



Chapter 14

Summary of Residual Effects

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Appendix 14.1 Schedule of Commitments



Chapter 14

14 Summary of Residual Effects

14.1 Introduction

1. This chapter provides a summary of the predicted potential effects of the Proposed Development, proposed mitigation measures and the anticipated residual effects of the Proposed Development after mitigation measures have been applied.

14.2 Residual Effects

2. Residual effects during construction and operation are summarised below in **Table 14.1** Summary of Residual Construction Effects and **Table 14.2** Summary of Residual Operational Effects respectively. **Table 14.3** Summary of Residual Cumulative Effects below summarises residual cumulative effects, where the Proposed Development has been considered in combination with other local wind energy developments.
3. Where text is in **bold** within the tables, this refers to an effect that is considered to be significant under The Electricity Works (Environmental Impact Assessment (EIA) (Scotland) Regulations 2017 (hereinafter referred to as 'the EIA Regulations').
4. The tables provide a quick reference to the significant residual environmental effects and relevant mitigation measures identified within the technical chapters (see **Chapters 5 to 13**) of this Environmental Impact Assessment Report (EIAR).
5. With successful implementation of the proposed mitigation measures, predicted residual effects have been assessed as not significant in the context of the EIA Regulations, with the exception of landscape and visual, archaeology and cultural heritage, and socio-economics, recreation and tourism.
6. The mitigation measures and commitments to be applied prior to construction, during construction and during operation of the Proposed Development can be found in **Appendix 14.1 Schedule of Commitments** of the EIAR.

Description of Effect (Construction Phase)	Pre-Mitigation Effect		Mitigation Measure	Residual Effect	
	Magnitude	Significance		Magnitude	Significance
Chapter 5: Landscape and Visual					
No significant effects on landscape character or visual amenity was assessed for the construction stage.					
Chapter 6: Hydrology, Geology, Hydrogeology and Soils					
Pollution of surface waters	Moderate	Minor Adverse	None	Moderate	Minor Adverse
Pollution of groundwater	Minor	Minor Adverse	None	Minor	Minor Adverse
Pollution effect on soil	Minor	Minor Adverse	None	Minor	Minor Adverse
Erosion causing loss of soil	Minor	Minor Adverse	None	Minor	Minor Adverse
Sedimentation of surface water	Minor	Minor Adverse	None	Minor	Minor Adverse
Surface water drainage patters	Minor	Minor Adverse	None	Minor	Minor Adverse
Modification of groundwater levels and flows	Minor	Minor Adverse	None	Minor	Minor Adverse
Modification of groundwater levels and flows on groundwater and groundwater dependent terrestrial ecosystems	Minor	Negligible	None	Minor	Negligible
Loss of soil	Moderate	Moderate Adverse	Restoration of existing quarries adjacent to Borrow Pit (BP) BP02 and BP03 Micrositing of proposed infrastructure	Minor	Minor Adverse
Compaction of soil	Minor	Negligible	None	Minor	Negligible
Peat stability failure on soil loss	Minor	Negligible	Additional site investigation pre-construction, including post-felling surveys Micrositing Slope management Specific drainage design Borrow pit methodology	Minor	Negligible
Peat stability failure causing surface water sedimentation	Moderate	Minor Adverse	Additional site investigation pre-construction, including post-felling surveys Micrositing Slope management Specific drainage design Borrow pit methodology	Minor	Minor Adverse
Peat stability failure modifying surface water drainage patterns	Moderate	Minor Adverse	Additional site investigation pre-construction, including post-felling surveys Micrositing Slope management Specific drainage design Borrow pit methodology	Minor	Minor Adverse
Chapter 7: Ecology and Biodiversity					
Bog Habitat – Habitat loss/degradation	Low	Significant	Embedded: Avoidance by design and adherence to best practice measures. Additional: Restoration and enhancement of bog habitat onsite via OHMP.	Low	Not significant in the medium term. Significant beneficial in the medium-long term.
Dry Heath – Habitat loss	Low	Not Significant	None.	Low	Not significant
Water vole – Disturbance/ accidental killing or injury of individuals	Low	Significant	Embedded: Avoidance by design, adoption of sensitive working methods, application of good practice measures, free movement maintained through culverts.	Low	Not significant

Description of Effect (Construction Phase)	Pre-Mitigation Effect		Mitigation Measure	Residual Effect	
	Magnitude	Significance		Magnitude	Significance
			Additional: Water vole species protection plan, derogation licence, trapping and translocation if required.		
Chapter 8: Ornithology					
Habitat loss – Osprey, goshawk, black grouse and crossbill	Low to Negligible	Not significant	None	Low to Negligible	Not significant
Disturbance and displacement – all Important Ornithological Features	Low	Not significant	None	Low	Not significant
Chapter 9: Noise					
Construction noise	Slight	Negligible	Adherence to best practice measures and ensure through the Construction Environmental Management Plan (CEMP).	Slight	Negligible
Construction vibration	Slight	Negligible		Slight	Negligible
Blast induced vibration and air overpressure	Slight	Negligible		Slight	Negligible
Chapter 10: Archaeology and Cultural Heritage					
Potential direct impact on Linfairn to Burnside Footpath (HA95)	Minor Adverse	Slight Adverse	Site demarcation and avoidance	Minor Adverse	Neutral
Direct impact on Linfern Loch Wall (1) (HA97)	Major Adverse	Slight Adverse	Archaeological recording	Moderate Adverse	Slight Adverse
Direct impact on Stob Hill Sheep Ree (HA99)	Major Adverse	Slight Adverse	Site demarcation and avoidance	Minor Adverse	Neutral
Direct impact on Linfern Loch Wall (2) (HA100)	Minor Adverse	Neutral	Site demarcation and avoidance, and archaeological recording	Negligible Adverse	Neutral
Direct impact on Stob Hill Walls (HA102)	Minor Adverse	Neutral	Site demarcation and avoidance, and archaeological recording	Negligible Adverse	Neutral
Potential direct impact on Stinchar Ford Wall (HA104)	Minor Adverse	Neutral	Site demarcation and avoidance	Negligible Adverse	Neutral
Chapter 11: Access, Traffic and Transport					
Road capacity	Slight	Neutral	None	Slight/Neutral	Neutral
Severance	Slight/Neutral to Moderate	Adverse	Traffic management measures included as part of the Construction Traffic Management Plan (CTMP), for example speed restrictions for site operative on the surrounding road network, in particular those locations passing through local settlements where there are likely to be an increase in pedestrians and vulnerable road users.	Slight/Neutral to Moderate	Adverse
Driver delay	Slight/Neutral	Adverse	Convoy management, driver information on construction traffic routes and times and consideration to be given to use of onsite borrow pits and onsite concrete batching to reduce heavy good vehicle (HGV) trips. This would form part of the CTMP.	Slight/Neutral	Adverse
Pedestrian delay	Slight/Neutral	Neutral	None	Slight/Neutral	Neutral
Pedestrian amenity	Moderate	Neutral	None	Slight	Neutral
Fear and intimidation	Slight	Neutral	None	Slight	Neutral
Accidents and safety	Moderate	Adverse	In relation to general construction traffic it is proposed that signage directing site operatives on the surrounding road network, including advising on advisory speed limits and where applicable the potential for interaction with vulnerable road users will be installed on the local road network. Signage will also be installed advising members of the public of an increase in HGV's operating in the area, in particular on the road network in the immediate vicinity of the proposed Site access junctions, where there will be an increase in HGV's entering and leaving the Proposed Development.	Slight	Adverse

Description of Effect (Construction Phase)	Pre-Mitigation Effect		Mitigation Measure	Residual Effect	
	Magnitude	Significance		Magnitude	Significance
			With regards to abnormal indivisible loads associated with the delivery of wind turbine components, convoy management, driver information on proposed access routes and formal escort procedures will be implemented to manage the movement of loads. All of the above measures would form part of the CTMP.		
Chapter 12: Socio-economics, Recreation and Tourism					
Estimated total net construction job generation and total net Gross Value Added (GVA) in South Ayrshire. (approximately £8.8 million GVA and approximately 140 jobs in South Ayrshire).	N/A	Minor Beneficial	None	N/A	Minor Beneficial
Estimated total net construction job generation and total net GVA in Scotland. (approximately £26.4 million GVA and approximately 421 jobs in Scotland).	N/A	Negligible	None	N/A	Negligible
Effects on forestry businesses.	N/A	Negligible	None	N/A	Negligible
Effects on Merrick WLA and Galloway Forest Park.	N/A	Minor Adverse	None	N/A	Minor Adverse
Effects on visitors to the promoted Dark Sky viewpoints, visitor centres or observatories within the Buffer Zone.	N/A	Negligible	None	N/A	Negligible
Effects on tourist receptors	N/A	Negligible	None	N/A	Negligible
Effects on Stinchar Falls.	N/A	Negligible	None	N/A	Negligible
Effect on walkers, cyclists, wild campers at Loch Bradan	N/A	Minor Adverse	None	N/A	Minor Adverse
Effects on anglers using Loch Bradan	N/A	Negligible	None	N/A	Negligible
Effects on tourist related businesses	N/A	Negligible	None	N/A	Negligible
Effects on access and amenity of recreational paths	N/A	Minor Adverse	None	N/A	Minor Adverse
Effects on informal walking, horse riding, cycling and deer stalking	N/A	Negligible	None	N/A	Negligible
Effects on National Cycle Network Route 7, Ayrshire Alps Road Cycle Park (AARCP) (Tairlaw route)	N/A	Minor Adverse	None	N/A	Minor Adverse
Effects on Carrick Forest Drive	N/A	Negligible	None	N/A	Negligible
Chapter 13: Other Issues					
Forestry and Land Use	N/A	N/A	Commitment for compensatory planting	N/A	N/A
Aviation and Radar	N/A	None	None	N/A	None
Climate and Carbon Balance	N/A	N/A	None	N/A	N/A
Telecommunications	N/A	None	None	N/A	None
Shadow Flicker	N/A	None	None	N/A	None

Table 14.1 Summary of Residual Construction Effects

Description of Effect (Operational phase)	Pre-mitigation Effect		Mitigation Measure	Residual Effect	
	Magnitude	Significance		Magnitude	Significance
Chapter 5: Landscape and Visual					
Landscape Character					
Foothills with Forest and Windfarms Landscape Character Type (LCT) (17c)	High-Medium within 5km; Medium-Low elsewhere.	Moderate (within 5km) Moderate-Minor elsewhere	None	High-Medium within 5km; Medium-Low elsewhere.	Moderate (within 5km). Moderate-Minor elsewhere.
Intimate Pastoral Valleys (13) – Water of Girvan Valley	Medium within 3-5km north of the Site and south of Tairlaw. Medium-Low elsewhere	Major-Moderate within 3-5km north of the Site and south of Tairlaw. Moderate-Minor elsewhere.	None	Medium within 3-5km north of the Site and south of Tairlaw. Medium-Low elsewhere	Major-Moderate within 3-5km north of the Site and south of Tairlaw. Moderate-Minor elsewhere.
Intimate Pastoral Valleys (13) – Stinchar Valley	Medium-Low within 5km; Low elsewhere.	Moderate (within 5km) Moderate-Minor elsewhere	None	Medium-Low within 5km; Low elsewhere.	Moderate (within 5km). Moderate-Minor elsewhere.
Rugged Uplands, Lochs and Forest LCT (21)	Medium within 6km; Low-Negligible elsewhere.	Major-Moderate (within 6km) Minor elsewhere	None	Medium within 6km; Low-Negligible elsewhere.	Major-Moderate (within 6km). Minor elsewhere.
Middle Dale (12)	Low	Moderate-Minor	None	Low	Moderate-Minor
Landscape Designations					
Carrick Hills Candidate Local Landscape Area (LLA)	Medium within 6km; Low-Negligible elsewhere.	Major-Moderate within 6km, Minor elsewhere.	None	Medium within 6km; Low-Negligible elsewhere.	Major-Moderate within 6km, Minor elsewhere.
Water of Girvan Candidate LLA	Medium-Low between 3-5km north of the Site. Low elsewhere.	Moderate between 3-5km north of the Site. Moderate-Minor elsewhere.	None	Medium-Low between 3-5km north of the Site. Low elsewhere.	Moderate between 3-5km north of the Site. Moderate-Minor elsewhere.
Stinchar Valley Candidate LLA	Medium-Low within 5km. Low Elsewhere.	Moderate within 5km. Moderate-Minor elsewhere.	None	Medium-Low within 5km. Low Elsewhere.	Moderate within 5km. Moderate-Minor elsewhere.
Rugged Uplands with Lochs and Forest Sensitive Landscape Area (East Ayrshire)	Low-Negligible	Minor-Negligible	None	Low-Negligible	Minor-Negligible
Foothills West of Doon Valley Sensitive Landscape Area (East Ayrshire)	Low-Negligible	Minor	None	Low-Negligible	Minor
Galloway Hills Regional Scenic Area (Dumfries and Galloway)	Negligible	Negligible	None	Negligible	Negligible
Visual Receptor Groups					
Upper Water of Girvan Valley Visual Receptors	High-Medium within 3-5km north of the Site. Medium-Low elsewhere.	Major-Moderate (residents, walkers), Moderate (road users) within 3-5km north of the Site. Moderate (residents, walkers) and Moderate-Minor (road users) elsewhere.	None	High-Medium within 3-5km north of the Site. Medium-Low elsewhere.	Major-Moderate (residents, walkers), Moderate (road users) within 3-5km north of the Site. Moderate (residents, walkers) and Moderate-Minor (road users) elsewhere.
Upper Stinchar Valley Visual Receptors	High-Medium	Major-Moderate (residents, walkers) Moderate (road users)	None	High-Medium	Major-Moderate (residents, walkers) Moderate (road users).
Straiton	Low	Moderate-Minor	None	Low	Moderate-Minor
Maybole	Low	Moderate-Minor	None	Low	Moderate-Minor
Key Routes					
Local Road C46W between Tairlaw and Waterhead on Minnoch	High-Medium	Major-Moderate	None	High-Medium	Major-Moderate
B7023	Medium-Low	Moderate-Minor	None	Medium-Low	Moderate-Minor
B7045	Medium-Low	Moderate-Minor	None	Medium-Low	Moderate-Minor

Description of Effect (Operational phase)	Pre-mitigation Effect		Mitigation Measure	Residual Effect	
	Magnitude	Significance		Magnitude	Significance
Recreational Routes					
Old Road through Straiton Heritage Path, core path SA47 and Local Paths Network: 72 (LPN:72) - Day	Patna-Straiton: Low-Negligible South of Straiton: High	Patna-Straiton: Moderate-Minor South of Straiton: Major-Moderate	None	Patna-Straiton: Low-Negligible South of Straiton: High	Patna-Straiton: Moderate-Minor South of Straiton: Major-Moderate
NCN7 and Core path SA1	Along Site Boundary: High-Medium Maybole to Girvan: Low-Negligible South of Site: no effect	Along Site Boundary: Major-Moderate Maybole to Girvan: Minor South of Site: no effect	None	Along Site Boundary: High-Medium Maybole to Girvan: Low-Negligible South of Site: no effect	Along Site Boundary: Major-Moderate Maybole to Girvan: Minor South of Site: no effect
Core path SA49 and SA56	High-Medium	Moderate	None	High-Medium	Moderate
Core paths SA52, SA54 and SA55	Medium	Moderate-Minor	None	Medium	Moderate-Minor
Cornish Hill Trail	High-Medium	Major-Moderate	None	High-Medium	Major-Moderate
Recreational Destinations and Visitor Attractions					
Galloway Forest Park	Medium within 6km of the Site. Low-Negligible elsewhere.	Moderate (within 6km) Minor elsewhere	None	Medium within 6km of the Site. Low-Negligible elsewhere.	Moderate (within 6km). Minor elsewhere.
Colonel Hunter Blair Monument Viewpoint	Medium-Low	Moderate	None	Medium-Low	Moderate
Merrick Summit	Low-Negligible	Minor	None	Low-Negligible	Minor
Chapter 6: Hydrology, Geology, Hydrogeology and Soils					
Modification of groundwater levels and flows	Minor	Minor Adverse	N/A	Minor	Minor Adverse
Chapter 7: Ecology and Biodiversity					
Bats species (<i>Nyctalus</i> and soprano and common pipistrelle) – Collision/barotrauma or injury	High	Significant	Additional: wind turbine curtailment and annual monitoring.	High	Not significant
Bats species (<i>Nyctalus</i> and soprano and common pipistrelle) – Landscape changes	High	Significant		High	Not significant
Chapter 8: Ornithology					
Disturbance and displacement – all Important Ornithological Features	Low	Not significant	None	Low	Not significant
Collision risk – Osprey, goshawk and peregrine	Low to Negligible	Not significant	None	Low to Negligible	Not significant
Chapter 9: Noise					
Operational wind turbine noise	N/A	Not Significant (Development in isolation) Significant (cumulatively)	Adherence to appropriate noise level limits. Application of an appropriate limit apportionment scheme.	N/A	Not significant
Chapter 10: Archaeology and Cultural Heritage					
83 Heritage Assets	Various	Neutral	None	Various	Neutral
36 Heritage Assets	Various	Slight Adverse	None	Various	Slight Adverse
One Heritage Asset (Knockinculloch Enclosures (SM3357)(HA89))	Various	Moderate Adverse	None	Various	Moderate Adverse
Chapter 11: Access, Traffic and Transport					
No significant effects on access, traffic and transport are anticipated during the operation of the Proposed Development.					
Chapter 12: Socio-economics, Recreation and Tourism					

Description of Effect (Operational phase)	Pre-mitigation Effect		Mitigation Measure	Residual Effect	
	Magnitude	Significance		Magnitude	Significance
Estimated total net operation and maintenance job generation and total net GVA in South Ayrshire (approximately £1 million GVA and approximately 25 jobs in South Ayrshire).	N/A	Negligible	None	N/A	Negligible
Estimated total net operation and maintenance job generation and total net GVA in Scotland (approximately £1.3 million GVA and approximately 35 jobs in Scotland).	N/A	Negligible	None	N/A	Negligible
Effects on forestry businesses.	N/A	Negligible	None	N/A	Negligible
Effects on tourism and tourism-based businesses (e.g. tourist accommodation)	N/A	Negligible	None	N/A	Negligible
Effects on Merrick WLA and Galloway Forest Park.	N/A	Minor Adverse	None	N/A	Minor Adverse
Effects on visitors to the promoted Dark Sky viewpoints, visitor centres or observatories within the Buffer Zone	N/A	Negligible	None	N/A	Negligible
Effects on Stinchar Falls	N/A	Negligible	None	N/A	Negligible
Effect on walkers, cyclists, wild campers at Loch Bradan	N/A	Minor Adverse	None	N/A	Minor Adverse
Effects on anglers using Loch Bradan	N/A	Negligible	None	N/A	Negligible
Effects on access and amenity of recreational paths.	N/A	Minor Adverse	None	N/A	Minor Adverse
Effects on informal walking, horse riding, cycling and deer stalking	N/A	Negligible	None	N/A	Negligible
Effects on National Cycle Network Route 7, AARCP (Tairlaw route)	N/A	Negligible	None	N/A	Negligible
Effects on Carrick Forest Drive	N/A	Negligible	None	N/A	Negligible
Chapter 13: Other Issues					
Forestry and Land Use	N/A	N/A	None	N/A	N/A
Aviation and Radar	N/A	None	Mitigation proposals to be agreed with stakeholders which may include measures such as potential infill radars.	N/A	None
Climate and Carbon Balance	N/A	N/A	None	N/A	N/A
Telecommunications	N/A	None	If concerns were raised at a later date, then mitigation measures such as diversion of the telecommunications links would be investigated.	N/A	None
Shadow Flicker	N/A	Theoretically potential for shadow flicker in excess of acceptable level to one property if the worst-case scenario were to occur.	If shadow flicker is found to occur in practice then mitigation such as automated wind turbine shutdown should be implemented to limit the potential impact of shadow flicker. This would require the Applicant to investigate any shadow flicker complaints and to action appropriate mitigation if the complaints were found to be valid.	N/A	Not significant

Table 14.2 Summary of Residual Operational Effects

Description of Cumulative Effect	Pre-mitigation Effect		Mitigation Measure	Residual Effect	
	Magnitude	Significance		Magnitude	Significance
Chapter 5: Landscape and Visual					
There is no change to the magnitude and significance reported in Table 14.2 for the cumulative effects on landscape and visual receptors, apart from those listed within this table below.					
Landscape Character					
Foothills with Forest and Windfarms LCT (17c)	High	Moderate	None	High	Moderate
Intimate Pastoral Valleys (13) – Stinchar Valley	Major-Moderate within 15km , Moderate-Minor elsewhere.	Major-Moderate	None	Major-Moderate within 15km , Moderate-Minor elsewhere.	Major-Moderate
Intimate Pastoral Valleys (13) – Water of Girvan Valley	High-Medium within 3-5km north of the Site. Medium-Low elsewhere.	Major-Moderate within 3-5km north of the Site. Moderate-Minor elsewhere.	None	High-Medium within 3-5km north of the Site. Medium-Low elsewhere.	Major-Moderate within 3-5km north of the Site. Moderate-Minor elsewhere.
Rugged Uplands, Lochs and Forest LCT (21)	Medium-Low	Moderate	None	Medium-Low	Moderate
Middle Dale (12)	Medium	Moderate	None	Medium	Moderate
Landscape Designations					
Carrick Hills Candidate LLA	Medium-Low (entire LLA)	Moderate (entire LLA)	None	Medium-Low (entire LLA)	Moderate (entire LLA)
Water of Girvan Candidate LLA	High-Medium (entire LLA)	Major-Moderate (entire LLA)	None	High-Medium (entire LLA)	Major-Moderate (entire LLA)
Stinchar Valley Candidate LLA	High-Medium (entire LLA)	Major-Moderate (entire LLA)	None	High-Medium (entire LLA)	Major-Moderate (entire LLA)
Rugged Uplands with Lochs and Forest Sensitive Landscape Area (East Ayrshire)	Low-Negligible	Minor-Negligible	None	Low-Negligible	Minor-Negligible
Foothills West of Doon Valley Sensitive Landscape Area (East Ayrshire)	Low-Negligible	Minor	None	Low-Negligible	Minor
Galloway Hills Regional Scenic Area (Dumfries and Galloway)	Negligible	Negligible	None	Negligible	Negligible
Visual Receptor Groups					
Upper Water of Girvan Valley Visual Receptors	High within 3-5km north of the Site. Medium-Low elsewhere.	Major-Moderate (residents, walkers), Moderate (road users) within 3-5km north of the Site. Moderate (residents, walkers) and Moderate-Minor (road users) elsewhere.	None	High within 3-5km north of the Site. Medium-Low elsewhere.	Major-Moderate (residents, walkers), Moderate (road users) within 3-5km north of the Site. Moderate (residents, walkers) and Moderate-Minor (road users) elsewhere.
Upper Stinchar Valley Visual Receptors	High-Medium	Major-Moderate (residents), Moderate (road users).	None	High-Medium	Major-Moderate (residents), Moderate (road users).
Straiton	Low	Moderate-Minor	None	Low	Moderate-Minor
Maybole	Medium-Low	Moderate	None	Medium-Low	Moderate
Key Routes					
Local Road C46W between Tairlaw and Waterhead on Minnoch	High-Medium	Major-Moderate	None	High-Medium	Major-Moderate
B7023	Medium-Low	Moderate-Minor	None	Medium-Low	Moderate-Minor
B7045	Medium-Low	Moderate-Minor	None	Medium-Low	Moderate-Minor
Recreational Routes					
Old Road through Straiton Heritage Path, core path SA47 and Local Paths Network: 72 (LPN:72) - Day	Patna-Straiton: Low-Negligible South of Straiton: High	Patna-Straiton: Moderate-Minor South of Straiton: Major-Moderate	None	Patna-Straiton: Low-Negligible South of Straiton: High	Patna-Straiton: Moderate-Minor South of Straiton: Major-Moderate
NCN7 and core path SA1	Along Site Boundary: High-Medium Maybole to Girvan: Medium-Low South of Site: no effect	Along Site Boundary: Major-Moderate Maybole to Girvan: Moderate	None	Along Site Boundary: High-Medium Maybole to Girvan: Medium-Low	Along Site Boundary: Major-Moderate

Description of Cumulative Effect	Pre-mitigation Effect		Mitigation Measure	Residual Effect	
	Magnitude	Significance		Magnitude	Significance
		South of Site: no effect		South of Site: no effect	Maybole to Girvan: Moderate South of Site: no effect
Core path SA49 and SA56	High-Medium	Moderate	None	High-Medium	Moderate
Core paths SA52, SA54 and SA55	Medium	Moderate-Minor	None	Medium	Moderate-Minor
Cornish Hill Trail	High-Medium	Major-Moderate	None	High-Medium	Major-Moderate
Recreational Destinations and Visitor Attractions					
Galloway Forest Park	Medium (within north and west parts of the Park)	Moderate (within north and west parts of the Park)	None	Medium (within north and west parts of the Park)	Moderate (within north and west parts of the Park)
Colonel Hunter Blair Monument Viewpoint	Medium	Major-Moderate	None	Medium	Major-Moderate
Merrick Summit	Medium-Low	Moderate	None	Medium-Low	Moderate
Chapter 6: Hydrology, Geology, Hydrogeology and Soils					
No significant cumulative effects on hydrology, geology, hydrogeology and soils are anticipated.					
Chapter 7: Ecology and Biodiversity					
Bat populations	Low	Adverse	None	Low	Adverse
Chapter 8: Ornithology					
No significant cumulative effects on bird species are anticipated.					
Chapter 9: Noise					
The Proposed Development would not give rise to a significant cumulative noise effect.					
Chapter 10: Archaeology and Cultural Heritage					
Knockinculloch Enclosures – Scheduled Monument	Moderate Adverse	Moderate Adverse	None	Moderate Adverse	Moderate Adverse
Chapter 11: Access, Traffic and Transport					
No significant cumulative effects on access, traffic and transport are anticipated.					
Chapter 12: Socio-economics, Recreation and Tourism					
Generation of additional construction related spend, employment and GVA during construction	N/A	Minor Beneficial	None	N/A	Moderate Beneficial
Tourism during construction	N/A	Minor Adverse	None	N/A	Minor Adverse
Recreation during construction	N/A	Minor Adverse	None	N/A	Minor Adverse
Generation of additional operation and maintenance related spend, employment and GVA (and community benefit funds and shared ownership offers) during operation	N/A	Minor Beneficial	None	N/A	Minor Beneficial
Tourism during operation	N/A	Negligible	None	N/A	Negligible
Recreation and visual amenity during operation	N/A	Minor Adverse	None	N/A	Minor Adverse
Chapter 13: Other Issues					
Forestry and Land Use	N/A	N/A	None	N/A	N/A
Aviation and Radar	N/A	Radar Line of Sight (RLoS) exists between all of the proposed wind turbines and the S511 and Terma PSRs	The GPA Terma would be optimised to filter out any clutter generated by the Proposed Development's wind turbines. Individual wind turbine positions would be manually added to the radar's internal map so that plots originating from wind turbines would be identified as static targets	N/A	None

Description of Cumulative Effect	Pre-mitigation Effect		Mitigation Measure	Residual Effect	
	Magnitude	Significance		Magnitude	Significance
			and suppressed from the controller's display.		
Climate and Carbon Balance	N/A	N/A	None	N/A	N/A
Telecommunications	N/A	None	None	N/A	None
Shadow Flicker	N/A	Theoretically potential increase to shadow flicker at four receptors if the worst-case scenario were to occur.	If complaint were to be received at Receptor A and found to be valid, appropriate mitigation would be implemented.	N/A	Not significant

Table 14.3 Summary of Residual Cumulative Effects

Carrick Windfarm Project Team

ScottishPower Renewables
9th Floor ScottishPower Headquarters
320 St Vincent Street
Glasgow
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