

# 18 Summary of Residual Effects

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# 18 Summary of Residual Effects

## 18.1 Introduction

- 18.1.1 The Summary of Residual Effects provides a summary of effects, mitigation measures and the residual effects of the Proposed Development anticipated after mitigation measures have been applied.
- 18.1.2 Residual effects during construction/decommissioning and operation are summarised below in Table 18.1 and Table 18.2 respectively. These tables provide a quick reference to each of the significant residual environmental effects identified in the technical sections of the EIA Report (with the exception of the Landscape and Visual Assessment), as well as a cross reference to the relevant mitigation measures identified.
- 18.1.3 Table 18.3 provides a quick reference to each of the significant residual environmental effects identified to receptors in the Landscape and Visual Assessment of the EIA Report
- 18.1.4 Table 18.4 provides a summary of the cumulative effects of the Proposed Development in combination with other proposed, consented and operational developments in the area

**Table 18.1 - Summary of Residual Effects – Construction/Decommissioning Phase**

Description of Effect	Significance of Likely Effect		Additional Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
<b>6. Ornithology</b>					
Curlew disturbance and displacement.	Low	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.	Barely Perceptible	Adverse
Gull species disturbance and displacement.	Barely Perceptible	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.	Barely Perceptible	Adverse
Hen harrier disturbance and displacement.	Low	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.	Barely Perceptible	Adverse
Osprey disturbance and displacement.	Barely Perceptible	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.	Barely Perceptible	Adverse
Other species disturbance and displacement.	Low	Adverse	Timing of works or pre-construction check for nesting	Barely Perceptible	Adverse

Description of Effect	Significance of Likely Effect		Additional Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
			birds. Exclusion zones during breeding season.		
<b>7. Ecology</b>					
<b>Designated Sites</b>					
Skelmorlie Glen and Fardens Glen LNCS: upper glen designation: loss of area	Minor and not significant	Long-term adverse	Implementation of CEMP, including compensatory replacement planting	Not significant	Long-term adverse
Skelmorlie Glen and Fardens Glen LNCS: Meigle Burn designation: loss of area	Negligible and not significant	Long-term adverse	Implementation of CEMP, including compensatory replacement planting	Not significant	Long-term adverse
<b>Habitats</b>					
Loss of habitat: M25 Blanket mire	Negligible and not significant	Long-term adverse	Implementation of CEMP	Not significant	Long-term adverse
Running water: fish habitat	Negligible and not significant	Long-term adverse	Implementation of CEMP. Careful wash-down of site plant	Not significant	Long-term adverse
M10 mire	Negligible and not significant	Long-term adverse	Implementation of CEMP. Protection of sensitive areas	Not significant	Long-term adverse
<b>Species</b>					

Description of Effect	Significance of Likely Effect		Additional Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Badger	Negligible and not significant	Short-term adverse	Implementation of CEMP. Control of task lighting; avoidance of sett areas; soft-felling in proximity to setts	Not significant	Short-term adverse
Other habitats and species	Negligible and not significant	Short-term adverse	Application of a suitable works management plan	Not significant	Short-term adverse
<b>8. Noise</b>					
Noise and vibration from construction activities	Negligible - Moderate	Adverse	Completion and implementation of CEMP and DEMP	Minor	Adverse
<b>9. Cultural Heritage</b>					
Partial damage to Laxlie Hill and Blackhouse Manor possible Roman road (Site 160)	Minor	Adverse	Implementation of programme of archaeological works	Negligible	Adverse
Damage to hitherto unknown archaeological remains	Minor	Adverse	Implementation of programme of archaeological works	Negligible	Adverse
<b>10. Geology, Peat, Hydrology and Hydrogeology</b>					
Changes to groundwater flow	Minor	Adverse	No specific mitigation beyond standard mitigation.	Minor	Adverse

Description of Effect	Significance of Likely Effect		Additional Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Removal of, and impact on, peat	Minor	Adverse	Appropriate management and on-site re-use of peat (PMP).  Restriction of works to set construction areas and corridors.	Minor	Adverse
Effects on groundwater (changes to flow and localised pollution) at areas of GWDTE	Minor	Adverse	Where pre-construction, detailed site investigation work confirms groundwater dependence, then additional mitigation measures such as micro-siting out of GWDTE where possible, or inclusion of targeted additional groundwater protection and monitoring during construction, will be implemented.	Minor	Adverse
Pollution impact from sediment runoff/transport	Minor	Adverse	Form any working platforms to ensure runoff away from watercourse.  Restriction of works to set construction areas and corridors.	Minor	Adverse
Pollution impact from chemical contaminated runoff	Negligible	Adverse	No specific mitigation beyond standard mitigation.	Negligible	Adverse
Impact on the integrity of banking	Negligible	Adverse	No specific mitigation beyond standard mitigation.	Negligible	Adverse

Description of Effect	Significance of Likely Effect		Additional Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Compaction of soils	Minor	Adverse	Restriction of works to set construction areas and corridors.	Minor	Adverse
Direct discharge of untreated foul drainage	Negligible	Adverse	No specific mitigation beyond standard mitigation.	Negligible	Adverse
<b>11. Traffic and Transport</b>					
Users of Craigmarnoch Road and Routenburn Road.	Moderate	Adverse	Construction Traffic Management Plan, enhanced BoP Contract, separate road widening surfacing, self-imposed speed limit and reviews	Minor	Adverse
<b>12. Socio-economic, Recreation and Tourism</b>					
<b>Construction</b>					
Economic Impact of £2.3 million GVA and 33 job years in North Ayrshire	Negligible	Beneficial	Not applicable	Negligible	Beneficial
Economic Impact of £15.8 million GVA and 242 job years in Scotland	Negligible	Beneficial	Not applicable	Negligible	Beneficial
Effect on core paths and recreational access	Minor	Adverse	Access Policies outlined in <b>Error! Reference source not found.</b>	Negligible	Adverse



Description of Effect	Significance of Likely Effect		Additional Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
<b>Decommissioning</b>					
Economic Impact of £0.3 million GVA and 5 job years in North Ayrshire	Negligible	Beneficial	Not applicable	Negligible	Beneficial
Economic Impact of £0.8 million GVA and 11 job years in Scotland	Negligible	Beneficial	Not applicable	Negligible	Beneficial
<b>13. Aviation and Radar</b>					
No significant effects during construction/decommissioning were identified.					
<b>14. Shadow Flicker</b>					
No significant effects during construction/decommissioning were identified.					
<b>15. Telecommunications</b>					
No significant effects during construction/decommissioning were identified.					

**Table 18.2 Summary of Residual Effects - Operation**

Description of Effect	Significance of Likely Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
<b>6. Ornithology</b>					
Curlew (and snipe) displacement.	Low	Adverse	Grazing management plan.	Low / Barely Perceptible	Beneficial
Hen harrier displacement and collision mortality.	Barely Perceptible	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.  Management plan to improve foraging habitat, safeguard winter roosting and summer breeding locations.	Low / Barely Perceptible	Beneficial
Osprey displacement and collision mortality.	Barely perceptible	Adverse	Timing of works or pre-construction check for nesting birds. Exclusion zones during breeding season.	Barely Perceptible	Adverse
<b>7. Ecology</b>					
<b>Designated Sites</b>					
Skelmorlie Glen and Fardens Glen LNCS	No impact	N/A	N/A	Not Significant	N/A
<b>Habitats</b>					

Description of Effect	Significance of Likely Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
M25 blanket mire: changes due to localised pooling/drying due to cable routes	Negligible and not significant	Long-term adverse	No additional measures required	Not significant	Long-term adverse
M25 blanket mire: transition (drying)	Negligible and not significant	Long-term adverse	No additional measures required	Not significant	Long-term adverse
<b>Species</b>					
Badger	Negligible and not significant	Short-term adverse	Daylight working and speed limits during maintenance works	Not significant	Short-term adverse
Common and soprano pipistrelle bats: collision risk	Negligible and not significant	Long-term adverse	Design mitigation observing 82m standoff from rotors	Not significant	Long-term adverse
<b>8. Noise</b>					
Noise effects from operation of wind turbines	Moderate	Adverse	Turbine selection, implementation of noise control mitigation, as required	Minor	Adverse
<b>9. Cultural Heritage</b>					
Effect on setting of Outerwards, Roman fortlet (Site 10)	Moderate	Adverse	N/A	Moderate	Adverse
Effect on settings of Sites 18, 42, 137 and 194	Minor /Moderate	Adverse	N/A	Minor /Moderate	Adverse

Description of Effect	Significance of Likely Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Effect on settings of Sites 6, 7, 9, 14, 43, 44, 54, 59, 60, 61, 67, 74, 76, 107, 110, 118, 124, 125, 126, 134, and 135	Minor	Adverse	N/A	Minor	Adverse
Effect on settings of Sites 20, 38, 52, 53, 68, 69, 77, 79, 92, 93, 104, 157 and 175	Negligible	Adverse	N/A	Negligible	Adverse
<b>10. Geology, Peat, Hydrology and Hydrogeology</b>					
Surface water drainage (increased rate of surface water runoff)	Minor	Adverse	No specific mitigation beyond standard mitigation.	Minor	Adverse
Long-term changes to groundwater flow regime and dewatering of peat	Minor	Adverse	No specific mitigation beyond standard mitigation.	Minor	Adverse
Impacts on fluvial geomorphology	Negligible	Adverse	No specific mitigation beyond standard mitigation.	Negligible	Adverse
Impact on fluvial flood risk on-site and downstream	Negligible	Adverse	No specific mitigation beyond standard mitigation.	Negligible	Adverse
<b>11. Traffic and Transport</b>					
No significant effects during operation were identified.					

Description of Effect	Significance of Likely Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
<b>12. Socio-economic, Recreation and Tourism</b>					
Annual economic impact of up to £0.3 million GVA and five jobs in North Ayrshire	Negligible	Beneficial	Not applicable	Negligible	Beneficial
Annual economic impact of up to £0.6 million GVA and eight jobs in Scotland	Negligible	Beneficial	Not applicable	Negligible	Beneficial
Effect of annual community benefit of £210,000	Minor	Beneficial	Not applicable	Minor	Beneficial
Annual payment of an estimated £0.5 million in non-domestic rates	Negligible	Beneficial	Not applicable	Negligible	Beneficial
Effect on tourism assets	Negligible	N/A	Not applicable	Negligible	N/A
Effect on accommodation providers	Negligible	N/A	Not applicable	Negligible	N/A
Effect on core paths and recreational access	Negligible	N/A	Not applicable	Negligible	N/A
<b>13. Aviation and Radar</b>					
No significant effects during operation were identified.					

Description of Effect	Significance of Likely Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
<b>14. Shadow Flicker</b>					
Shadow flicker nuisance on residential receptor	Significant	Adverse	Implementation of a Wind Farm Shadow Flicker Protocol to be agreed with North Ayrshire Council	Not significant	N/A
<b>15. Telecommunications</b>					
No significant effects during operation were identified.					

**Table 18.3 - Summary of Effects for Landscape and Visual Impact Assessment Receptors**

<b>Receptor</b>	<b>Sensitivity</b>	<b>Construction - magnitude of change</b>	<b>Construction- significance of effect</b>	<b>Operation - magnitude of change</b>	<b>Operation - significance of effect</b>	<b>Cumulative magnitude of change / effect</b>
<b>Rough grass moorland</b>	Medium to low	Low	Not significant	N/A	N/A	N/A
<b>Trees</b>	Medium to high	Medium to low	Not significant	N/A	N/A	N/A
<b>Rugged Moorland Hills and Valleys LCT: Loch Thom LCU</b>	Medium to high	High / medium to high No change	Significant	High / medium to high No change	Significant	Medium to low Not significant
<b>Rugged Moorland Hills and Valleys LCT: Upland Core LCU</b>	Medium to high	High / medium to high Low / no change	Significant across north-west to 4 km Not significant – all remaining parts	High / medium to high Low / no change	Significant across north-west to 4 km Not significant – all remaining parts	Medium to low Not significant
<b>Rugged Moorland Hills LCT</b>	Medium to high / medium	Medium to high Medium / medium to low / low / no change	Significant across south-west to 4 km Not significant – all remaining parts	Medium to high Medium / medium to low / low / no change	Significant across south-west to 4 km Not significant – all remaining parts	Low Not significant

Receptor	Sensitivity	Construction - magnitude of change	Construction-significance of effect	Operation - magnitude of change	Operation - significance of effect	Cumulative magnitude of change / effect
<b>Intimate Pastoral Valley LCT: Brisbane Glen LCU</b>	Medium to high	Medium to high	Significant	Medium to high	Significant	No cumulative effect
<b>North Ayrshire Raised Beach Coast LCT</b>	Medium	High / medium to high Low / no change	Significant – Skelmorlie to Knock Castle  Not significant – remainder of LCU	High / medium to high Low / no change	Significant – Skelmorlie to Knock Castle  Not significant – remainder of LCU	Low Not significant
<b>Cumrae Coastal Fringe with Agriculture LCT</b>	Medium to high	Medium to low – north Low – south	Not significant	Medium to low – north Low – south	Not significant	Medium to low Not significant
<b>Rugged Island Core LCT</b>	Medium to high	Medium to low – north Low – south	Not significant	Medium to low – north Low – south	Not significant	Medium to low Not significant
<b>Bute Rolling Farmland with Estates LCT</b>	Medium	Medium – north and east Medium to low - west	Not significant	Medium – north and east Medium to low - west	Not significant	Medium to low Not significant



<b>Receptor</b>	<b>Sensitivity</b>	<b>Construction - magnitude of change</b>	<b>Construction- significance of effect</b>	<b>Operation - magnitude of change</b>	<b>Operation - significance of effect</b>	<b>Cumulative magnitude of change / effect</b>
<b>Bute Open Ridgeland LCT</b>	Medium	Medium to low	Not significant	Medium to low	Not significant	Medium to low Not significant
<b>Rolling Farmland with Estates LCT: Cowal LCU</b>	Medium	Medium – east Low or change - west	Not significant	Medium – east Low or change - west	Not significant	Medium to low Not significant
<b>Steep Ridgeland with Mountains LCT: Cowal LCU.</b>	Medium	Medium to low	Not significant	Medium to low	Not significant	Medium to low Not significant
<b>Skelmorlie to Largs CCA</b>	Medium	Medium to low	Not significant	Medium to low	Not significant	Low Not significant
<b>Great Cumbrae Island CCA</b>	Medium	Medium to low	Not significant	Medium to low	Not significant	Medium Not significant
<b>Kerrytonlia Point to Bogany Point CCA</b>	Medium	Medium to low	Not significant	Medium to low	Not significant	Medium to low Not significant
<b>Toward to Dunoon CCA</b>	Medium	Medium to low	Not significant	Medium to low	Not significant	Medium to low Not significant

<b>Receptor</b>	<b>Sensitivity</b>	<b>Construction - magnitude of change</b>	<b>Construction- significance of effect</b>	<b>Operation - magnitude of change</b>	<b>Operation - significance of effect</b>	<b>Cumulative magnitude of change / effect</b>
<b>North Ayrshire SLA</b>	Medium to high – Loch Thom LCU / Brisbane Glen LCU  Medium – Raised Beach Coast LCU	High / Medium to high - Loch Thom LCU / Brisbane Glen LCU / Skelmorlie to The Knock of Raised Coast Beach LCU  Medium to low / Low / No change – remainder of SLA	Significant - Loch Thom LCU / Brisbane Glen LCU / Skelmorlie to The Knock of Raised Coast Beach LCU  Not significant – remainder of SLA	High / Medium to high - Loch Thom LCU / Brisbane Glen LCU / Skelmorlie to The Knock of Raised Coast Beach LCU  Medium to low / Low / No change – remainder of SLA	Significant - Loch Thom LCU / Brisbane Glen LCU / Skelmorlie to The Knock of Raised Coast Beach LCU  Not significant – remainder of SLA	Medium to low / Low / No change  Not significant
<b>West Renfrew Hills LLA</b>	Medium to high	Medium to high – south  Medium to low / no change – remainder of LLA	Significant – south  Not significant – remainder of LLA	Medium to high – south  Medium to low / no change – remainder of LLA	Significant – south  Not significant – remainder of LLA	Medium to low  Not significant
<b>Great Cumbrae SLA</b>	Medium to high	Medium – north  Low / no change - south	Significant – north  Not significant – south	Medium – north  Low / no change - south	Significant – north  Not significant – south	Medium to low  Not significant
<b>Bute and South Cowal APQ</b>	Medium	Medium / Medium to low / Low / No change	Not significant	Medium / Medium to low / Low / No change	Not significant	Medium to low / low  Not significant

<b>Receptor</b>	<b>Sensitivity</b>	<b>Construction - magnitude of change</b>	<b>Construction- significance of effect</b>	<b>Operation - magnitude of change</b>	<b>Operation - significance of effect</b>	<b>Cumulative magnitude of change / effect</b>
<b>Mount Stuart GDL</b>	Medium to high	Medium to low / Low / No change	Not significant	Medium to low / Low / No change	Not significant	Low Not significant
<b>VP1: Skelmorlie Golf Course</b>	Medium to high	Medium to low	Not significant	Medium to low	Not significant	No cumulative effect
<b>VP 2: Brisbane Glen</b>	Medium to high	Medium to high	Significant	Medium to high	Significant	No cumulative effect
<b>VP 3: Skelmorlie Castle / Meigle Bay</b>	Medium to high	Medium	Significant	Medium	Significant	Low Not significant
<b>VP 4: Kelly Reservoir</b>	Medium to high	Medium to high	Significant	Medium to high	Significant	No cumulative effect
<b>VP 5: The Knock</b>	Medium to high	Medium to high	Significant	Medium to high	Significant	Medium to low Not significant
<b>VP 6: Wemyss Bay</b>	Medium	Low / Negligible	Not significant	Low / Negligible	Not significant	No cumulative effect

<b>Receptor</b>	<b>Sensitivity</b>	<b>Construction - magnitude of change</b>	<b>Construction- significance of effect</b>	<b>Operation - magnitude of change</b>	<b>Operation - significance of effect</b>	<b>Cumulative magnitude of change / effect</b>
<b>VP 7: Dunrod Hill</b>	Medium	Medium	Significant	Medium	Significant	Medium Not significant
<b>VP 8: Rothesay</b>	High	Medium to low	Significant	Medium to low	Significant	Medium to low Not significant
<b>VP 9: Innellan</b>	High	Medium	Significant	Medium	Significant	Medium to low Not significant
<b>VP 10: Dunoon</b>	Medium to high	Medium to low	Not significant	Medium to low	Not significant	Medium to low Not significant
<b>VP 11: Barbay Hill, Great Cumbrae</b>	Medium to high	Medium	Significant	Medium	Significant	Medium to low Not significant
<b>VP 12: Windy Hill</b>	Medium to high	Low	Not significant	Low	Not significant	Low Not significant
<b>VP 13: Mount Stuart</b>	Medium to high	Medium to low	Significant	Medium to low	Significant	Medium to low Not significant

<b>Receptor</b>	<b>Sensitivity</b>	<b>Construction - magnitude of change</b>	<b>Construction- significance of effect</b>	<b>Operation - magnitude of change</b>	<b>Operation - significance of effect</b>	<b>Cumulative magnitude of change / effect</b>
<b>VP 14: Strone Point</b>	Medium to high	Low	Not significant	Low	Not significant	Low Not significant
<b>VP15: Wemyss Bay to Rothesay Ferry</b>	Medium to high	Medium to high	Significant	Medium to high	Significant	Medium to low / Low Not significant

**Table 18.4 Cumulative Effects**

Receptor	Description of Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/ Adverse
<b>6. Ornithology</b>				
No significant cumulative effects were identified.				
<b>7. Ecology</b>				
No significant cumulative effects were identified.				
<b>8. Noise</b>				
Residential properties	Cumulative noise from wind turbines	Kellybank wind turbines (x2)	Minor	Adverse
<b>9. Cultural Heritage</b>				
Cumulative Effect on Sites 10 and 18	Changes to setting	Hunterston II	Minor	Adverse
<b>10. Geology, Peat, Hydrology and Hydrogeology</b>				
No significant cumulative effects were identified.				
<b>11. Traffic and Transport</b>				
No significant cumulative effects were identified.				
<b>12. Socio-economic, Recreation and Tourism</b>				

Receptor	Description of Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/ Adverse
No significant cumulative effects were identified.				
<b>13. Aviation and Radar</b>				
No significant cumulative effects were identified.				
<b>14. Shadow Flicker</b>				
No significant cumulative effects were identified.				
<b>15. Telecommunications</b>				
No significant cumulative effects were identified.				

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