
20 Summary of Residual Effects

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20. Summary of Residual Effects

20.1. Introduction

- 20.1.1. **Tables 20.1** and **20.2** provide a quick reference guide to the 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.
- 20.1.2. The residual effects are highlighted in **bold** where an effect is considered to be significant.
- 20.1.3. **Table 20.3** 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 20.1 – Summary of Residual Effects – Construction and Decommissioning

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Chapter 7: Forestry						
No significant residual effects on woodland resource, subject to implementation of compensatory planting in accordance with the relevant statutory and policy framework.						
Chapter 8: Landscape and Visual						
Construction						
Effects on existing landscape features in development area.	Worst-case minor/moderate not significant.	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case minor/moderate not significant.	Adverse	No change
Effects on landscape character within Assessment Unit (AU) 22: Southern Uplands with Forest – Ken.	Worst-case major to moderate significant.	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case major to moderate significant.	Adverse	No change

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Effects on landscape character within AU 4: Narrow Valleys – Ken.	Worst-case moderate/minor not significant.	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case moderate/minor not significant.	Adverse	No change
Effects on landscape character within AU 9: Upper Dale – Upper Glenkens.	Worst-case moderate/minor not significant.	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case moderate/minor not significant.	Adverse	No change
Visual effects	Worst-case moderate significant from section of Southern Upland Way and local footpaths DS15, DS16, DS17 and DS21.	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case moderate significant from section of Southern Upland Way and local footpaths DS15, DS16,	Adverse	No change

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
				DS17 and DS21.		
Decommissioning						
Effects on landscape character within AU 22: Southern Uplands with Forest – Ken.	Worst-case moderate/minor not significant.	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case moderate/minor not significant	Adverse	No change
Effects on landscape character within AU 4: Narrow Valleys – Ken.	No effect	No effect	N/A	No effect	No effect	Change from moderate/minor effect in relation to Consented Development as no turbines located in AU 4 in Proposed Varied Development.
Effects on landscape character within AU 9: Upper Dale – Upper Glenkens.	No effect	No effect	N/A	No effect	No effect	No change

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Visual effects	Worst-case moderate significant from section of Southern Upland Way and local footpaths DS15, DS16 and DS17.	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case moderate significant from section of Southern Upland Way and local footpaths DS15, DS16 and DS17.	Adverse	No change
Chapter 9: Ecology						
Habitat displacement (bats).	Minor / Site level	Adverse	Implementation of Habitat Enhancement and Management Plan (HEMP) pre-work checks by an Ecological Clerk of Works (ECoW).	Not significant	Beneficial	None
Roost loss (bats).	Minor / Site level	Adverse	CEMP and pre-work checks by ECoW.	Not significant	Adverse	None
Disturbance (otter).	Minor / Site level	Adverse	CEMP and pre-work checks by ECoW.	Not significant	Adverse	None

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Collision related mortality and injury (otter).	Minor / Site level	Adverse	CEMP	Not significant	Adverse	None
Chapter 10: Ornithology						
Loss of habitat	Negligible	Adverse	None	Negligible	Beneficial	None
Disturbance	Negligible	Adverse	Implementation of Breeding Bird Protection Plan.	Negligible	Beneficial	None
Chapter 11: Cultural Heritage						
Direct physical impact upon known heritage assets during construction, including micrositeing.	Negligible	N/A	Review of any micrositeing proposals in relation to cultural heritage baseline. A programme of archaeological monitoring, fieldwork, recording, and reporting of HA1; scope and nature to be outlined in a WSI and agreed with Dumfries and Galloway Council (DGC) in advance of construction, a matter which	None	N/A	None

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
			the Applicant agrees can be conditioned.			
Potential accidental physical impacts during construction.	Minor	Adverse	Protection by fencing to avoid accidental physical impacts upon SM2238 Craigengillan, cairn and MDG27135 Craigengillan, burnt mound.	None	N/A	None
Direct (physical) impact upon unexpected archaeological remains within the site ('archaeological potential').	Minor	Adverse	A programme of archaeological monitoring, fieldwork, recording, and reporting; scope and nature to be outlined in a Written Scheme of Investigation and agreed with DGC in advance of construction, a matter which the Applicant agrees can be conditioned.	None	N/A	None
Chapter 12: Geology and Peat						
Disturbance of peat - peat resource.	Minor (not significant)	Adverse	Mitigation by design, best practice and standard embedded mitigation.	Minor (not significant)	Adverse	No change to significance overall.

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
			No specific additional mitigation required.			Reduction in peat disturbance (when including earthworks, clearance and bulking factor) compared to original proposal and consented revised development. Therefore, no additional mitigation is required beyond standard best practice.
Disturbance of peat - peat stability.	Minor (not significant)	Adverse	Mitigation by design, best practice and standard embedded mitigation. No specific additional mitigation required.	Minor (not significant)	Adverse	No change to significance overall. Therefore, no additional mitigation is required beyond standard best practice.
Geology – borrow pits.	Minor (not significant)	Adverse	Mitigation by design, best practice and standard embedded mitigation. No specific additional mitigation required.	Minor (not significant)	Adverse	No change to significance overall as borrow pits for the Proposed Varied Development are the same as the Consented Development.
Chapter 13: Hydrology and Hydrogeology						

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Alteration of flow, natural drainage patterns/ runoff volumes and rates, including flooding and geomorphology.	Minor	Adverse	None, assuming embedded best practice such as adherence to guidance, being outwith 50 m watercourse buffer and Construction Environmental Management Plan (CEMP).	Minor	Adverse	None
Potential pollution events affecting groundwater and surface water quality.	Minor	Adverse	None, assuming embedded best practice such as adherence to guidance and CEMP. No micro-siting or widening of existing track further into 50 m buffers around waterbodies.	Minor	Adverse	None
Chapter 14: Noise and Vibration						
Noise from construction activities at residential receptors.	Not significant	N/A	Implementation of CEMP and core construction hours.	Not significant	N/A	None

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Chapter 15: Traffic and Transport						
B729 Users / Residents	Major	Adverse	Implementation of Construction Traffic Management Plan, provision of construction traffic road signage, convoy escorts for AIL movements, provision of localised road improvement works.	Minor / Not Significant	Neutral	None
A713 Users / Residents	Major / Moderate	Adverse	Implementation of Construction Traffic Management Plan, provision of construction traffic road signage, convoy escorts for AIL movements, provision of localised road improvement works.	Minor / Not Significant	Neutral	None
B741 Users / Residents	Moderate	Adverse	Implementation of Construction Traffic Management Plan, provision of construction traffic road signage, convoy escorts for AIL movements, provision of	Minor / Not Significant	Neutral	None

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
			localised road improvement works.			
Residents in Carsphairn	Moderate / Major	Adverse	Implementation of Construction Traffic Management Plan, provision of construction traffic road signage, convoy escorts for AIL movements, provision of localised road improvement works.	Minor / Not Significant	Neutral	None
Residents in Dalmellington	Major / Moderate	Adverse	Implementation of Construction Traffic Management Plan, provision of construction traffic road signage, convoy escorts for AIL movements, provision of localised road improvement works.	Minor / Not Significant	Neutral	None
Residents in New Cumnock	Major / Moderate	Adverse	Implementation of Construction Traffic Management Plan, and provision of construction traffic road signage.	Minor / Not Significant	Neutral	None

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Chapter 16: Aviation						
No effects on aviation and radar interests during construction and decommissioning.						
Chapter 17: Shadow Flicker						
No shadow flicker effects during construction or decommissioning.						

Table 20.2 Summary of Residual Effects – Operation

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Chapter 7: Forestry						
No effects on forestry during operation.						
Chapter 8: Landscape and Visual						
Effects on landscape character of AU 22: Southern Uplands with Forest – Ken.	Worst-case major within 1 km, major/moderate 1 – 3.5 km, major/moderate 3.5 – 4 km to north-east, major/moderate, 3.5 - 5 km to east moderate significant, 4 – 5 km moderate significant.	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent at the design process.	Worst-case major within 1 km, major/moderate 1 – 3.5 km, major/moderate 3.5 – 4 km to north-east, major/moderate, 3.5 – 4 km to east moderate significant, 4 – 5 km moderate significant.	Adverse	Increase from major/moderate. within 1 km, increase from moderate and significant 1 – 3.5 km to east, increase from moderate and significant 1 – 4 km to north-east, moderate significant effects extended to 5 km.

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Effects on landscape character of AU 4: Narrow Valleys – Ken.	Worst-case major within 3 km, moderate to major 3 - 4 km, moderate significant 4 -5 km.	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent at the design process.	Worst-case major within 3 km, moderate to major 3 -4 km, moderate significant 4 - 5 km	Adverse	Increase from moderate and significant 3 – 4 km, extension of moderate significant effect by 0.5 km.
Effects on landscape character of AU9: Upper Dale – Glenkens.	Worst-case major within 3 km, moderate significant 3 -5 km.	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent at the design process.	Worst-case major within 3 km, moderate significant 3 - 5 km.	Adverse	Extension of moderate. significant effect by 0.5 km.
Effects on landscape character of AU 20: Foothills with Forest – Stroan.	Worst-case major to moderate within 3.5 km, moderate significant 3.5 - 4.5 km.	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent at the design process.	Worst-case major to moderate within 3.5 km, moderate significant 3.5 - 4.5 km.	Adverse	Extension of moderate to major and moderate significant effects by 0.5 km.
Effects on landscape character of AU 21: Southern Uplands – Carsphairn.	Worst-case major within 3 km, moderate to major 3 – 4 km,	Adverse	No additional mitigation – consideration of landscape and visual matters was	Worst-case major within 3 km, moderate to major to 3 –	Adverse	Increase from moderate significant effect 3 – 4 km, extent of moderate

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
	moderate significant 4 -5 km.		inherent at the design process.	4 km, moderate significant 3 - 5 km.		significant effect increased from 4.5 km.
Effects on representative viewpoints during daylight hours.	Worst-case major (Viewpoints 1, 2, 3, 4, 5, 7 and 15), moderate to major (Viewpoints 6, 10 and 12), moderate significant (Viewpoints 11, 13, 14, 16, 19, 20 and 22).	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent at the design process.	Worst-case major (Viewpoints 1, 2, 3, 4, 5, 7 and 15), moderate to major (Viewpoints 6, 10 and 12), moderate and significant (Viewpoints 11, 13, 14, 16, 19, 20 and 22).	Adverse	Viewpoint 4 increased from moderate to major level of effect, due to recent tree felling and increased height of turbines.
Effects on representative viewpoints during hours of darkness.	Worst-case moderate significant (Viewpoints 2 Stroanfreggan Craig, Viewpoint 12 Dundough Hill, Viewpoint 13	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000cd/200cd) when atmospheric visibility is greater than 5 km and	Worst-case moderate significant (six viewpoints as listed).	Adverse	N/A

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
	Beninner, Viewpoint 14 Cairnsmore of Carsphairn, Viewpoint 15 Craig of Knockgray, and Viewpoint 16 Alhang).		vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.			
Visual effects on residential properties within 2 km of the proposed turbines during daylight hours.	Worst-case major (Properties 13 – Game Keeper's Cottage and 15 - Bridgemark), major/moderate (Property 12 – Moorbrock), moderate significant (Properties 4 – Nether Loskie, 8 – Smittons, 9 – Stroanpatrick, 10 – Craigengillan and 14 – Strahanna	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent at the design process.	Worst-case major (Properties 13 – Game Keeper's Cottage and 15 - Bridgemark), major/moderate (Property 12 – Moorbrock), moderate significant (Properties 4 – Nether Loskie, 8 – Smittons, 9 – Stroanpatrick, 10 –	Adverse	Properties 4, 8, 9, and 12 increased from moderate not significant, Property 13 increased from moderate/minor not significant.

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
	Farm and River Ken Cottage).			Craigengillan and 14 – Strahanna Farm and River Ken Cottage).		
Visual effects on residential properties within 2 km of the proposed turbines during hours of darkness.	No significant effects	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000cd/200cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	No significant effects	Adverse	N/A
Visual effects on residential properties between 2 – 5 km during daylight hours.	Worst-case major (properties to north-east accessed from Lorg Road,	Adverse	No additional mitigation – consideration of landscape and visual matters was	Worst-case major (as listed), moderate to major from properties to	Adverse	No change from properties to the north-east, south-east or west.

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
	properties to south-east accessed from the B729 near Blackmark Hill and properties to west accessed from the B729 near Water of Deugh). Moderate to major from properties to south accessed from the B7000.		inherent at the design process.	south (accessed from the B7000).		The effect on Bridgemark (to the south the site, accessed from the B7000) was assessed in this part of the LVIA in relation to the Consented Development as major. The property now falls within 2 km, so the assessment of its effects is included separately in the RVAA as major.
Visual effects on residential properties between 2 – 5 km during hours of darkness.	Worst-case moderate significant from properties to west (accessed from the B729 near Water of Deugh), moderate not significant from	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000 cd / 200 cd) when atmospheric visibility is greater than 5 km and vertical directional intensity	Worst-case moderate significant from properties to west (accessed from the B729 near Water of Deugh), moderate not	Adverse	N/A

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
	properties to north-east accessed from Lorg Road, properties to south-east accessed from the B729 near Blackmark Hill, properties to south accessed from the B7000.		which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	significant from properties to north-east accessed from Lorg Road, properties to south-east accessed from the B729 near Blackmark Hill, properties to south accessed from the B7000.		
Visual effects on primary settlements between 5 -20 km during daylight hours.	Worst-case moderate not significant (Carsphairn).	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent at the design process.	Worst-case moderate not significant (Carsphairn).	Adverse	No change
Visual effects on primary settlements between 5 -20 km during hours of darkness.	Worst-case moderate/minor not significant (Carsphairn).	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000 cd / 200 cd) when	Worst-case moderate/minor not significant (Carsphairn).	Adverse	N/A

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
			atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.			
Visual effects on recreational and long-distance walking and cycling routes during daylight hours.	Worst-case major (Southern Upland Way within 5 km).	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent at the design process.	Worst-case major (Southern Upland Way within 5 km).	Adverse	No change
Visual effects on recreational and long-distance walking and cycling routes during hours of darkness.	Worst-case moderate significant (Southern Upland Way).	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000 cd / 200 cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of	Worst-case moderate significant (Southern Upland Way).	Adverse	N/A

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
			lighting at angles below the level of the visible aviation lights.			
Visual effects on core paths within 10 km during daylight hours.	Worst-case moderate to major (Core Paths 23, 188 and 199), moderate significant (Core Paths 16, 164 and 182).	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent at the design process.	Worst-case moderate to major (Core Paths 23, 188 and 199), moderate significant (Core Paths 164 and 182).	Adverse	No change to Core Paths 23 or 164. Core Path 199 increased from moderate significant. Core Path 182 not previously assessed separately, Core Paths 16 and 188 not previously assessed.
Visual effects on core paths within 10 km during hours of darkness.	Worst-case moderate significant (Core Paths 23 and 164).	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000 cd / 200 cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of	Worst-case moderate significant (Core Paths 23 and 164).	Adverse	N/A

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
			lighting at angles below the level of the visible aviation lights.			
Visual effects on other rights of way within 5 km during daylight hours.	Worst-case major (DS15, DS16 and DS17).	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent at the design process.	Worst-case major (DS15, DS16 and DS17).	Adverse	No change
Visual effects on other rights of way within 5 km during hours of darkness.	Worst-case moderate significant (DS15, DS16 and DS17).	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000 cd / 200 cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	Worst-case moderate significant (DS15, DS16 and DS17).	Adverse	N/A

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Visual effects on roads during daylight hours.	Worst-case major (B729, B7000 and Lorg Road), moderate significant (A713).	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent at the design process.	Worst-case major (B729, B7000 and Lorg Road), moderate significant (A713).	Adverse	No change
Visual effects on roads during hours of darkness.	Worst-case moderate significant (Lorg Road).	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000 cd / 200 cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	Worst-case moderate significant (Lorg Road).	Adverse	N/A
Direct effects on Galloway Hills	Worst-case major significant effects on AU 22:	Adverse	No additional mitigation – consideration of landscape and visual matters was	Worst-case major significant effects on AU	Adverse	No change

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Regional Scenic Area (RSA).	Southern Uplands with Forest – Ken area within site boundary on periphery of RSA.		inherent at the design process.	22: Southern Uplands with Forest – Ken area within site boundary on periphery of RSA.		
Indirect effects on Galloway Hills RSA.	Worst-case major within 3 km within AU 22: Southern Uplands with Forest - Ken, moderate significant 3 - 5km within AU 9: Upper Dale – Upper Glenkens area and AU 21: Southern Uplands – Carsphairn.	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent at the design process.	Worst-case major within 3 km within AU 22: Southern Uplands with Forest - Ken, moderate significant 3 - 5 km within AU 9: Upper Dale – Upper Glenkens area and AU 21: Southern Uplands – Carsphairn.	Adverse	Slight extension to the landscape effect in relation to the Consented Development by approximately 0.5 km.

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Chapter 9: Ecology						
Turbine collision and barotrauma (bats).	Minor / site level	Adverse	Mitigation through design; turbine height, separation and inclusion of keyholed areas, feathering and curtailment.	Not significant	Adverse	None
Chapter 10: Ornithology						
Disturbance	Negligible	Adverse	None	Negligible	Adverse	None
Collision risk	Negligible	Adverse	None	Negligible	Adverse	None
Chapter 11: Cultural Heritage						
Effect upon cultural significance through development within setting of designated heritage assets: ■ Scheduled Monument SM2238 Craigengillan Cairn	Negligible	N/A	The maintenance of established enhancement measures at SM2238 Craigengillen Cairn is committed to. No further mitigation is proposed beyond the applied mitigation embedded in the design of	Negligible	N/A	None

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
- Scheduled Monument SM1095 Stroanfreggan Craig, fort - Non-designated heritage asset of National importance MDG11404 Little Auchrae farmstead			the Proposed Varied Development.			
Chapter 12: Geology and Peat						
Disturbance of peat.	Minor (not significant)	Adverse	Best practice and standard embedded mitigation. No specific additional mitigation required.	Minor (not significant)	Adverse/Beneficial	None
Geology	Minor (not significant)	Adverse	Best practice and standard embedded mitigation. No specific additional mitigation required.	Minor (not significant)	Adverse	None
Chapter 13: Hydrology and Hydrogeology						

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Alteration of flow, natural drainage patterns/ runoff volumes and rates, including flooding and geomorphology.	Minor	Adverse	None, assuming embedded best practice such as adherence to guidance, being outwith 50 m watercourse buffer and CEMP.	Minor	Adverse	None
Potential pollution events affecting groundwater and surface water quality.	Minor	Adverse	None, assuming embedded best practice such as adherence to guidance, being outwith 50 m watercourse buffer and CEMP.	Minor	Adverse	None
Chapter 14: Noise and Vibration						
Noise from operational wind turbines at residential receptors.	Significant	N/A	Mode management would be required to meet the Site Specific Noise Limits for the candidate turbine. The planning conditions should contain appropriate noise limits which the final turbine chosen for installation would have to meet.	Not significant	N/A	None

Description of Effect	Significance of Potential Effect		Mitigation and/or Enhancement Measure	Significance of Residual Effect		Change to Consented Development Conclusion
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Noise from operational BESS and substation at residential receptors.	Not significant	N/A	None	Not significant	N/A	None
Chapter 15: Traffic and Transport						
No residual traffic and transport effects during operation are anticipated.						
Chapter 16: Aviation						
Effects on NATS Lowther Hill and Great Dun Fell radars.	Significant	Adverse	Mitigated through the use of technical capabilities built into the radar specifically to enable wind turbine effects to be overcome.	Negligible	Neutral	None
Chapter 17: Shadow Flicker						
Shadow flicker nuisance to Receptors B (Gamekeeper's Cottage), D (Craigengillan) and F (Furmiston).	Significant	Adverse	Wind Farm Shadow Flicker Protocol.	Not Significant	Adverse	None

Table 20.3 - Summary of Cumulative Effects

Receptor	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/Adverse
Chapter 7: Forestry				
No significant cumulative effects are anticipated.				
Chapter 8: Landscape and Visual				
Cumulative landscape character effects.	The Proposed Varied Development would fit in with the established pattern of wind energy development and would consolidate the existing effects on landscape character that have already been brought about by these other schemes and would not extend significant effects beyond the extent already introduced by the other schemes.	Developments within the cumulative study area.	No change	Adverse
Totality of cumulative landscape character effects.	The Proposed Varied Development would fit in with the established pattern of wind energy development and would	Developments within the cumulative study area.	No change	Adverse

Receptor	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/Adverse
	consolidate the existing effects on landscape character that have already been brought about by these other schemes and would not extend significant effects beyond the extent already introduced by the other schemes.			
Cumulative visual effects.	The Proposed Varied Development would give rise to significant cumulative visual effects from some residential properties within 5 km, but significant visual effects are predicted in both the solus assessment and in the absence of the Proposed Varied Development.	Developments within the cumulative study area.	No change	Adverse
Cumulative sequential visual effects.	The Proposed Varied Development would give rise to significant cumulative visual effects	Developments within the cumulative study area.	Worst-case moderate significant	Adverse

Receptor	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/Adverse
	for a limited section of the B729 at Guttery Glen in Scenario 1, from the B729 between Carsphairn and the B7000, the B7000 north of Mackilston Hill, and from Core Paths 23 and 199 in Scenario 2 where significant solus effects are already identified.			
Totality of cumulative visual effects.	The addition of the Proposed Varied Development to both Scenarios 1 and 2 would result in some major significant effects experienced at various points within the local area, but not such as to result in the overall cumulative visual effect of wind turbines being dominant or oppressive in views.	Developments within the cumulative study area.	No change	Adverse
Chapter 9: Ecology				
No significant cumulative effects are anticipated.				

Receptor	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/Adverse
Chapter 10: Ornithology				
All bird species	Loss of habitat	Operational projects; projects under construction; consented projects which are not yet under construction; projects for which planning applications have been submitted and for which sufficient information is therefore publicly available; and Lorg Wind Farm Grid Connection.	Negligible	Adverse
All bird species	Disturbance	Operational projects; projects under construction; consented projects which are not yet under construction; projects for which planning applications have been submitted and for which sufficient information is therefore publicly available; and Lorg Wind Farm Grid Connection.	Negligible	Adverse

Receptor	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/Adverse
All bird species	Collision risk	Operational projects; projects under construction; consented projects which are not yet under construction; projects for which planning applications have been submitted and for which sufficient information is therefore publicly available; and Lorg Wind Farm Grid Connection.	Negligible	Adverse
Chapter 11: Cultural Heritage				
No cumulative effects are anticipated.				
Chapter 12: Geology and Peat				
No cumulative effects are anticipated, assuming embedded best practice.				
Chapter 13: Hydrology and Hydrogeology				
No cumulative effects are anticipated, assuming embedded best practice.				
Chapter 14: Noise and Vibration				
Residential receptors between both the Proposed Varied	Cumulative Wind turbine Noise	Quantans Hill	Not significant	N/A

Receptor	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/Adverse
Development and Quantans Hill.				
Residential receptors between both the Proposed Varied Development and Windy Rig.	Cumulative Wind turbine Noise	Windy Rig	Not significant	N/A
Residential receptors	Cumulative wind turbine and BESS noise	Proposed Varied Development	Not significant	N/A
Chapter 15: Traffic and Transport				
Users of Roads	Severance Driver Delay Pedestrian Delay Non-motorised User Amenity Fear and Intimidation Road Safety Large Loads	Enoch Hill 2 Wind Farm Manquhill Wind Farm Glenshimmeroch Wind Farm Margree Wind Farm Windy Standard I Re-Powering	Minor / Not Significant	Neutral
Users / Residents of Locations	Severance Driver Delay Pedestrian Delay	Enoch Hill 2 Wind Farm Manquhill Wind Farm Glenshimmeroch Wind Farm	Minor / Not Significant	Neutral

Receptor	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/Adverse
	Non-motorised User Amenity Fear and Intimidation Road Safety Large Loads	Margree Wind Farm Windy Standard I Re-Powering		
Chapter 16: Aviation				
No cumulative effects on aviation and radar interests subject to mitigation measures agreed and put in place.				
Chapter 17: Shadow Flicker				
No cumulative effects are anticipated.				