17 Summary of Residual Effects

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17 Summary of Residual Effects

17.1 Introduction

17.1.1 Tables 17.1 and 17.2 provide a reference to any significant residual environmental effects identified in the technical sections of this Environmental Impact Assessment (EIA) Report, as well as a cross reference to the relevant mitigation measures identified.

17.1.2 Table 17.3 provides a summary of the significant residual effects and cumulative effects identified in the Landscape and Visual Assessment (LVIA) in Chapter 6 of the EIA Report.

17.1.3 Table 17.4 provides a summary of the cumulative effects of the Proposed Development in combination with other proposed, consented and operational developments within the local area.

Table 17.1 – Summary of Residual Effects – Construction and Decommissioning

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Ecology					
Construction					
Loch of Isbister SAC. Loss of habitat and disturbance to Qualifying species: otter	Negligible and not significant at an international scale	N/A	Implementation of Species protection plan.	Negligible and not significant at an international scale	N/A
Loch of Isbister SAC. Mortality of qualifying species: otter	Minor and not significant at an international scale	Adverse	Implementation of Species protection plan.	Negligible and not significant at an international scale	Adverse
Loss/Drying effect on: West Mainland Moorlands SSSI and associated habitat blanket bog	Negligible and not significant at a national scale	N/A	Adoption of good practice and CEMP. ECoW advising on micro-siting requirements to ensure impacts on blanket bog are reduced further where possible.	Negligible and not significant at a national scale	N/A
Loss/Drying effect on: Loch of Swannay LNCS wet heath.	Moderate and significant at a	Adverse	Adoption of good practice and CEMP. ECoW advising on micro-siting requirements to ensure impacts on habitats are reduced further where possible.	Minor and not significant at a council area scale	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
	council area scale				
Loss/Drying effect on: Loch of Swannay LNCS lowland fen.	Minor and significant at a council area scale	Adverse	Adoption of good practice and CEMP. ECoW advising on micro-siting requirements to ensure impacts on habitats are reduced further where possible.	Minor and not significant at a council area scale	Adverse
Loss/Drying effect on: Loch of Swannay LNCS burns and canalised burns.	Negligible and not significant at a council area scale	N/A	None required. However, good practice and CEMP will be in place.	Negligible and not significant at a council area scale	N/A
Mortality to: Loch of Swannay LNCS brown trout	Negligible and not significant at a council area scale	N/A	Adoption of good practice and CEMP	Negligible and not significant at a council area scale	N/A
Loss/Drying effect on: Blanket bog	Moderate and significant at a council area scale	Adverse	Implementation of CEMP and demarcation of sensitive areas during construction.	Negligible and not significant at a council area scale	N/A
Wet heath/acid grassland mosaic	Moderate and significant at a local area scale	Adverse	Implementation of CEMP and demarcation of sensitive areas during construction.	Negligible and not significant at a local area scale	N/A

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Ornithology					
Construction					
Orkney Mainland Moors SPA Qualifying Species – Hen harrier: disturbance and displacement	Negligible and not significant	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.	Negligible (not significant)	Adverse
Orkney Mainland Moors SPA Qualifying Species – Red-throated diver: disturbance and displacement	Negligible and not significant	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.	Negligible (not significant)	Adverse
Orkney Mainland Moors SPA Qualifying Species – Short-eared owl: disturbance and displacement	Negligible and not significant	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.	Negligible (not significant)	Adverse
Great skua disturbance and displacement.	Negligible and not significant	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.	Negligible (not significant)	Adverse
Curlew disturbance and displacement.	Low and not significant	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.	Low (not significant)	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Lapwing disturbance and displacement.	Low and not significant	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.	Low (not significant)	Adverse
Loch of Swannay LCNS – habitat loss, disturbance and displacement of qualifying species.	Low and not significant	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.	Low (not significant)	Adverse
Loch of Hundland LCNS - disturbance and displacement of qualifying species.	Negligible and not significant	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.	Negligible (not significant)	Adverse
Decommissioning					
Scoped out of the assessment.					
Cultural Heritage					
Construction					
Direct impacts on known non-designated regionally or nationally important archaeological remains present on the site	Major (worst case scenario if substantial damage were to occur without	Adverse	The Proposed Development has been designed so as to avoid direct impacts upon the two Scheduled Monuments at Hundland Hill Enclosure and the Nisthouse Burial Mound which lie within the site boundary and	None	Neutral

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
	fencing being in place)		will both be enclosed with fencing prior to the onset of construction. The possibility of further previously unrecorded buried archaeological associated with these sites being present elsewhere on the site will be addressed through the mitigation measures that are outlined below.		
Direct impacts on known non-designated remains of negligible importance that are present on the site.	Negligible/ Neutral to Minor	Adverse	Direct impacts of negligible/ neutral to minor levels of effect have been predicted for two of the non-designated assets (Assets 164 and 167) located within the site boundary both of which are of probable post-medieval or modern date. Negligible/ neutral to minor levels of effect are not considered significant although mitigation works in the form of a watching brief are proposed. In addition to the watching brief all known assets within 50m of the development boundary will be fenced prior to the onset of construction.	None	Neutral
Direct impacts on previously unrecorded non-designated regionally or nationally important archaeological remains that could be present on the site	Major	Adverse	A watching brief would also be maintained on a proportion of all other ground breaking works to assess the potential for hitherto unrecorded buried archaeological remains to survive within the Proposed Development Area. The aim of the watching brief would be to identify any archaeological remains threatened by the Proposed Development, to	Negligible (not significant)	Neutral

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
			assess their significance and to mitigate any impact upon them either through avoidance or, if preservation in situ is not warranted, through preservation by record. If significant archaeological remains are identified during the watching brief there is the potential that further works, such as excavation and post-excavation analyses, could be required. Details of mitigation would be agreed with OIC in consultation with the Orkney County Archaeologist through a Written Scheme of Investigation (WSI).		
Decommissioning					
In the event of decommissioning, or replacement of turbines, it is anticipated that the levels of effect would be similar but of a lesser level than those during construction. Decommissioning would be undertaken in line with best practice processes and methods at that time and will be managed through an agreed Decommissioning Environmental Management Plan.					
Noise					
Construction					
Noise from construction activities	Minor	Adverse	Implementation of appropriate noise controls regarding hours of work, timing of site deliveries, and use of best practice to minimise unnecessary noise	Minor (not significant)	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Noise from construction traffic	Minor	Adverse	Implementation of appropriate noise controls regarding hours of work, timing of site deliveries, and use of best practice to minimise unnecessary noise	Minor (not significant)	Adverse
Decommissioning					
Noise from decommissioning activities	Minor	Adverse	Implementation of appropriate noise controls regarding hours of work, timing of site deliveries, and use of best practice to minimise unnecessary noise	Minor (not significant)	Adverse
Traffic and Transport					
Construction					
Hundland Road Users	Minor	Adverse	CTMP Proposals and improved signage	Minor (not significant)	Adverse
Nisthouse Road Users	Minor	Adverse	CTMP Proposals and improved signage	Minor (not significant)	Adverse
A986 Road Users	Minor	Adverse	CTMP Proposals and improved signage	Minor (not significant)	Adverse
A965 Road Users	Minor	Adverse	CTMP Proposals and improved signage	Minor (not significant)	Adverse
Finstown Residents	Minor	Adverse	CTMP Proposals and improved signage	Minor (not significant)	Adverse
Dounby Residents	Minor	Adverse	CTMP Proposals and improved signage	Minor (not significant)	Adverse
Decommissioning					
In the event of decommissioning, it is anticipated that the levels of effect would be similar but of a lesser level than those during construction. Decommissioning would be undertaken in line with best practice processes and methods at that time and will be managed through an agreed Decommissioning Environmental Management Plan.					

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Geology, Hydrology, Peat and Hydrogeology					
Construction					
Pollution/ sedimentation of watercourses (construction)	Moderate	Adverse	Appropriate drainage and watercourse crossing design. Implementation of CEMP to prevent silt-laden runoff entering watercourses. Design working platforms (if applicable) to drain away from watercourses. Maintenance of pollution control system, especially during wet weather, suspension of sensitive construction operations when extremely wet conditions are forecast.	Negligible (not significant)	Adverse
Chemical contaminated runoff to watercourses (construction)	Moderate	Adverse	Implementation of CEMP to ensure appropriate storage and management of oils and chemicals, spill response and contingency measures.	Negligible (not significant)	Adverse
Soil compaction (construction)	Minor-Moderate	Adverse	Implementation of CEMP to delineate working areas and ensure appropriate earthworks methods. Tracks to be constructed by stripping topsoil and subsoil to a substrate of firm till or rock. Stripped soils to be stored in temporary	Negligible (not significant)	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
			windrows, to be used in forming soft verges to roads.		
Impact on the integrity of banking (construction)	Minor	Adverse	Detailed design of watercourse crossings in line with relevant guidance and best practice, to be agreed with SEPA and regulated under the CAR licensing regime. Implementation of CEMP to ensure appropriate earthworks and construction methods.	Negligible- Minor (not significant)	Adverse
Impact on the groundwater quality and flow regime (construction)	Minor	Adverse	Pre-construction intrusive site investigations to aid in detailed foundation design and micro-siting. To include groundwater monitoring and permeability testing. Implementation of CEMP to minimise dewatering requirement through efficient excavation and concrete pouring.	Negligible-Minor (not significant)	Adverse
Erosion or drying out of peat during construction	Minor	Adverse	Pre-construction intrusive site investigations to fully characterise ground conditions and aid micro-siting. Avoidance of thick peat by iterative design process.	Negligible (not significant)	Adverse
Decommissioning					
Scoped out of the assessment.					

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Aviation and Radar					
N/A	N/A	N/A	N/A	N/A	N/A
Socioeconomic, Recreation and Tourism					
Construction					
Economic impact of £2.2 million GVA and 28 years of employment in Orkney	Minor	Beneficial	N/A	Minor	Beneficial
Economic impact of £7.2 million GVA and 106 years of employment in Scotland	Negligible	Beneficial	N/A	Negligible	Beneficial
Decommissioning					
Scoped out of the assessment.					
Telecommunications					
The Proposed Development will not have any significant effects during construction or decommissioning as a result of the Proposed Development.					
Shadow Flicker					
No shadow flicker effects during construction or decommissioning.					

Table 17.2 Summary of Residual Effects - Operational

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Ecology					
Loss/Drying effect on: Loch of Swannay LNCS: Habitats and species	Moderate and significant at a council area scale	Adverse	Implementation of Grazing Management Plan that will reduce grazing pressure within the site and therefore enhance biodiversity.	Negligible and not significant at a council area scale	N/A
Loss/Drying effect on: blanket bog habitats	Moderate and significant at a council area scale	Adverse	Implementation of Grazing Management Plan that will reduce grazing pressure within the site and therefore enhance biodiversity.	Negligible and not significant at a council area scale	N/A
Loss/Drying effect on: Wet heath/acid grassland mosaic	Moderate and significant at a local area scale	Adverse	Implementation of Grazing Management Plan that will reduce grazing pressure within the site and therefore enhance biodiversity.	Negligible and not significant at a local area scale	N/A
Ornithology					
Great skua – collision risk	Negligible and not significant	Adverse	None	Negligible and not significant	Adverse
Red-throated diver – collision risk	Low and not significant	Adverse	None	Low and not significant	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Ground nesting waders and other species displacement	Low and not significant	Adverse	Grazing management to remain in place throughout the lifetime of scheme. Inclusion in the Orkney Native Wildlife Project.	Low and not significant	Beneficial
Cultural Heritage					
Moderate significant setting effects on the settings of five Scheduled Monuments: Hundland Hill Enclosure; the Nisthouse burial mound; Park Holm Artificial Island and Causeway; Stoney Holm Crannog; and the Mittens Mounds	Moderate	Adverse	Although moderate effects are considered to be significant, this assessment has found that the predicted effects upon these assets would not affect the integrity of their settings and that consequently the predicted effects are compliant with Paragraph 145 of Scottish Planning Policy (SPP, 2014). Setting effects are hard to mitigate for wind farm proposals, as conventional mitigation strategies such as the creation of tree belts can only be employed in very limited specific circumstances when it comes to this type of development. Therefore, no mitigation is proposed beyond embedded mitigation in the form of design iteration which has sought to minimise effects as far as practical.	Moderate	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Noise					
Noise from non-turbine fixed plant	Minor	Adverse	Selection of plant which complies with specified maximum sound power level such that the derived noise limits are met.	Minor (not significant)	Adverse
Noise from wind turbines	Not significant	Adverse	Small turbines associated with Nisthouse, Newhouse and Hundland will be switched off at wind speeds of 9 ms^{-1} and above to preserve headroom for the Proposed Development to operate. Not significant evaluation considered based on the conservatism of the prediction method. Predicted noise level at NSR22 and NSR23 is marginally above proposed RNL however, such exceedances are not anticipated to occur in practice.	Not significant	Adverse
Traffic and Transport					
No operational effects are anticipated.					
Hydrology, Geology, Hydrogeology and Peat					
Impact on the drainage and groundwater flow (operation)	Minor	Adverse	Pre-construction intrusive site investigations to aid in detailed foundation design and micro-siting.	Negligible-Minor (not significant)	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
			Appropriate drainage and watercourse crossing design.		
Aviation and Radar					
The Proposed Development will not impact any aviation or radar.					
Socio-economic, Recreation and Tourism					
Economic impact of £0.2 million GVA and 2 jobs in Orkney	Negligible	Beneficial	N/A	Negligible	Beneficial
Economic impact of £0.6 million GVA and 7 jobs in Scotland	Negligible	Beneficial	N/A	Negligible	Beneficial
Non-domestic rates of £0.2 million	Negligible	Beneficial	N/A	Negligible	Beneficial
Effects on local tourism economy	Negligible	N/A	N/A	Negligible	N/A
Telecommunications					

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Interference with EE telecommunications link caused by Turbine 3	Major	Adverse	A 125m micrositing buffer would be placed on Turbine 3. This turbine would be microsited in a southerly direction to ensure an acceptable clearance distance.	Negligible	Neutral
Shadow Flicker					
Shadow flicker effects on residential properties 1, 2, 3, 7, 8 and 10.	Significant	Adverse	Implementation of a Wind Farm Shadow Flicker Protocol if complaints from residents are received and shadow flicker effects are found to be causing nuisance in certain atmospheric conditions and at certain times of the year, to be agreed with Local Council.	Negligible	N/A

Table 17.3 Summary of Landscape and Visual Residual and Cumulative Effects

Receptor	Sensitivity	Magnitude of Change	Significance of Effect
Residual Effects			
Landscape			
Agricultural Land	Medium-high	Medium-low	Moderate /minor (not significant)
296 Whaleback Islands LCT: 296A Eynhallow LCU	Medium-high	Medium No change	Moderate (significant) – western and central parts No effect – eastern parts
302 Inclined Coastal Pasture LCT: 302A Evie LCU	Medium-high	Medium-high Medium-low No change	Major / Moderate (significant) – localised part to north of Burgar Hill Wind Farm Moderate (not significant) – Aiker Ness No effect – remaining parts
302 Inclined Coastal Pasture LCT: 302B Rousay LCU	Medium	Medium Low No change	Moderate (significant) – western and south-western parts Minor (not significant) – southern parts No effect – remaining parts
304 Isolated Coastal Knolls LCT: 304B Vishall Hill LCU	Medium	Medium-low No change	Moderate-minor (not significant) No effect
305 Enclosed Bays LCT: 305A Birsay LCU	Medium	Medium	Moderate (significant)

Receptor	Sensitivity	Magnitude of Change	Significance of Effect
306 Coastal Hills and Heath LCT: 306A North Coast LCU	Medium-high	High	Major (significant)
306 Coastal Hills and Heath LCT: 306B Ravie Hill LCU	Medium-high	Medium No change	Moderate (significant) east-facing slopes of Marwick Head, north-east facing slopes of Ravie Hill and east facing slopes of the northern part of Marwick No effect – remaining parts
306 Coastal Hills and Heath LCT: 306C Vestra Fiold LCU	Medium	Medium No change	Moderate (significant) – north and north-east facing slopes No effect – remaining parts
306 Coastal Hills and Heath LCT: 306E Rousay LCU	Medium	Medium No change	Moderate (significant) – southern part No effect – northern part
307 Cliffs LCT: 307A Marwick Head LCU	Medium	Medium	Moderate (significant)
309 Peatland Basin LCT: 309A Hillside LCU	Medium	Medium-high	Moderate (significant)
309 Peatland Basin LCT: 309C Rousay LCT	Medium	Medium-low No change	Moderate / Minor (not significant) No effect
310 Loch Basin LCT: 310A Swannay LCU	Medium-high	High	Major (significant)

Receptor	Sensitivity	Magnitude of Change	Significance of Effect
310 Loch Basin LCT: 310B West Mainland LCU	Medium-high	High / Medium-high / Medium Medium-low No change	Major / Moderate (significant) – out to approximately 7 km Moderate (not significant) – remaining parts No effect – remaining parts
313 Rolling Hill Fringe LCT: 313A Hillside LCU	Medium	High Medium-low No change	Major / Moderate (significant) – out to approximately 4 km Moderate / Minor (not significant) – central part No effect -southern part
313 Rolling Hill Fringe LCT: 313B West Mainland LCU	Medium	High / Medium-high / Medium Medium-low / Low No change	Major / Moderate or Moderate (significant) -out to approximately 7 km Moderate / Minor (not significant) – remaining parts No effect – remaining parts
314 Moorland Hills LCT: 314A West Mainland LCU	Medium	Medium-high / Medium Medium-low / Low No change	Moderate (significant) – out to approximately 7 km Moderate / Minor or Minor (not significant) – remaining parts No effect – remaining parts
314 Moorland Hills LCT: 314D Rousay LCU	Medium	Medium Medium-low No change	Moderate (not significant) - south-west facing slopes of Ward Hill and Swarta Fiold Minor (not significant) – remaining parts

Receptor	Sensitivity	Magnitude of Change	Significance of Effect
			No effect – remaining parts
RCCA 10: Rousay North - LCCA 10a Scabra Head to Saviskaill Head	Medium	Medium No change	Moderate (significant) – southern part No effect – northern part
RCCA 11: Rousay South – LCCA 11a Eynhallow	Medium	Medium No change	Moderate (significant) – western parts No effect – eastern parts
RCCA 11: Rousay South – LCCA 11b Scabra to Tratland	Medium	Medium	Moderate (significant)
RCCA 11: Rousay South – LCCA 11b Tratland to Point of Avelshay	Medium	Medium – low No change	Moderate / Minor (not significant) No effect
RCCA 12: Egilsay and Wyre	Medium	Medium No change	Moderate (not significant) - Wyre No effect - Egilsay
RCCA 26: Marwick Head and Bay of Skaill – LCCA 26c Marwick Head	Medium	Medium	Moderate (significant)
RCCA 26: Marwick Head and Bay of Skaill – LCCA 26d Birsay Bay	Medium	Medium	Moderate (significant)

Receptor	Sensitivity	Magnitude of Change	Significance of Effect
RCCA 27: Brough Head to Costa Head - 27a Brough of Birsay	Medium	Medium / Medium-low No change	Moderate or Moderate / Minor (not significant) No effect
RCCA 27: Brough Head to Costa Head - 27b Point of Buckquoy to Crooie;	Medium	Medium / Medium-low No change	Moderate or Moderate / Minor (not significant) No effect
RCCA 27: Brough Head to Costa Head - LCCA 27c Costa Head.	Medium	Medium / Medium-low No change	Moderate or Moderate / Minor (not significant) No effect
Viewpoints			
VP1: A966, Loch of Swannay	High	High	Major (significant)
VP2: A966, Hundland Road junction	High	High	Major (significant)
VP3: Vinquin Hill, Costa	Medium-high	High	Major (significant)
VP4: Mid Hill	Medium-high	Medium	Moderate (significant)
VP5: Kirbuster, Loch of Hundland	Medium-high	High	Major (significant)
VP6: Brough of Birsay	Medium-high	Medium	Moderate (significant)
VP7: A967, Birsay Community Hall	Medium-high	Medium-high	Major / moderate (significant)

Receptor	Sensitivity	Magnitude of Change	Significance of Effect
VP8: A967, Twatt	Medium-high	Medium-high	Major / moderate (significant)
VP9: A967, near Rosemire	Medium-high	Medium	Moderate (significant)
VP10: A967, near Queena	Medium-high	Medium-low	Moderate (not significant)
VP11: Ring of Brodgar	High	Medium-low	Moderate (not significant)
VP12: Vishall Hill	Medium	Low	Minor (not significant)
VP13: B9057 north-west of Dounby	Medium-high	Medium-high	Major / moderate (significant)
VP14: Skara Brae	High	Low	Moderate / minor (not significant)
VP15: Vestra Fiold	Medium-high	Medium	Moderate (significant)
VP16: A966 west of Abune the Hill	Medium-high	Medium-high	Major / moderate (significant)
VP17: Westside, Rousay	Medium-high	Medium	Moderate (significant)
VP18: Hillock Road, Shapinsay	Medium-high	Low	Moderate / minor (not significant)
VP19: Ward Hill, Hoy	High	Low	Moderate / minor (not significant)
Residential Visual Amenity			
Property 1: Veltan	High	High	Major (significant)

Receptor	Sensitivity	Magnitude of Change	Significance of Effect
Property 2: Dale	High	High	Major (significant)
Property 3: Belmont	High	High	Major (significant)
Property 4: Lochside Cottage	High	Medium-high	Major (significant)
Property 5: Stoneymilders	High	High	Major (significant)
Property 6: Bokieha	High	High	Major (significant)
Property 7: Kelowna	High	High	Major (significant)
Property 8: Scruit	High	Medium-high	Major (significant)
Property 9: Scruit Garage	High	Medium-high	Major (significant)
Property 10: Surtidale	High	Medium-high	Major (significant)
Property 11: Viewforth	High	Medium-high	Major (significant)
Property 12: Finties	High	High	Major (significant)
Property 13: Slinghorn	High	High	Major (significant)
Property 14: Myres	High	High	Major (significant)
Property 15: Newhouse	High	Medium-high	Major (significant)
Property 16: Nisthouse	High	High	Major (significant)

Receptor	Sensitivity	Magnitude of Change	Significance of Effect
Property 17: Mucklehouse	High	High	Major (significant)
Property 18: Hundland	High	High	Major (significant)
Property 19: Hunchaquoy	High	Medium-high	Major (significant)
Property 20: Hundland Gallery	High	High	Major (significant)
Property 21: Hundland Schoolhouse	High	High	Major (significant)
Property 22: The Cottage	High	High	Major (significant)
Property 23: The Longhouse	High	High	Major (significant)
Property 24: Insa-Bi-Seatter	High	High	Major (significant)
Property 25: Hundasaeter	High	Medium-high	Major (significant)
Property 26: Vassquoy	High	Medium-high	Major (significant)
Property 27: Kelda	High	Medium-high	Major (significant)
Property 28: Skesquoy	High	Medium-high	Major (significant)
Property 29: Deasbreck	High	Medium-high	Major (significant)
Property 30: Caravan Deasbreck	High	Medium-high	Major (significant)

Receptor	Sensitivity	Magnitude of Change	Significance of Effect
Property 31: Hillside School	High	Medium-high	Major (significant)
Property 32: Wascra	High	Medium-high	Major (significant)
Property 33: Wenvoe	High	Medium-high	Major (significant)
Property 34: Neven	High	Medium-high	Major (significant)
Property 35: Ingsay	High	Medium-high	Major (significant)
Property 36: Lower Fea	High	Medium-high	Major (significant)
Property 37: Fea	High	Medium-high	Major (significant)
Property 38: Fea 2	High	Medium-high	Major (significant)
Property 39: Curcum	High	Medium-high	Major (significant)
Property 40: Swannay Cottage	High	Medium-high	Major (significant)
Property 41: Brekkan	High	Medium-high	Major (significant)
Property 42: The Bungalow, Swannay Farm	High	Medium-high	Major (significant)
Property 43: Swannay House	High	Medium-high	Major (significant)
Property 44: Mannobreck	High	Medium-high	Major (significant)
Property 45: Crismo Farm	High	Medium-high	Major (significant)

Receptor	Sensitivity	Magnitude of Change	Significance of Effect
Property 46: Crismo House	High	Medium-high	Major (significant)
Property 47: Crismo Cottage	High	Medium-high	Major (significant)
Property 48: Crismo Cottage Caravan	High	Medium-high	Major (significant)
Property 49: Upper Midhouse	High	High	Major (significant)
Property 50: Newton Cottage	High	High	Major (significant)
Property 51: Newton	High	High	Major (significant)
Property 52: Dale Costa	High	High	Major (significant)
Property 53: Birsay Hatcheries Caravan	High	High	Major (significant)
Property 54: Lochview	High	High	Major (significant)
Property 55: Rymmon	High	Medium-high	Major (significant)
Property 56: Whitemire	High	Medium-high	Major (significant)
Cumulative Effects			
Landscape			
296 Whaleback Islands LCT: 296A Eynhallow LCU	Medium	Medium	Moderate (not significant) – south-western and central parts

Receptor	Sensitivity	Magnitude of Change	Significance of Effect
		No change	No effect – north-eastern parts
302 Inclined Coastal Pasture LCT: 302A Evie LCU	Medium	Medium-high No change	Moderate (significant) – north of Burgar Hill Wind Farm No effect – remaining parts
302 Inclined Coastal Pasture LCT: 302A Evie LCU	Medium	Medium-high No change	Moderate (significant) – north of Burgar Hill Wind Farm No effect – remaining parts
306 Coastal Hills and Heath LCT: 306A North Coast LCU	Medium-high	Medium-high Medium-low No change	Major / Moderate (significant) – north-eastern part Moderate (not significant) – remaining parts No effect
310 Loch Basin LCT: 310A Swannay LCU	Medium-high	Medium-high	Major / Moderate (significant)
310 Loch Basin LCT: 310B West Mainland LCU	Medium-high	Medium Medium-low / Low No change	Moderate (significant) – northern part out to approximately 4km Moderate / Minor (not significant) – remaining parts No effect – remaining parts
313 Rolling Hill Fringe LCT: 313B West Mainland LCU	Medium	Medium-low / Low No change	Moderate / Minor or Minor (not significant) No effect
314 Moorland Hills LCT: 314A West Mainland LCU	Medium	Medium-high Medium-low / Low	Moderate (significant) - northern part out to approximately 4km Moderate / Minor (not significant) – remaining parts

Receptor	Sensitivity	Magnitude of Change	Significance of Effect
		No change	No effect – remaining parts
314 Moorland Hills LCT: 314D Rousay LCU	Medium	Medium Medium-low No change	Moderate (not significant) – Westness to Frostoft Moderate / Minor (not significant) – remaining parts No effect – remaining parts
RCCA 11: Rousay South – LCCA 11a Eynhallow and LCCA 11b Scabra to Tratland	Medium	Medium Medium-low No change	Moderate (not significant) Moderate / Minor (not significant) No effect
Viewpoints			
VP1: A966, Loch of Swannay	Medium-high	Medium	Moderate (significant)
VP2: A966, Hundland Road junction	Medium-high	Medium-low	Moderate (not significant)
VP3: Vinquin Hill, Costa	Medium-high	Medium-high	Major / moderate (significant)
VP4: Mid Hill	Medium-high	Medium-low	Moderate (not significant)
VP5: Kirbuster, Loch of Hundland	Medium-high	Medium-low	Moderate (not significant)
VP16: A966 west of Abune the Hill	Medium-high	Medium-low	Moderate (not significant)
VP17: Westside, Rousay	Medium-high	Medium-low	Moderate (not significant)

Table 17.4 – Summary of Cumulative Effects

Receptor	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	**Beneficial/ Adverse**
Ecology				
Loch of Swannay LNCS wet heath and lowland fen	Loss/drying of special features	Burger Hill, Hammers Hill, Holodykes and Costa Head	No impact, not significant at a council area scale	N/A
West Mainland Moorland SSSI	Loss/drying of special features	Burgar Hill, Hammers Hill, Holodykes and Costa Head	No impact, not significant at a national area scale	N/A
Ornithology				
Red-throated diver collision risk.	Collision mortality	A combined annual collision risk of 0.558 birds is predicted which is not considered to be significant	Negligible (not significant)	Adverse
Wader nest displacement	Disturbance, displacement.	Wader data is not available for a number of developments across Orkney. Some temporary displacement is likely during construction however with a HMP in place this will be offset and with grazing management schemes being put in place during operation of the schemes, waders including lapwing and curlew may benefit from improving habitats for	Negligible (not significant)	Adverse

		breeding, along with the stoat trapping scheme, and as such increased productivity.		
Cultural Heritage				
No additional cumulative effects are predicted.				
Noise				
All NSRs	Cumulative wind turbine noise – cumulative noise effects will be the same as operation in isolation effects	Small turbines associated with Nishouse, Newhouse, Hundland, Dale and wind farms at Costa Head and Burgar Hill	Not significant	Adverse
Traffic and Transport				
Sensitivity review included in the assessment for transport and access matters.				
Hydrology, Geology, Hydrogeology and Peat				
There are not considered to be any cumulative effects on hydrological, hydrogeological or geological receptors.				
Aviation and Radar				
It is considered that there will be no significant cumulative effects on aviation or radar as a result of the Proposed Development.				
Socioeconomics, Recreation and Tourism				
Orkney	Economic impact of interconnector	HVDC Interconnector	**Moderate**	Beneficial
Telecommunications				

There are not considered to be any cumulative effects on telecommunications.
Shadow Flicker
There is no potential for cumulative shadow flicker effects.