

**Appendix 5 – Detailed SEA Assessment Table – Cumulative Effects**

**Environmental Report**

**Renewable & Low Carbon Energy Supplementary Guidance**

**August 2019**

## Cumulative Assessment Table for All Technologies

SEA Topic	SEA Objective	Wind	Hydro	Solar	Biomass	Heat Pumps	Other renewables	Cumulative Score (pre-mitigation)	Evaluation
Pop and Human Health	SEA 6 – Increase the potential of Perth and Kinross in contributing to Scotland’s renewable energy resources	++	++	++	++	++	++	++	The SG promotes and supports the reduction in the reliance of fossil fuels through the deployment of renewable and low carbon energy technologies. It is considered that there will be benefits to population and human health from the associated positive air quality impacts and wider climate benefits. However, there are various technologies such as biomass, AD, EfW and landfill gas which may give rise to negative air quality impacts which would require appropriate mitigation measures to be implemented.
	SEA 7 – Support Adaptation to climate change and ‘future proofing’ of new development	++	++	++	++	++	++	++	
	SEA 10 – Protect and enhance green infrastructure and networks	+/-	+/-	+/-	N/A	N/A	N/A	+/-	
	SEA 12 – Protect and enhance air quality	++	++	++	+/-	++	+/-	+/-	
Biodiversity, flora and fauna	SEA 1 – Avoid adverse impacts on valuable soil resources e.g. prime agricultural land, carbon rich soils	+/-	+/-	+/-	+/-	N/A	N/A	+/-	The SG promotes the protection of biodiversity, flora and fauna, including designated and non-designated species and sites. Across all renewable and low carbon energy technologies, there is the potential for cumulative negative impacts on biodiversity, flora and fauna, however, the SG will require all development proposals to appropriately consider any impacts individually and in context of other development proposals, including guidance on appropriate mitigation measures and the submission of ecological surveys where required. Development proposals will also be required to take in to account, and will be assessed against, the relevant policies of the LDP.
	SEA 2 - Avoid adverse impacts on existing land use/cover	+/-	+/-	+/-	+/-	N/A	N/A	+/-	
	SEA 4 - Promote the important role and potential of forests and woodlands and avoid adverse impacts on their natural heritage value.	+/-	+/-	N/A	--	N/A	N/A	+/-	
	SEA 5 - Conserve and enhance the diversity of habitats and species	--	--	+/-	--	-	+/-/?	--	
	SEA 10 - Protect and enhance green infrastructure and networks	+/-	+/-	+/-	+/-	N/A	N/A	+/-	
	SEA 11 - Safeguard the integrity of designated sites	--	--	+/-	-	-	+/-/?	--	
Soil	SEA 1 - Avoid adverse impacts on valuable soil resources e.g. prime agricultural land, carbon rich soils	-	+/-	-	+/-	N/A	N/A	+/-	Across all renewable and low carbon energy technologies, there is the potential for cumulative effects on the loss of valuable soil resources, and on soil quality and erosion of river banks. The SG will require all developments to take due cognisance of guidance on soils including mitigation measures, where required. The spatial framework for wind will also assist in protecting valuable soil resources.
	SEA 5 - Conserve and enhance the diversity of habitats and species	+/-	+/-	+/-	+/-	N/A	N/A	+/-	
Water	SEA 3 – Promote the sustainable management of	+/-	--	+/-	+/-	+/-	+/-	+/-	There is potential for cumulative effects on the water environment across all renewable and low carbon energy technologies. The SG will protect the water environment and its assets through enforcing

SEA Topic	SEA Objective	Wind	Hydro	Solar	Biomass	Heat Pumps	Other renewables	Cumulative Score (pre-mitigation)	Evaluation
	the water environment								national and local guidance and providing guidance on where mitigation measures will be required and how issues can be considered as part of the planning application. Cumulatively, hydrological impacts from hydro energy proposals and ground water impacts from wind energy proposals have potential to significantly affect the environment. Potential pollution to the water environment from Anaerobic Digestion and Energy from Waste is also noted. Hydro energy proposals can increase flood risk, in-river engineering should be designed to cope with extreme rainfall, and powerhouses and other dry land infrastructure should be designed and sited to minimise risk. The SG will ensure these issues are considered in detail, including appropriate mitigation measures where necessary.
	SEA 5 - Conserve and enhance the diversity of habitats and species	-	--	+/-	+/-	-	+/-	+/-	
	SEA 11 - Safeguard the integrity of designated sites	-	--	+/-	+/-	-	+/-	+/-	
Climatic Factors	SEA 1 - Avoid adverse impacts on valuable soil resources e.g. prime agricultural land, carbon rich soils	+/-	+/-	+/-	+/-	N/A	N/A	+/-	The SG promotes and supports the reduction in the reliance of fossil fuels through the deployment of renewable and low carbon energy technologies. It is considered that there will be climatic benefits and associated positive air quality impacts and deploying a range of different technologies will help to deliver these climatic benefits. However, there are various technologies such as hydro, biomass, AD, EfW and landfill gas which may give rise to negative air quality impacts which would require appropriate mitigation measures to be implemented
	SEA 3 - Promote the sustainable management of the water environment	+/-	+/-	+/-	N/A	+/-	+/-	+/-	
	SEA 4 – Promote important role and potential of forests and woodlands and avoid adverse impacts on their natural heritage value	+/-	+/-	+/-	+/-	N/A	N/A	+/-	
	SEA 6 – Increase the potential of Perth and Kinross in contributing to Scotland’s renewable energy resources	++	++	++	++	++	++	++	
	SEA 7 – Support Adaptation to climate change and ‘future proofing’ of new development	++	++	++	++	++	++	++	
	SEA 12 – Protect and enhance air quality	++	++	++	+/-	++	+/-	+/-	
Material Assets	SEA 1 - Avoid adverse impacts on valuable soil resources e.g. prime agricultural land, carbon rich soils	+/-	+/-	+/-	+/-	N/A	N/A	+/-	The SG promotes the efficient use of land and buildings, including opportunities for utilising recreational and greenspace areas, and maximising access provision across the Council area. These improvements contribute towards achieving reductions in greenhouse gas emissions across the Council area, improving health and community well-being.
	SEA 2 - Avoid adverse impacts on existing land use/cover	+/-	+/-	+/-	+/-	N/A	N/A	+/-	
	SEA 4 – Promote important role and potential of forests and woodlands and avoid adverse impacts on their natural heritage value	+/-	+/-	+/-	+/-	N/A	N/A	+/-	
	SEA 6 – Increase the potential of Perth and Kinross in contributing to Scotland’s	++	++	++	++	++	++	++	

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	renewable energy resources								
	SEA 7 – Support Adaptation to climate change and ‘future proofing’ of new development	++	++	++	++	++	++	++	
	SEA 10 – Protect and enhance, where appropriate, the historic and cultural environment	+/-	+/-	+/-	N/A	N/A	+/-	+/-	
Cultural Heritage	SEA 8 – Conserve and enhance the character, local distinctiveness, scenic and cultural value of the area’s landscape	-	+/-	-	N/A	N/A	N/A	+/-	There is potential for cumulative negative impacts on cultural heritage across all renewable and low carbon energy technologies, including on the setting of buildings and features. The SG will require guidance on how to avoid and/or minimise any impacts on cultural heritage, both individually and cumulatively.
	SEA 9 – Protect and enhance, where appropriate, the historic and cultural heritage	-	+/-	+/-	N/A	+/-	+/-	+/-	
	SEA 11 – Safeguard the integrity of designated sites	-	+/-	+/-	N/A	+/-	+/-	+/-	
Landscape	SEA 2 – Avoid adverse impacts on existing land use / cover	+/-	+/-	+/-	+/-	N/A	N/A	+/-	Cumulatively, there is the potential for significant adverse landscape impacts across the technologies, with clusters of wind energy proposals likely to have the most significant cumulative impacts. The SG will safeguard against any significant adverse cumulative impacts through detailed guidance and requirements for applicants to submit detailed surveys and/or assessments to ensure that a sufficient assessment can be undertaken and any significant adverse effects avoided or mitigated. Development proposals will also be required to take in to account, and will be assessed against the relevant policies of the LDP. The Strategic Environmental Sensitivity mapping will also assist in identifying suitable locations for the deployment of wind, hydro and solar technologies, taking in to account potential cumulative impacts.
	SEA 4 – Promote important role and potential of forests and woodlands and avoid adverse impacts on their natural heritage value	+/-	+/-	+/-	N/A	N/A	N/A	+/-	
	SEA 8 – Conserve and enhance the character, local distinctiveness, scenic and cultural value of the area’s landscape	--	--	-	--	N/A	N/A	--	
	SEA 9 – Protect and enhance, where appropriate, the historic and cultural heritage	-	+/-	+/-	N/A	+/-	+/-	+/-	
	SEA 11 – Safeguard the integrity of designated sites	--	--	-	N/A	+/-	+/-	--	
Air	SEA 12 – Protect and enhance air quality	++	++	++	+/-	++	+/-	+/-	Cumulatively, there is the potential for significant positive environmental effects in relation to air quality through the deployment of a range of renewable and low carbon energy sources. Any localised effects will be considered in detail at the planning application stage including any potential air quality impacts associated with biomass proposals and other renewables such as EfW and landfill gas.