 tonne mobile cranes on site. Remaining traffic levels would be less than that required for construction given lesser materials involved in decommissioning. Decommissioning of the hydrogen facility would be a reversal of installation, making use of plant for disassembly and removal.

9.6. Landscape and Visual Impact

9.6.1.

A Landscape and Visual Impact Assessment (LVIA) is considered by Chapter 4 of Volume III in association with Volumes IV and V of the EIAR, which includes LVIA graphics and supporting documents. Development-specific assessment of landscape and visual impact is part of the EIA process, and is set out in the LVIA. It is noted that the single public objection relates to impacts which may reasonably be linked to the landscape and visual impact of the development through concerns raised regarding the number of wind turbines exceeding the carrying capacity of the landscape in which they are situated and the scale of the proposed wind turbines in relation to policy and guidance. Development and Marine Planning (DMP) commented with regards the Spatial Strategy Framework for Windfarm Developments, in relation to the SG, supplementary advice relative thereto, and the Orkney Landscape Capacity Assessment, confirming that the ‘Landscape and Visual Impact Assessment’ completed by the agent accords with current best practice.

9.6.2. Landscape Character

The proposed site is in a ‘Moorland Hills’ Landscape Character Type (LCT) in close proximity to ‘Isolated Coastal Knolls’ LCT, as defined in the SNH Orkney Landscape Character Assessment (1998) which is also used to inform The Landscape Capacity Assessment for Wind Energy (2015). The EIAR focuses on the Moorland Hills LCT, whilst the consultation response from DMP confirms that the site straddles the noted LCT typologies.

9.6.3.

LCTs are identified as ‘tracts of countryside which have a unity of character due to particular combinations of landform and landcover, and a consistent and distinct pattern of constituent elements.’ This is recognised as a general framework for assessment. Vishall Hill to the north east, on the seaward side of the A966 and at approximately 2.5 kilometres from the closest wind turbine, is the key landform feature in relation to the ‘Isolated Coastal Knolls’ LCT. The general context of the site

is considered to have greater relationship with the ‘Moorland Hills’ LCT, mindful that the proposed turbines are positioned in a transitional area between poorer quality agricultural and hill ground and are significantly influenced by the surrounding moorland hills of the Moorland Hills LCT rather than the more distant feature of the Isolated Coastal Knoll LCT of Vishall Hill.

9.6.4.

The Moorland Hills LCT of West Mainland presents one of the largest scale landscapes in Orkney within which larger turbines can be accommodated, according to The Landscape Capacity Assessment for Wind Energy (2015). This is in contrast to the Isolated Coastal Knolls LCT which are sensitive to wind energy developments. The local landscape is formed and characterised by the topography at Hammars Hill, Fibla Fiold, Starling Hill and Hill of Huntis forming an open mouth bowl with the Burn of Woodwick at its base flowing to the sea to the north east. To the south of the site, Hammars Hill/Fibla Fiold creates a pronounced ridgeline feature accentuated by the linear pattern of the existing Hammars Hill wind farm which separates the site from the coastal landscapes of Wide Firth. The feature of the valley occupied by the Burn of Woodwick opens to the north-east towards the A966 and the sea at Woodwick Bay. The impression of the area in the vicinity of the A966 and towards the coast is of a more populous area, with scattered houses and steadings giving a greater sense of human activity.

9.6.4. Landscape Capacity Assessment

The ‘Landscape Capacity Assessment for Wind Energy in Orkney’ (2015) was commissioned by the Council to consider the capacity of the Orkney landscape to accommodate onshore wind energy development. This is based on an assessment of landscape sensitivity and the value of the different landscape character types and areas of Orkney, and includes underlying capacity, effects of consented and operating development, and residual capacity, ie the level of further development that could acceptably be accommodated. It is acknowledged, within this guidance and within the SG, that the Orkney Landscape Capacity Study is strategic in nature. This is stated in the DMP response, noting Development Management Guidance (DMG) adopted by the Council following the declaration of a Climate Emergency by the Council in May 2019. The DMG is to provide clarity on elements of the SG and clarifies that the Landscape Capacity Assessment Study is not a substitute for a development-specific Landscape and Visual Impact Assessment at planning application level.

9.6.5.

The case presented by the developer is that the development is considered in the context of the Moorland Hills LCT with a lesser consideration of Isolated Coastal Knolls LCT. This is considered reasonable given the context of the development site surrounded on three sides by the moorland hills and marginal connection with the isolated Vishall Hill which is set apart and to the north east of the site with the connective landscape element of improved agricultural land, scattered with houses and steadings between the principle elements of these LCTs.

9.6.6.

The submitted Landscape Capacity Assessment as an element of the LVIA states that the proposed development has been specifically sited at a lower elevation in order to balance the increased height of the proposed wind turbines relative to the scale of the existing wind turbines at Hammars Hill, whilst also reducing visibility of the turbines in the wider landscape. The bowl landscape formed by Hill of Huntis, Starra Fiold, Starling Hill, Little Billia Fiold, Fibla Fiold and Hammars Hill creates an opportunity to locate larger scaled turbines into this landscape. The 'Landscape Capacity Assessment for Wind Energy' (2015) regards the general landscape capacity for turbines up to 80 metres in height in the area, in the circumstance of the Moorland Hills LCT. Isolated Coastal Knolls LCT are sensitive to wind developments with possible capacity for wind turbines up to 30 metres potentially accommodated at the fringes of such areas.

9.6.7. Policy Context

Policy 1(i) states that development will be supported where "it is sited and designed taking into consideration the location and the wider…landscape and coastal character". In relation to landscape, Policy 7G(i) states that "All development proposals must be sited and designed to minimise negative impacts on the landscape, townscape and seascape characteristics and landscape sensitivities that are identified in the Orkney Landscape Character Assessment and should be sympathetic to locally important natural and/or historic features within the landscape." Policy 7G(ii) further notes that, "Consideration should be given to the siting, scale and design of the proposal, as well as the potential for the cumulative effects with other developments."

9.6.8.

The first paragraph under Development Criterion 2 of the SG states that, "Wind energy development that is likely to have a significant adverse impact or cumulative impact on landscape character or visual amenity, which cannot be mitigated to the satisfaction of the planning authority to avoid unacceptable impacts, will not be permitted." DMP confirms, as noted above, that the proposed development is located within 'Areas with Potential for Wind Farms' as indicated within the Spatial Strategy Map, Figure 1 of the SG. The SG at 'SP1' notes that these places represent the areas of least constraint to wind energy development. Wind energy development is likely to be supported in principle within the areas subject to proposals complying with the Development Criteria and any other material consideration.

9.6.9.

The SG goes on to clarify the distinction between landscape impacts and visual impacts, "Visual impacts and landscape impacts are interrelated yet distinct from each other. Visual impacts relate to what people can see from places that they frequent or from particular viewpoints, whilst landscape impacts relate to the physical effect that a proposed development may have, as well as the potential effect "on the feeling of a place" and the identity of a location. The landscape and visual impacts of a development are strongly influenced by turbine's form, design, colour, size, relationship to other turbines and by any ancillary infrastructure. Sensitive siting and design can help to ensure that the visual impacts of potential wind energy

developments in the landscape remain within acceptable limits. The siting and design of a proposed wind energy development should seek to reduce its potential landscape and visual impact by ensuring that the receiving landscape is able to accommodate the new development."

9.6.10. Landscape Designations

The proposed site is not located within a designated landscape, and there are no international or national landscape designations within the site boundary. The site is within the outer 'sensitive' area of the Heart of Neolithic Orkney World Heritage site, in common with much of West Mainland. The overall LVIA study area of 40 kilometres covers most of Orkney and the various landscape designations therein, and including The Hoy and West Mainland National Scenic Area (NSA), approximately 9 kilometres to the south west and Hoy Wild Land Area (WLA) approximately 25 kilometres also to the south west. There are three Gardens and Designed Landscapes (GDL) within 35 kilometres of the proposed development: Balfour Castle approximately 11 kilometres to the east of the site, Skaill House which is approximately 14 kilometres to the west, and Melsetter House which is approximately 35 kilometres to the south. Of these matters the NSA, WLA, Skaill House and Melsetter House were scoped out, typically due to distance and lack of visibility with indirect effects arising therefore considered as unlikely.

9.6.11.

Impacts arising in relation to Balfour Castle have been assessed through the LVIA. The scenic qualities of Balfour Castle are considered outstanding as an important component of Shapinsay's character and for views towards the Castle from Mainland. A Zone of Theoretical Visibility (ZTV) predicts visibility of the turbines and whilst no dedicated viewpoint (VP) was taken from Balfour Castle within the EIAR, VP11 was taken from Shapinsay near Greenwall, 11.4 kilometres from the nearest proposed wind turbine and is considered as representative. Given the band of mature trees which screen views to the north west, together with the distance to the proposed wind turbine and intervening seascape and landscape features, the impact on Balfour Castle is considered by the LVIA to result in a low magnitude of change, resulting in a moderate level of effect which would not be considered significant.

9.6.12.

Historic Environment Scotland (HES) is content that the proposed wind turbines are not likely to have a significant impact on the Heart of Neolithic Orkney World Heritage Site (WHS) given the distance from the component sites of the WHS (approximately 14 kilometres) and that they are off the ridgeline of Hammars Hill. The proposed wind turbines are not considered to have an adverse impact on the Outstanding Universal Value of the WHS. This accrues with the findings of the LVIA.

9.6.13. Theoretical Visibility

In assessing effects on landscape, it is helpful to focus on those areas that are affected directly by the proposed development, ie areas which have a clear view of the wind turbines. The ZTV, considering hub and tip height ZTV, illustrates the potential visibility of the turbines to hub height and blade tip height within the study area of 40 kilometres, and the extent of landform containment. The presence of the

existing Hammars Hill wind farm provides a useful indicator as to likely visibility given the comparative tip height, noting that the proposed wind turbines are larger but are situated downslope of the existing wind farm. Due to the partially contained character of the landscape, forming the open bowl in which the proposed wind turbines are set, hub visibility is theoretically pronounced when viewed from eastern parts of the Mainland, notably from the south given the open aspect across Wide Firth and low intervening landform between Deerness and the development site and to a lesser extent to the north of the proposed development within a 5 kilometre radius. Views from the eastern and southern parts of both the inner and northern isles of Shapinsay, Gairsay, Wyre, Rousay, Egilsay, Eday, Sanday and Stronsay are also expected. There would also be more constrained views from South Ronaldsay and from Ward Hill and Kier Fiold by Skaill, Sandwick on the west coast of Mainland. Theoretical tip visibility increases the given extent of ZTV, notably to the west of West Mainland, from Hoy and South Ronaldsay. Many locations where the development would be theoretically visible would not view the development in its entirety due to the landform in which it is situated in addition to intervening structures and localised landform features.

9.6.14. Landscape and Visual Impact Assessment

Chapter 4 of the EIAR includes a Landscape and Visual Impact Assessment (LVIA) which includes a Cumulative LVIA. The LVIA describes the key sensitivities and potential changes to the physical and visual environment resulting from the proposed development. The LVIA is targeted at the wind turbine element of the proposal in accordance with the level of information required by the SG.

9.6.15.

As required by the SG, the LVIA was carried out in accordance with current best practice advice, and guidance from SNH and the Council. In addition to relevant policies and the SG, the following policy and guidance was referred to in preparation of the LVIA chapter of the EIAR:

- Orkney Landscape Character Assessment, Land Use Consultants, 1998.
- Siting and Designing Windfarms in the Landscape, Scottish Natural Heritage, Version 3a, August 2017.
- Visual Representation of Windfarms Good Practice Guidance, prepared by Horner + Maclennan and Envision for Scottish Natural Heritage, The Scottish Renewables Forum and the Scottish Society of Directors of Planning, March 2006.
- Visual Representation of Wind Farms, Scottish Natural Heritage, February 2017.
- Landscape Character Assessment: Guidance for England and Scotland (Countryside Agency and Scottish Natural Heritage publication, produced by the University of Sheffield and Landuse Consultants), 2002.
- Guidance: Cumulative Impacts of Onshore Wind Developments, Scottish Natural Heritage Advisory Service, Version 3, March 2012.
- Photography and Photomontage in Landscape and Visual Assessment, Landscape Institute Advice Note 01/2011, 2011.

- Assessing the Cumulative Impacts of Onshore Wind Energy Developments, Scottish Natural Heritage Version 3, March 2012.
- Landscape Character Assessment Topic Paper 6 - Techniques and Criteria for Judging Capacity and Sensitivity, Countryside Agency and Scottish Natural Heritage, 2015.
- Landscape Capacity Assessment for Wind Energy in Orkney, Ironside Farrar, June 2015.

9.6.16.

The LVIA identifies and assesses the significance of potential effects of the proposed development, relative to baseline conditions and taking account of all mitigation measures proposed. The assessment of effects includes sensitivity to change of landscape, and for each assessing the susceptibility to the change and the value of the receptor. For landscape, the baseline value ranges from very high where the landscape contributes to designations at national and international level, Wild Land Areas, and/or where there is evidence of high value associated with special interests, to negligible value where there are no specific features of natural heritage, cultural associations or other features of special interest.

9.6.17.

The sensitivity of visual receptors (people) to change is assessed, both in terms of susceptibility of visual receptors to the proposed change, and the value attached to views experienced by receptors. Very high susceptibility would be where there are users of strategic outdoor facilities, visitors to important landmarks, heritage assets or other attractions where views are an essential component of the experience, and/or residents at home with views of the proposed development. Value ranges from very high where there is a very high value placed on the view, such as a promoted viewpoint, to negligible where there is no evidence of value placed on a view.

9.6.18.

The magnitude of change is assessed for seascapes, landscape and views and visual amenity, all in terms of size or scale; geographical extent and duration and reversibility. In relation to views and visual amenity, assessment of size or scale ranges from ‘major’ where the development will be a dominant feature in the view, a strong contrast with the key visual characteristics of the baseline view with a high proportion of the development visible with no significant screening effects, and/or where the view is not curtailed by physical parameters, to ‘negligible’ where changes will not be readily discernible. The methodology for LVIA is set out in full in chapter 4 of the EIAR. Methodology for the assessment of cumulative effects is also included, and the Cumulative Landscape and Visual Assessment (CLVIA) takes into consideration other relevant developments consented or within the planning system.

9.6.19.

A total of 17 Landscape Character Types were identified for landscape baseline as within the study area, with potential impacts from the proposed wind turbine development. In relation to visual amenity, 14 viewpoints are included in the Visual

Impact Assessment, identifying residents, settlements, transport users and recreation as visual receptors. The viewpoints are contained in Volume IV: Landscape and Visual Assessment Figures, Figures 4.12 to 4.25 of the EIAR. The impact of the development on sequential routes is also assessed, including A and B class and minor roads within the study area, National Cycle Route Number 1, six core paths and one right of way. The ferry routes Tingwall to Rousay and Kirkwall to Shapinsay have also been subject to assessment.

9.6.20. Mitigation

The application is presented as an extension to the existing Hammars Hill wind farm. Consideration of key design issues including turbine size and layout composition, to minimise landscape and visual impacts, have been detailed in the supporting LVIA. In terms of design, significant elements are listed as follows:

- Turbines located on the lower slopes to take advantage of the screening effects of topography and reduce the extent of infrastructure visible from locations to the west and south west. This utilises the ‘bowl’ created by the surrounding topography to contain the development thereby reducing the visual influence.
- Turbines located offset from existing turbines avoiding exacerbation of ridgeline placement and excess contrast of scale between the two proposed wind turbines and the five existing wind turbines. The proposed 150 metre turbines sit at 91 metres AOD at their highest point ,while the operational 67 metre turbines sit at 150 metres AOD at their highest point.
- The layout seeks to fit into the landscape by creating a distinct separation, and both turbines appearing on the same part of the ridgeline, with balanced and even spacing to complement the existing wind farm. This is considered to avoid visual confusion or imbalance between the proposed and existing turbines particularly when viewed from the south and east. Whilst the horizontal extent of the windfarm would be increased, it is considered that for the greater part that the proposed turbines would be viewed in the same section of the skyline as the existing turbines.
- The number of turbines has been reduced from that subject to scoping opinion from three to two, to reduce the extent of theoretical visibility and potential for overlapping blades, albeit that the proposed wind turbines are maximum 150 metres tip height rather than the previously anticipated 125 metres.
- The site avoids areas dense with scheduled monuments, noting its location within The World Heritage Site Sensitive Area, and has no direct visibility from the key features of the World Heritage Site at Skara Brae, Maeshowe, Stones of Stenness and the Ring of Brodgar.
- Keeping the proposed wind turbines to the south eastern part of the site reduces visual impact to the nearest residential properties and maintains a suitable distance from such.
- Access tracks would be aligned to utilise existing accesses and minimise extent of new accesses required.
- The hydrogen facility would be in the context of the existing steading, close to the existing access track, positioned and designed to reflect the typical scale and setting of agricultural buildings.

9.6.21. Assessment of effects

The assessment predicts no significant effects on the Hoy and West Mainland National Scenic Area, the Hoy Wild Land Area, or two of the three Gardens and Designed Landscapes within the study area. The NSA and Gardens and Designed Landscapes have a very high sensitivity to change but, principally due to the distance of each from the proposed development site, the magnitude of change would be minor and the likely effect acceptable. The findings of the EIAR can therefore be accepted.

9.6.22.

Effects on Landscape Character Types (LCTs) were assessed that have potential visibility according to the ZTV. Landscape Effects are defined by the Landscape Institute as “Change in the elements, characteristics, character, and qualities of the landscape as a result of development.” The landscape was assessed to be of medium sensitivity with no loss of landscape features arising. The magnitude of change for direct landscape effects as a result of the development on the local landscape character resource would be medium, resulting in a moderate level of effect, which would not be significant, given the relationship of the proposed turbines to the existing windfarm at Hammars Hill and setting within the landscape ‘bowl’. In consideration of the immediate Moorland Hills LCA, it is considered that this is large scale landscape where the magnitude of change on the Moorland Hills resource would be low, resulting in a moderate level of effect, which would not be significant. Indirect effects on neighbouring Landscape Character Areas were assessed with no direct effects on the key physical characteristics that form the areas’ landscape character or their quality and integrity. These findings are detailed within Chapter 4, LVIA, in Volume III of the EIAR.

9.6.23.

An assessment of visual effects was undertaken from 14 representative viewpoints, selected in consultation with the Council, primarily via the EIA scoping process. An additional viewpoint was requested from Gairsay; however, lack of access to the island was cited as a difficulty, combined with confirmation that photomontages from Wyre and Shapinsay have been included and may be considered as providing a similar impression of impact as would occur from Gairsay. Viewpoint analysis indicates significant visual effects from two of the 14 viewpoints; Evie School, VP01 and Wyre, VP06. Significant visual effects from three of the closest residential properties are also expected to arise. No significant effects were found to accrue in relation to any settlements within the study area. No significant effects are predicted from the construction period or ground based activity.

9.6.24.

In terms of viewpoints, the turbines would be prominent from VP01, Evie School. The development will be prominent from this area given the largely unobstructed view of both proposed wind turbines from ground level to blade tip and as illustrated within the submitted LVIA. The LVIA considers that the large-scale nature of the moorland hills landscape and context of the existing Hammars Hill turbines provides a suitable scale to accommodate the proposed turbines. Similarly, VP06 on Wyre provides an open view of the proposed wind turbines, albeit at a greater distance with intervening

seascape. The conclusions from viewpoint assessment have been used to form a view as to the level of overall visual effects within the wider survey area with significant effects being restricted to the local area immediately to the north of the site and as indicated by the indicative viewpoints at VP01 and VP06.

9.6.25.

Cumulative landscape and visual effects have been assessed, with primary cumulative effects identified in relation to the operational turbines at Hammars Hill. Key to consideration of cumulative effects is the difference in scale of the existing turbines with those proposed. As noted above, the situation of the proposed larger wind turbines on lower ground, combined with the smaller scale but elevated position of the existing Hammars Hill wind turbines, achieves a degree of balance without visual confusion or appearing out of scale as from most views the appearance of the wind turbines will be similar between the existing and proposed wind turbines above the horizon. The only situation where this otherwise harmonious appearance is not achieved is in the open views from the north as identified at VP01 at Evie School where both proposed turbines appear prominently and in full. This effect is considered by the LVIA to diminish beyond two kilometres as evidenced when comparing the view from Wyre at VP06 with VP01. In relation to cumulative effects arising from the proximity of Burgar Hill, this is considered to be rare as sufficient spacing occurs between the two developments, avoiding significant effect to the coastline or creating a continuous wind turbine corridor along Eynhallow Sound when viewed from the southern side of Rousay and parts of Wyre.

9.6.26.

Of greater concern is the cumulative impact of other wind farm developments at different stages in planning, including the approved wind farm at Costa Head, the proposed wind farm at Quanterness, currently under planning consideration by the Scottish Government’s Planning and Environmental Appeals Division (DPEA) and the proposed development on Faray, for which a scoping opinion has been adopted. Of these, Quanterness is of greatest significance in relation to cumulative effects as it would appear regularly in views with Hammars Hill. It is considered by the submitted LVIA that Quanterness would have a more substantial contribution to cumulative impacts, taking into account matters including the fact that the proposed development is an extension to an existing wind farm and would have a lesser visual influence on the wider area than Quanterness. Costa Head will increase the number of turbines appearing along Eynhallow Sound, however simultaneous views are considered by the LVIA as rare owing to separation distance.

9.6.27.

Consideration of cumulative effects on major tourist and transport routes were undertaken with typically negligible and low effects being envisaged. The exception to this was the B9064 circular route on Rousay, when considering Costa Head and Faray together with the existing Burgar Hill wind turbines. The cumulative magnitude of change when using this route is stated as medium given the cumulative and sequential nature of views of wind farm development.

9.6.28.

Limited comment has been provided by consultation bodies on the LVIA, with the key comment from DMP that the LVIA accords with current best practice, as noted above. It is acknowledged that the objector to the application has raised matters of proliferation of wind turbines within the parish of Evie and the scale of the proposed wind turbines exceeding the 120 metres threshold indicated by planning policy. The EIAR submitted in support of the application is considered to have satisfactorily addressed the development criteria for wind energy development as required by the SG and is in general accordance with the spatial strategy for wind farm development, being sited in an area with potential for wind farm development. The EIAR makes the case that the development has been sensitively sited and designed to avoid unacceptable cumulative impacts for which a development-specific LVIA has been produced. Development Management Guidance, to accompany Policy 7 and the SG, was adopted by the Council in July 2019, amending and updating the definition of a 'Very Large' turbine as included in the SG to allow for wind turbines in excess of 125 metres tip height. The Development Management Guidance is a material planning consideration.

9.6.29.

Policy 9G(i) requires that "All development proposals must be sited and designed to minimise negative impacts on the landscape… and landscape sensitivities that are identified in the Orkney Landscape Character Assessment…" The Planning Statement submitted in support of the application concludes that the design of the proposed development has taken into consideration mitigation throughout the design process and thorough impact assessment with any predicted significant impacts being adequately removed or mitigated, or outweighed by considerations in favour of the development.

9.7. Visual Amenity

9.7.1.

There is no minimum separation distance between a wind turbine and a dwelling, and the acceptable separation distance is largely determined by an assessment of the noise, shadow flicker and visual impact, which varies on an individual case-by-case basis. Those potential impacts of wind energy developments on the amenity enjoyed by residents of neighbouring houses are recognised in Chapter 4 of the EIAR on LVIA, with detailed assessment of residential visual amenity of properties within a 10 rotor diameter radius of the proposed development being selected as an appropriate threshold, albeit that the assessment was extended to include properties beyond this threshold. Many of the properties are related to the dispersed settlement of Evie and are included in the assessment to indicate impacts that may accrue at those properties. Settlements up to 15 kilometres distant have also been included for assessment, specifically: Evie, Tingwall, Norseman, Brinyan (Rousay), Balfour (Shapinsay), Kirkwall and Quoyloo.

9.7.2.

The existing Hammars Hill wind farm is highly visible locally being a linear development of five wind turbines, 67 metres to tip along a prominent and elevated ridgeline. Given the extant nature of the existing turbines, the scale of the two proposed turbines and nature of the Orkney landscape locally, the development is accepted as being visibly prominent. Combined with the dispersed settlement pattern, it is inevitable that any tall development will result in some effects on the visual amenity of residential properties. The presence of wind turbines near residential properties can have an adverse effect on residential amenity by appearing as a dominant presence in views from the property.

9.7.3.

Within the LVIA, impacts on the closest residential properties are assessed separately to the viewpoints, to form a judgement as to the scale of predicted impacts on residential amenity. A visual assessment of 34 Residential Properties (RPs) are detailed within the submitted LVIA with distances from the nearest wind turbine ranging from 1,100 metres at Upper Jubidee to 1,970 metres at Upper Crowrar Cottage. Of these, 17 properties are within the threshold of 10 rotor diameters distance threshold (1,160 metres). The property at Savisgarth not been assessed as a residential property.

9.7.4.

Each of the 34 RPs has been subject to visual assessment as described individually within Table 4.9 of the LVIA. All the RPs, excepting the 7 RPs with no views of the proposed wind turbines or hydrogen facility, are considered to be of high sensitivity given the nature of the receptor, as a residential property. The levels of effect range from major, in relation to Pulkitto (RP2), Lower Henley (RP3), Brins (RP7) and The Acre (RP9) to moderate/minor at Moss of Hatamo (RP19), Garson (RP21), Woodwick House (RP24), Midland (RP27), Creya 4 (RP28), Lower Elibister (RP30), Valhalla (RP32) and Upper Elibister (RP33). Other properties studied range from major/moderate to moderate levels of effect. It is therefore evident that a number of local properties have been assessed as being potentially subject to large and medium impacts, where the proposed development would form either a significant or prominent element in views from several key locations of the property, resulting in considerable change to the quality and character of views from the property.

9.7.5.

In defining impacts on residential visual amenity, it is important to note that the outlook from a private property is normally a private matter, not a public one. The difference between that private interest and what should be protected in the public interest has been the subject of focus in wind farm appeal decisions, and the public at large may be affected differently by the visual and other impacts of wind turbines than those who live close to them. If turbines are present in such number, size and proximity that they represent an overbearing and unavoidable presence in main views from a house or garden, there is every likelihood that the property could be regarded as an unattractive place in which to live. The impact on visual amenity is

not considered to be so great or overwhelming on any individual property to merit being a reason for refusal of the application.

9.8. Ecology and Nature Conservation

9.8.1. Designations

The application site is not located within any international or national statutory designation for natural heritage. It is close to the West Mainland Moorlands Site of Special Scientific Interest (SSSI), about 200 metres from T7 at its nearest point and the Orkney Mainland Moors Special Protection Area (SPA) which is classified for its breeding red-throated diver, hen harrier and short-eared owl and for its wintering hen harrier. North Orkney proposed Special Protection Area (pSPA), selected for its breeding red-throated diver and non-breeding common eider, European shag, great northern diver, long-tailed duck, red-breasted merganser, Slavonian grebe and velvet scoter. One local nature conservation site (LNCS) is within one kilometre of the proposal, the North Mainland Evie-Finstown Coast, which is an important feeding area for wintering waders including curlew, turnstone and purple sandpiper and is frequented by otters.

9.8.2.

The legal protection afforded to designated European sites is set out in the Conservation (Natural Habitats, andc.) Regulations 1994, as amended (the “Habitats Regulations”) or, for reserved matters the Conservation of Habitats and Species Regulations 2010, as amended. An appropriate assessment in view of the sites’ conservation objectives for the qualifying interests, in relation to effects on the red-throated diver, short-eared owl and hen harrier interests of Orkney Mainland Moorlands SPA and the red-throated diver interest of North Orkney pSPA was noted as required by SNH/NatureScot and RSPB Scotland. As Competent Authority, the Council must consider whether any plan or project would have a ‘likely significant effect’ on a Natura site before it can be consented, and if so carry out an Appropriate Assessment. That process is known as Habitats Regulations Appraisal (HRA).

9.8.3.

In considering likely significant effects, the Council as Competent Authority, is not obliged to follow the advice given by SNH/NatureScot. The Council’s duty is to have regard to that advice. However, based on SNH/NatureScot’s role as a statutory consultation body and appropriate national body on natural heritage issues, the Council is bound to afford considerable weight to this advice, and there would have to be cogent and compelling reasons for departing from that advice. The Council’s HRA, attached as Appendix 2 to this report, concludes that Appropriate Assessment is required. This has been undertaken accounting for the advice provided by SNH/NatureScot, with the outcome that whilst a significant effect on the red-throated diver, short-eared owl and hen harrier interests of Orkney Mainland Moorlands SPA and the red-throated diver interest of North Orkney pSPA is identified, the proposal will not adversely impact the integrity of either of the sites. The reasoning to reach this conclusion is set out in detail within the HRA.

9.8.4.

The developer has provided assessment of the ecology and ornithology of the site in Chapter 3 of the EIAR with appendices related to vegetation, ornithology and an otter report. In the course of consideration of the application, and in response to request, the applicant has also provided supplemental information on the visual assessment of brown trout habitat in the Woodwick Burn and additional assessment in relation to the North Orkney Proposed Special Protection Area together with points of clarification in relation to ecological and nature conservation matters raised by consultation bodies and as a consequence of the peer review of the EIAR carried out on behalf of the Planning Authority.

9.8.5. Policy Context

Policy 9 is the key natural heritage policy. Supplemental Guidance: Natural Heritage details how natural heritage designations, protected species, wider biodiversity and geodiversity, the water environment and peat and soils will be interpreted and applied in consideration of any proposed development. It is also recognised that Development Criterion 3 ‘Natural Heritage’, as stated within of the Energy SG, also directly relates to the assessment of the proposed development. The theme of such policy and guidance is to minimise impacts of a development on natural heritage sites and species during construction, operation and decommissioning.

9.8.6.

Assessments have been carried out in relation to key ecology and nature conservation issues, including the methods used, and are as detailed within the EIAR, relevant appendices and additional information submitted. This has been subject to assessment and comment from consultation bodies including SNH/NatureScot as the relevant nature conservation body and as statutory consultee. Consultation responses of direct relevance from SEPA, RSPB Scotland and DMP (Environment) have also been considered. Of these parties, RSPB (Scotland) has maintained its objection to the proposed development which is considered below in relation to ornithology.

9.8.7. Vegetation

The development footprint is almost entirely on agriculturally improved ground. The ground has been identified as reverting, with soft rush and poor drainage being identified despite field drainage. The vegetation survey did not identify any nationally rare or nationally scarce plant species within the survey area. The area of the development is generally characterised as species-poor. The area of loss of vegetation types has been quantified with over 90% from improved grassland and invading rushes. The only listed vegetation type of local importance identified at direct risk of development is a small stand of UKBAP lowland fen, represented by M27c Meadowsweet mire. This would amount to less than 100 square metres owing to the widening of a sharp bend on the access. This loss has been assessed as not significant. Impacts were identified for six areas of groundwater dependent vegetation; however, such impacts have been attributed to possible drying out through the construction phase and as such are temporary effects which can be mitigated with no long-term impacts anticipated. Losses from unlisted vegetation are also assessed as not significant due to the low conservation importance of such.

9.8.8.

In the DMP consultation response, the Council's Policy Officer (Environment) advised that activities associated with the construction phase, including site preparation, materials storage and the temporary storage and disposal of excess soil, should be prevented from impacting on the more sensitive habitats in proximity. Similarly, works on the track and in the vicinity of watercourses, including crossing places should be appropriately managed to avoid environmental impacts. These matters can be addressed by an appropriate Construction Environmental Management Plan which can be secured by planning condition.

9.8.9.

Submitted ecological mitigation measures were subject to assessment, and responses from RSPB Scotland and SNH/NatureScot identified management options for farm and moorland habitat improvement to benefit breeding waders and foraging raptors as well as further precautionary otter survey work immediately prior to construction. Consultation bodies including DMP initially raised the lack of a defined mitigation section on natural heritage interests and concern over ongoing monitoring, whilst RSPB Scotland disagrees with the developer's conclusion that the majority of works comprising construction activity can be scheduled during the breeding season while maintaining minimum impact, owing to the possible risk to SPA species and breeding waders such as curlew. This matter was raised with SNH/NatureScot, who requested that a Breeding Bird Protection Plan (BBPP) be secured prior to construction. Supplementary information, including further mitigation, was received, including a commitment to appoint a licensed and suitably qualified Ecological Clerk of Works (ECoW), monitoring of the outcome of the Habitat Management Plan for breeding waders, as well as a commitment to undertake annual carcass searches whilst continuing existing land management practices (or similar), in order to enhance habitat for waders together with post-construction monitoring. It is acknowledged that the developer has stated an interest in providing a net ecological benefit from the development which may be secured at a minimum level through appropriate planning conditions, such as the conditioning of a BBPP.

9.8.10.

Implementation of a Habitat and Species Management Plan (HSMP), with environmental management plans during construction and decommissioning phases, and the operation phase if required, would be a helpful tool and could be tailored to development, although inclusion of the wider Hammars Hill Wind Farm would lead to a more holistic approach. Details on timelines for undertaking mitigation for each identified important ecological feature would be required. Environmental management plans would include the provision of an Ecological Clerk of Works (ECoW) to oversee the implementation of recommended mitigation. Generic mitigation measures which would apply to all important ecological features across the development site should include:

- Not more than 12 months prior to construction and/or decommissioning of the development, a suitably qualified ecologist would undertake repeat ecological surveys to update the baseline information.

- Survey results would be communicated to the contractor by the ECoW and fed into relevant environmental management plans.
- Avoidance of unnecessary disturbance to habitats by minimising the extent of ground clearance and other construction practices, and restoration works during decommissioning as far as practicable.
- Plant and personnel will be constrained to a prescribed working corridor using temporary barriers.
- Works compound, storage sites and access tracks sited and designed to avoid areas identified as being of ecological value by the ECoW.
- Trenches covered or to include ramps to prevent mammals being trapped and exposed pipes and trenches will additionally be checked each morning.

9.8.11. Protected species

An otter survey was carried out, with a study area generally extending to 500 metres surrounding the site infrastructure, for evidence indicating the presence of otter, including breeding holts, other shelters or resting places, footprints, paths/trails, prey remains and spraint (droppings). Evidence of otter was detected, most notably through the occurrence of spraints along the full length of the burn within the survey area, with a concentration near the farmhouse at Savisgarth. This is considered a consequence of the pond at Savisgarth holding larger fish and usage by more than a single otter. A lack of any recently used resting place was identified, with no holts found within the survey area. The survey undertaken in 2018 notes similar findings to a survey from 2007, which indicates that findings are likely to be representative, mindful that SNH/NatureScot would generally consider an 18 month period of validity for findings from an otter survey. The developer acknowledges that further survey works would be necessary immediately prior to construction work. Accepted industrial practices are cited as possible mitigation including the avoidance of open pits or ditches in down periods of construction with ramps being provided to allow for egress to avoid otter entrapment in such excavations. Good practice construction methods would also be employed to avoid surface water pollution. In relation to bats, due to the geographical location of the site and its exposed nature together with having little suitable habitat present, and lack of records of such, assessment of bats was not deemed as required and was scoped out of the EIAR. Subject to the appropriate ecological surveys and mitigation measures referred to above, the development is not anticipated to have an adverse effect on otters or bats.

9.8.12.

The proximity of Woodwick Burn and its significance as one of the 23 principal sea trout spawning burns in Orkney, meant additional information was sought during consideration of the application. Sea trout are a Priority Marine Feature (PMF) and are identified in the Scottish Biodiversity List as a priority for conservation. A visual assessment of trout habitat in the Woodwick Burn was undertaken, which considered habitat quality, obstructions, land use and pollution. Construction activity was identified as a typical risk from sediments, chemicals or fuel spillages entering the watercourse. These matters can be addressed through good construction practice and appropriate mitigation.

9.8.13.

The EIAR includes relevant surveys of the whole affected area. The developer has committed to updated survey work where required and is supportive of general and site-specific mitigation measures. Construction and operational site management plans could be developed to include habitat creation, land management, and/or habitat restoration works elsewhere within this site as a measure to offset the direct impact. Although the details of all such works are limited, those could be controlled by condition, and managed by an Ecological Clerk of Works. This is sufficient to conclude that “mitigative measures will be satisfactorily implemented” as required by policy 9A. Impact on ecology and nature conservation is therefore considered to be satisfactorily addressed.

9.9. Ornithology

9.9.1. Policy Context

Policy 9B states, “(i.) Development likely to have an adverse effect on any protected species will not be permitted unless it can be justified in accordance with the relevant protected species legislation. (ii.) Where there is evidence to indicate that a protected species may be present on, or adjacent to, a development site and could be affected by the proposal, the Planning Authority may require an ecological survey and/or mitigation plan to be submitted with the planning application.”

9.9.2.

Ornithology is considered in chapter 3 of Volume iii of the EIAR. This, together with ornithological appendices, detail the study methodology and the predicted impacts and effects of the development on birds in general and specific species relevant to the SPA and pSPA interest. This includes ornithological watch tables, target species considered, breeding bird maps, flight path maps for species of significant interest including red-throated diver, hen harrier, short-eared owl and skua together with other bird species encountered. The development is considered across development stages noting particular interest in potential disturbance through construction/site clearance and operational phases – particularly of the wind turbines given the risks of disturbance, displacement and collision mortality.

9.9.3.

Bird species of specific interest are those which relate to the classification of Orkney Mainland Moors Special Protection Area (SPA); classified for its breeding red-throated diver, hen harrier and short-eared owl and for its wintering hen harrier, and to North Orkney proposed Special Protection Area (pSPA), selected for its breeding red-throated diver and non-breeding common eider, European shag, great northern diver, long-tailed duck, red-breasted merganser, Slavonian grebe and velvet scoter. There are also wider ornithological interests owing to both moorland breeding bird assemblages and waders in the wider local area.

9.9.4.

Assessment investigated typical wind farm impact upon birds including:

- Disturbance to breeding, roosting or foraging birds during construction, decommissioning and operation.
- Displacement of breeding, roosting or foraging birds throughout the operational phase due to the presence of the turbines.
- Collision mortality for selected target species.

9.9.5.

The assessment investigated potential impacts arising from both the proposed development individually and cumulatively with the existing Hammars Hill wind farm. Ornithological fieldwork was mostly conducted over a two-year timespan and consisted of vantage point surveys, moorland bird surveys and specific survey for breeding short-eared owls and winter roosting hen harriers. All survey work was carried out in line with current policy guidance and standards, as set out in detail within EIAR Appendix 3.2: Ornithology Report.

9.9.6.

Cumulative impacts were also assessed incorporating data from all West Mainland wind farms and at an Orkney-wide scale in addition to specific study of the qualifying interests of the SPA and pSPA. Calculations used in consideration of collision risk took into account the separate habits of species noting that a basic Band Model area-based approach was used for direct flying species such as Great Skua which assumes an even distribution of activity across the 'risk-window' whilst a volume-based model was applied to species such as hen harrier which tend to fly more indirectly. The volume-based model is based on the estimated flight length at risk height.

9.9.7.

Key respondents to consultation on this matter included SNH/NatureScot, RSPB Scotland and OIC DMP (Environment). This included comment in relation to potential impacts on the qualifying interests of the SPA and pSPA. SNH/NatureScot is content that information presented allows appraisal, assessing that the proposal would not adversely affect the integrity of either site and do not object to the development. RSPB Scotland however objects to the proposal, stating that impacts have not been demonstrated beyond reasonable scientific doubt as avoiding an adverse effect on the integrity of the SPA and pSPA and that the precautionary approach should be applied in the determination of the application.

9.9.8.

RSPB Scotland notes declines in key interest species red throated divers, hen harriers and short eared owls in recent years and are concerned regarding further decline. RSPB Scotland also has concerns regarding impacts to other species of conservation concern including curlew and kestrel together with the possible negative impacts arising from the scheduling of works. Whilst further information provided during consideration of the application is noted, the objection to the proposal is maintained as, in RSPB Scotland's view, 'the Applicant has not demonstrated beyond reasonable scientific doubt that there will not be an adverse

effect on the on the integrity of the Orkney Mainland Moors SPA, North Orkney pSPA, or West Mainland Moorlands SSSI'.

9.9.9.

The proposed development would have some impact on ornithological interests, including collision risk to red-throated diver, short-eared owl and hen harrier and other bird species. Information and analysis submitted in support of the application predicts that likely mortality rates are low and would not compromise the SPA or pSPA conservation objectives, either alone or in combination with other wind farms in the vicinity. Predicted collision risk for short-eared owl and hen harrier may be overestimated as it is based on a turbine risk window that has its lowest swept point of 20 metres, whereas the proposed turbines have a lowest sweep point of approximately 34 metres. SNH/NatureScot states that 'most short-eared owl and hen harrier activity will be foraging flights at low level and so are not likely to pass through the turbine blade envelope.' The issue of whether the proposed turbines would be a barrier to red throated diver flights between nest sites and foraging areas at sea was assessed, with the barrier effect caused by two widely separated turbines considered by SNH/NatureScot as 'minimal'. It is noted that both short-eared owl and hen harrier could be subject to displacement; however, these species show only moderate avoidance of wind farm infrastructure so the area affected will be small and, because the habitat in the area is not considered to be productive for prey species such as voles, the reduction in food resource would be limited and would not have a significant impact on foraging success. The temporary and short term effects of displacement and disturbance during the construction and site clearance work phases are recognised and can be mitigated to ensure that breeding birds are not disturbed, either through appropriate site surveys immediately in advance of works or by avoiding works in breeding season.

9.9.10.

SNH/NatureScot 'alert the Council to the fact that cumulative impacts on kestrel are approaching that level and are likely to exceed it should further wind farm developments be proposed', but this does not affect the current proposal.

9.9.11.

The potential effects on ornithology, primarily by the wind turbine element of the proposal, is acknowledged. Notwithstanding the maintained objection from RSPB Scotland, the view of the Council as Competent Authority accords with the advice provided by SNH/NatureScot that the proposal would not adversely affect site integrity of either of the designations. As such these impacts do not merit refusal of the application. In terms of wider ornithological and ecological issues, appropriate management through all phases of development, including relevant mitigation, and as considered within the EIAR, could be addressed through appropriate planning conditions. On this basis, the application is considered to accord with Policy 9 and Development Criterion 3 'Natural Heritage' of the SG.

9.10. Historic Environment

9.10.1. Policy Context

Policy 8A supports development "which preserves or enhances the archaeological, architectural, artistic, commemorative or historic significance of cultural heritage assets, including their settings…" It is stated that, "Development which would have an adverse impact on this significance will only be permitted where it can be demonstrated that: (i.) measures will be taken to mitigate any loss of this significance; and (ii.) any lost significance which cannot be mitigated is outweighed by the social, economic, environmental or safety benefits of the development."

9.10.2.

The historic environment is considered within Chapter 5, Cultural Heritage of the EIAR which seeks to identify elements of archaeological and cultural heritage value that may be impacted by the Hammars Hill extension and hydrogen production facility. Both direct and indirect effects have been considered. Appropriate policy and legislation, including consideration of the Historic Environment Record, aerial photography and other desk-based resources, together with assessment methodology which has been supplemented in the course of consideration of the application, has been addressed in a cultural heritage assessment. Key consultees responses are noted from both Historic Environment Scotland (HES) and the County Archaeologist.

9.10.3.

In relation to direct effects, no sites designated as scheduled monuments or listed buildings lie within the development area boundary. There is only one feature of high sensitivity found within two kilometres of the proposed development, the category 'B' Listed Woodwick Doocot. To 10 kilometres, 52 scheduled monuments were found to have theoretical views and were therefore subject to further assessment for indirect effects. No significant impacts were found on the setting or historical appreciation of any category 'A' listed buildings, scheduled Monuments or Gardens and Designed Landscapes found to be within the ZTV.

9.10.4.

The County Archaeologist indicated within the initial round of consultation that further information was required, which led to submission of an additional wireline from Blackhammer Cairn and assessment of the low winter sun movements in relation to the lower entrance to Taversoe Tuick Chambered Cairn and the main entrance to Blackhammer Chambered Cairn. These matters are considered as a key component of the setting of the designated structures. A further desk-based archaeological assessment and walkover survey was also undertaken which had previously been delayed due to COVID-19 restrictions; this was provided in early December 2020. The County Archaeologist wishes 'to reinforce the findings of the very thorough Archaeological Supplemental survey by ORCA, related to this development' and accepts the conclusions. An Archaeological Watching Brief would be required and protection by temporary barrier or avoidance for any remains. This would take due cognisance of the archaeological interest in the probable site of 'The Kirk of Norrisdale', dating to the Medieval period, situated approximately 80 metres south

east of the proposed location of turbine T7. This could be addressed by appropriate condition(s).

9.10.5.

Historic Environment Scotland (HES) does not object to the application, concluding that the development would not raise issues of national interest. HES has focussed its response on historic environment assets in its remit where significant impacts were most likely to occur. These include the Heart of Neolithic Orkney World Heritage Site and scheduled monuments in the vicinity of the project, noting Aiker Ness, Broch of Gurness broch and settlement. Comment is made with reference to the visualisation from the Broch of Gurness given that the wind turbines would be located on the hillslopes facing towards the monument. HES recognise that the proposed wind turbines 'would be very noticeable and visually distracting in some views from the broch' and that the turbines would have a greater impact than the existing turbines on Hammars Hill. HES have assessed this impact as not to be so prominent or overwhelming that 'it would no longer be possible to appreciate, understand or experience the monument or its setting. Consequently, the potential impact of the turbines on the broch's setting would not reach a level that raises issues of national interest.'

9.10.6.

HES raised a number of points with regards the assessment, including the lack of information regarding the competence of those undertaking the assessment for cultural heritage and use of dated methodology. This was subject to supplemental information being submitted. Neither of the key consultation bodies objects to the proposal.

9.10.7.

Assessing impact on the Outstanding Universal Value of the World Heritage Site is a requirement of the proposed development given the extent of the 'sensitive area' in relation to the Heart of Neolithic Orkney World Heritage Site (WHS). There are no expected direct views of the turbines from the monuments at Skara Brae, Maeshowe, Ring of Brodgar or the Stones of Stenness. The development is also not located on a 'sensitive ridgeline'. The report concludes that the development would have a negligible magnitude of change for the experience of these monuments and that there would be moderate/minor levels of effect which would not be significant in consideration of possible indirect impacts upon the WHS. Overall the development would not impact on the Outstanding Universal Value of the WHS.

9.10.8.

No direct impacts on designated sites have been identified, with no significant indirect impacts being found on the setting or historical appreciation of any category 'A' listed buildings, scheduled monuments or Gardens and Designed Landscapes within the study area. There are no objections from relevant consultation bodies. The archaeological impacts which are considered to arise are in relation to possible local interest and can be mitigated through working practices and an Archaeological Watching Brief which can be secured by appropriate planning condition(s). The development is considered to accord with Policy.

9.11. Tourism and Recreation

9.11.1. Core Paths

In relation to core paths and access, Policy 10A requires that “(i) Development should have no unacceptable adverse impact on statutory access rights, core paths, other public footpaths or rights of way. (ii.) Where a proposal will affect access rights, a core path, a right of way or other public paths it will be necessary to: a) Maintain or enhance the amenity value of the current route; or b) Provide an alternative.” There are no core paths or identified Rights of Way within the development site area. The site area would be subject to general access rights as conferred by the Land Reform (Scotland) Act 2003, as amended, where relevant. Impacts to users of six surrounding core paths and one identified Right of Way were subject to consideration through the scope of the LVIA. Only moderate to minor effects were noted for those routes with a view of the development. Such impacts were not considered to be significant and the development is considered to be in accordance with Policy 10A.

9.11.2. Tourism

Various studies are cited in the EIAR concerning the impact of wind energy development, and the tourism industry is considered within Chapter 12: Socio Economics. Assessment primarily focuses on the impact of the proposed wind turbines and potential impact on tourism. Given the scale, appearance and siting of the hydrogen production facility, no significant impacts are considered to arise in relation to direct impacts from that component of the application. Potential effects were concluded to be at a limited impact at the local level. Beyond the limited visual impact of the proposed wind farm in context with the existing wind farm, impacts identified are on Route 1 of the National Cycling Route as a consequence of additional vehicle movements through the construction and demolition phases, and negligible additional vehicle movements in the operational phase of the proposed development. In the absence of substantiated evidence to the contrary, it is considered that operation of the development would have no effect on tourism in Orkney. Whilst visitors may note the presence of the additional two turbines to the Hammars Hill wind farm, visitor numbers, repeat visits and visitor spend within the local area or wider region are not considered to be significantly adversely impacted.

9.12. Peat and Carbon Rich Soils

9.12.1.

Policy 9E requires that, “(i) i. Development on areas of peat or carbon-rich soils will only be permitted where: a) it has been clearly demonstrated that there is no viable alternative; b) an acceptance assessment of the likely effects of the development on carbon dioxide emissions has been undertaken and submitted; and c) the economic and social benefits of the development clearly outweigh any potential detrimental effects on the environment, including likely carbon dioxide emissions, and (ii) Where development on peat or carbon-rich soil is permitted, the Council may ask for a peatland management plan to be submitted which is supported by an appropriate peat survey and clearly demonstrates how the unnecessary disturbance,

degradation and erosion of peat and soils will be avoided and, where this is not possible, minimised and mitigated."

9.12.2.

Exploratory holes dug at or near the two turbine positions found minimal peat content. It is also recognised that the development is proposed on an area subject to agricultural practice and has been subject to disturbance and previous agricultural improvement. The use of a Construction Environmental Management Plan (CEMP) and Pollution Prevention Plan (PPP) are accepted methodologies in the management of site works. The DMP policy response states the matters that should be included in the CEMP:

- The quantity of peat/carbon-rich soil that will be excavated.
- The timing of excavation of peat/carbon-rich soil and overlying heathland/ grassland habitat.
- The type of machinery that will be used.
- Where the peat/carbon-rich soil and overlying vegetation will be stored prior to its reinstatement.
- How the peat / carbon-rich soil will be stored to ensure that it remains fit for use for ground restoration purposes.
- Identification of an appropriate area locally for the relocation of any surplus peat / carbon-rich soil and heathland / grassland habitat.
- How and when the excavated areas and heathland / grassland habitat will be reinstated.

9.12.3.

SEPA has noted that other regulatory requirements would have to be addressed in relation to management of surplus peat or soils, which may require an exemption under The Waste Management Licensing (Scotland) Regulations 2011.

9.12.4.

On the basis a Construction Environmental Management Plan (CEMP) would be implemented, consultation bodies have no objections. Based on information submitted and the nature and scale of works proposed, a site-specific carbon calculator exercise is not required and the development is considered to accord with Policy 9E.

9.13. Water Environment

9.13.1.

Policy 9D requires that, "(i.)…development proposals should seek to protect and, where possible, improve the water environment (river streams, lochs, groundwater, estuaries, coastal waters (to 3 nautical miles) and wetlands including Groundwater Terrestrial Ecosystems). Where this is not possible, it must be clearly demonstrated that the development: a) will avoid causing deterioration in the water quality or overall status of water bodies and, for any water body currently not achieving good

status, will not prevent it from being able to achieve good status in the future. b) includes the management and/or enhancement of existing habitats and, if appropriate, the creation of new habitats. c) will not significantly affect water quality, flows and sediment transport, either during construction or after completion. Where a development proposal is located adjacent to the water environment, and a bank-side (waterside) location is not essential to the proposal, an appropriate buffer zone between the development and the water body should be included, within which development should be avoided. (ii.) There is a presumption against unnecessary culverting and engineering activities in the water environment."

9.13.2.

Chapter 9 of Volume 3 of the EIAR provides details of the consideration of hydrology and hydrogeology. This outlines the methodology used to determine the baseline hydrological conditions, identifies the sensitivity of the site and adjacent receptors, assesses the impacts of the development during the construction, operational and decommissioning phases, and evaluates the significance of any impacts both before and after mitigation. In relation to potential impacts on surface water hydrology, the Burn of Woodwick is the main hydrological feature. Further study of the ecology of this watercourse was undertaken through submission of the visual assessment of brown trout habitat, as well as vegetation and habitat surveys, a Phase 1 habitat survey and NVC survey, to support the proposal. A total of 12 Groundwater Dependent Terrestrial Ecosystems (GWDTE) zones were identified within the study area, with significance of impacts arising from the development deemed to be "not significant at any level" for any of the identified zones. As such, these areas were not considered for hydrological impact.

9.13.3.

The CEMP would identify all environmentally sensitive features on site and incorporate detailed pollution prevention, site waste management and mitigation measures for all elements of construction and operation potentially capable of giving rise to pollution or causing environmental harm. Issues expected to be considered within the CEMP include: surface water drainage during construction and operation, details of water crossings and any water engineering works including appropriate mitigation, monitoring of mitigation measures (procedure and schedule), soil storage/management/re-use, details of timing of works (avoiding periods of heavy rainfall if possible), wet weather working plan, water management during construction, details of any dewatering including discharge locations and any required mitigation, buffer zones including mitigation where required and details of site waste management and re-use/disposal.

9.13.4.

Groundwater is likely to enter excavations. The developer notes, as acknowledged by SEPA, that "dewatering will likely be required to temporarily lower the water table for larger excavations, such as those for the turbine foundations and borrow pit." Any dewatering during excavations would require to be undertaken in compliance with The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (CAR) General Binding Rule (GBR) 2 and GBR 15. Abstraction of groundwater in quantities greater than 10 cubic metres per day would require

authorisation under CAR. Such works should be agreed with SEPA in advance of construction.

9.13.5.

SEPA has noted that the proposed borrow pit is a significant distance from watercourses and that the development would not impact on private water supplies, is not located on deep peat and would not have an impact on GWDTEs. In common with DMP, matters in relation to the new and altered access tracks and their impacts to surface waters and habitats have been raised, particularly with reference to “A temporary bridge may be required to cross the burn towards T7; this would be supported by concrete abutments set back from the water on each side.” The replacement of an existing culvert was also referenced. SEPA has advised that such works would require authorisation under CAR to carry out engineering works in or in the vicinity of inland surface waters (other than groundwater) or wetlands. The preparation of the indicated CEMP, which could be secured by condition, would adequately protect the water environment in accordance with Policy 9D.

9.13.6.

No private water supplies are expected to be directly impacted by the development. It is noted that Savisgarth currently utilises a private water supply; the developer has stated that connection to the public supply would be pursued in conjunction with a change of use from residential to business use.

9.13.7.

The hydrogen production facility, through the use of hydrolysis, requires a water supply. The water is stated as being obtained from the public supply via the Scottish Water network, and therefore no abstraction on site. Scottish Water was consulted and has raised no objections. The Scottish Water response notes that ‘no objection’ does not confirm that the proposed development could be serviced and that “Due to the volume of water required and the height of the development site, it is likely that storage and a pumping station will be necessary. Scottish Water will include this development in their water network model for this area and will continue to engage directly with the developer regarding the outputs. This will ensure any necessary mitigation is in place to support the development whilst maintaining the current level of service for existing customers.” Although the volume of water required for the operation is not specified, the developer has confirmed discussions with Scottish Water directly, and on the basis the consultation body has confirmed sufficient capacity, it is assumed that details have been shared with Scottish Water. This is a matter for the developer to pursue directly with Scottish Water, in terms of securing a connection and supply. Water Byelaws under Section 70 of the Water (Scotland) Act 1980 maintain and protect water quality to the existing network.

9.14 Borrow Pit

9.14.1.

The borrow pit would be located to the south west of Neigarth and to the south of T6, covering 3,937 square metres and requiring a short section of new track for access purposes. The developer has stated that winnable rock is readily available, and that

the suitability of this location has also been identified owing to distance from residential properties, sensitive habitats and watercourses. The borrow pit would substantially reduce HGV movements associated with the construction phase on the public highway. Approximately 12,000 tonnes of aggregate are required, of which 90% is projected to be won from the proposed borrow pit. The remaining 10% would be sourced from Heddle Quarry, by Finstown, which relates to approximately 70 HGV loads as stated by the developer.

9.14.2.

As noted, the proposed borrow pit is a significant distance from surface watercourses, would not impact on Private Water Supplies, is not located on deep peat, and does not have an impact on potential GWDTEs. The developer has stated that the borrow pit would be restored as near to pre-construction ground profile as possible using material won on site during construction works, and that “any detailed reinstatement and restoration proposals will consider and mitigate all residual risks to environmental receptors”. SEPA has stated that appropriate planning conditions would be required for proposed restoration and aftercare and the associated temporary access road. Risks of pollution as a result of working would be subject to separate regulatory control through SEPA via a CAR construction site licence. Detailed restoration and aftercare of the borrow pit could be secured by appropriate planning conditions, as stated by SEPA, noting also that aspects of this element of the proposed development would be subject to the site Construction Environmental Management Plan (CEMP).

9.15. Aviation, Defence and Communications

9.15.1.

Key to the consideration of this section are the wind turbines rather than the hydrogen production facility, the latter is not considered to have any impact on aviation infrastructure or telecommunications services. Television transmission is digital rather than analogue and as such no significant interference is anticipated. Objection was initially raised by The Joint Radio Company (JRC) which analyses proposals for wind farms on behalf of the UK fuel and power industry. This objection was withdrawn following further details being provided and the project cleared with respect to radio link infrastructure operated by UK gas and electricity transmission and distribution companies. There are no outstanding objections received from any telecommunications link operators, including BT.

9.15.2.

The site is approximately 18 kilometres south east of Kirkwall Airport, operated by Highland and Islands Airports Limited (HIAL). The maximum extent of the obstacle limitation surfaces associated with any aerodrome are just over 15 kilometres from the runway reference point, therefore the turbines are outside those safeguarding limits. HIAL has confirmed that “this development would not infringe on the safeguarding criteria for Kirkwall Airport”. The Ministry of Defence (MoD) has no objection, and requests that the development be fitted with MoD accredited aviation safety lighting, in accordance with the Civil Aviation Authority, Air Navigation Order 2016. This could be secured by planning condition. The MoD would require to be

advised at key stages of the development, prior to commencement of construction works, in order for the development to be plotted on flying charts to ensure that military aircraft avoid this area. The Civil Aviation Authority was consulted and no response was received.

9.15.3.

In consideration of potential disruption to television signal caused by wind turbines, which is understood to have been an issue previously in the locality, it is recognised that the nature of signal transmission has moved from analogue to digital which is considered as less susceptible to interference. A digital signal does not however remove all risk of interference but is expected to significantly reduce potential impacts. No residual effects are anticipated on television, telecommunications, marine radar or aviation infrastructure, however the developer has indicated that mitigation may be warranted with 'assurance that the developer will rectify any problems is normally formalised in a planning condition which is now fairly standard practice with approved wind applications'. A planning condition is therefore assumed by the developer.

9.16. Socio-economics

9.16.1. Employment

Chapter 12 of the EIAR provides information on the socio-economics of the proposed development including employment. The development would create local employment opportunities throughout the construction, operational and decommissioning phases. The developer has used local consultancy expertise in the provision of information for the proposal, including expert local ecological and archaeological input to date. Identified local construction experience in the installation of the wind turbines on site is expected to be utilised with local contractors and suppliers being employed where possible. An onsite workforce would be required to manage and maintain the hydrogen facility and would require 6-7 full time equivalent (FTE) personnel. Other employment opportunities and benefits accruing may include the local accommodation sector and haulage firms. Overall, the creation of jobs and use of local utilities during all phases of the development is considered to be a slight positive impact locally.

9.16.2.

Example supply chain opportunities are as follows:

- Archaeology – surveys, watching brief.
- Hydrology.
- Ecological Clerk of Works.
- Ornithology – surveys, ongoing research, management plan.
- Traffic and transport – surveys, traffic management and signage.
- Telecoms – IT and telephone services.
- Health and Safety contractors.

- Construction sub-contractors – building contractors, steel fixers, site compound, access tracks and crane pads, substation.
- Plant hire contractors – excavation, earthworks, craneage services, cabins, security, welfare.
- Electrical engineering – high voltage trained personnel, site cabling, substation.
- Construction materials – concrete, aggregates, building materials, geotextiles, culverts.
- Plant Hire – excavation, earthworks, site tracks, craneage, traffic management and signage, site compound.
- Ancillary support – security, welfare.
- Site investigation / geotechnical contractors.
- Hydrogen facility operators and technicians.
- Operations and maintenance personnel.
- Turbine technicians.
- Labour hire companies – engineers, plant operatives, construction labourers, setting-out engineers.
- Local spend includes accommodation, air and ferry bookings, car and van hire.

9.17. Subsea Cable Transmission Link

9.17.1.

The Orkney grid is currently connected to Caithness by two 33kV cables with a combined capacity of 38 megawatts. Orkney is one of Britain’s leading centres for innovation in renewable energy combined with significant renewable resources, from onshore wind to wave and tidal. Following the significant growth in small-scale renewable electricity generation, the existing Orkney electricity network reaches full capacity at times, preventing new electricity generators connecting and curtailing the output of some existing generators.

9.17.2.

It is proposed to install a 220kV HVAC subsea cable between Orkney and Caithness to relieve the pressure on the current system and allow new generators to connect, followed by a second cable of similar specification once further generation has been committed and the economic case has been made for the further investment. To receive approval for a cable, the government regulator for gas and electricity markets in the United Kingdom, Ofgem, must agree that a ‘needs case’ demonstrates sufficient demand and value to Orkney and Scottish mainland customers.

9.17.3.

The Needs Case includes a comprehensive analysis of the investment options available to meet a range of credible future generation scenarios in Orkney. Ofgem has conditionally approved SSEN proposals to build a 220MW interconnector linking Orkney with the Scottish mainland. Approval is dependent on at least 135 megawatts of new wind farm projects in Orkney either being awarded a Contract for Difference (CfD) or being judged 'likely to be developed' by December 2021.

9.17.4.

As stated earlier in this report, in National Planning Framework 3 (NPF3) the 'Orkney Waters' are identified as an 'Energy Hub' and an area of co-ordinated action and relieving current electricity grid constraints are stated as an objective, "Strengthening the electricity grid will be essential in unlocking renewable resources, both onshore and offshore. Interconnectors to…Orkney…are all required to fully realise the potential for diverse and widely distributed renewable energy development." NPF3 also refers to Kirkwall and Orkney, noting "…Ambitious plans for wave and tidal energy, together with the wider area's importance as a strategic location for shipping and energy infrastructure, provide significant new opportunities for the town…Improved grid connection will be a vital component in the future success of Orkney's marine energy sector. As part of this, there will be opportunities to develop new technologies and approaches to harness renewable power generation on and around the islands…"

9.17.5.

Noting that the subsea cable transmission link is identified as national development in NPF3, which is the Government's statutory framework for Scotland's long-term spatial development, it is appropriate to provide material weight to the contribution that the development would make to the Needs Case. It is uncertain whether the development as proposed can be considered in relation to the 'needs case' as the proposal is for the purpose of generating renewable electricity to facilitate hydrogen production. It has however been stated in submitted documents that the hydrogen production facility would be subject to proving the commercial case post-planning, whilst also making the case that the key rationale for the hydrogen production element of the development is due to the limited ability to export electricity to mainland Scotland and that 'no new renewable generation can be accommodated without a demand for the electricity produced' without the development of a new electrical interconnector (Volume I: Planning Statement and Volume II a: Design Statement). If considered as contributing to the needs case, the development would contribute 8.4 megawatts towards the 'tipping point' of 135 megawatts of electricity generation required.

9.17.6.

On the issue of grid constraints, Paragraph 165 of Scottish Planning Policy confirms that, "Grid capacity should not be used as a reason to constrain the areas identified for wind farm development or decisions on individual applications for wind farms." For the avoidance of doubt, the paragraphs above refer to the contribution of the proposed development to infrastructure identified as national development, but not connection of the proposed development to the grid, which is an issue for wind farm developers to pursue with the relevant transmission network operator.

9.18. Orkney Sustainable Energy Strategy

9.18.1.

The Orkney Sustainable Energy Strategy is the result of collaboration between the Council, Orkney Renewable Energy Forum, Community Energy Scotland and Highlands and Islands Enterprise, and prioritises "the need to attract, build and

anchor innovation in business, people and infrastructure, to capitalise on Orkney's reputation as a location of choice for energy technology development and to harness the powerfully collaborative nature of the local community." The strategy sets an objective to build on Orkney's existing international competitive advantage and harness Orkney's potential in terms of growth, quality jobs and exports, by building on existing strengths demonstrated in innovation, energy research and development, technology, and the capability of supply chain. An Orkney energy vision is stated, of: "A secure and sustainable, low carbon island economy driven uniquely by innovation and collaboration, enabling the community to achieve ambitious carbon reduction targets, address fuel poverty and provide energy systems solutions to the world."

9.18.2.

However, in relation to research and innovation, and the energy industry generally in Orkney, constraints and special circumstances are also identified. Despite leading the way towards self-sufficient renewable generation, the strategy notes that access to energy markets is limited by inadequate electrical grid infrastructure, affecting the ability to export energy to the Scottish mainland. It is concluded that for Orkney to deliver and significantly contribute towards the low carbon ambitions of the Scottish and UK governments, significant investment in grid connectivity is required.

9.18.3.

The Orkney Hydrogen Strategy, which sits within and supports the strategic aims of the Orkney Sustainable Energy Strategy 2017 to 2025, aims to identify how hydrogen can be applied to energy systems in Orkney to maintain and build on current hydrogen schemes locally and to assist in wider societal goals towards net zero carbon by 2045. The strategy identifies five hydrogen development themes:

- Innovative local energy systems and hydrogen economies.
- Renewably produced low carbon hydrogen.
- Energy security, system flexibility and self-sufficiency.
- Just transition.
- Promoting innovative research and development using a collaborative approach.

9.18.4.

The proposed development is considered to be closely allied to all of the above themes in that it would achieve further local innovation, including the use of ammonia as a carrier for hydrogen thereby easing current issues of handling, storage and transportation, whilst adding to the local renewably produced low carbon hydrogen aiding the local supply chain. The proposed development has taken due cognisance of this strategy and states the need for an action plan in order to define, and thereby achieve, the aims within the strategy. It is however recognised that the proposed development would provide additional hydrogen production capacity with which to progress the use of hydrogen as an energy source locally, including transport, power, heat and chemicals.

9.19. Decommissioning and Restoration

The expected lifespan of the development is 25 years. It is a requirement of Development Criterion 9 of Supplementary Guidance: Energy that decommissioning and restoration is considered in relation to the nature and scale of the development as proposed. To ensure that decommissioning and reinstatement is completed and that all costs are met by the developer, appropriate planning conditions and, where required, a financial bond, letter of credit and/or a Section 75 planning obligation would be required. It is also expected that a condition be attached, requiring that in the event that a wind turbine is not operational and producing energy for a period of one year, it should be removed and the site restored at the expense of the developer Authority.

10. Other Issues

The following issues are related to the proposed development but are not material planning considerations in the determination of the current application.

10.1. Electricity Transmission Infrastructure

Any electricity transmission infrastructure associated with the proposed development is subject to a separate consenting regime. Discussions regarding the design, including types of poles, or routes of that potential infrastructure, are not material to determination of the current application.

10.2. Community Benefit Fund

In line with Government advice, the development would provide a community benefit fund of £5,000 per megawatt per annum of installed capacity to the local community throughout the lifetime of the development.

11. Conclusion

11.1.

Supplementary Guidance: Energy, together with Development Management Guidance: Energy confirm that any decision for a wind farm development is a balance between potential benefits and anticipated adverse impacts on known constraints, as follows:

- All planning applications are determined by considering the potential benefits of a proposal and any anticipated adverse impacts on known constraints. The Council balance these factors as part of the assessment process before ultimately making a decision regarding the suitability of any application for planning permission.
- Whilst potential constraints are covered within the topic-specific policies in the Local Development Plan, and related supplementary guidance, it is likely that the most relevant benefits that a proposed energy development could have would surround net economic benefit; the scale of contribution to renewable energy generation targets; and the effects of a proposal on greenhouse gas emissions.

- Where there would be clear adverse impacts on known policy constraints or impacts on the subject areas included within the Development Criteria of the supplementary guidance, the scale of any positive impacts will help to establish whether, on balance, the identified adverse impacts are unacceptable.

11.2.

The application site is within a part of Orkney identified in the Spatial Strategy Framework of Policy 7 as 'Areas with Potential for Wind Farm Development'. Consideration is therefore not whether the principle of the development is acceptable, but assessment of acceptability of the design and effects of the wind energy development proposed.

11.3.

It must be acknowledged that this is an extension of an existing wind farm, rather than a new site or wind farm development. The development aspires to a model where electricity produced is not subject to uncertainty through current grid curtailment, as the proposal seeks to utilise the renewable energy generated by the wind turbines to be converted to hydrogen and thereby provide a clean and low-cost fuel that can be utilised for transportation and heating systems. The site has no international or national natural heritage designations. The site can accommodate the development without impacting aviation and defence interests. Levels of peat and carbon rich soils are low. When compared to other sites across Orkney equally distant from houses, the site is relatively free of constraints.

11.4.

In terms of landscape impact, by its nature, wind energy development will result in some significant impacts on landscape and visual receptors, and it is a balance of the scale and impact of a development against landscape capacity, individually and cumulatively with other development. The wind energy sector is evolving with larger commercial wind turbines proposed than those already installed. The two 150 metre tip height turbines included within this proposal are an increase in scale to existing operational wind turbines in Orkney. Key to the consideration of this element of the proposal is the 'fit' of such development within the landscape, in relation to the existing Hammars Hill Wind Farm and in the context of cumulative impact of such development on the wider area. The development has been laid out to mitigate the most significant negative affects which may otherwise have accrued from the scale and nature of the wind turbines as proposed, through appropriate siting within topography that contains the development and restricts the visual impact of the turbines from multiple directions. Situating the larger scale turbines at a lower elevation than the smaller operational turbines along the ridge line is considered a reasonable balance to mitigate the visual impact, equating tip heights when viewed from a distance and on the horizon and providing a unified impression of a wind farm albeit containing turbines of disparate scales and placement. No significant impacts on any designated landscapes are considered to arise and significant effects are restricted to a relatively small local area immediately to the north of the turbines. There is a perception of potential for overbearing development from the closest houses, but that is not considered to be so significant to make the development

unacceptable, and noise and shadow flicker have been assessed and would be controlled to protect residential amenity.

11.5.

In conclusion, even in areas identified as having potential for wind farms and with least constraint, it is not guaranteed that development within those areas will be technically feasible or appropriate and each application will be judged on its merits. In this case, in accordance with the content of the EIA Report, and based on the creation of an innovative hydrogen production facility, utilising energy generated from wind turbines, contributing to hydrogen innovation in Orkney, in conjunction with employment creation, socio-economic benefits and the contribution of energy generation towards the needs case, and, subject to the extensive mitigation measures proposed, the benefits of the development are considered to outweigh landscape and any other negative impacts. On balance, the development is considered to accord with the relevant provisions of the Orkney Local Development Plan 2017 and associated supplementary guidance.

12. Recommendations

12.1.

The application is **recommended for approval**, subject to the conditions attached as Appendix 3 to this report.

12.2.

Approval should be subject to a planning obligation, financial bond and/or other financial provision, to ensure that decommissioning and reinstatement would be completed, at the cost of the developer.

12.3.

That powers be delegated to the Executive Director of Development and Infrastructure, in consultation with the Head of Finance and the Head of Legal Services:

- To determine the appropriate planning obligation, financial bond and/or other financial provision, to ensure completion of decommissioning and reinstatement at the cost of the developer.
- To thereafter negotiate and conclude, prior to commencement of development, the necessary planning obligation, financial bond and/or other financial provision.

13. Contact Officer

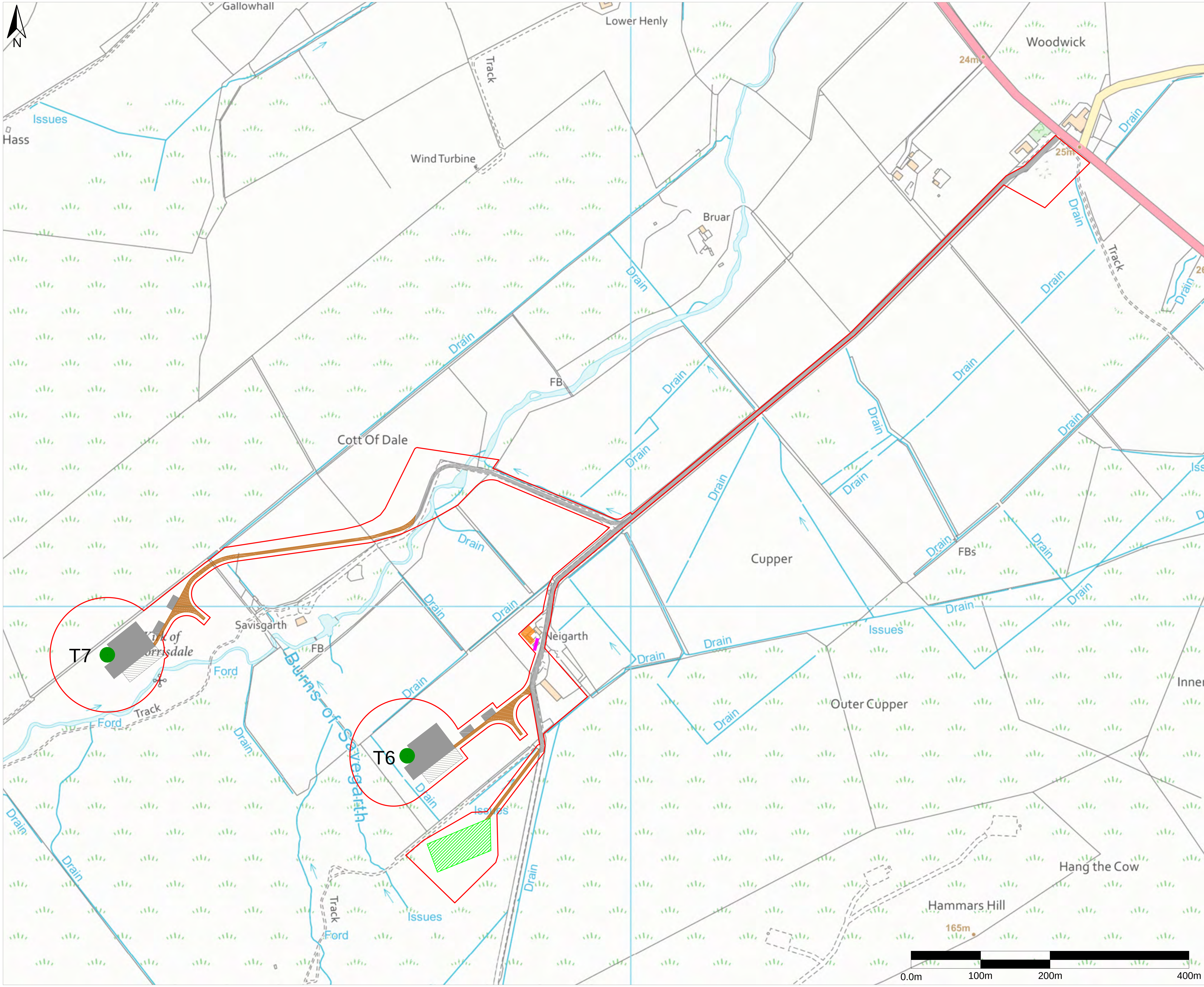
David Barclay, Senior Planner, Development Management. Email: david.barclay@orkney.gov.uk

14. Appendices

Appendix 1: Location Plan.

Appendix 2: Habitats Regulations Appraisal.

Appendix 3: Planning Conditions.



Notes:

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2. Work to figured dimensions only.

3. This drawing is to be read in conjunction with all relevant architect's, service engineer's and Green Cat Renewables Ltd drawings and specifications.

Key:

- Turbine Foundation:
- Crane Hardstading:
- Soft Laydown:
- New Access Track:
- Upgrade Existing Track:
- Proposed Borrow Pits:
- Proposed Substation:
- Temporary Construction Compound:
- Planning App Boundary: Appox 10.0 Hectares

Hydrogen Production Facility

- Welfare Building:
- Proposed Hydrogen Facility Building:
- New Hardstanding Area:
- Gravel / Drainage Protection:
- Security Fence:
- Gate:

REV:	DESCRIPTION:	BY:	CHK'D:	APP'D:	DATE:
A	Amended to suit comments	LS			17.04.20

STATUS: PLANNING

Green Cat Renewables Ltd
Stobo House
ROSLIN
EH25 9RE
0131 541 0060
www.greencatrenewables.co.uk

CLIENT: Hammars Hill Energy Ltd.
Eneus Enegry Ltd.

PROJECT: Hammars Hill Extension & Hydrogen Facility

DRG TITLE: Planning Application

DATE:	DRAWN BY:	CHECKED BY:	APPROVED BY:
06.02.20	CT	BT	GD

SCALE AT A3:	PROJECT DRAWING NUMBER:	REV:
1:5,000	C3572 (1) 102	A

Appendix 2

Erect Two Wind Turbines (Maximum height 150 metres, Maximum capacity 8.4 MW total), Substation, Hydrogen Production Facility and Welfare Building, Construct Access Tracks, Create Borrow Pits and Associated Infrastructure at Hammars Hill, Evie.

Planning Reference: 20/112/TPP

Consideration of Proposals affecting European Sites

The proposal lies close to Orkney Mainland Moors Special Protection Area (SPA) classified for its breeding red-throated diver, hen harrier and short-eared owl and for its wintering hen harrier, and to North Orkney proposed Special Protection Area (pSPA), selected for its breeding red-throated diver and non-breeding common eider, European shag, great northern diver, long-tailed duck, red-breasted merganser, Slavonian grebe and velvet scoter. The site's status means that the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 amended (the "Habitats Regulations") or, for reserved matters, The Conservation of Habitat's and Species Regulations 2017 apply. Consequently, Orkney Islands Council is required to consider the effect of the proposal on the SPA and pSPA before it can be consented (commonly known as Habitats Regulations Appraisal).

This means that where the conclusion reached by the Council on a development proposal unconnected with the nature conservation management of a Natura 2000 site is that it is likely to have a significant effect on that site, it must undertake an appropriate assessment of the implications for the conservation interests for which the area has been designated. The need for appropriate assessment extends to plans or projects outwith the boundary of the site in order to determine their implications for the interest protected within the site.

This means that the Council, as competent authority, has a duty to:

- determine whether the proposal is directly connected with or necessary to site management for conservation; and, if not,
- determine whether the proposal is likely to have a significant effect on the site either individually or in combination with other plans or projects; and, if so, then
- make an appropriate assessment of the implications (of the proposal) for the site in view of that site's conservation objectives.

The competent authority can only agree to the proposal after having ascertained that it will not adversely affect the integrity of the site(s). If this is not the case, and there are no alternative solutions, the proposal can only be allowed to proceed if there are imperative reasons of overriding public interest, which in this case can include those of a social or economic nature.

The proposed development is outwith the boundary of both Orkney Mainland Moors SPA and North Orkney pSPA, however SNH / NatureScot have advised that the proposal is likely to have a significant effect on the red-throated diver, short-eared owl and hen harrier interests of Orkney Mainland Moorlands SPA and the red-throated diver interest of North Orkney pSPA.

It is evident that the proposal is not connected with or necessary to site management for conservation, hence further consideration is required.

Orkney Mainland Moors Special Protection Area (SPA)

Qualifying Species:

- Hen harrier (Circus cyaneus)
- Red-throated diver (Gavia stellata)
- Short-eared owl (Asio flammeus)

The Conservation Objectives for Orkney Mainland Moors SPA are noted as follows:

- To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained.
- To ensure for the qualifying species that the following are maintained in the long term:
    - Population of the species as a viable component of the site.
    - Distribution of the species within site.
    - Distribution and extent of habitats supporting the species.
    - Structure, function and supporting processes of habitats supporting the species.
    - No significant disturbance of the species.

North Orkney proposed Special Protection Area (pSPA)

The area included within the pSPA supports a population of European importance of the following Annex 1 species:

- Great northern diver (Gavia immer).
- Slavonian grebe (Podiceps auritus).
- Red-throated diver (Gavia stellata).

It also supports migratory populations of European importance of the following species:

- Common eider (Somateria mollissima).
- Long-tailed duck (Clangula hyemalis).
- Velvet Scoter (Melanitta fusca).

- Red-breasted merganser (Mergus serrator).
- European shag (Phalacrocorax aristotelis).

Qualifying Interest:

The North Orkney proposed Special Protection Area (SPA) qualifies under Article 4.1 by regularly supporting a non-breeding population of European importance of the following Annex 1 species: great northern diver Gavia immer (a mean peak annual non-breeding population of 310 birds (12.4% of the Great Britain population) for the years 2006/07 to 2008/09) and Slavonian grebe Podiceps auritus (a mean peak annual non-breeding population of 120 birds (10.9% of the Great Britain population) for the years 2007/08-2008/9).

The site also qualifies under Article 4.1 by regularly supporting a population of European importance of the following Annex 1 species during the breeding season: red-throated diver Gavia stellata of up to 52 pairs (4.4% of the Great Britain population) for the year of 2006.

The site further qualifies under Article 4.2 by regularly supporting populations of European importance of the following migratory species: common eider Somateria mollissima (a mean peak annual non-breeding population of 1,453 birds (2.4% of the Great Britain population) for the years of 2006/07 to 2008/09), long-tailed duck Clangula hyemalis (a mean peak annual non-breeding population of 937 birds (8.5% of the Great Britain population) for the years of 2006/07 to 2008/09), velvet scoter Melanitta fusca (a mean peak annual non-breeding population of 147 birds (5.9% of the Great Britain population) for the years of 2006/07 to 2008/09), red-breasted merganser Mergus serrator (a mean peak annual non-breeding population of 344 birds (4.1% of the Great Britain population) for the years of 2007/08 to 2008/09) and European shag Phalacrocorax aristotelis (a mean peak annual non-breeding population of 1742 birds (1.6% of the Great Britain population) for the years of 2007/08 to 2008/09).

In its responses to the Council, SNH / NatureScot has provided an appraisal of the impact that the proposal is likely to have on Orkney Mainland Moorlands SPA and North Orkney pSPA.

Matters in relation to the conservation objectives as noted above for both the Orkney Mainland Moorlands SPA and North Orkney pSPA have been considered in relation to the proposed development. SNH / NatureScot have advised that the proposal is likely to have a significant effect on the red-throated diver, short-eared owl and hen harrier interests of Orkney Mainland Moorlands SPA and the red-throated diver interest of North Orkney pSPA.

An Appropriate Assessment has therefore been undertaken in view of the site's conservation objectives for its respective qualifying interests. SNH / NatureScot has advised that in their view 'this proposal is likely to have a significant effect on the red-throated diver, short-eared owl and hen harrier interests of Orkney Mainland Moorlands SPA and the red-throated diver interest of North Orkney pSPA'

Based on the information provided by the applicant with regards to their assessment of the works in relation to Habitats Regulations Assessment and in consideration of the advice provided by SNH / NatureScot the following is noted:

- The wind turbines would present a collision risk to red-throated diver, short-eared owl and hen harrier. On the basis of the information and analysis provided in the Ornithological Report and annexes, that the likely mortality rates are low and will not compromise the sites' conservation objectives, either alone or in combination with other wind farms in the vicinity. In the course of consideration of the application further information was provided by the applicant with respect of cumulative impact assessment for red-throated diver with a cumulative collision risk, calculated at 0.380 per annum being provided. The predicted collision risk for short-eared owl and hen harrier may also be overestimates as they are based on a turbine risk window that has its lowest swept point of 20m, whereas the proposed turbines have a lowest sweep point of about 34m. Most short-eared owl and hen harrier activity will be foraging flights at low level and so are not likely to pass through the turbine blade envelope.
- Wind turbines can also be a barrier to diver flights between nest sites and foraging areas at sea, however in this instance with only two widely separated turbines the barrier effect is expected to be minimal.
- The development may displace short-eared owl and hen harrier from potential foraging areas; however, these species show only moderate avoidance of wind farm infrastructure so the area affected will be small. The habitat in the area is also relatively poor for their main prey, Orkney voles, so the reduction in food resource will be slight and is unlikely to have a significant impact on the birds' foraging success.
- Construction work is likely to displace foraging short-eared owl and hen harrier from a wider area and could disturb nesting or roosting birds. This effect would be temporary and would not affect site integrity.
- The developer has committed to appoint a licensed and suitably qualified Ecological Clerk of Works (ECoW) who would check and search for the nests of ground-nesting birds in advance of the active stages of construction.
- A breeding bird protection plan will be implemented and overseen by an Ecological Clerk of Works (ECoW) if required
- Other qualifying species of North Orkney pSPA are not likely to be affected as they are limited to the marine environment during the non-breeding period.

Conclusion

On the basis of this Appropriate Assessment it is concluded that the proposal will not adversely affect the integrity of the sites. This is based on the above noted factors and upon the developer instigating the proposed means of mitigation fully.

Appendix 3.

Duration of the Consent

01. This planning permission shall expire and cease to have effect after a period of 25 years from the date 12 months from the date of commencement of works, or when electricity is first exported from any of the approved wind turbines to the electricity grid network (the "First Export Date"), whichever is earlier. Upon the expiration of that 25 year period, the wind turbines shall be decommissioned and, together with all ancillary infrastructure (excluding the hydrogen production facility), removed from the site. Written confirmation of the First Export Date, within the period 12 months from the date of commencement, shall be submitted in writing to the Planning Authority, within one month of the First Export Date.

Reason: In recognition of the stated lifespan of the development and to allow the Planning Authority to calculate the date of expiry of the consent.

Defining the Development

02. The development hereby permitted shall be undertaken in strict accordance with the undernoted planning drawings and documentation, except insofar as amended by the terms of and conditions attached to this permission:

- C3572 (1) 104, Hardstanding Details.
- C3572 (1) 105, Access Track Details.
- C3572 (1) 106, Foundation Detail.
- C3572 (1) 108 A, Substation Elevations.
- C3572 (1) 200, Hydrogen Production Facility Site Overview.
- C3572 (1) 201, Hydrogen Production Facility Site Layout.
- C3572 (1) 202 A, Hydrogen Facility Plan & Elevations.
- C3572 (1) 203 A, Hydrogen Facility Welfare Building Plan and Elevations.

Reason: To ensure the development is carried out in accordance with the approved application documentation and drawings.

Financial Guarantee

03. No development shall commence until:

(i) Full details of a bond or other financial provision to be put in place to cover all of the decommissioning and site restoration measures, outlined in the approved decommissioning, restoration and aftercare strategy, have been submitted to, and approved in writing by, the Planning Authority.

(ii) Confirmation in writing by a suitably qualified independent professional that the amount of financial provision proposed under part (i) above is sufficient to meet the full estimated costs of all decommissioning, dismantling, removal, disposal, site restoration, remediation and incidental work, as well as associated professional costs, has been submitted to, and approved in writing by, the Planning Authority.

(iii) Documentary evidence that the bond or other financial provision approved under parts (i) and (ii) above is in place has been submitted to, and confirmation in writing that the bond or other financial provision is satisfactory has been issued by, the Planning Authority.

Thereafter, the developer shall:

(iv) Ensure that the bond or other financial provision is maintained throughout the duration of this permission.

(v) Pay for the bond or other financial provision to be subject to review five years after the commencement of development and every five years thereafter until the wind farm is decommissioned and the site restored.

Each review shall be:

(a) Conducted by a suitably qualified independent professional.

(b) Published within three months of each five year period ending, with a copy submitted upon its publication to both the landowner(s) and the Planning Authority.

(c) Approved, in writing, by the Planning Authority without amendment or approved, in writing, by the Planning Authority following amendment to their reasonable satisfaction.

(d) Where a review approved under part (c) above recommends that the amount of the bond or other financial provision should be altered (be that an increase or decrease) or the framework governing the bond or other financial provision requires to be amended, the Wind Farm Operator shall do so within one month of receiving that written approval, or another timescale as may be agreed, in writing, by the Planning Authority, and in accordance with the recommendations contained therein.

Reason: To ensure financial security for the cost of restoration of the site to the satisfaction of the Planning Authority.

Duration of works

04. No development shall commence unless and until a timetable for the construction period has been agreed, in writing, with the Planning Authority. The timetable shall include the start and finish date, noting that the construction work shall not exceed a period of three years from the date of commencement unless otherwise approved, in writing, by the Planning Authority.

Reason: To ensure proper planning and other environmental control of the development.

Design and operation of wind turbines

05. No turbines shall be erected until full details of the proposed wind turbines have been submitted to, and approved in writing by, the Planning Authority. These details shall include:

(a) The make, model, design, power rating and sound power levels of the turbines to be used.

(b) The external colour and/or finish of the turbines to be used (including towers, nacelles and blades) which should be non-reflective pale grey semi-matt.

(c) Each wind turbine having three blades and all wind turbines rotating in the same direction.

(d) The provision of infrared aviation warning lights at hub height.

(e) Light level sensors.

Thereafter, development shall progress in accordance with these approved details and, with reference to the approval above, the turbines shall be maintained in the approved colour, free from external rust, staining or discolouration, until such time as the wind farm is decommissioned.

Reason: To ensure that the environmental impacts of the turbines forming part of the development conform to the impacts assessed in the environmental statement and in the interests of the visual amenity of the area.

06. The overall height of the wind turbines shall not exceed 149.85 metres to tip of the blades when the turbine is in the vertical position as measured from the natural ground conditions immediately adjacent to the turbine base as shown on Figure C3572 (1) 107A.

Reason: To ensure proper planning and other environmental control of the development.

07. Notwithstanding the provisions of the Town and Country Planning (Control of Advertisements) (Scotland) Regulations 1984 (as amended), and unless there is a demonstrable health and safety or operational reason, none of the wind turbines, substation buildings/enclosures, hydrogen plant or above ground fixed plant shall display any name, logo, sign or other advertisement without express advertisement consent having been granted on application to the Planning Authority.

Reason: To ensure that the turbines are not used for advertising, in the interests of visual amenity.

Micro-siting of Turbine Development

08. Wind turbines, buildings, masts, areas of hardstanding shall be erected, and the site tracks constructed in the positions indicated on Figure C3672 (1) 101A, but may be adjusted by micro-siting within the site subject to the following restrictions:

(a) No wind turbine, building, access track directly associated with a turbine, mast or hard standing shall be moved more than 50 metres from the position shown on Figure C3572 (1) 101A.

(b) No general access track shall be moved more than 20 metres from the position shown on Figure C3572 (1) 101A.

(c) All micro-siting permissible under this condition must be approved in advance in writing by the Ecological Clerk of Works (EcoW).

(d) No wind turbine proposed within 800 metres of a non-financially involved residential property shall be micro-sited closer to that residential property.

Reason: To ensure proper planning and other environmental control of the development.

09. Prior to commencement of works, the Planning Authority shall be notified, in writing, with a plan of the development, showing the final position of all wind turbines, masts, areas of hardstanding, tracks and associated infrastructure forming part of the development. The plan should specify areas where micro-siting has taken place and, for each instance, be accompanied by copies of approval of the micro-siting by the Ecological Clerk of Works (EcoW).

Reason: To control environmental impacts while taking account of local ground conditions.

Design of hydrogen generating building sub-station and ancillary development

10. No development shall commence until full details of the external appearance and surface materials of the hydrogen generating building and the location, layout, external appearance and surface materials of all control and/or substation buildings, welfare facilities, compounds and parking areas, as well as any fencing, walls, paths and any other ancillary elements of the development, have been submitted to, and approved in writing by, the Planning Authority. Thereafter, development shall progress in accordance with these approved details. For the avoidance of doubt, details relating to the control and substation buildings shall include additional architectural design, carried out by a suitably qualified and experienced designer, to ensure that they are sensitively scaled, sited and designed.

Reason: To ensure that all ancillary elements of the development are acceptable in terms of visual, landscape, noise and environmental impact considerations.

11. Site preparation, vegetation removal and occupation will be limited to the minimum necessary for construction works to be undertaken. Where field boundaries are to be protected and temporary fencing is be used to safeguard them from the works, details of those measures shall be submitted to, and approved in writing by, the Planning Authority and implemented for the duration of the development.

Reason: To ensure that all ancillary elements of the development are acceptable in terms of visual, landscape and environmental impact considerations.

Borrow Pit

12. Prior to the commencement of development, a scheme detailing the method of extraction; phasing; depth of working; environmental controls (noise, dust and

water); temporary access road; restoration and aftercare with respect to the extraction of materials from the borrow pit indicated on Figure C3572 (1) 101A shall be submitted to, and approved in writing by, the Planning Authority. The scheme should demonstrate how the borrow pit will be restored as near to pre-construction ground profiles as possible.

Reason: To retain control over this temporary form of development and ensure that the site is appropriately restored in the interests of the protection of the environment.

13. The extraction of material from the borrow pit and its restoration shall be limited to a single and continuous period of three years from the lawful commencement of development. The material extracted shall only be used in the construction works hereby approved.

Reason: To retain control over this temporary form of development and ensure that the site is appropriately restored in the interests of the protection of the environment.

Post Construction Restoration

14. Prior to the commencement of development, a scheme detailing the restoration of areas disturbed as a result of the construction process shall be submitted to, and approved in writing by, the Planning Authority. The scheme will include (but not limited to):

- Lay down areas.
- Area of temporary construction compound.
- Areas around turbines.
- Track edges and trenching.
- Soil placement.
- Seed mix for reinstatement of vegetation.
- Fencing.
- Aftercare.

Thereafter the approved scheme will be implemented in full accordance with the approved timescales to the satisfaction of the Planning Authority.

Reason: To maintain proper planning control.

Drainage Strategy

15. No development shall commence until a drainage strategy has been submitted to, and approved in writing by, the Planning Authority in consultation with Scottish Environmental Protection Agency (SEPA). The drainage strategy will set out details in respect of permanent and temporary drainage measures, including a sustainable drainage system design concept, including runoff and sediment control measures; any flood risk management measures; details of watercourse engineering works and foul drainage arrangements. It should define which existing drainage ditches are to be removed; details of the bottomless culvert to replace culvert 337983, 1023119, location of clean water cut-off ditches associated with the borrow pit, access track

and hardstanding for both turbines. Thereafter the agreed drainage strategy shall be fully implemented.

Reason: To ensure the provision of an acceptable drainage system in the interest of the amenity of the area.

Ecology

16. Prior to the commencement of development, a habitat and species management plan shall be submitted to, and approved in writing by, the Planning Authority in consultation with Scottish Natural Heritage (SNH/NatureScot), SEPA and the Royal Society for the Protection of Birds (RSPB) as necessary. The habitat and species management plan shall set out proposed habitat and species management of the development site during the periods of construction, operation, decommissioning, restoration and aftercare of the site, and shall provide for the improvement, maintenance, monitoring and reporting of high focus habitats.

The approved habitat and species management plan shall include provision for regular monitoring and review to be undertaken to consider whether amendments are needed to better meet the habitat and species plan objectives. In particular, the approved habitat and species management plan will be updated to reflect ground condition surveys undertaken following construction and prior to the date of final commissioning and submitted to, and approved in writing by, the Planning Authority in consultation with SNH/NatureScot and SEPA.

Unless otherwise agreed in advance in writing with the Planning Authority, the approved habitat and species management plan shall be implemented in full.

Reason: In the interests of good land management and the protection of habitats and species.

17. Prior to the commencement of development, a management scheme for the improvement and monitoring of moorland habitat for breeding waders and foraging raptors within the blue lined area shown on Figure C3572 (1) 103 shall be submitted to, and approved in writing by, the Planning Authority. The approved management scheme shall be implemented in full.

Reason: To safeguard ecological interests and to reflect commitments made within the planning application submission.

18. Prior to the commencement of development, a monitoring programme to monitor the effects of the proposed development post restoration and operation upon waders and short eared owl, with reporting to be submitted annually, shall be submitted to, and approved in writing by, the Planning Authority in consultation with SNH/NatureScot.

Reason: To safeguard ecological interests and to reflect commitments made within the planning application submission.

19. Prior to the commencement of development, an otter survey shall be undertaken by an appropriately qualified professional and shall detail mitigation and monitoring

measures necessary to safeguard otter and its habitat from the permitted development. The details of the survey and associated reporting shall be submitted to, and approved in writing by, the Planning Authority before development begins and thereafter implemented for the duration of the development.

Reason: To safeguard ecological interests and to reflect commitments made within the planning application submission.

Ecological Clerk of Works

20. No development shall commence unless the Planning Authority has approved, in writing, the terms of appointment by the operator of an independent and suitably qualified Ecological Clerk of Works (ECoW) in consultation with SNH/NatureScot and SEPA as necessary. The terms of appointment shall:

(a) Impose a duty to monitor compliance with the ecological and hydrological requirements set out in the Environmental Impact Assessment Report and any other information lodged in support of the application, the Construction and Operation Environmental Management Plan and the Habitat and Species Management Plan.

(b) Undertake or oversee a series of repeat ecological surveys within 12 months prior to construction and/or decommissioning, including surveys of principal habitat types.

(c) Require the ECoW to report to the operator's nominated construction project manager any incidences of non-compliance with the ECoW's works at the earliest practical opportunity.

(d) Require the ECoW to submit monthly reports to the Planning Authority summarising works undertaken on site.

(e) Require the ECoW to report to the Planning Authority any incidences of non-compliance with the ECoW's works at the earliest practical opportunity.

The ECoW shall be appointed on the approved terms throughout the period from commencement of development, to completion of post construction restoration works.

Reason: To secure effective monitoring of and compliance with the environmental mitigation and management measures associated with the development.

21. No later than 18 months prior to decommissioning of the development or the expiry of this consent (whichever is the earlier), details of the terms of appointment by the operator of an independent ECoW throughout the decommissioning, restoration and aftercare phases of the development shall be submitted to, and approved in writing by, the Planning Authority, in consultation with SNH/Naturescot and SEPA.

An ECoW shall also be appointed under the terms of this condition throughout the decommissioning and restoration phases of the development.

Reason: To secure effective monitoring of and compliance with the environmental mitigation and management measures associated with the development.

Protection of Breeding Birds

22. No development shall commence until a Breeding Bird Protection Plan (BBPP) shall be submitted to, and approved in writing by, the Planning Authority.

No works to or removal of vegetation suitable for common breeding birds shall take place between 1 March and 31 August inclusive, unless a competent ecologist has undertaken a detailed check of vegetation for active birds' nests immediately before (within 24 hours) the works commence and provided written confirmation that no birds will be harmed and/or that there are appropriate measures in place to protect nesting bird interest on site. Any such written confirmation should be submitted to the Planning Authority within three days of such works commencing.

Prior to the commencement of construction works for any bridge abutments, the ECoW should carry out a survey for breeding Common Sandpiper. The construction of bridge abutments shall only take place if no breeding Common Sandpiper are found to be present or if works are outwith breeding bird season. The ECoW will also carry out a pre-construction breeding bird survey prior to commencement of works to locate any active nests used by short-eared owls, hen harriers, Common Sandpiper and other bird species. Any active nests will be cordoned off to a suitable distance (agreed in consultation with SNH/NatureScot) and construction/decommissioning operations delayed within the cordon until the young have fledged and the nest becomes vacant, to be confirmed by the ECoW. The ECoW will carry out a watching brief during works and will oversee implementation of the BBPP.

All development activities associated with Turbine 7, as shown on C3572 (1) 101 Rev A, including the widening and extension of the access track, proposed modifications to the bridge and installation of the foundation and hard standing of this turbine and the erection of the turbine itself shall only take place outwith the breeding season for short-eared owls and wading birds.

The construction timetable outlined on page 4 of the Ornithology and Ecology Supplementary information Report, by Firth Ecology (November 2020), which outlines the timetable required to avoid undue disturbance to breeding waders around T7 and to any owls with a territory at Cott of Dale, will be adhered to during the construction phase.

Reason: To protect nesting birds in vegetation in accordance with the Wildlife and Natural Environment (Scotland) Act 2011 (as amended).

Soil

23. Insofar as it is practicable to do so, to limit double handling, soil materials when stripped shall be handled and placed in their final resting position, without compaction.

Reason: To safeguard the restoration material resource from damage through overhandling and compaction.

24. No soils shall be stripped, moved or placed unless in a dry and friable condition. During soil stripping or placement, machinery shall be routed so as to avoid compaction of such soils.

Reason: To safeguard the soils resource for restoration purposes.

25. All topsoil and subsoil shall be permanently retained on the site stored in bunds and seeded until used in site restoration.

Reason: To safeguard the soil resource for restoration purposes.

26. No plant or vehicles shall cross any area of unstripped topsoil or subsoil except where such trafficking is essential and unavoidable for purposes of undertaking permitted operations. No part of the site shall be excavated or traversed or used for a road or for storage of subsoil or overburden or waste or mineral deposits, until all available topsoil and subsoil has been stripped from that part. The exception is that topsoils may be stored on like topsoils and subsoils may be stored on like subsoils.

Reason: To safeguard the soils resource for restoration purposes.

27. Once formed, all mounds in which topsoil and subsoil are to be stored for more than six months shall be seeded in accordance with a specification agreed in advance, in writing, with the Planning Authority. Mounds shall be managed throughout the period of storage to maintain satisfactory vegetation cover, carry out weed control and avoid erosion and waterlogging.

Reason: To safeguard the soils resource.

Construction and Operational Environmental Management Plan

28. No development shall commence until a Construction and Operational Environmental Management Plan (COEMP) outlining site specific details of all on-site construction works, post-construction reinstatement, drainage and mitigation, operational environmental monitoring, together with details of their timetabling, has been submitted to, and approved in writing by, the Planning Authority, in consultation with SNH/NatureScot and SEPA.

The COEMP shall include (but shall not be limited to):

(a) A site waste management plan (dealing all aspects of waste produced during the construction period other than peat), including details of contingency planning in the event of accidental release of materials which could cause harm to the environment.

(b) Details of the formation of the construction compound, welfare facilities, any areas of hardstanding, turning areas, internal access tracks, car parking, material stockpiles, oil storage, lighting columns, and any construction compound boundary fencing.

(c) A construction dust management plan.

(d) A construction noise management plan.

(e) Details of measures to be taken to prevent loose or deleterious material being deposited on the local road network including wheel cleaning and lorry sheeting facilities, and measures to clean the site entrances and the adjacent local road network.

(f) A pollution prevention and control method statement, including arrangements for the storage and management of oil and fuel on the site.

(g) A soil storage and management plan.

(h) Details of the methods to be adopted to reduce the effects of noise occurring during the construction period to the lowest practicable level and in accordance with BS5228.

(i) A drainage management strategy, demonstrating how all surface and waste water arising during and after development will be managed and prevented from polluting any watercourses or sources. The strategy should outline details of de-watering.

(j) Sustainable Drainage System (SuDS) design concept including run off and sediment control measures and flood risk management.

(k) Details of any water course engineering works including any stream crossings.

(l) A peat management plan, to include details of all peat stripping, excavation, storage and reuse of material in accordance with best practice advice published by SNH/NatureScot and SEPA.

(m) Sewage disposal and treatment.

(n) Temporary site illumination.

(o) Details of any temporary diversions of access routes and associated signage.

(p) The construction of the access into the site and the creation and maintenance of associated visibility splays.

(q) Provision of wheel washing facilities.

(r) The method of construction of the crane pads.

(s)The method of construction of the turbine foundations.

(t) The method of working cable trenches.

(u) The method of construction and erection of the wind turbines and meteorological masts.

(v) Incident Response Plan for operational phase.

All construction work associated with the development must be carried out in accordance with the current BS 5228, 'Code of practice for noise and vibration control on construction and open sites'.

Reason: To ensure that all construction operations are carried out in a manner that minimises their impact on amenity and the environment, and that the mitigation measures proposed are fully implemented.

Construction Hours

29. Hours of construction work on site involving the use of machinery and powered tools, or any other operation that would be audible from any noise-sensitive receptor, and all HGV movements to and from the site, shall only take place between the hours of 07:00 and 19:00 Mondays to Fridays, 07:00 to 13:00 on Saturdays and not at all on Sundays or the Christmas or New Year Public Holidays, unless otherwise agreed, in writing, with the Planning Authority. Outwith these specified hours, development on the site shall be limited to maintenance, emergency works, dust suppression, and the testing of plant and equipment, unless otherwise approved in advance in writing by the Planning Authority.

Reason: In the interests of local amenity.

Traffic Management Plan

30. No development shall commence until a Construction Traffic Management Plan (CTMP) has been submitted to, and approved in writing by, the Planning Authority in consultation with Roads Services. The CTMP, which shall be implemented as approved, shall include the measures as follows:

- A description of all measures to be implemented by the developer to manage traffic during the construction phase (including routing strategies), with any additional or temporary signage and traffic control undertaken by a recognised suitably qualified traffic management consultant.
- The identification and delivery of all upgrades to the public road network to ensure that it is to a standard capable of accommodating construction-related traffic (including the formation or improvement of any junctions leading from the site to the public road) to the satisfaction of Roads Services, including:
    - A route assessment report for abnormal loads and construction traffic, including swept path analysis and details of the movement of any street furniture, any traffic management measures and any upgrades and mitigations measures as necessary.
    - An assessment of the capacity of existing bridges and other structures along the construction access routes to cater for all construction traffic, with upgrades and mitigation measures proposed and implemented as necessary.
    - A videoed trial run to confirm the ability of the local road network to cater for turbine delivery. Three weeks' notice of this trial run must be made to Roads Services who must be in attendance.

- Drainage and wheel washing measures to ensure water and debris are prevented from discharging from the site onto the public road.
- A risk assessment for the transportation of abnormal loads to site during daylight hours and hours of darkness.
- A contingency plan prepared by the abnormal load haulier. The plan shall be adopted only after consultation and agreement with the Police and Roads Services. It shall include measures to deal with any haulage incidents that may result in public roads becoming temporarily closed or restricted.
- A procedure for the regular monitoring of road conditions and the implementation of any remedial works required during the construction period.
- A detailed protocol for the delivery of abnormal loads/vehicles, prepared in consultation and agreement with interested parties. The protocol shall identify any requirement for convoy working and/or escorting of vehicles and include arrangements to provide advance notice of abnormal load movements in the local media. Temporary signage, in the form of demountable signs or similar approved, shall be established, when required, to alert road users and local residents of expected abnormal load movements. All such movements on public roads shall take place outwith peak times on the network, including school travel times, and shall avoid local community events.
- A detailed delivery programme for abnormal load movements, which shall be made available to Roads Services and community representatives.
- Details of any upgrading works required at the junction of the site access and the public road. Such works may include suitable drainage measures, improved geometry and construction, measures to protect the public road and the provision and maintenance of appropriate visibility splays.
- Details of appropriate traffic management which shall be established and maintained at the site access for the duration of the construction period. Full details shall be submitted for the prior approval of Roads Services.
- A concluded agreement in accordance with Section 96 of the Roads (Scotland) Act 1984 under which the developer is responsible for the repair of any damage to the local road network that can reasonably be attributed to construction related traffic. As part of this agreement, pre-start and post-construction road condition surveys must be carried out by the developer, to the satisfaction of Roads Services.
- Measures to ensure that construction traffic adheres to agreed routes.
- Appropriate reinstatement works shall be carried out, as required by Roads Services, at the end of the turbine delivery and erection period.

Reason: To maintain safety for road traffic and the traffic moving to and from the development, and to ensure that the transportation of abnormal loads will not have any detrimental effect on the road network.

Archaeology

31. Prior to the commencement of development, an archaeological Written Scheme of Investigation (WSI) shall be submitted to, and approved in writing by, the Planning Authority. The WSI shall provide for the following:

- Undertaking a Watching Brief during ground breaking at sensitive areas (highlighted by the walkover survey).
- An intrusive investigation of the T7 location and its associated hardstanding shown on Figure C3572 (1)A, with the aim of establishing the presence or absence, nature, extent, and significance of any archaeology likely to be adversely impacted by the plant.
- An exclusion zone extending 10 metres from the north edge of the Burn of Woodwick to be in place during all construction activities within the field in which T7 is to be sited.

In the case of church or human remains being present, a mitigation strategy should be submitted to, and approved in writing by, the Planning Authority, which may include avoidance or full excavation. Following written approval, the mitigation strategy shall be implemented.

The WSI should identify the need for fencing around the Neigarth feature as proposed in Chapter 5 of the EIAR (February 2020).

Any widening of the access road should avoid encroaching onto the footprint of the drainage ditch structures, referred to on page 14 of the Desk Based Assessment and Walkover Survey (November 2020). If this is not possible, they should be recorded by an archaeologist to level 1 building recording standard, in advance of construction.

Reason: To ensure the protection or recording of archaeological features on the site.

Archaeological Clerk of Works

32. No development shall commence until the Planning Authority has approved, in writing, the terms of appointment of an independent Archaeological Clerk of Works (AcoW). The scope of the AcoW's appointment shall include:

(a) Monitoring compliance with the archaeological mitigation works that have been approved in this consent.

(b) Advising the Company on adequate protection and recording of archaeological interests on the site.

(c) Checking for new records of archaeological interests for which additional mitigation may be required.

(d) Directing the micro-siting and placement of turbines and tracks.

(e) Monitoring the compliance with mitigation, reinstatement and restoration measures approved in this consent.

(f) Reporting any breaches of the mitigation, reinstatement and restoration measures approved in this consent to the Planning Authority in writing.

The AcoW shall be appointed on the approved terms throughout the period from Commencement of Development, throughout any period of construction activity and during any period of post construction restoration works.

Reason: To ensure the protection or recording of archaeological features on the site.

33. No later than 18 months prior to decommissioning of the development or the expiration of this consent (whichever is the earlier), details of the terms of appointment of an independent ACoW shall be submitted to, and approved in writing by, the Planning Authority. The ACoW shall be appointed on the approved terms throughout the decommissioning, restoration and aftercare phases of the Development.

Reason: To ensure the protection or recording of archaeological features on the site.

Noise: Hydrogen Production Facility

34. When measured in low wind conditions (less than 5m/s) and to exclude any noise generated by the wind turbines, the cumulative noise from the Hydrogen Production facility; associated fixed plant and machinery and the electricity sub-station when measured at a position 50 metres north east of the hydrogen production facility building; shall not exceed 55dB LAeq 1hour.

Reason: To protect residential amenity from any excess noise generated by plant and machinery not included in conditions applying to the wind turbines only.

Noise: Wind Turbines

35. The rating level of noise immissions from the combined effects any wind turbine or turbines lawfully developed with respect to planning permission 20/112/TPP cumulative with any wind turbine or turbines lawfully developed with respect to planning permission 08/138/PPF – Erect five wind turbines (max. height 67m) Savisgarth, Evie (including the application of any tonal penalty), shall not exceed the values for the relevant integer wind speed set out in, or derived from, the tables set out below at any dwelling which is lawfully existing or has planning permission at the date of this permission.

Table 1 – Between 07:00 and 23:00 – Noise limits expressed in dB L_{A90},10-minute as a function of the standardised wind speed (m/s) at 10 metre height as determined within the site averaged over 10 minute periods.

Location	Standardised wind speed at 10m height in m/s within the site averaged over 10 minute periods.								
	4	5	6	7	8	9	10	11	12
Lower Henly	35.0	35.7	37.1	38.5	39.9	39.3	39.9	39.9	39.9
Pulkitto	35.0	35.0	35.0	35.4	36.7	38.4	39.8	39.8	39.8
Garson	35.9	36.9	37.4	38.0	39.0	39.0	39.0	39.0	39.0
The Bothy	35.0	35.0	35.0	35.0	35.0	35.0	36.0	38.8	38.8
Kilrennan	35.0	35.0	35.0	35.0	35.0	35.9	38.6	38.6	38.6
Graemshall	35.0	35.0	35.0	35.0	35.0	35.0	37.5	37.5	37.5

Table 2 – Between 23:00 and 07:00 – Noise limits expressed in dB L_{A90},10-minute as a function of the standardised wind speed (m/s) at 10 metre height as determined within the site averaged over 10 minute periods.

Location	Standardised wind speed at 10m height in m/s within the site averaged over 10 minute periods.								
	4	5	6	7	8	9	10	11	12
Lower Henly	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0
Pulkitto	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0
Garson	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0
The Bothy	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0
Kilrennan	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0
Graemshall	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0

In the event that the developer provides evidence to the satisfaction of the Planning Authority under condition j) above that the Occupier(s) of any address subject to the above noise limits has an ongoing direct financial involvement in the development approved under this planning application any figure which is less than 45.0 in tables 1 and 2 above shall be replaced with 45.0.

Table 3: Coordinate locations of the properties listed in Tables 1 and 2.

Property	Easting	Northing
Lower Henly	337958	1023865
Pulkitto	338402	1023632
Garson	339338	1023465
The Bothy	339403	1022762
Kilrennan	339331	1022254
Graemshall	338630	1022120

Note to Table 3: The geographical coordinate references are provided for the purpose of identifying the general location of dwellings to which a given set of noise limits applies.

Reason: In the interests of residential amenity.

36. The wind farm operator shall, for turbines which are under his control, continuously log power production, wind speed and wind direction, all in accordance with Guidance Note 1(d) set out in the informative to this decision notice. This data shall be retained for a period of not less than 24 months. The wind farm operator shall provide this information in the format set out in Guidance Note 1(e) to the

Planning Authority on its request, within 14 days of receipt in writing of such a request.

Reason. In the interests of residential amenity.

37. No electricity shall be exported until the wind farm operator has submitted to the Planning Authority for written approval a schedule of proposed independent acoustics consultants who may undertake noise compliance measurements in accordance with condition 36. Amendments to the list of approved consultants shall be made only with the prior written approval of the Planning Authority.

Reason. In the interests of residential amenity.

38. Within 21 days from receipt of a written request from the Planning Authority following a complaint to it from an occupant of a dwelling alleging noise disturbance at that dwelling, the wind farm operator shall, at its expense, employ an acoustics consultant approved by the Planning Authority to assess the level of noise immissions from the wind farm at the complainant's property in accordance with the procedures described in the Guidance Notes included within the Informative section of this decision notice. The written request from the Planning Authority shall set out the date, time and location that the complaint relates to and any identified atmospheric conditions, including wind direction, and include a statement as to whether, in the opinion of the Planning Authority, the noise giving rise to the complaint contains or is likely to contain a tonal component.

Reason. In the interests of residential amenity.

39. The assessment of the rating level of noise immissions set out in condition 38 above shall be undertaken in accordance with an assessment protocol that shall previously have been submitted to, and approved in writing by, the Planning Authority. The protocol shall include the proposed measurement location identified in accordance with the Guidance Notes included within the Informative section of this decision notice. Measurements for compliance checking purposes shall be undertaken, whether noise giving rise to the complaint contains or is likely to contain a tonal component, and also the range of meteorological and operational conditions (which shall include the range of wind speeds, wind directions, power generation and times of day) to determine the assessment of rating level of noise immissions. The proposed range of conditions shall be those which prevailed during times when the complainant alleges there was disturbance due to noise, having regard to the written request of the Planning Authority detailed in condition 38 and such others as the independent consultant considers likely to result in a breach of the noise limits.

Reason. In the interests of residential amenity.

40. Where a dwelling to which a complaint is related is not listed in the tables set out in condition 35, the wind farm operator shall submit to the Planning Authority, for written approval, proposed noise limits selected from those listed in the Tables to be adopted at the complainant's dwelling for compliance checking purposes. The proposed noise limits are to be those limits selected from the Tables specified for a listed location which the independent consultant considers as being likely to

experience the most similar background noise environment to that experienced at the complainant's dwelling. The rating level of noise immissions resulting from the combined effects of the wind turbines when determined in accordance with the Guidance Notes set out in the Informative section of this decision notice shall not exceed the noise limits approved in writing by the Planning Authority for the complainant's dwelling.

Reason. In the interests of residential amenity.

41. The wind farm operator shall provide to the Planning Authority the independent consultant's assessment of the rating level of noise immissions undertaken (referenced in planning conditions 35 to 40 and in accordance with the Guidance Notes set out within the Informative section of this decision notice) within two months of the date of the written request of the Planning Authority for compliance measurements (to be made under planning condition 40), unless the time limit is extended in writing by the Planning Authority. The assessment shall include all data collected for the purposes of undertaking the compliance measurements, such data to be provided in the format set out in 1(e) of the Guidance Notes.

Reason. In the interests of residential amenity.

42. Instrumentation used to undertake all noise measurements shall be calibrated in accordance with Guidance Note 1(a) (set out the Informative section of this decision notice) and certificates of calibration shall be submitted to the Planning Authority with the independent consultant's assessment of the rating level of noise immissions.

Reason. In the interests of residential amenity.

43. Where an assessment of the rating level of noise immissions from the wind farm is required pursuant to Guidance Note 4(c), (set out within the Informative section of this decision notice), the wind farm operator shall submit a copy of the further assessment to the Planning Authority within 21 days of submission of the independent consultant's assessment pursuant to condition 39 above unless the time limit has been extended in writing by the Planning Authority.

Reason. In the interests of residential amenity.

44. Following the Planning Authority's receipt of the independent consultant's noise assessment, including all noise measurements and any audio recordings pursuant to planning condition 35, where the Planning Authority is satisfied of an established breach of the noise limits (as set out in tables 1 and 2 of condition 35), upon notification by the Planning Authority in writing to the wind farm operator of the said breach, the wind farm operator shall, within 21 days, propose a scheme for the approval of the Planning Authority. The scheme shall be designed to mitigate the breach and to prevent its future recurrence. This scheme shall specify the timescales for implementation. The scheme shall be implemented as reasonably approved by the Planning Authority and according to the timescales within it. The scheme as implemented shall be retained thereafter unless otherwise agreed, in writing by, the Planning Authority.

Reason. In the interests of residential amenity.

45. If, on the basis of the independent consultant's noise assessment submitted pursuant to planning condition 35, the Planning Authority is satisfied that any established breach of the noise limits set out in tables 1 and 2 of condition 35 (having regard to the Guidance Notes set out within the Informative section of this decision notice) is as a result of any turbine or turbines lawfully developed under application 08/138/PPF being in breach of planning conditions applied to it, and that the turbines approved under this application are not subject to a tonal penalty as described in Guidance Notes 3 and 4, then no further action will be required by the developer of the turbines approved under this application in regards to these noise conditions as they relate to noise from the operation of the approved wind turbines.

Reason. In the interests of residential amenity.

46. In the event that the operator claims that one or more noise sensitive receptors are subject to a direct financial involvement in the development approved under this application, and therefore the noise sensitive receptor should be subject to the higher noise limits for such financially involved noise sensitive receptors as described in ETSU-R-97 (The Assessment and Rating of Noise from Wind Farms), the developer shall provide evidence of such financial involvement for the approval of the Planning Authority and thereafter shall provide evidence of the ongoing nature of the financial involvement within 21 days of a written request from the Planning Authority.

Reason. In the interests of residential amenity.

Shadow Flicker

47. No development shall commence unless and until a Shadow Flicker Protocol has been submitted to, and approved in writing by, the Planning Authority. This Protocol should include details of light level sensors. The Shadow Flicker Protocol shall set out mitigation and management for addressing any complaint received from a residential receptor within the study area defined in Section 7 of the Environmental Impact Assessment Report. Operation of the turbines shall take place in accordance with the approved Shadow Flicker Protocol and any mitigation measures that have been agreed through the protocol shall be implemented.

Reason In the interest of local residential amenity.

48. Prior to the commencement of development, a television reception mitigation plan shall be submitted to, and approved in writing by, the Planning Authority. The television mitigation plan shall provide for a baseline television reception survey to be carried out prior to the installation of any turbine forming part of the development, the results of which shall be submitted to the Planning Authority. The approved television reception mitigation plan shall thereafter be implemented in full for the duration of the development.

Reason: In the interest of local residential amenity.

Aviation Safety

49. No development shall commence until the Planning Authority, Ministry of Defence, Defence Infrastructure Organisation Safeguarding (DIOS), Defence Geographic Centre (DGC) and Civil Aviation Authority (CAA) have been provided with the following information, and evidence has been provided to the Planning Authority that this has been done:

- The date of the expected commencement of each stage of construction.
- The height above ground level of the tallest structure forming part of the development.
- Confirmation that each turbine will be fitted with warning infra-red lights at hub height, to MOD accredited aviation safety lighting standard in accordance with the Civil Aviation Authority, Air Navigation Order 2016.
- The maximum extension height of any construction equipment.
- The position of the turbines and masts in latitude and longitude.

Reason: In the interests of aviation safety.

Redundant turbines

50. The wind farm operator shall, at all times after the First Export Date, record information regarding the monthly supply of electricity from the site and electricity generated by each individual turbine within the development and retain the information for a period of at least 24 months. The information shall be made available to the Planning Authority within one month of any request by them. In the event that any wind turbine installed and commissioned fails to supply electricity on a commercial basis for a continuous period of 12 months, then unless otherwise agreed in writing, the wind turbine, along with any ancillary equipment, fixtures and fittings not required in connection with retained turbines, shall, within three months of the end of the said continuous 12 month period, be dismantled and removed from the site and the surrounding land fully reinstated in accordance with this condition. For the avoidance of doubt, in making a direction under this condition, the Planning Authority shall have due regard to the circumstances surrounding the failure to generate and shall only do so following discussion with the wind farm operator and such other parties as they consider appropriate.

All decommissioning and reinstatement work required by this condition shall be carried out in accordance with the approved decommissioning, restoration and aftercare strategy, or, should the decommissioning, restoration and aftercare strategy not have been approved at that stage, other decommissioning and reinstatement measures approved in writing by the Planning Authority.

Such a scheme shall include the removal of above ground elements of the development and the management and timing plan to address any traffic impact issues during the decommissioning period.

Reason: To ensure that any redundant wind turbine is removed from site, in the interests of safety, amenity and environmental protection.

Site Decommissioning, Restoration and Aftercare

51. The development shall cease to generate electricity and shall be decommissioned by no later than the date 25 years from the date 12 months from commencement of works, or First Export Date. The total period for restoration of the site in accordance with this condition shall not exceed three years from the date of final decommissioning without prior written approval of the Planning Authority.

No development shall commence unless a decommissioning, restoration and aftercare strategy has been submitted to, and approved in writing by, the Planning Authority in consultation with SNH/NatureScot and SEPA. This strategy will be reviewed every five years. The strategy shall outline measures for the decommissioning of the development, restoration and aftercare of the site and will include, without limitation, proposals for the removal of the development, treatment of ground surfaces, management and timing of the works, and environmental management provisions.

No later than three years prior to decommissioning of the development or the expiration of this consent (whichever is the earlier) a detailed decommissioning, restoration and aftercare plan, based upon the principles of the approved decommissioning, restoration and aftercare strategy, shall be submitted to, and approved in writing by, the Planning Authority, in consultation with SNH/NatureScot and SEPA. The detailed decommissioning, restoration and aftercare plan will provide updated and detailed proposals for the removal of the development, treatment of ground surfaces, management and timing of the works and environment management provisions, which shall include:

- A site waste management plan (dealing with all aspects of waste produced during the decommissioning, restoration and aftercare phases).
- Details of the formation of the construction compound, welfare facilities, any areas of hardstanding, turning areas, internal access tracks, car parking, material stockpiles, oil storage, lighting columns, and any construction compound boundary fencing.
- A dust management plan.
- A construction noise management plan.
- Details of measures to be taken to prevent loose or deleterious material being deposited on the local road network including wheel cleaning and lorry sheeting facilities, and measures to clean the site entrances and the adjacent local road network.
- A pollution prevention and control method statement, including arrangements for the storage and management of oil and fuel on the site.
- Details of measures for soil storage and management.
- A surface water and groundwater management and treatment plan, including details of the separation of clean and dirty water drains, and location of settlement lagoons for silt laden water.
- Details of measures for sewage disposal and treatment.
- Temporary site illumination.

- The construction of any temporary access into the site and the creation and maintenance of associated visibility splays.
- Details of watercourse crossings.
- A species protection plan based on surveys for protected species (including birds) carried out no longer than 18 months prior to submission of the plan.
- Traffic management plan.
- Community liaison plan.
- Site environment management appointment.

The development shall be decommissioned, the site restored and aftercare undertaken in accordance with the approved plan, unless otherwise agreed, in writing, in advance, with the Planning Authority, in consultation with SNH/NatureScot and SEPA.

Reason: To ensure the decommissioning and removal of the development in an appropriate and environmentally acceptable manner and the restoration and aftercare of the site, in the interests of safety, amenity and environmental protection.

Hydrology and Hydrogeology

53. Prior to the commencement of development, further ground investigations will be undertaken to include an assessment of the ground permeability and water potential and to clarify existing depth of soil/peat horizons. The surveys shall be submitted to, and approved in writing by, the Planning Authority.

Reason: In the interests of safeguarding the water environment and for the avoidance of doubt.

Safety

54. Prior to the commencement of operation, an operational safety plan shall be submitted to, and approved in writing by, the Planning Authority. This plan shall be implemented for the lifetime of the development.

Reason: To ensure that the development does not result in an unacceptable level of risk to public health and safety, in accordance with Policy 1(vi) of the Orkney Local Development Plan 2017.

Savisgarth

55. Prior to the first operation of either of the wind turbines hereby approved, all residential occupation of the property known as ‘Savisgarth’ shall cease, either by the property being unoccupied or an alternative use subject to express consent. The property shall remain free of residential use throughout the lifetime of the operation of the development.

Reason: To ensure that the development does not result in unacceptable residential amenity impacts, at a property certified as under the control of the applicant, and on the basis the intention has been stated to change the use of the property.

Informatives

Guidance Notes for Noise Conditions

These notes are to be read with and form part of the noise conditions. They further explain the condition and specify the methods to be employed in the assessment of complaints about noise immissions from the wind farm. The rating level at each integer wind speed is the arithmetic sum of the wind farm noise level as determined from the best-fit curve described in Guidance Note 2 of these Guidance Notes and any tonal penalty applied in accordance with Guidance Note 3. Reference to ETSUR-97 refers to the publication entitled “The

Assessment and Rating of Noise from Wind Farms” (1997) published by the Energy Technology Support unit (ETSU) for the Department of Trade and Industry (DTI).

Guidance Note 1

(a) Values of the LA90,10-minute noise statistic should be measured at the complainant’s property, using a sound level meter of EN 60651/BS EN 60804 Type 1, or BS EN 61672 Class 1 quality (or the equivalent UK adopted standard in force at the time of the measurements) set to measure using the fast time weighted response as specified in BS EN 60651/BS EN 60804 or BS EN 61672-1 (or the equivalent UK adopted standard in force at the time of the measurements). This should be calibrated in accordance with the procedure specified in BS 4142: 1997 (or the equivalent UK adopted standard in force at the time of the measurements). Measurements shall be undertaken in such a manner to enable a tonal penalty to be applied in accordance with Guidance Note 3.

(b) The microphone should be mounted at 1.2 to 1.5 metres above ground level, fitted with a two-layer windshield or suitable equivalent approved in writing by the Planning Authority, and placed outside the complainant’s dwelling. Measurements should be made in “free field” conditions. To achieve this, the microphone should be placed at least 3.5 metres away from the building facade or any reflecting surface except the ground at the approved measurement location. In the event that the consent of the complainant for access to his or her property to undertake compliance measurements is withheld, the wind farm operator shall submit for the written approval of the Planning Authority details of the proposed alternative representative measurement location prior to the commencement of measurements and the measurements shall be undertaken at the approved alternative representative measurement location.

(c) The LA90,10-minute measurements should be synchronised with measurements of the 10-minute arithmetic mean wind and operational data logged in accordance with Guidance Note 1(d), including the power generation data from the turbine control systems of the wind farm.

(d) To enable compliance with the conditions to be evaluated, the wind farm operator shall continuously log arithmetic mean wind speed and wind direction at hub height for each turbine and arithmetic mean power generated by each turbine, all in successive 10-minute periods, unless otherwise agreed in writing with the Planning

Authority. The mean wind speed data for the operating turbines shall be 'standardised' to a reference height of 10 metres as described in ETSU-R-97 at page 120 using a reference roughness length of 0.05 metres. It is this standardised 10 metre height wind speed data, averaged across all operating wind turbines, which is correlated with the noise measurements determined as valid in accordance with Guidance Note 2, such correlation to be undertaken in the manner described in Guidance Note 2. All 10-minute periods shall commence on the hour and in 10-minute increments thereafter.

(e) Data provided to the Planning Authority in accordance with the noise condition shall be provided in comma separated values in electronic format.

Guidance Note 2

(a) The noise measurements shall be made so as to provide not less than 20 valid data points as defined in Guidance Note 2.

(b) Valid data points are those measured in the conditions specified in the agreed written protocol under paragraph (d) of the noise condition but excluding any periods of rainfall measured in the vicinity of the sound level meter. Rainfall shall be assessed by use of a rain gauge that shall log the occurrence of rainfall in each 10 minute period concurrent with the measurements periods set out in Guidance Note 1. In specifying such conditions the Planning Authority shall have regard to those conditions which prevailed during times when the complainant alleges there was disturbance due to noise or which are considered likely to result in a breach of the limits.

(c) For those data points considered valid in accordance with Guidance Note 2(b), values of the LA90,10-minute noise measurements and corresponding values of the 10- minute wind speed, as derived from the standardised ten metre height wind speed averaged across all operating wind turbines using the procedure specified in Guidance Note 1(d), shall be plotted on an XY chart with noise level on the Y-axis and the standardised mean wind speed on the X-axis. A least squares, "best fit" curve of an order deemed appropriate by the independent consultant (but which may not be higher than a fourth order) should be fitted to the data points and define the wind farm noise level at each integer speed.

Guidance Note 3

(a) Where, in accordance with the approved assessment protocol under paragraph (d) of the noise condition, noise immissions at the location or locations where compliance measurements are being undertaken contain or are likely to contain a tonal component, a tonal penalty is to be calculated and applied using the following rating procedure.

(b) For each 10-minute interval for which LA90,10-minute data have been determined as valid in accordance with Guidance Note 2 a tonal assessment shall be performed on noise immissions during 2 minutes of each 10 minute period. The 2-minute periods should be spaced at 10-minute intervals provided that uninterrupted uncorrupted data are available ("the standard procedure"). Where

uncorrupted data are not available, the first available uninterrupted clean 2-minute period out of the affected overall 10-minute period shall be selected. Any such deviations from the standard procedure, as described in Section 2.1 on pages 104-109 of ETSU-R-97, shall be reported.

(c) For each of the 2-minute samples the tone level above or below audibility shall be calculated by comparison with the audibility criterion given in Section 2.1 on pages 104 -109 of ETSU-R-97.

(d) The tone level above audibility shall be plotted against wind speed for each of the 2-minute samples. Samples for which the tones were below the audibility criterion or no tone was identified, a value of zero audibility shall be substituted.

(e) A least squares “best fit” linear regression line shall then be performed to establish the average tone level above audibility for each integer wind speed derived from the value of the “best fit” line at each integer wind speed. If there is no apparent trend with wind speed then a simple arithmetic mean shall be used. This process shall be repeated for each integer wind speed for which there is an assessment of overall levels in Guidance Note 2.

(f) The tonal penalty is derived from the margin above audibility of the tone according to the figure 17 on page 104 of ETSU-R-97 (The Assessment and Rating of noise from Wind Farms)

Guidance Note 4

(a) If a tonal penalty is to be applied in accordance with Guidance Note 3 the rating level of the turbine noise at each wind speed is the arithmetic sum of the measured noise level as determined from the best fit curve described in Note 2 and the penalty for tonal noise as derived in accordance with Guidance Note 3 at each integer wind speed within the range specified by the Planning Authority in its written protocol under paragraph (d) of the noise condition.

(b) If no tonal penalty is to be applied then the rating level of the turbine noise at each wind speed is equal to the measured noise level as determined from the best fit curve described in Guidance Note 2.

(c) In the event that the rating level is above the limit(s) set out in the Tables attached to the noise conditions or the noise limits for a complainant’s dwelling approved in accordance with paragraph (e) of the noise condition, the independent consultant shall undertake a further assessment of the rating level to correct for background noise so that the rating level relates to wind turbine noise immission only.

(d) The wind farm operator shall ensure that all the wind turbines in the development are turned off for such period as the independent consultant requires to undertake the further assessment. The further assessment shall be undertaken in accordance with the following steps:

(e). Repeating the steps in Guidance Note 2, with the wind farm switched off, and determining the background noise (L3) at each integer wind speed within the range requested by the Planning Authority in its written request under paragraph (c) and the approved protocol under paragraph (d) of the noise condition.

(f) The wind farm noise (L1) at this speed shall then be calculated as follows where L2 is the measured level with turbines running but without the addition of any tonal penalty:

L1 = 10log[10 L2/10 – 10 L3/10]

(g) The rating level shall be re-calculated by adding the tonal penalty (if any is applied in accordance with Note (3) to the derived wind farm noise L1 at that integer wind speed.

(h) If the rating level after adjustment for background noise contribution and adjustment for tonal penalty (if required in accordance with guidance note (3) above) at any integer wind speed lies at or below the values set out in the Tables attached to the conditions or at or below the noise limits approved by the Planning Authority for a complainant's dwelling in accordance with paragraph (e) of the noise condition then no further action is necessary. If the rating level at any integer wind speed exceeds the values set out in the Tables attached to the conditions or the noise limits approved by the Planning Authority for a complainant's dwelling in accordance with paragraph (e) of the noise condition then the development fails to comply with the conditions.

CAA and MoD Notification

Prior to commencement of any works on the hereby approved development, the developer shall notify the Civil Aviation Authority (CAA) and Ministry of Defence (MoD) of the proposed development and works, at the following address:

Off Route Airspace 5, Directorate of Airspace Policy, Civil Aviation Authority, CAA House, 45-59 Kingsway, London WC2B 6TE (Email: airspace@caa/co.uk).

Ministry of Defence, Safeguarding – Wind Energy, Kingston Road, Sutton Coldfield, West Midlands B75 7RL

Water Environment

Please note also that authorisation is required under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) to carry out engineering works in or in the vicinity of inland surface waters (other than groundwater) or wetlands.