Department for Infrastructure

Strategic Environmental Assessment (SEA) Environmental Report

Regional Strategic Planning Policy on Renewable and Low Carbon Energy

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RSK GENERAL NOTES

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APPENDICES

ABBREVIATIONS

AA	Appropriate Assessment
ACP	Agricultural Catchment Programme
AFBI	Agri-Food and Biosciences Institute
AONB	Area of Outstanding Natural Beauty
AQMAs	Air Quality Management Areas
AQS	Air Quality Standard
ASSI	Areas of Special Scientific Interest
BGS	British Geological Survey
BHARNI	Built Heritage at Risk in Northern Ireland
BESS	Battery Energy Storage Systems
BPG	Best Practice Guidance
CAMERAS	Co–ordinated Agenda for Marine, Environment and Rural Affairs Science
CBD	Convention on Biological Diversity
CBS	Countryside Bird Survey
CCRA	Climate Change Risk Assessment
CEH	Centre for Ecology and Hydrology
CFRAM	Catchment Flood Risk Assessment and Management Programme
CH_4	Methane
CMP	Conservation Management Plans
CMS	Countryside Management Scheme
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CSO	Central Statistics Office
DAERA	Department of Agriculture Environment and Rural Affairs.
DARD	Department of Agriculture and Rural Development's
DCLG	Department for Levelling Up, Housing and Communities
DfC	Department for Communities
DIN	Dissolved Inorganic Nitrogen
DOE	Department of Environment
DoF	Department of Finance
DfE	Department for the Economy
DfI	Department for Infrastructure
DWI	Drinking Water Inspectorate
EC	European Commission
EFS	Environmental Farming Scheme
EIA	Environmental Impact Assessment

EPA	Environmental Protection Agency
ES	Ecosystem Services
ESAS	Environmentally Sensitive Areas Scheme
EU	European Union
FRA	Flood Risk Assessment
HED	Historic Environment Division
HEI	Higher education institution
IBA	Important Bird and Biodiversity Area
GHG	Greenhouse Gas
GI	Green Infrastructure
GIS	Geographic Information Systems
GSNI	Geological Survey of Northern Ireland
LAC	Local Authority Collected
LCA	Landscape Character Assessment
LDP	Local Development Plan
LSE	Likely Significant Effects
MBR	Industrial Heritage Record
MCZ	Marine Conservation Zones
MDM	Multiple Deprivation Measure
MLA	Member of the Legislative Assembly
MPA	Marine Protected Areas
MarPAMM	Marine Protected Area Management and Monitoring
NAP	Nitrates Action Programme
NBN	National Biodiversity Network
NHA	Natural Heritage Area
NHS	National Health Services
NI	Northern Ireland
NIA	Northern Ireland Assembly
NI BAP	Northern Ireland Biodiversity Action Plan
NIEA	Northern Ireland Environment Agency
NIRO	NI Renewables Obligation
NISRA	Northern Ireland Statistics and Research Agency
NISMR	Northern Ireland Sites and Monuments Record
NO_2	Nitrogen Dioxide
NPWS	National Parks and Wildlife Services
NTS	Non-technical summary
O_3	Ozone
OECD	Organisation for Economic Co-operation and Development

OFS	Organic Farming Scheme
ODPM	Office of the Deputy Prime Minister
OPW	Office of Public Works
P	Phosphorus
PAH	polycyclic aromatic hydrocarbons
PPS	Planning Policy Statement
PT	Policy Theme
PO	Policy Objective
RBMP	River Basin Management Plan
PM	Particulate Matter
RSPB	Royal Society for the Protection of Birds
R&LC E	Renewable and Low Carbon Energy
SAC	Special Area of Conservation
SDC	Sustainable Development Council
SDG	Sustainable Development Goals
SEA	Strategic Environmental Assessment
SEF	Strategic Energy Framework
SWPA	Shellfish Waters Protected Areas
SPA	Special Protection Area
SONI	System Operator for Northern Ireland
SOA	Super Output Area
SO_2	Sulphur Dioxide
SPPS	Strategic Planning Policy Statement
SWPA	Shellfish Waters Protected Area
UK	United Kingdom
UK NEA	United Kingdom National Ecosystem Assessment
UKCIP	UK Climate Impacts Programme
UKCP	UK Climate Projections
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UNESCO	United Nations Educational, Scientific and Cultural Organisation
uPBT	ubiquitous, persistent, bio-accumulative and toxic
WFD	Water Framework Directive
WHS	World Heritage Site
WRZ	Water Resource Zones

1 INTRODUCTION

1.1 Purpose of the Report

1.1.1 RSK has been instructed by the Department for Infrastructure (the Department) to carry out a Strategic Environmental Assessment (SEA) of the draft revised Regional Strategic Planning Policy on Renewable and Low Carbon Energy (R&LC E), which when published in final form, will replace the Subject Policy 'Renewable Energy' contained within the Strategic Planning Policy Statement (SPPS) for Northern Ireland (pages 90 – 93 refer). Hereafter this will be referred to as 'the Policy'.

1.1.2 SEA is a systematic process for evaluating the environmental consequences of proposed plans or programmes to ensure environmental issues are fully integrated and addressed at the earliest appropriate stage of decision making, with a view to promoting sustainable development. The process of SEA was introduced under European Directive 2001/42/EC12 on the assessment of the effects of certain plans and programmes on the environment (SEA Directive) and came into force in 2001.

1.1.3 The requirements of the SEA Directive are transposed into Northern Irish domestic law through the Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004 (SR 280/2004). Hereafter referred to as 'the Northern Ireland Regulations'. Also of relevance are the Environmental Assessment of Plans and Programmes Regulations 2004 (SI 1633/2004) (the UK Regulations) and, in Ireland, the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (Irish SI 435/2004 and SI 200/2011), and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (Irish SI 436/2004 and as amended by SI 201/2011).

1.1.4 The Northern Ireland Regulations require the Department, as the programming authority, to assess the likely significant effects of its plans and programmes on: "*the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship of the above factors" including "secondary, cumulative, synergistic, short, medium, and long-term, permanent and temporary positive and negative effects*".

1.1.5 The purpose of this report is to evaluate the likely environmental effects of implementation and non-implementation of the proposed changes to the extant Subject Policy 'Renewable Energy' outlined in the SPPS as per the requirements of the Directive and Northern Ireland Regulations. This includes an assessment of realistic strategic alternative approaches and options, as well as the suggestion of mitigation and

enhancement measures to prevent, reduce and offset any significant adverse effects on the environment of implementing the proposed policy changes.

1.1.6 A non-technical summary of the information provided in this report has been provided separately.

1.2 Structure of this Report

The areas considered in this Environmental Report, and their location in the report, are as follows:

Table 1.1: Structure of the report

Aspect of ER	Location within report
Approach to the SEA	Section 2.2
SEA Objectives and assessment methodology	Section 2.4 and 2.5
Summary of the Policy	Section 3
Summary of scoping consultation responses	Section 4 and Appendix C
Summary of baseline data	Section 4.3
Existing environmental problems and the likely evolution of the environment without the Policy Change	Section 4.4
Consideration of alternatives	Section 5
Identification and assessment of likely significant effects	Section 6
Mitigation and enhancement measures	Section 7
Proposed monitoring programme	Section 8
Next steps regarding the consultation	Section 9
Environmental Baseline Maps	Appendix A
Relationship with other plans, programmes and conservation objectives	Appendix B

2 SEA FRAMEWORK AND ASSESSMENT METHODOLOGY

2.1 Best Practice Guidance

2.1.1 Our SEA approach takes into account the procedures provided under the following guidance documents:

- European Commission (2003), 'Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment';
- EC (2013) Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment;
- Office of the Deputy Prime Minister (ODPM), Scottish Executive, Welsh Assembly Government and DOE (2005), 'A Practical Guide to the Strategic Environmental Assessment Directive';
- Northern Ireland Environment Agency (2009), 'Strategic Environmental Assessment: Consultation Bodies' Services and Standards for Responsible Authorities';
- Environmental Protection Agency (EPA) (2020) SEA Pack
- EPA (2020) Good Practice Guidance on Cumulative Effects Assessment in SEA
- EPA (2020) Guidance on SEA Statements and Monitoring
- EPA (2019) Integrating Climatic Factors into the Strategic Environmental Assessment Process in Ireland;
- EPA (2019) Good Practice note on SEA for the Forestry Sector
- EPA (2015) Developing and Assessing Alternatives in Strategic Environmental Assessment;
- EPA (2013) Integrated Biodiversity Impact Assessment – Streamlining AA, SEA and EIA Processes: Practitioner's Manual.
- EPA (2003) Development of Strategic Environmental Assessment (SEA) Methodologies for Plans and Programmes in Ireland - Synthesis report;
- United Nations Economic Commission for Europe (2012) 'Resource Manual to Support Application of the Protocol on Strategic Environmental Assessment'.
- Department of Health (2007), 'Draft Guidance on Health in Strategic Environmental Assessment';
- Levett-Therivel, Environment Agency, Countryside Council for Wales, UKCIP, Natural England, InteREAM, and CAG Consultants (2007), 'Strategic Environmental Assessment and Climate Change: Guidance for Practitioners'; and
- Countryside Council for Wales, English Nature, Environment Agency and RSPB (2004), 'Strategic Environmental Assessment and Biodiversity: Guidance for Practitioners'.

2.2 The SEA Process

2.2.1 The SEA Guide produced by the Office of the Prime Minister (ODPM) (now Ministry of Housing, Communities and Local Government), Welsh Assembly Government and DOE

in 2005, in common with other SEA guidance documents, sets out a five stage process for carrying out SEA. These stages are summarised in **Error! Reference source not found.** below.

Table 2.1: Stages of the SEA process

Stage	Tasks
Pre-review	If SEA is not mandatory, screen for possible significant environmental effects.
Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope	Step 1: Describe briefly the statutory purpose, geographic area, population, and timeframe of the plan, and its relationship (both vertical and horizontal) with other plans/programmes.
	Step 2: Summarise the main findings of the survey and analysis stage.
	Step 3: Describe in general terms the current state of the physical environment of the area, with particular reference to (a) areas of environmental importance (such as protected sites); and (b) areas experiencing environmental problems (such as waste, or air or water pollution) at present. Describe how that environment would be likely to evolve on the basis of current development trends but no change in current policies.
	Step 4: Define (a) broad planning policy objectives for the area based on Steps 1 and 2; and (b) relevant environmental policy objectives for the area taking account of national policy and any relevant international legal obligations (e.g. EU Directives).
Initial public consultation	Consult the Consultation Bodies on the scope of the SEA.
Stage B: Developing and refining alternatives and assessing effects	Step 5: Identify a number of reasonable alternative development strategies for the area which are capable of fulfilling the policy objectives established in Step 4.
	Step 6: Evaluate these alternative strategies against the chosen planning and environmental policy objectives (step 4), with a view to establishing the most sustainable option.
	Step 7: Select the preferred strategy (which may combine elements of different strategies), stating reasons for the choice, and work it up with detailed policy objectives.
	Step 8: Carry out an environmental assessment of the preferred strategy to determine whether implementation would be likely to cause any significant effects on the environment (in particular, the aspects listed in Annex I of the SEA Directive, such as biodiversity, air, cultural heritage, etc.).
Stage C: Preparing the Environmental Report	Step 9: Modify the preferred strategy to eliminate, reduce or offset any significant adverse effects, as appropriate.
	Step 10: Propose monitoring measures in relation to any likely significant environmental impacts.
	Step 11: Prepare a non-technical summary.

Stage	Tasks
Stage D: Consulting on the draft plan or programme and the Environmental Report	Step 12: Consult the public and Consultation Bodies on the draft plan or programme and the Environmental Report.
	Step 13: Assess significant changes.
	Step 14: Make decisions and provide information.
Stage E: Monitoring the significant effects of implementing the plan or programme on the environment	Step 15: Develop aims and methods for monitoring.
	Step 16: Respond to adverse effects.

2.3 Sustainability Topics and SEA Objectives

2.3.1 The baseline data, key environmental issues and SEA Objectives have been presented through a series of sustainability topics derived from Annex I(f) of the SEA Directive, namely: biodiversity, flora and fauna; population; human health; soil; water; air; climatic factors; material assets; cultural heritage (including architectural and archaeological heritage); landscape; and Natural Capital (the inter-relationship between these).

2.3.2 The purpose of the SEA Objectives is to ensure that the assessment process is transparent and robust and that the Policy considers and addresses potential environmental effects. The topics considered in the SEA will be in accordance with these requirements, updated to align more closely with the requirements of the SPPS in relation to R&LC E, and expanded below for clarity (see Table 3.2 below).

Table 2.2: SEA Sub-Objectives

SEA Objective	Sub-objective (Will the Renewable & Low Carbon Energy policy…?)
1. Ecology and Nature Conservation – Protect, enhance and manage biodiversity assets and ecosystems	a. Maintain and where appropriate enhance the integrity of internationally and nationally terrestrial, freshwater and marine designated sites, specifically SPAs, SACs, Ramsar sites and Natural Heritage Areas, Marine Conservation Zones b. Maintain and where appropriate enhance locally designated sites c. Maintain and where appropriate enhance priority habitats and species d. Prevent and minimise the spread of invasive species e. Protect and maintain migratory species, connectivity and cross border habitats f. Maintain terrestrial, freshwater and marine habitats, species and natural heritage sites
2. Socio-economics – Improve prosperity and reduce deprivation	a. Facilitate ongoing development b. Support local businesses, enhancement of the local economy and overall prosperity c. Reduce energy poverty d. Create green jobs

SEA Objective	Sub-objective (Will the Renewable & Low Carbon Energy policy…?)
3. Health and Quality of Life – Improve health and quality of life	a. Improve long-term health and wellbeing, reduce health deprivation b. Encourage walking, cycling and other physical activity through outdoor recreational spaces c. Minimise the number of people exposed to and levels of noise and vibration pollution d. Safeguard and ensure protection of residential amenity from inappropriate development
4. Soil and Land Use – Protect and enhance soil quality	a. Safeguard and improve the highest quality soil and agricultural land b. Reduce soil pollution, compaction, erosion and degradation c. Encourage local production of fuel d. Encourage use of previously developed land e. Encourage strategic land use planning f. Protection of sites designated for geodiversity importance
5. Water – Protect, enhance and manage water resources and flood risk	a. Protect water resources from over-abstraction and pollution b. Maintain the quality of surface water, groundwater and marine c. Minimise exposure to flood risk and droughts
6. Air Quality – Reduce air pollution and ensure continued improvements to air quality	a. Improve air quality b. Minimise nitrogen deposition on designated sites and priority habitats c. Encourage the uptake of low carbon renewable energy sources
7. Climate Change – Minimise contribution to climate change and adapt to its predicted effects	a. Improve energy conservation and efficiency b. Improve climate change resilience and adaption capacity c. Increase the supply of energy from low carbon/renewable energy sources d. Minimise the impacts of new infrastructure in the transition to renewable energy
8. Material Assets – Protect and conserve natural resources and reduce waste production	a. Safeguard natural resources (including minerals, forestry and peatland) and minimise unsustainable use b. Increase recycling and re-use of materials c. Maximise use of the existing built environment
9. Cultural Heritage – Protect, enhance and manage archaeological and cultural heritage	a. Preserve, conserve and where appropriate enhance designated and non-designated sites and areas and their settings b. Preserve, conserve and where appropriate enhance archaeological sites and the setting of historical and architectural assets including marine cultural heritage c. Preserve, conserve and where appropriate enhance the quality and character of historic landscapes (townscape, seascape and villagescape)

SEA Objective	Sub-objective (Will the Renewable & Low Carbon Energy policy…?)
	d. Protect, conserve and enhance historic landscapes and their settings
10. Landscape – Protect, enhance and manage the character and quality of the landscape	a. Preserve, conserve and where appropriate enhance the quality and character of landscape, seascape and coastal areas b. Preserve, conserve and where appropriate enhance designated sites, public open space and green infrastructure assets c. Preserve, conserve and where appropriate enhance and enhance cross border landscapes d. Minimise light pollution and light spill
11. Natural Capital and Inter-relationships – To support the transition to renewable energy while maintaining natural capital benefits including carbon sequestration, protection from flooding and access to the countryside.	a. Preserve, conserve and where appropriate enhance the ability of an area to provide ecosystem services such as carbon sequestration and flood resilience, as well as supporting other ecosystem services b. Encourage multifunctionality of land used for renewables to provide numerous ecosystem services simultaneously c. Encourage biophysical changes such as restoration of degraded land and enhanced connectivity of habitats and greenspace

2.3.3 A list of indicators and targets, broken down by SEA objective can be found in Appendix D.

2.4 Spatial and Temporal Scope

2.4.1 The spatial scope for the assessment is all of NI. As required by the Northern Ireland Regulations, the assessment will also take into account trans-boundary impacts where it is identified that actions taken under the Policy have the potential to impact on the topic areas identified in other states, particularly the ROI.

2.4.2 Consideration of trans-boundary impacts is likely to be particularly relevant with some of the environmental topics that transcend national boundaries, for example ecology, climate, air, water, cultural heritage and landscape.

2.4.3 Whilst this policy development process is a review of terrestrial planning policy and therefore limited to on-shore development considerations, the SEA assessment will nevertheless have regard to marine and coastal environments.

2.4.4 There is no specific temporal scope. With certain aspects of the environment such as climate, ecology and landscape, any positive or negative impacts associated with the emerging Policy area may take effect over a time period of many decades. For this

reason, a longer term view will be taken on potential impacts rather than seek to set a fixed temporal scope.

2.5 Assessment Methodology

2.5.1 This stage of the SEA process involves the identification and evaluation of the likely significant effects on the environment of implementing the proposed alterations to the Policy and its reasonable alternatives. This follows a matrix approach and has been carried out in several stages to include high level and detailed matrix assessments, and a descriptive cumulative effects assessment.

High Level Matrix Assessment

2.5.2 The first step of the assessment process, the high-level assessment, is used to identify the likely adverse, beneficial, neutral and uncertain effects of the Policy alterations on the environment. Presented in matrix format, the assessment ascertains how well the policy meets each of the SEA Objectives. A descriptive summary of the likely effects is provided alongside the matrix.

2.5.3 The high-level matrix assessment is not a conclusive tool or model; its purpose is to identify those principles or policies for which uncertainties or potential adverse effects may arise. These particular principles or policies would then typically undergo further scrutiny e.g. via the detailed matrix assessment stage. Going forwards, these known types of impacts will be addressed directly through mitigation and/or enhancement measures.

2.5.4 A high-level matrix assessment has also been carried out on the different alternatives, including the 'do nothing' option and both 'fundamental policy change' options. This enables comparisons to be drawn between how well each alternative option correlates with the SEA Objectives.

2.5.5 The key used in the high level matrices is as follows:

Key for Likely Effects	
++	Likely strong beneficial effect
+	Likely beneficial effect
0	Neutral / no effect
-	Likely adverse effect
- -	Likely strong adverse effect
+/-	Uncertain effect

Detailed Matrix Assessment

2.5.6 The second step of the assessment process is typically used to scrutinise the potential adverse or uncertain effects that have been identified by the high level assessment. Each Policy Theme identified as potentially having such effects has been analysed against each of the SEA Objectives in more detail.

2.5.7 In order to determine the likely significance of effects, this process addresses the range of criteria identified in Annex II of the SEA Directive (reproduced below):

"Characteristics of the effects and of the area likely to be affected, having regard, in particular, to:

- the probability, duration, frequency and reversibility of the effects,

- the cumulative nature of the effects,

- the transboundary nature of the effects,

- the risks to human health or the environment (e.g. due to accidents),

- the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected),

- the value and vulnerability of the area likely to be affected due to:

- *special natural characteristics or cultural heritage,*
- *exceeded environmental quality standards or limit values,*
- *intensive land-use,*

- the effects on areas or landscapes which have a recognised national, Community or international protection status."

2.5.8 The detailed matrices used in the assessment of the R&LC E policy include consideration of the duration, frequency, permanence and geographic extent of effects (including transboundary effects) which feed into the consideration of magnitude (i.e. the degree of change that the proposed objective would have on the environment). This is then correlated with the value and vulnerability of the receiving environment, which includes consideration of the protected status of the area.

2.5.9 Table 3.3 below shows how significance of effect (which can be beneficial or adverse) is determined. A descriptive summary of the significance of likely effects for each SEA Objective and an overall verdict on the priority scheme assessed is provided alongside each detailed matrix.

Table 2.3: Significance of Effects Matrix

		MAGNITUDE OF CHANGE			
		High	**Medium**	**Low**	**Negligible**
VALUE /	**High**	Major	Major/ Moderate	Moderate	Moderate/ Minor

	Medium	Major/ Moderate	Moderate	Moderate/ Minor	Minor
	Low	Moderate	Moderate/ Minor	Minor	Minor/ Negligible
	Negligible	Moderate/ Minor	Minor	Minor/ Negligible	Negligible

2.5.10 The significance of effect can be either adverse or beneficial. The key used in the detailed matrices is therefore as follows:

Key for Significance of Effect	
	Major or Major/Moderate beneficial effect
	Moderate or Moderate/Minor beneficial effect
	Minor or Minor/Negligible beneficial effect
	Negligible beneficial/adverse effect or neutral effect
	Minor or Minor/Negligible adverse effect
	Moderate or Moderate/Minor adverse effect
	Major or Major/Moderate adverse effect

Cumulative Effects Assessment

2.5.11 The SEA Directive (in Annex I) also requires identification and evaluation of likely secondary, cumulative and synergistic effects of the Policy. Cumulative effects are best considered by looking at the Policy as a whole, as the insignificant effects of different objectives may combine with one another to create a significant effect even if individually the objectives are assessed as unlikely to have a significant effect. Synergistic effects go beyond this, producing a total effect that is greater than the sum of the individual effects. Secondary effects are those that are not a direct result of the programme, but where, over time the original effects lead to additional impacts. These terms are not mutually exclusive, and often the term 'cumulative effects' is taken to include secondary and synergistic effects.

2.5.12 In order to ensure that cumulative effects are considered throughout the SEA and the Policy preparation process, some consideration has been given through the SEA Objective 'Natural Capital', which is a broad topic that looks at the inter-relationship between all of the other sustainability topics. Such effects have also been considered through the review of other plans and programmes carried out during the scoping process.

2.5.13 The main purpose of the cumulative effects assessment is to report on the identified significant cumulative effects in a transparent and accessible way. This is done in descriptive format, with particular focus on analysis of effects on selected environmental resources; past impacts and future impacts relating to these resources; cumulative impact pathways (including cause-effect relationships); uncertainties and assumptions; and in-

combination effects (of the Policies identified as having adverse effects in the detailed matrix assessment) with the plans and programmes identified in Section 4.2 and Appendix B.

2.6 Uncertainties

2.6.1 The following uncertainties have been encountered during the SEA of the Policy:

- the exact type, scale, location and timing of future R&LC E development that may come forward as a result of the implementation of the Policy is unknown;
- there are uncertainties with regard to the exact type and magnitude of effects associated with new development and activity in the renewables sector, particularly emerging technologies;
- the type, scale and location of measures to enhance biodiversity that may come forward as a result of the implementation of the policy are unknown; and
- future changes to the socio-economic and environmental baseline are difficult to predict.

2.6.2 No aspects of the Policy outlined within this document are location-specific; they apply to the whole of Northern Ireland. It is recognised that with a programme of this nature, the precise environmental impacts will depend on the specific projects that come forward.

2.7 Links to Appropriate Assessment

2.7.1 Under Article 6(3) of the Habitats Directive, an Appropriate Assessment (AA) is required where a plan or project is likely to have a significant effect upon a European site, either individually or in-combination with other projects.

2.7.2 An initial stage 1 assessment was issued to DAERA and Loughs Agency on 28 June and 6 September 2022, respectively, for consideration. Comments received have been considered and reflected, where appropriate, in version 3 of the stage 1 assessment.

2.7.3 It is concluded that a Stage 2 AA is not required at this stage. The Department will however keep under review this Stage 1 screening assessment as the policy development process progresses and following the public consultation stage. Where appropriate, the Department will prepare a revised Stage 1 screening assessment.

3 THE CURRENT RENEWABLE ENERGY POLICY

3.1 Background and General Principles

3.1.1 The Department published the Strategic Planning Policy Statement (SPPS) for Northern Ireland (NI) in September 2015. The SPPS consolidates some twenty separate policy publications into one document, and sets out regional strategic planning policy for a wide range of planning matters. It also provides the core planning principles to underpin delivery of the two-tier planning system with the aim of furthering sustainable development. The SPPS provides the strategic direction for planning authorities to bring forward detailed operational policies within future local development plans and it is also a material consideration in the determination of individual planning applications, the vast majority of which are determined by planning authorities.

3.1.2 On 21 April 2021, former Infrastructure Minister, Nichola Mallon announced her decision to review regional strategic planning policy on renewable & low carbon energy, as contained in the SPPS. Officials have been progressing the review in accordance with policy development best practice, including during the tenure of the last DfI Minister (John O'Dowd).

3.1.3 Regional strategic planning policy for renewable energy development is set out within the Department's SPPS and Planning Policy Statement 18 (PPS 18) 'Renewable Energy,' which is currently retained under the transitional arrangements of the SPPS. The overall policy approach is to facilitate the achievement of targets for renewable energy generation whilst balancing other important planning considerations, such as impacts on landscape character, visual and residential amenity, nature conservations interests, public safety etc.

3.1.4 The stated aim of the SPPS (2015) in relation to renewable energy is as follows: 'to facilitate the siting of renewable energy generating facilities in appropriate locations within the built and natural environment in order to achieve Northern Ireland's renewable energy targets and to realise the benefits of renewable energy without compromising other environmental assets of acknowledged importance' (Paragraph 6.218 refers).

3.1.5 The SPPS and extant PPS 18 (August 2009) set out a wide range of objectives which have acted to ensure that renewable energy development made an increased contribution to the overall energy mix in accordance with the Executive's former Strategic Energy Framework (SEF). The SEF was published in September 2010 and set a target of 40% electricity from renewable energy by 2020.

3.1.6 The current planning policy framework has played its part in facilitating, meeting and exceeding the SEF target. However, the new Energy Strategy (2021) established a renewable electricity consumption target of 70% by 2030 that was then increased to 80% by 2030 by the Climate Change (Northern Ireland) Act 2022.

3.1.7 A main principle of new Energy Strategy is to replace key fossil fuels with renewable energy and become more self-sufficient, strengthening Northern Ireland's security of

supply. The Energy Strategy takes account of the cost of living crisis (which includes the sharp rise in energy costs).

3.1.8 A key driver in achieving and exceeding the SEF targets by 2020 was the financial subsidies available by way of NI Renewables Obligation (NIRO). The NIRO played a pivotal role in achieving the expansion of renewable energy and the previous renewable energy targets. The closure of NIRO in 2016/17 resulted in a subsequent reduction in the number of planning applications for renewable energy development.

3.1.9 The options paper considers the potential way forward for the review in respect of the following 9 policy themes.

3.2 Renewable Energy Policy Themes currently within the SPPS

Policy Theme 1 - Regional Strategic Planning Policy & Energy Targets

3.2.1 Within the current SPPS there is positive support for increasing renewable energy development in order to achieve renewable energy targets whilst recognising that final decisions must take into account potential unacceptable adverse effects. The renewable energy planning policy section of the SPPS states in paragraph 6.218 (below) that -

"The aim of the SPPS in relation to renewable energy is to facilitate the siting of renewable energy generating facilities in appropriate locations within the built and natural environment ***in order to achieve Northern Ireland's renewable energy targets*** *and to realise the benefits of renewable energy* ***without compromising other environmental assets of acknowledged importance****." (emphasis added)*

3.2.2 Paragraph 6.225 of the SPPS, states that;

"The wider environmental, economic and social benefits of all proposals for renewable energy projects are material considerations that will be given appropriate weight in determining whether planning permission should be granted."

Policy Theme 2 – Locational Considerations

3.2.3 Whilst the SPPS does not include specific policy provision for a spatial approach for renewable energy, the following text is set out in paragraphs 6.222 and 6.223 (re-produced below) –

"Particular care should be taken when considering the potential impact of all renewable proposals on the landscape. For example, some landscapes may be able to accommodate wind farms or solar farms more easily than others, on account of their topography, landform and ability to limit visibility"

"A cautious approach for renewable energy development proposals will apply within designated landscapes which are of significant value, such as Areas of Outstanding Natural Beauty, and the Giant's Causeway and Causeway Coast World Heritage Site, and their wider settings. In such sensitive landscapes, it may be difficult to accommodate renewable energy proposals, including wind turbines, without detriment to the region's cultural and natural heritage assets."

Policy Theme 3 – Siting New Wind Farms in Perpetuity

3.2.4 The SPPS does not provide policy provision that indicates new wind farms should be sited in perpetuity. In Northern Ireland, the operating period of a wind farm is generally a matter for the developer and the relevant planning authority and tends to be specific to the nature of the development and its expected life span.

Policy Theme 4 – Noise, Shadow Flicker and Separation Distance.

3.2.5 Paragraphs 4.11 & 4.12 of the SPPS, Core Planning Principle 'Improving Health and Well-being', currently provides some general direction in relation to 'Safeguarding Residential and Work Environs'.

3.2.6 In addition, paragraph 6.224 of the SPPS' Renewable Energy subject policy states that –

"Development that generates energy from renewable resources will not be permitted where the proposal and any associated buildings and infrastructure, will not result in an unacceptable adverse impact on the following considerations:

- *public safety, human health, or residential amenity;*
- *visual amenity and landscape character;*
- *biodiversity, nature conservation or built heritage interests;*
- *local natural resources, such as air quality, water quality or quantity; and*
- *public access to the countryside."*

3.2.7 Furthermore, paragraph 6.229 of the SPPS specifically states within the Renewable Energy subject policy, that -

"The factors to be considered on a case by case basis will depend on the scale of the development and its local context. In addition to those factors set out at paragraph 6.228 proposals will also be assessed in accordance with normal planning criteria, including such considerations as: access arrangements, road safety, good design, noise and shadow flicker; separation distance; cumulative impact; communications interference; and, the inter-relationship between these considerations."

Policy Theme 4 - Wind Turbines & Amenity Considerations (Theme 4a-Noise Assessment)

3.2.8 General guidance with regards noise considerations is set out in Annex A of the SPPS 'Managing Noise and Improving Air Quality'. Whilst this advice is not provided specifically for the assessment of noise from wind turbines, this information should be treated as a material consideration in the determination of all planning applications for proposals likely to give rise to significant levels of noise.

3.2.9 The SPPS includes general policy provisions with regards noise considerations, the Best Practice Guidance (BPG) to PPS 18 provides further specific guidance to the overall

policy approach to noise from wind turbines, and promotes the use of the ETSU-R-97 for the assessment of noise impacts associated from wind energy development.

3.2.10 It is important to note that the SPPS' 'Transitional Arrangements' include retention of the BPG, which will continue to have effect (where relevant) unless and until such guidance is updated, revised or replaced by new Departmental guidance on this planning issue.

3.2.11 The ETSU-R-97 standard and its good practice guidance is the current methodology for noise assessment and remains the preferred methodology for the acoustic measurement of noise from wind turbines in Northern Ireland.

Policy Theme 4 - Wind Turbines & Amenity Considerations (Theme 4b - Separation Distances)

3.2.12 In terms of separation distances, the SPPS includes regional strategic planning policy for wind farms (defined as development comprising more than 2 turbines), however, these policy provisions do not apply to single wind turbines. Paragraph 6.227 of the SPPS states –

"For wind farm development a separation distance of 10 times rotor diameter to occupied property, with a minimum distance not less than 500m, will generally apply."

3.2.13 The SPPS recognises 'Public Safety' as an important planning consideration to be taken into account in respect of planning proposals for Renewable Energy.

3.2.14 The BPG to PPS 18, includes further advice and guidance in relation to separation distances in terms of safety considerations, which apply to both single wind turbines and wind farm development proposals. In relation to separation distances in terms of safety considerations, paragraph 1.3.52 of the BPG states -

"For wind farm developments the best practice separation distance of 10 times rotor diameter to occupied property should comfortably satisfy safety requirements. For a smaller individual wind turbine, for example on a farm enterprise, the fall over distance (i.e. the height of the turbine to the tip of the blade) plus 10% is often used as a safe separation distance."

Policy Theme 4 - Wind Turbines & Amenity Considerations (Theme 4c- Shadow Flicker)

3.2.15 The SPPS includes reference to the need to consider amenity aspects, including shadow flicker, when determining planning applications for renewable energy development proposals.

3.2.16 Paragraph 6.229 of the SPPS indicates –

"The factors to be considered on a case by case basis will depend on the scale of the development and its local context. In addition to those factors set out at paragraph 6.228 proposals will also be assessed in accordance with normal planning criteria, including such considerations as: access arrangements, road safety, good design, noise and shadow flicker; separation distance; cumulative impact; communications interference; and, the inter-relationship between these considerations."

3.2.17 In addition, paragraphs 1.3.72 – 1.3.78 of the BPG to PPS 18 provide further detail and advice on shadow flicker.

Policy Theme 5 - Decommissioning and Site Restoration for New Development

3.2.18 Paragraph 6.233 of the SPPS indicates that –

"In relation to developments such as wind farms and solar farms, applicants will be required to provide details on future decommissioning, including proposals for site restoration. In such cases planning conditions (or a legal agreement where appropriate) should be used."

3.2.19 In addition, Best Practice Guidance (BPG) to Planning Policy Statement 18 'Renewable Energy' 2009 states *that* –

1.3.86 "The decommissioning of a wind energy development once electricity ceases to be generated will need to be assessed. Plans for decommissioning should be outlined at the planning application stage. Issues to be addressed include restorative measures, the removal of above ground structures and equipment, landscaping and/or reseeding roads. On occasion it may be appropriate to allow tracks to remain, e.g., as part of a walking route after decommissioning.

1.3.87 "A decommissioning plan may be covered in conditions and/or a legal agreement accompanying planning permission and will be triggered by the expiry of the consent or in the event of the project ceasing to operate for a specified period. Developers should demonstrate that funding to implement decommissioning will be available when required.

1.3.88 "It is likely that the duration of the planning permission will be linked to the expected operational life of the turbines. However during this period, proposals may be forthcoming to extend the life of the project by re-equipping or to replace the original turbines with new ones. While there are obvious advantages in utilising established sites, such cases will have to be determined on their individual merit and in the light the then prevailing policy and other relevant considerations."

3.2.20 In practice, the provisions of the BPG to PPS 18, as indicated above, also apply to single wind turbines and other forms of renewable and low carbon development.

Policy Theme 6 - Solar Farms and Agricultural Land

3.2.21 The SPPS' Renewable Energy subject policy identifies solar energy as one of the main sources of renewable energy. The general provisions of current policy are applicable to proposals that seek to harness solar energy.

3.2.22 The SPPS' Core Planning Principle 'Preserving and Improving the Built and Natural Environment' (paragraph's 4.37 – 4.40) promotes the safeguarding the unique landscape (including heritage assets) and biological diversity which makes an important contribution to the protection of the wider global ecosystem.

3.2.23 In relation to the potential impact of all renewable energy proposals on the landscape, paragraph 6.222 and 6.223 of the SPPS provide that;

"Particular care should be taken when considering the potential impact of all renewable proposals on the landscape. For example, some landscapes may be able to accommodate wind farms or solar farms more easily than others, on account of their topography, landform and ability to limit visibility" and

"A cautious approach for renewable energy development proposals will apply within designated landscapes which are of significant value, such as Areas of Outstanding Natural Beauty, and the Giant's Causeway and Causeway Coast World Heritage Site, and their wider settings. In such sensitive landscapes, it may be difficult to accommodate renewable energy proposals, including wind turbines, without detriment to the region's cultural and natural heritage assets."

3.2.24 The SPPS does not provide any specific policy provision that would expressly support and promote the use of brownfield land for solar development, before considering such development opportunities on green field sites.

Policy Theme 7 - Co-Locating Renewable, Low Carbon and Supporting Infrastructure

3.2.25 The SPPS and the Best Practice Guidance to PPS 18: 'Renewable Energy' do not include specific policy provision for the co-location of renewable & low carbon technologies and supporting infrastructure or the co-location of renewables developments and other land-uses, such as facilitating the linking of R&LC energy with major new development and high energy users or the co-location of major developments to enable the use of local heat opportunities. However, this does not prevent such proposals from coming forward.

Policy Theme 8 - Re-Powering Existing Wind Farms

3.2.26 The SPPS does not currently provide specific policy provisions for the re-powering of existing wind farms or other categories of renewable and low carbon energy development.

Policy Theme 9 - Emerging Technologies & Other Issues

3.2.27 Whilst the SPPS and the Best Practice Guidance to PPS 18: 'Renewable Energy' provide general policy provisions that may be relevant to many forms of renewable energy development, including a supportive general regional planning policy on micro-generation (para. 3.13 refers), it does not include specific policy provisions for some emerging technologies, such as battery energy storage for renewable & low carbon energy, hydrogen energy and geo-thermal energy, however, this does not prohibit such forms of development proposals coming forward.

3.3 Renewable and Low Carbon Energy Policy Consultation

3.3.1 On 21 April 2021, former Infrastructure Minister, Nichola Mallon announced her decision to review regional strategic planning policy on renewable & low carbon energy, as contained in the SPPS. Subsequently, the Department circulated an 'Issues Paper' to key stakeholders on 15 December 2021 for a period of 8 weeks consultation ending on 11 February 2022. The Issues Paper was also posted on the Departmental website so that anyone with an interest in the review could respond.

3.3.2 This pre-consultation exercise is intended to assist the Department with the drafting of revised regional strategic planning policy on this subject area. It builds upon a previous

Call for Evidence in 2016 and the independent consultant's research report in 2018 on this policy field.

3.3.3 A total of 43 responses were received to the 'Issues Paper'. Overall, there continues to be varied and contrasting perspectives on the appropriateness of the current regional strategic planning policy approach. Whilst most responses raise matters relating to wind energy, detailed comments have also been submitted in respect of solar, anaerobic digestion, hydro-development, geothermal, hydrogen, battery energy storage systems (BESS) and other emerging technologies.

3.3.4 Generally, the responses received suggest that there is a predominance of positive support for fully taking account of the climate emergency and the Executive's energy targets, as set out in the Energy Strategy – A Path to Net Zero. However, there are contrasting views on how revised policy might address this changed context and how any potential policy change options can best be implemented. Where appropriate, the responses that have been received have been taken into account in this paper.

3.4 Previous Environmental Outputs

3.4.1 The current planning system has made a positive contribution to meeting and exceeding previous renewable energy strategy target with 51% of electricity consumed being generated from indigenous renewable sources in 2022.(DfE, 2023)

3.4.2 Since the reform of the planning system and the transfer of planning powers to local government on 1 April 2015, to the end of September 2022, 837 renewable energy planning applications were approved, including:

- 32 wind farms;
- 583 single wind turbines;
- 32 hydroelectric plants;
- 93 applications for solar panels;
- 76 biomass/anaerobic digesters; and
- 21 other (includes, Landfill Gases, Waste Incineration and Heat Pumps).

3.5 Characterisation of the Policy Area

3.5.1 NI is one of four administrative regions of the UK. It is a predominantly a rural region, with 80% of the landmass in agricultural and forestry use. Almost two fifths of the urban population live within the Belfast Metropolitan Area with another sizeable concentration of population around Derry/Londonderry. The region has a distinctive cultural heritage and retains strong rural dimensions through the importance of agriculture, tourism and their interactions with the landscape.

3.5.2 NI has 650 km of coastline, the majority of which is protected for its special interest and a number of coastal species and habitats are recognised as internationally important. In addition, the NI coast has highly productive and biologically diverse ecosystems with features that serve as critical natural defences against storms, floods and erosion.

3.5.3 There are a number of nature conservation, landscape, seascape and cultural heritage designations in NI. These are designated as either statutory (protected by law) or non-

statutory (a material planning consideration), and can be of international, national or local importance.

3.5.4 Information on local and/or non-statutory designations is held by individual local authorities and has not been obtained for this strategic level assessment.

4 FINDINGS OF THE SCOPING PROCESS

4.1 Scoping Consultation Responses

4.1.1 The first stage of the SEA process is Scoping; this aims to identify the key issues, the main areas of interaction between the Policy and the SEA objectives and set the scope of the SEA. This was completed by RSK and the Department in 2022, with the findings published in the SEA Scoping Report.

4.1.2 The SEA Directive requires authorities with "environmental responsibilities" (hereafter referred to as the Consultation Bodies) to be consulted on the scope and level of detail of the information which must be included in the Environmental Report (Article 5(4)). The Directive does not require full consultation with the public or bodies other than Consultation Bodies until the Environmental Report on the programme is finalised.

4.1.3 A five-week consultation exercise supported by a draft SEA Scoping Report was carried out in June 2022. Consultation responses were received from the Department of Agriculture, Environment and Rural Affairs (DAERA) and the Environmental Protection Agency (EPA) and in summary, the following changes were made:

- Additions and updates to baseline data;
- Minor changes to SEA Sub- Objectives;
- Additional plans and programmes reviewed; and
- Points raised taken into consideration during the SEA environmental report.

4.1.4 A list of the consultation responses, relevant to the SEA, and how these have been addressed is set out in Appendix C.

4.2 Other Plans, Programmes and Environmental Protection Objectives

4.2.1 Assessing the relationship of the Policy with the existing International, European and National framework of plans and programmes and identifying gaps and conflicts is a key part of the SEA process. This includes the consideration of statutory and non-statutory environmental protection objectives.

4.2.2 The scoping process involved an initial review of plans, programmes and environmental protection objectives. A number of plans and programmes have been added along with an assessment of the inter-relationship and possible cumulative effects with the Policy. These are listed and assessed in full in Appendix B, the summary of which can be found in section 6.6.

4.3 Summary of Baseline Data

4.3.1 Schedule 2 of the NI SEA Regulations specifies that the Environmental Report must contain the following information in respect of baseline conditions:

> *"2. The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.*
>
> *3. The environmental characteristics of areas likely to be significantly affected.*
>
> *4. Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Council Directive 79/409/EEC on the conservation of wild birds and the Habitats Directive."*

4.3.2 A summary of the current state of the environment in NI, in respect of each of the sustainability topics is provided below; maps are provided in Appendix A. A more detailed baseline description is provided in the Scoping Report. Analysis of baseline information has been carried out to provide an evidence base for current and likely future environmental conditions without the Policy revision.

4.3.3 Information for this section has been obtained from DAERA, Northern Ireland Environment Agency (NIEA), Northern Ireland Statistics and Research Agency (NISRA) websites and other publicly available information sources.

Ecology and Nature Conservation

Strengths and Opportunities

- NI has a large area of international nature conservation value, including 17 Special Protection Areas (SPAs), 57 Special Areas of Conservation (SACs) and 21 Ramsar sites (NIEA and DAERA, 2021).
- DAERA is currently funding the production of 57 Natura SACs individual Conservation Management Plans (CMPs).
- NI hosts 50 habitat types of Annex I and 18 species of Annex II under the Habitats Directive; as well as all species of bats, all marine mammals and 6 other species of Annex IV (NIEA and DAERA, 2013).
- NI has 394 Areas of Special Scientific Interest (ASSI's) comprising a total of 111,159 ha, defined as being NI's very best wildlife and geological sites, as of 2022 (NIEA and DAERA, 2022).
- The total terrestrial protected sites have demonstrated an increase from 1,384 km^2 in 2009/10 to 1,494 km^2 in 2020/21 (NIEA and DAERA, 2021). In 2021/22, the area of terrestrial protected sites under favourable management in Northern Ireland was recorded as 34,835 hectares (NIEA and DAERA, 2022).
- The total marine protected area increased from 269 km^2 in 2009/10 to 2,410 km^2 in 2020/21 (NIEA and DAERA, 2021).
- The proportion of protected habitats in NI under favourable management has demonstrated an increase of 370% from the baseline data of 86.25 km^2 in 2016, to 319.83 km^2 in 2019/2020 (DAERA, 2021).
- In 2021/22, over half of features within Marine and Terrestrial protected sites were in favourable condition (55%), while 36% were in unfavourable condition (NIEA and DAERA, 2022).

- DAERA Marine and Fisheries Division has designated four new Marine Conservation Zones (MCZs) in the NI Inshore Region, with another in progress, in addition to the existing MCZ Strangford Lough (DAERA, 2021).
- The 2015 strategy 'Valuing Nature – A Biodiversity Strategy for Northern Ireland to 2020' sets out 57 actions to aid biodiversity conservation efforts in the light of identified risks facing the NI environment. The 2020 progress report states that there have been many positive outcomes during the lifespan of the Strategy, 32 actions had been achieved and 22 were partially achieved.
- A key factor in the improved environmental performance is wider societal participation in supporting biodiversity; over 5000 farms are involved in the Environmental Farming Scheme (EFS), schools are now participating in eco-schools initiatives and increase in public participation such as volunteering, demonstrating a year on year growth.
- Between 1994 and 2018, the average population change amongst 37 surveyed breeding bird species for which the Breeding Bird Survey produces statistically robust results in NI demonstrated a 50% increase (NIEA and DAERA, 2021). The long-term 1,305% increases in Buzzard and 1,540% increases in Blackcap are of particular significance.
- The 'Invasive Alien Species Strategy for Northern Ireland 2013' serves the aim of minimising the risks and reducing the negative impacts caused by invasive alien species.
- The former DAERA Minister, Edwin Poots, stated that a NI peatland strategy is being developed (CEH, 2017). In 2021 'The Northern Ireland Peatland Strategy 2021-2040' consultation document has been made available online, providing an outline of the policy drivers for the development of the strategy. The vision of the Strategy entails peatland habitats protection, enhancement and sustainable management. It is expected that an Implementation Structure for the strategy will be published in early 2023 (DAERA, 2022).
- Upland blanket bogs and lowland raised bogs are well represented in NI, as peaty soils cover almost 15% of NI's land (DOE, 2015). A new peat map was developed by the Centre for Ecology and Hydrology (CEH) in 2017. The CEH mapping identified a total peat extent of 242,622 ha.
- Throughout NI the RSPB, the National Trust and Ulster Wildlife have delivered conservation projects including restoration of peatlands and management of 727 ha nature reserves for biodiversity benefit, with 1,600 recorded species including 130 NI priority species (DAERA, 2021).
- In 2020/21, approximately 283 ha of new woodland (65 ha conifer and 218 ha broadleaf) was established by private landowners and part funded by the European Commission under the Forestry Grant Schemes (DAERA, 2021).
- The Woodland Trust has further restored 310 ha of ancient woodland with a further 960 ha surveyed, upholding the ambition is to plant 9000 ha of new woodland by 2030 (NIEA, 2013).
- NI has the highest density of hedgerows in the UK (though they are generally newer, having been planted within the last 200 years) (UK NEA, 2011).
- As revealed in the UK National Ecosystem Assessment (UK NEA) (2011), NI is notable within the UK for its large area of freshwater habitats, their flow dynamics, nutrient characteristics and biodiversity. Open waters and wetlands cover approximately 7% of NI.
- With an astonishing 650 km of coastline, the intertidal loughs, estuaries and marine area are a significant component of NI's biodiversity (National Biodiversity Network (NBN), 2019).

- The NBN State of Nature 2019 report states that management plans for the NI Marine protected areas (MPA) network are being developed through the EU funded Marine Protected Area Management and Monitoring (MarPAMM) project to bring marine sites into favourable condition.

Weaknesses and Threats

- The increased movement of biological materials globally is leading to introduction of new pests and diseases such as *Phytophthora spp*. Invasive species such as Japanese Knotweed are increasingly affecting rural land across NI. The 2020 study by Cuthbert *et al*. has estimated that biological invasions cost the NI economy a minimum of £63.3 million, based on minimum estimates of £5.4 billion or the biological invasions costs to the UK's economy between 1976 and 2019.
- It is approximated that only around 1% of NI's peatlands have been restored in the past 30 years (Northern Ireland Assembly, 2021).
- It is estimated that 90% of lowland raised bogs have been lost or altered due to peat extraction, forestry and drainage in recent decades (Cooper, et al., 2009).
- Over recent decades there has been a large-scale move away from mixed farming to a predominantly pastoral system, leading to the loss of semi-natural habitats, overwintering stubbles and hedgerows (NBN, 2019).
- During 2016, the area of agricultural land managed through agri-environment scheme agreements fell by 85% to 46,000 ha (approximately 4-5% of NI farmland), due to the expiration of the remaining older 10-year agri-agreements (Countryside Management Scheme and Environmentally Sensitive Areas Scheme) (NIEA and DAERA, 2019).
- The area of woodland in the UK as of March 2022 is estimated to be 3.24 million hectares equating to 13% of the total land area. The area of woodland cover in NI represents 9%. This is the lowest forest cover of any of the UK regions (Forest Research, 2022).
- NI is responsible for 12% of UK ammonia emissions, despite only having 3% of UK population and 6% of the land area (DAERA, 2020). Ammonia is seen as a threat for approximately 75% of NI's terrestrial priority habitats and as a threat of high significance for 45% of these habitats due to threat of nitrogen deposition (Expert Working Group on Sustainable Agricultural Land Management for N. Ireland, 2017).
- As per the UK National Ecosystem Assessment (UK NEA) (2011) open waters and wetlands in NI are of particular importance for recreation and tourism, but they have become increasingly eutrophic. While the lowland raised bogs and other wetland habitats have decreased over the past 10 years.

Transboundary Considerations

- Ireland has established 439 SACs covering approximately 1.35M ha, 154 SPAs covering 5.894 km^2 of marine and terrestrial habitats (National Parks and Wildlife Services (NPWS), 2021) as well as 45 Ramsar sites (The Ramsar Convention Secretariat, 2022).
- There are 163 Natural Heritage Areas (NHAs) spread across Ireland. To date, 75 raised bogs have been designated as NHAs, covering approximately 23,000 ha. In addition, 73 blanket bogs are also designated as NHAs, covering approximately covering 37,000 ha (NPWS, 2022).
- Over half (57%) of the 68 Habitat Directive-listed species in Ireland are in favourable condition, while over two thirds (72%) demonstrate stable or improving trends (NPWS, 2019).

- The Countryside Bird Survey (CBS) identified that over a 22-year period, population trend analyses indicate that 60.4% of bird species experienced population increases in Ireland (Lewis, L. et al., 2020).
- Over a 16-year period, 85% of assessed seabird species have demonstrated a population increase (Cummins, S. et al., 2019).
- The most recent assessment of the status of EU protected habitats and species in Ireland 2019 demonstrated that 85% of the habitats assessed have unfavourable overall status. Whilst 46% demonstrated ongoing declining trends, only 2% demonstrated improving trends (NPWS, 2019).
- Agriculture has been identified as a key contributor to the declines in conservation status, with over 70% of habitats being impacted by agricultural practices (NPWS, 2019).

Socio-Economics

Strengths and Opportunities

- The population of NI was estimated as 1,904,600 in June 2021, an increase of 5.1% between 2011 census data and 2021 census data (NISRA, 2022). Over the decade the population of NI demonstrated an average increase of 0.5% per year (NISRA,2020). The two million milestone is expected to be reached by mid-2043 (NISRA, 2019).
- Between the 2001 and 2011 census data, the largest population growth was within settlements of less than 1,000 people and the open countryside (NISRA, 2021). Rural areas, which make up the majority of NI, exhibit a strong sense of community and local identity.
- The employment rate in NI over the period September - November 2022 was at 71.3%, generally lower than the UK average of 75.6% (NISRA, 2023). However, NI demonstrates the largest increase in employment rates in UK when compared with the same period last year, up by 3.3% (Office for National Statistics, 2023).
- The unemployment rate for September-November 2022 decreased over the year to 2.8%. Below the overall UK rate of 3.7%, placing NI as the second lowest of the UK's regions (NISRA, 2023).
- The claimant count (Jobseeker's Allowance Claimants and those claimants of Universal Credit who were claiming for the reason of being unemployed) is approximately 36,900 as of December 2022 (3.9% of the workforce), which shows an increase of 2.1% from previous month's figure but decrease of 11.8% since last year's figures (NISRA, 2023).
- Education attainments in NI are rising. The number of people of working age with high level skills increased from 30.2% in 2007 to 38.4% in 2017. The figure representative of working age population which still had no formal level of education has fallen to 13.3% in 2019, in comparison to 16.6% in 2017 (OECD, 2020).
- The number of qualifications gained by NI's students at UK's higher education institutions (HEIs) has increased by 14% over the past decade, from 18,655 in 2011-12 to 21,245 in 2020-21. The number of qualifications was 21% higher than in 2019/20 (NISRA and DfE, 2022).
- The proportion of working age population with high level skills reached 38.4% in 2017, up from 30.2% in 2007. However, the figure remains below the 42.7% UK average, indicating more can be done to improve the uptake of tertiary qualifications (OECD, 2020).

Weaknesses and Threats

- According to the NI Poverty Bulletin 2020/21 there were 316,000 people in relative poverty and 223,000 in absolute poverty, which equates to 17% and 12% of the population respectively (NISRA and DfC, 2022). This demonstrates only a slight improvement since the 2016/2017 results, when 18% of the population were living in relative poverty and 15% in absolute poverty.
- NI continues to have the highest inactivity rate of all UK regions, above the UK average of 26.6% (Office for National Statistics, 2023). Subsequently, NI remains one of the most deprived regions of the UK as a combined result of having a young population, low labour market participation rates, a high rate of economic inactivity, a larger share of employment in sectors of low productivity and below average wages (NISRA, 2017).
- Deprivation in NI varies geographically with a tendency for more deprived areas to the west, north and south and in Belfast. The predominant majority (95%) of the most deprived Super Output Areas (SOAs) are classified as rural.
- The long-term unemployment rate in 2022 has seen an increase (43.2%) in comparison with the unemployment rate in 2021 (42.5%) (NISRA, 2022).
- A particular historic challenge facing the NI labour market is high levels of working age population being classed as economically inactive. Over the past 15 years, the inactivity rate has varied between just under 26% and 32% and for September – November 2022 was estimated at 26.6% (NISRA, 2023).
- Despite being twice that of the UK's average and the highest of all UK regions, the figure representative of working age population which had no formal level of education in NI has fallen to 13.3% in 2019 (OECD, 2020).

Health and Quality of Life

Strengths and Opportunities

- In 2021/22, almost three-quarters of Health Survey respondents (73%) rated their general health as 'very good' or 'good', reaching pre-pandemic levels (Information Analysis Directorate, Department of Health, 2022).
- Life satisfaction (7.7) and happiness (7.8) scores were higher in 2021/22 compared with year prior (7.6 and 7.5 respectively). Average recorded levels of anxiety also decreased (3.2 to 2.8) (NISRA and The Executive Office, 2022).
- In keeping with the rest of the UK, NI enjoys a 'free at the point of access' health service through the NHS although these services. Between 2011 and 2020 the health and social care workforce grew by 17% (Information Analysis Directorate, Department of Health, 2020).
- The life expectancy for females is estimated at 82.4 years which is almost four years higher than for males (78.7 years), down from over six years multiple decades earlier (NISRA and DoF, 2021).

Weaknesses and Threats

- In 2021/22, the Health Survey respondents living in the most deprived areas were less likely to rate their health as 'good' or 'very good' (61%) than those living in less deprived areas (72% - 80%). Subsequently, the population living in the most

deprived areas were also four times as likely to rate their general health as bad or very bad (17%) compared with those living in the least deprived areas (4%) (Information Analysis Directorate, 2022).

- In 2021/22, more than a third (35%) of respondents reported having concerns about their own mental health in the past year, similar to the findings in 2020/21. Almost half (47%) of those living in the most deprived areas had concerns about their own mental health in the past year, compared with over a third (36%) of those living in the least deprived areas (Information Analysis Directorate, 2022).
- The 2021/22 Continuous Household Survey participants aged 55-64 and 75 and over, reported significantly higher proportions of loneliness than those in the 35-44 and 45-54 age categories (NISRA and The Executive Office, 2022).
- The services offered by the NHS are increasingly under pressure due to a combination of increased demand presented by an ageing population and a comparative reduction in funding relative to historic levels. As such, between 2016/17 and 2020/21 the average number of available hospital beds decreased by 4% (Information Analysis Directorate, 2021).
- Obesity continues to be one of the most important public health challenges facing NI. In 2019/2020, 65% of adults were either overweight (38%) or obese (27%), up from 62% in 2018/2019. The proportion of children classed as overweight or obese has remained roughly the same at roughly 25% overweight or obese (Information Analysis Directorate, 2020).

Soil and Land Use

Strengths and Opportunities

- NI has significant natural resources such as carbon-rich peatland and high quality agricultural grassland. There is good availability of land bank for biomass feedstock for potential use in renewable energy technologies.
- For its relatively compact size NI is one of the most geologically diverse regions in the world (DOE, 2015). Notable sites in NI include caves at Marble Arch, white cliffs at Antrim, Giant's Causeway, Slieve Gullion and the mountains of Mourne.
- It is predicted that soil phosphorus concentrations will steadily decline in the long-term as a result of the Nitrates Action Programme (NAP) and Phosphorus (P) Regulations (NIEA and DAERA, 2019).
- While semi-natural peatlands only cover 12% of the land area of NI, they account for 53% of the soil carbon pool. Peaty soils cover approximately 18% of NI's land area (DAERA, 2021). NI gives a total peat extent of 242,622 ha (CEH, 2017).
- In 2021 DAERA published the 'Northern Ireland Peatland Strategy 2021-2040' consultation document, which identifies the ecosystem services provided by healthy peatlands, including climate regulation and adaptation, details the current factors affecting semi-natural peatlands and sets out the objectives to support sustainable peatland management. It is expected that an implementation structure for the strategy will be published in early 2023 (DAERA, 2022).
- The new Environmental Farming Schemes (EFS) opened in 2017 (NIEA and DAERA, 2018). By the end of 2020 there are three tranches of the scheme with 4,700 agreements covering 47,700 ha of land (NIEA and DAERA, 2021).
- Agri-Food is one of NI's largest and most successful industries, with exports in particular increasing. The gross output of NI's agriculture was estimated at £2.23 billion for 2020, a 4.2% increase from 2016 (DAERA, 2021).

- Over half (55%) of NI's woodlands and semi-natural forests are owned and managed by the Forest Service. The remainder is managed mostly by private landowners (NIEA, 2013).
- In 2020/21, there were 283 ha of new plantings, which were part funded by the by the European Commission under the 2014-2020 Rural Development Programme. This represents a 34.7% increase on the 210 ha planted in 2017/18 and a large increase on the 54 ha planted in 2015/16 (NIEA and DAERA, 2021).

Weaknesses and Threats

- Degradation of the soil resource is seen in recent years. In 2016/17, there were slightly more soils that were either under or over-enriched with phosphorus compared to 2010/11 (NIEA and DAERA, 2019).
- Agricultural land quality is typically classified through a six grade system; the top three grades, Grade 1, 2 and 3a, are referred to as the 'best and most versatile' land. The Agri-Food and Biosciences Institute revealed NI in 2007 that the largest share per grade falls on Grade 4 (30.6%), demonstrating issues in relation to land quality (AFBI and BGS, 2007).
- Currently less than 10% of NI farmland has an up-to-date soil analysis, whilst 64% of soils are not at optimum pH. This can partially be attributed to almost 30% of agricultural land being let in 'Conacre', a short-term arrangement which denies tenants security in their land tenure and obstructs long-term planning (Expert Working Group, 2017).
- At the end of 2015, 305,000 ha of land in NI were under agri-environment scheme agreements. The area of land managed through agri-environment scheme agreements dropped by 84.3% from 2015 to 2020 due to the expiration of the agreements under the older schemes (CMS and ESAS) (NIEA and DAERA, 2021).
- Recent condition assessment for peatland SACs and ASSIs has demonstrated that a high proportion of the designated sites is generally 'unfavourable' or 'unfavourable-recovering' condition (DAERA, 2021).
- There is limited information on the current status of peatland in NI, however, particularly with regards to soil structure, pH and nutrient profiles. As the majority of peatlands in NI are in private ownership, their conservation and management are dependent on the adoption of good practices by their owners.
- Upland blanket bogs and lowland raised bogs are well represented in NI. However a loss of 8% of vegetation in lowland raised bogs, 25% in upland bog and 18% in fens was recorded between 1992 and 1998 due to overgrazing, drainage and peat cutting (UK NEA, 2011).
- The new EFS opened in 2017 and had a target of up to 6,200 EFS agreements in place by 2020 (NIEA and DAERA, 2018). The initial target of 6,200 was not reached (NIEA and DAERA, 2021).
- Potential threats to NI's geological sites include landfill, coastal defence work and changes to natural systems (including human-induced changes).
- NI has the lowest level of tree cover (9%) of any UK regional territory (Forest Research, 2022). Much of the woodland lacks active management, is fragmented and not easily accessible by the public due to distance from residential areas.
- NI, like other parts of the UK, has a legacy of land affected by contamination, often arising from its past industrial use (e.g. shipbuilding, textiles, petrol stations, etc.) but also from natural or diffuse sources. It is not known how much land is contaminated, although DOE records estimate that there are over 12,000 sites across NI that have had some form of previous industrial use (DAERA, 2022).

Water

Strengths and Opportunities

- In alignment with the aspirations of the Nitrates Directive, all rivers monitored for nitrate levels had an annual mean concentration of less than 25 mg NO3/l in the 2012 to 2016 period. In 2019, 99.8% of all sites had an annual mean concentration of less than 25 mg NO3/l (NIEA and DAERA, 2021).
- Lakes are a significant source of drinking water supplies. Lough Neagh and Upper and Lower Lough Erne make up over 90% of the total area of lakes greater than 50 ha in NI (NIEA and DAERA, 2021).
- The WFD introduced new priority substances to the monitoring programme, which is a significant change in monitoring and classification for rivers, lakes, and other water bodies. For the first time the presence of ubiquitous, persistent, bioaccumulative, toxic (uPBT) substances have been assessed as part of chemical status.
- Concentration of groundwater nitrate across NI are generally low with 54 of 56 (96%) stations below 25mg/l NO_3/l in 2019 (i.e., less than half of the permitted maximum level) (NIEA and DAERA, 2021).
- Bathing water quality is measured against mandatory and guideline standards. Based on 2015-2018 data, 58% of the beaches monitored in met the 'excellent' standard, 27% met the 'good' standard. In 2018, nine beaches and two marinas were awarded Blue Flag status, meeting a number of criteria such as water quality, safety, facilities and information (NIEA and DAERA, 2019).
- NI has 650 km of coastline and many of the larger towns are associated with ports. The majority of the coastline is protected for its special interest. A number of the coastal species and habitats are recognised as internationally important. The coastline is also vital as a defence against storms, floods and erosion. The marine area is a key asset in terms of biodiversity, recreation, tourism, transport, aquaculture and fishing (UK NEA, 2011).
- Compliance of waste water treatment works against the numeric conditions of their Water Order consent is a key performance indicator for the water utility sector and has continued to improve since 2007 having reached 99% in 2019. Drinking water quality remains at the highest level of compliance since 2004, at 99.86% of public drinking water and 98.85% of private water supplies (NIEA and DAERA, 2020).
- DAERA's consents and permits compliance rate for trade effluents continues to remain high at 93% in 2019 (NIEA and DAERA, 2020).
- Drinking water quality in Northern Ireland is of a high standard, as the overall compliance for the mains water Inspectorate was 99.88% (The Drinking Water Inspectorate (DWI), 2021).
- NI has decreased water demand by 15% through control of leakages and revised projections suggest that control of demand can help offset the effects of climate change. While the original assessment projected a number of Water Resource Zones (WRZs) to be deficit by 2013 and all by 2018, with the new demand data, no WRZs were projected to be deficit in the 2030s, nor in the same scenario in the 2080s (ASC, 2016).

Weaknesses and Threats

- River monitoring in NI is carried out routinely by NIEA against Water Framework Directive (WFD) standards. In 2021, no river waterbodies achieved 'good' or 'high' overall status, as uPBT substances were included as part of the chemical

assessment. Of the three main river basins in NI – Neagh Bann, North West and North East, water quality is noticeably better in the North West.

- DAERA 2021 analysis shows that there has been a deterioration trend in the water quality of NI's waterbodies since previous surveys, as winter Dissolved Inorganic Nitrogen (DIN) has increased from 26.45 µM to 35.71 µM between 2015 and 2019, before decreasing to levels of 26.2 µM in 2020. In 2021, no waterbodies monitored in NI achieved good overall status (NIEA and DAERA, 2021).
- Overall status of marine waterbodies is measured, and this accounts for both the ecological and chemical status of each waterbody. In 2018, 10 marine waterbodies were classified as 'high' or 'good' status, whilst the remaining 15 were at 'moderate', 'poor' or 'bad' status (NIEA and DAERA, 2019).
- DAERA's consents and permits compliance rate for private sewage fell to 72% in 2019. A notable decrease in compliance since 2010, which recorded a high of 88% compliance. The compliance rate for trade effluent fell from 98% in 2018 to 93% in 2019 (NIEA and DAERA, 2020).
- In 2019, 1,754 water pollution incidents were reported to NIEA or discovered during inspections, of which 53.6% were substantiated as having an impact on the water quality of the receiving waterway. The number of incidents decreased by 2% and the number of substantiated incidents increased by 1.8% compared to 2018. Farming was identified to account for the largest proportion of substantiated incidents investigated (36.5%) (NIEA and DAERA, 2021).
- Monitoring of shellfish waters takes place in NI; only 2 out of 9 designated Shellfish Waters Protected Areas (SWPAs) complied with the E. coli standard in 2018 (NIEA and DAERA, 2019).
- The UK Climate Change Risk Assessment is predicting a decrease in the volume of water available for public supply in NI over the medium term, by around 10% by the 2050s (ASC, 2016).

Transboundary Considerations

- There are a number of rivers that run through both Ireland and Northern Ireland and a number of lakes that straddle the border. Two sea loughs, both designated as SPAs, Lough Foyle and Carlingford Lough are located between the border of Ireland and Northern Ireland; both SPAs contain ASSIs and include Shellfish Water Protected Areas (DAERA, 2019).
- According to Marine Water Bodies Status 2018, Lough Foyle is classified as having a 'good' status and Carlingford Lough is classified as having a 'moderate' status (DAERA, 2023).
- Water quality in Ireland has deteriorated over the past two decades, sewage and diffuse agricultural sources are the main threat to Ireland's surface water quality (EC, 2020).
- The proportion of rivers and streams with 'good' or 'moderate' quality have increased from an average annual 49% in 1987 to 66% in 2020. However, the proportion of rivers and streams with 'high' water quality declined from 27% in 1987-1990 to 17% in 2017-2020 (CSO, 2022).
- In 2021, 91% of bathing water sites surveyed had good water quality and 97% had sufficient water quality; 76% of groundwater bodies were found to be of satisfactory quality (CSO, 2022).

- Peat extraction for commercial or domestic purposes, and drainage of peatlands has been identified as a significant pressure in 8% of water bodies that are at risk of not meeting their water quality objectives. (EPA Catchments Unit, 2019).
- Just over 50% of river water bodies are in 'high' or 'good' ecological status and almost 50% are in 'moderate', 'poor' or 'bad 'ecological status. Nearly one fifth 18.5% of monitored river water bodies are in 'poor' or 'bad' status and are severely polluted (EPA, 2022).

Air Quality

Strengths and Opportunities

- There are 19 Air Quality Management Areas (AQMAs) in NI, with 9 of the 11 district councils having declared at least one (DAERA, 2020).
- There were 21 automatic air quality monitoring stations operating in 2020 in NI (DAERA, 2020). EU limit values, target values and corresponding Air Quality Standard (AQS) objectives, have been met for the following pollutants: particulate matter as PM_{10} and $PM_{2.5}$, Nitrogen Dioxide (NO_2), Ozone, Carbon monoxide (CO), benzene, sulphur dioxide (SO_2) and metallic pollutants (lead, arsenic, cadmium and nickel).
- In 2020, levels of NO_2 at ten sites did not breach the UK Air Quality Strategy annual mean limit value of 40 µg/m^3, reaching the mean of 24.3 µg/m^3. This demonstrates a positive change from 35.6 µg/m^3 reported in 2014 (NIEA and DAERA, 2021).
- In 2020, the annual mean concentration of particle matter (PM_{10}) did not breach Air Quality Strategy annual mean limit value of 40 µg/m^3 either. The annual mean concentration of PM_{10} across urban areas was 15 µg/m^3 and the mean for the Lough Navar rural background monitoring site was 7 µg/m^3 (NIEA and DAERA, 2021).
- NI's air quality has seen a marked improvement in recent decades. Sulphur dioxide has decreased substantially due to the wider availability of natural gas, which has led to a reduction of coal and oil used for domestic heating (NIEA, 2013).

Weaknesses and Threats

- The access to public transport services in rural areas is poor, leading to a high dependency on cars. This is consistent with the trend seen in the rest of the UK and Western Europe.
- Although no sites exceeded the AQS objective or the EU target value in 2020 for Ozone (O_3), the possibility remains for the future. Ozone levels remain variable from year to year as ozone concentrations are affected by long-range, metrological and local factors (DAERA, 2020).
- Benzo[a]pyrene has been monitored at three different sites in NI. While all sites met the EU target value, two of the three sites where benzo[a]pyrene is monitored continue to exceed AQS objective (DAERA, 2020).
- Ammonia emissions from livestock increased by 6.9% since 2001 and ammonia emissions from the application of nitrogen fertilisers decreased by 18.9%. Overall ammonia emissions have increased in NI by approximately 8.5% from 2001 to 2019 (DAERA, 2021).
- There is a lack of a downward trend in the most widely exceeded pollutant, NO_2, which has remained generally level since the late nineties. This has been attributed to the increase in proportion of diesel cars in the market and retrofitting

of pollution control devices to vehicles, as well as an increase in hemispheric background concentrations of ozone.

Transboundary Considerations

- As Ireland shares a land boundary with Northern Ireland there is potential for transboundary air quality impacts.
- Air quality in Ireland is generally improving. The EPA's Informative Inventory Report 2021 confirmed an overall reduction trend in emissions between 1990 and 2019 (EPA, 2021).
- In the Air Quality Index (AQI) rankings 2021, Ireland ranked 98th out 106 countries, up from 91st in 2020, perceived as a 'good' average (IQAir, 2021).
- Ireland has higher than average per capita emissions of CH_4 and NO_2 from any of the EU member states, primarily due to high agriculture emissions (EPA, 2022).
- Ammonia emissions have increased by approximately 14.4% between 1990 and 2019, predominantly due to emissions from livestock (EPA, 2021).
- Ireland continues to be compliant with the EU air quality standards for most pollutants such as PM, NO_2, ozone, polycyclic aromatic hydrocarbons (PAH) and Dioxins (EPA, 2021).
- There are some localised air quality issues in smaller towns and villages associated with pollutants such as NO_2 and PM. $PM_{2.5}$ is the most problematic pollutant in Ireland from an air quality point of view (EPA, 2020).
- Emissions of SO_2 in Ireland continue to be within the required EU emission limits and continue to decrease. This positive result is substantially due to the switch to lower sulphur content fuels in electricity generation and transport (EPA, 2021).

Climate Change

Strengths and Opportunities

- The average annual temperature in Northern Ireland has seen an increase of 0.7°C from mid-1970s to mid-2010s, while annual mean rainfall has seen an average increase of 6.4% from mid-1970s to mid-2010s (CCC, 2021).
- Northern Ireland's Climate Change Act 2022 legally requires, in delivering, that all Northern Ireland Departments contribute to delivering its targets, carbon budgets and climate action plans. It also legally supports all departments' climate change related strategies and policies now and in the future.
- The NI Executive's Green Growth Strategy sets out how the Climate Change Act will be delivered, driven to meet its targets and grow the Northern Ireland economy in a sustainable way. The Climate Change Act and the Green Growth Strategy will significantly shape future Programmes for Government, policy development and investment decisions.
- The Greenhouse Gas (GHG) Emissions Reduction Action Plan was published in February 2011 and a commitment was given to provide the NI Executive at the Stormont Assembly with an annual report on progress towards the NI target of a reduction in GHG emissions of at least 35% by 2025 based on 1990 levels.
- NI's total GHG emissions have reduced by 18% since 1990 (DAERA, 2019). Total GHG emissions from the residential sector in NI accounted for 14% of NI's total GHG emissions in 2019, a decrease of 21.4% from the base year.
- There is good potential for carbon storage in NI considering the Department of Agriculture and Rural Development's (DARD) strategic aim to double the area of

tree cover over the next 50 years in the context of sustainable forestry. There is also a very high percentage of grassland cover available to capture carbon.

- In June 2019 the UK became the first major economy to commit to a 100% reduction in GHG emissions by 2050. The Department for the Economy published the Northern Ireland Energy Strategy - the Path to Net Zero Energy and its associated action plan on 16 December 2021 and in January 2022 respectively. The Energy Strategy established a renewable electricity consumption target of 70% by 2030 that was then increased to 80% by 2030 by the Climate Change (Northern Ireland) Act 2022.
- For the 12 month period January 2022 to December 2022, 51.0% of total electricity consumption in Northern Ireland was generated from renewable sources located in Northern Ireland.
- The vast majority of renewable electricity generated within NI comes from wind sources. Of all renewable electricity generated within Northern Ireland over the 12 month period January 2022 to December 2022, 85.3% was generated from wind (NISRA and Department for the Economy, March 2023).
- Throughout 2022 the total electricity consumption generated from renewable sources located in NI has seen an increase of 9.7% on the previous 12 month period (January 2021 to December 2021).
- The climate, facilities and processing capabilities for food production in NI are more favourable than other regions. There is a well-connected research development and extension programme in renewable energies, low carbon farming and high level stakeholder engagement.
- Attitudes in NI towards climate change are changing, and public concern regarding environmental issues was high in 2020/21, with 82% of respondents expressing their concern about the environment (DAERA, 2021).

Weaknesses and Threats

- During the 21st Century NI is projected to experience increasing average temperatures throughout the year, an increase in average rainfall in winter, a decrease in average rainfall in summer and rising sea levels (UK Climate Projections 2009, UKCP09).
- By the end of the 20th century, the ten-year moving average temperature had risen to its highest levels since the temperature records began. The 2005 - 2014 decade was 0.7ºC warmer than the 1961-1990 average. Such changes in temperature extremes have implications for agriculture practices and population's health.
- The third UK Climate Change Risk Assessment (CCRA3) was published in January 2022, it assesses 61 risks and opportunities from climate change to NI. The assessment for NI identified that more action was needed in a number of environmental areas. Action is needed now to address 31 of them, further investigation is needed for 19, while sustaining current adaptation action is deemed appropriate for 5 of the risks or opportunities.
- Part 4 of the UK Climate Change Act 2008 sets a target of a reduction of 35% in GHG source emissions by 2025 from the base year. The most recent DAERA projections demonstrate that NI is not likely to achieve this level of emissions reductions through existing policies (Committee on Climate Change, 2019).
- NI accounted for 4.3% of total UK GHG emissions in 2018 and produced the equivalent of 10.3 tonnes of CO_2 per person compared with the average 6.8 tonnes in the UK. By sector agriculture provides the biggest contribution to

emissions in NI with 27%, higher than the rest of the UK at 10% (Northern Ireland Assembly, 2021).

- Unlike for the rest of the UK, the land use, land-use change, and forestry sectors are a net carbon source rather than a net sink. Forest coverage in NI is approximately 40% below the UK as a whole (Northern Ireland Assembly, 2021), as the area of woodland cover in NI represents 9% (Forest Research, 2022).
- Future inclusion of emissions from degraded peatland in the UK emissions inventory could add around 9% to NI's total emissions (Northern Ireland Assembly, 2021).
- NI represents a higher than average share of UK domestic emissions considering its share of UK population. The reason for this is the comparatively limited availability of natural gas resulting in the high consumption of coal, burning oil and gas oil in the residential sector (Department for Business, Energy & Industrial Strategy, 2022).
- Total GHG emissions from the transport sector in NI have increased by 21.5% between the 1990 and 2019 despite improvements in efficiency of transport vehicles. Emissions from the transport sector tend to be large as a result of increasing population and increasing demand for transportation despite improvements in energy efficiency of vehicles (DAERA, 2019).
- The recently published evidence report for CCRA3 provides a series of projections of sea level rise for Belfast Northern Ireland. The projections detailed in this report show that sea level is expected to rise between 0.14 – 0.16m in 2050 and 0.27 – 0.58m in 2080. While the IPCC report 'Climate Change 2021: The Physical Science Basis' states that global sea levels are projected to increase by 0.28-0.55m by 2100 under SSP1-1.9 (the lowest GHG emissions scenario) or by as much as 0.63 – 1.01m by 2100 under SSP5-8.5 (the highest GHG emissions scenario).

Material Assets

Strengths and Opportunities

- NI is underlain by extensive deposits of economically valuable minerals. and significant natural resources such as water, carbon rich soils and high quality grassland, whilst natural resources are also available for renewable energy generation e.g. wind, hydro, marine, biomass and solar.
- Approximately 90% of raw materials are sourced from local industry, and some farmers have implemented resource efficiency measures with evidence of greater profitability.
- A regeneration plan for the closed Magheramorne Quarry in County Antrim, where limestone was extracted in the 19th and 20th centuries, is expected to transform the site into a major recreational and leisure attraction, including 450 sustainable homes.
- The revised Northern Ireland Waste Management Strategy (DOE, 2013) proposed to achieve a 50% recycling rate by 2020 for local authority collected household waste. Since 2014/15 household waste recycling has increased by 9.8%, reaching 51.9% in 2019/20. The municipal waste collected by local authorities sent for reuse, dry recycling and composting reached a record high at 510,374 tonnes in 2019/20 (NIEA and DAERA, 2021).
- In 2020/21 234,956 tonnes of municipal were landfilled, a landfill rate of 22.8%, the lowest ever recorded, a significant drop from a high of 72.3% in 2006/07. The quantity of waste sent to landfill has declined each year since 2004/05,

decreasing the rate at which landfilled biodegradable waste emits methane and carbon dioxide into the atmosphere as it decomposes (DAERA, 2021).

- NI's councils sent over half (53.8%) of all biodegradable waste to landfill during 2020/21, 1.2% more than previous year (DAERA, 2021).

Weaknesses and Threats

- Agriculture is highly susceptible to disruption due to climate change and extreme weather events such as prolonged periods of rainfall, drought and snow.

Cultural Heritage

Strengths and Opportunities

- The built heritage of NI includes archaeological sites and monuments, historic buildings, industrial and military remains, gardens, historic landscapes, shipwrecks and other underwater features.
- The rural, largely undeveloped nature of NI has helped preserve its archaeological sites and built heritage better than in other countries. The NI's centralised heritage recording system has created a unified, standardised and advanced baseline data set for cultural heritage.
- There are 51,783 heritage assets currently recorded in NI, 24% of which are protected by formal designation, and a total of 190 single, groups or complexes of sites and monuments in state care, these are subject to an ongoing conservation programme (Department for Communities, 2020).
- In 2019/20, there were a total of 2,008 scheduled monuments (a 33% increase since 2001/02), including settlements, defences, workplaces, routeways and sites for ritual and burial (NIEA and DAERA, 2021).
- Application numbers for scheduled monument consent increased throughout 2018/19 and reached 97 in 2019/20, the highest number presented since before 2004/05.
- There has been a modest increase of 9.8% in the number of listed buildings since 2003/04, with a total of 8,994 buildings recorded in 2018/19 (NIEA and DAERA, 2021).
- In order to encourage building conservation activities, NIEA offers repair grant aid to owners of listed buildings. During 2019/20, £322,820 in funding was spent on 17 grants, which is 4.8% higher than the £308,166 spent in 2018/19 (NIEA and DAERA, 2021).
- In terms of archaeology, the Sites and Monuments Record (NISMR) holds information on over 16,000 archaeological sites and historic monuments. These range from Mesolithic campsits, Bronze Age landscapes and Early Christian monasteries through to the defended houses of the Plantation settlers.
- 340 ship wrecks and 8 aircraft wrecks are currently recorded within NI waters (DFC 2020); 2 of the shipwrecks have statutory protection; La Girona under the Protection of Wrecks Act 1973, and HMS Drake under the Historic Monuments and Archaeological Objects (NI) Order 1995.
- There are also more than 16,000 features listed in the Industrial Heritage Record (MBR), including mills, mines, canals and railways (DfC, 2022).
- Peatland (which covers 15% of the land area in NI) is valuable as an archival record of climatic and vegetation history and archaeological remains (DfC, 2022).
- The Northern Ireland Heritage Gardens Archive contains a comprehensive record of over 700 historic parks, gardens and demesnes (manorial estates). There are

60 Conservation Areas and 177 Areas of Townscape/Village Character identified throughout NI, along with 547 Local Landscape Policy Areas (DfC, 2020).

Weaknesses and Threats

- In the period between 2003/04 and 2019/20, 305 buildings and monuments were removed from the list due to achieving conserved status. A listed building or structure is at risk when its condition and management is deemed to be poor and unsustainable. Those that are classified as 'at risk' in NI are recorded on the online Built Heritage at Risk in Northern Ireland (BHARNI) database (NIEA and DAERA, 2021).
- Whole 34 incidents of graffiti and damage were recorded at State Care Sites during 2018/19, 5 cases were considered serious enough to be reported to the Police (DfC, 2020).

Landscape

Strengths and Opportunities

- NI has attractive, largely unspoilt and high quality rural landscapes, numerous protected area designations and major rural tourism attractions. Major rural tourism attractions in NI include the Giant's Causeway, the Mourne Mountains and the Glens of Antrim, whilst the Antrim coast is considered to be of very high seascape value, particularly along the Causeway Coast. It is estimated that in the period 2017-19, 20% of total overnight trips in NI was trips to The Causeway Coast and Glens (NISRA and DoF, 2020).
- The Giant's Causeway and Causeway Coast site was inscribed as a World Heritage Site (WHS) by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in 1986, contains superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance (DAERA, 2022).
- The Cuilcagh Lakelands Geopark formerly known as the Marble Arch Caves Global Geopark straddles the border between Northern Ireland and the Republic of Ireland.
- There are nine areas designated as Areas of Outstanding Natural Beauty (AONB) in NI. These include the Antrim Coast and Glens; the Causeway Coast; Lagan Valley; the Mourne, Binevenagh; Ring of Gullion; Sperrin and Strangford and Lecale (DAERA, 2022).
- While the AONB designation policy is one of protection and enhancement, SPPS 2015 takes into account the needs of local communities and the need to sustain the economic and social wellbeing of those living in the AONBs.
- There are plans to create a national park in the Mourne Mountains which is supposed to cover the area stretching from Slieve Croob to Newcastle and Carlingford Lough (UK National Parks, 2012).
- A Landscape Character Assessment was carried out across NI in 2000 which describes the local character areas. There are 130 Landscape Character Areas across NI (DAERA, 2022).
- The Northern Ireland Regional Landscape Character Assessment further provides a strategic overview and divides the countryside into 26 Regional Landscape Character Areas (NIEA, 2016).
- In keeping with much of the UK and Europe, agriculture in NI is changing, with subsidies shifting more towards landscape and nature conservation objectives rather than solely focusing on production.

Weaknesses and Threats

- There are currently no National Parks in NI. The DOE published a White Paper as a first step towards bringing forward enabling legislation to allow for the creation of National Parks back in 2011. When faced with high levels of opposition from farmers and landowners, the Environment Minister's statement on 11 November 2013 'shelved' the National Parks Plan (Northern Ireland Assembly, 2013).
- Semi-natural grasslands have declined significantly over the last 60 years due to fragmentation and agricultural intensification. The Biodiversity Strategy (DOE, 2015) estimated semi-grasslands cover 18.5% of NI's land area, although the UK Land Cover Map 2015 puts the estimate at 5.8% with improved grassland covering 57.3% (Rowland, et al., 2017).
- Forest cover in NI remains low compared to the rest of the UK and Europe at just 9%, despite increasing afforestation (Forest Research, 2022).
- Landscapes in NI have been strongly affected by rural development, particularly single dwellings and their associated infrastructure, and windfarms/single turbines (e.g. in County Tyrone), as well as by agricultural intensification.

Transboundary Considerations

- Ireland has 6 areas recognised as nationally important landscapes; all of these are National Parks.
- Ireland currently has three UNESCO Global Geoparks, and a number of other geotourism projects. The Cuilcagh Lakelands UNESCO Global Geopark in Fermanagh and Cavan seek to promote geotourism in those counties.
- Ireland's land use is predominantly agricultural, and the countryside has become increasingly important for forestry, recreation and tourism. Ireland forestry land cover has increased from 6.8% in 1990 to 11.4% in 2020 (The World Bank, 2021).
- Ireland's National Landscape Strategy was published in 2015 ongoing to 2025 which will be used to ensure compliance with the European Landscape Convention, as recently landscape issues have moved up the policy agenda.

Natural capital

Strengths and Opportunities

- The UK NEA revealed values that have been placed on some of the ES that NI provides. Provisioning services include livestock, dairy and poultry products (which together accounted for £1.14 billion of output in 2008); arable products (£126 million); marine fisheries (£25 million); aquaculture (£11 million); forest products (£7 million); and drinking water (£186 million). Cultural services include tourism (£1.5 billion); and coarse, game and sea/shore angling (£43.5 million). Valued regulating services include apple pollination (£7 million), whilst the supporting service of water quality was valued at £8 million. It was further revealed that a 2006 study estimated that the natural environment contributed £573 million to the NI economy (UK NEA, 2011).
- The majority of NI's 650 km of coastline is protected for its nature conservation interest, but more importantly it includes productive and biologically diverse ecosystems, with features that serve as critical natural defences against storms, floods and erosion (NBN, 2019).

- Habitats such as grassland and peatland are excellent carbon stores if managed appropriately, whilst the extensive hedgerow provide connectivity through the landscape and minimise soil erosion (UK NEA, 2011).
- In 2019, NI welcomed 5.3m visitors, an estimated record breaking expenditure of £1bn (£76m or 8% more compared with 2018), whilst £2.9m was spent on average each day during Jan-Dec 2019 (NISRA, 2019). The most recent estimate (2018) for NI Gross Value Added stood at £42.2 billion indicating that spending on overnight trips broadly equates to around 2.5% of the local economy (NISRA and DoF, 2020).

Weaknesses and Threats

- Public access to land in NI is more restricted than other parts of the United Kingdom. Land ownership is particularly different as most farms are of a much smaller scale, with a proportionately higher number of the population with land owning interests.
- There is a widespread disparity in public access to woodland with most being located far from where people live. For example, whilst 72% of woodland is publicly accessible, only 7.2% of the population has access to a 2 ha+ woodland site within 500 m of their home (UK NEA, 2011).
- Previously, Ireland's 2016 State of the Environment report identified seven key environmental actions which related to environmental and health/wellbeing, climate change, implementation of environmental legislation, water quality, sustainable economic activities, nature and wild places and community engagement. The majority of these issues are also expected to be of relevance to Northern Ireland.

4.4 Key Environmental and Sustainability Issues

4.4.1 From analysis of the baseline data the key sustainability issues facing the programme areas are thought to be:

Ecology and Nature Conservation

- Threats to peatland including low levels of peatland restoration.
- Threats to priority habitats and biodiversity, including climate change.
- Need to achieve favourable conservation status for European designated sites.
- Threats to woodland land cover including afforestation.

Socio-economics

- Increase in long-term unemployment rates.
- Increase in relative and absolute poverty rates.
- High economic inactivity and deprivation rates, particularly in rural areas.

Health and Quality of Life

- Those living in deprived areas are more likely to rate their health as bad, and have mental health concerns.
- Public access to a high quality natural environment, including green space, woodland and open countryside is restricted.

Soil and Land Use

- Threats to soil resource including degradation.
- Threats to agricultural land quality.
- Threat to condition of designated sites such as SACs and ASSIs.
- Limited data on peatlands status due to private land ownership.
- Threat to vegetation represented in upland blanket bogs and lowland raised bogs.
- The agri-environment scheme agreement target remains unmet.
- Threat to geological sites.
- Threat of land being affected by contamination.

Water

- Poor water quality across river, marine and other waterbodies.
- Reduction in private sewage and trade effluent compliance.
- Reduction in the amount of available drinking water.
- Risk of substantiated water pollution incidents.

Air Quality

- Lack of downward trend in the most widely exceeded pollutant, NO_2.

Climate Change

- Threat of rising temperatures, rainfall and sea levels.
- Land use, land-use change, and forestry sectors act as a net carbon source rather than a net sink.

Material Assets

- Agriculture an important component of the NI economy but is highly susceptible to disruption due to climate change.

Historic Environment and Landscape

- There are currently no National Parks in Northern Ireland
- Threat to semi-natural grasslands.
- Rural development strongly affects landscape character in Northern Ireland.

Natural Capital

- Public access to a high quality natural environment, including green space, woodland and open countryside is restricted.

Information Gaps

4.4.2 As indicated by the baseline section, a wealth of existing data exists about the state of the environment. This is necessarily focused on national or regional levels and therefore

it is acknowledged that the large-scale trends discussed may not in every case fully represent sub-regional circumstances.

4.4.3 The information available does not allow for the specific effects of the predecessor policies to be isolated from the observed general trends, this is therefore identified as an information gap for the SEA process.

5 CONSIDERATION OF ALTERNATIVES

5.1 The Process

5.1.1 Consideration of alternatives is a key feature of the SEA process; the SEA Directive requires that the Environmental Report should consider:

'*Reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme' and give 'an outline of the reasons for selecting the alternatives dealt with' (Article 5.1 and Annex I (h)).*

5.1.2 In practical terms, it refers to possible alternative mechanisms for delivering a revision to the SPPS, and the assessment of the impacts of each of these options against the SEA Objectives. In line with an ecosystems approach, the alternative options have also been assessed in terms of how well they provide ecosystem services, based on the list provided in Section 2.3.

5.1.3 The ODPM (now DLUHC) guidance on SEA recognises that it is not for the SEA to decide on the options to be considered. Instead the SEA should focus on the alternative delivery options actually considered in the preparation of the policy document. These should be identified by the Department as the body responsible for the policy review. The SEA has assessed which of the identified options, or combination of options, performs the best against the SEA objectives.

5.2 Alternative Policy Options / Delivery Mechanisms

5.2.1 The alternatives considered in the review of the Policy have been informed by the following key questions:

- **What elements of the policy are regionally important?** Changes in context may mean some elements of the policy are no longer as significant, or appropriate for regional policy and new policy provisions may be required. This will have a bearing on the themes to be addressed and the level of policy prescription to be applied.
- **Which policy approach?** There will be a number of specific policy themes for this topic which will require consideration in the context of the policy development process overall. It may be the case that some elements of the existing Policy position will remain unchanged, and that reasonable alternatives will be limited. In other areas, a consideration of further policy options may be helpful. Where appropriate, it will also be important to consider the various policy approaches and reasonable alternatives for their interrelationship with the separate marine planning and licensing system.
- **Which words express the intentions of the policy most clearly?** The way the document is scrutinised means that the nuances of words are important to the policy being applied as intended.

5.2.2 The Department developed a number of policy options for each policy theme (PT). Each option was either likely to have a more restrictive approach, a more permissive approach or the policy theme would remain the same. The options considered are set out below:

Policy Theme 1 - Regional Strategic Planning Policy & Energy Targets

OPTION 1: Retain the existing policy approach of the SPPS.

OPTION 2: Revise existing regional strategic planning policy to remove the reference to renewable energy targets but maintain the broad existing policy approach.

OPTION 3: Revise the policy approach to reflect the latest wider contemporary context, and strengthen the link between planning and the ambitions of the Energy Strategy and the Climate Change Act.

OPTION 4: Option 3 above plus a requirement to undertake a site specific assessment which considers the impact of development on peatland, including the likely effects on carbon emissions, to assist in the determination of planning applications.

Policy Theme 2 – Locational Considerations

OPTION 1: Retain the existing regional strategic planning policy approach.

OPTION 2: Revise regional strategic planning policy to introduce a new spatial approach to provide more clarity on where is, and where is not, acceptable for the provision of new and additional development. It is accepted that there are a number of options as to how a spatial approach for Northern Ireland could be introduced.

Policy Theme 3 - Siting New Wind Farms In Perpetuity

OPTION 1: Retain the existing regional strategic planning policy approach.

OPTION 2: Revise the policy approach to support the long term re-use of land for new wind farm development on appropriate sites (subject to the need to satisfy the usual planning requirements when submitting new applications for wind farm development on such sites).

Policy Theme 4 - Wind Turbines & Amenity Considerations (Theme 4a- Noise Assessment)

OPTION 1: Retain the existing policy approach to noise in the SPPS and continue to use ETSU-R-97 as the assessment methodology.

OPTION 2: Provide new policy direction in the SPPS on noise impacts and wind turbines specifically. This could mean tailoring policy / bringing existing policy under the headline or developing new policy to provide either a more stringent or flexible approach to the consideration of noise impacts from wind turbine proposals.

Policy Theme 4 - Wind Turbines & Amenity Considerations (Theme 4b - Separation Distances)

OPTION 1: Retain the existing approach and standards in relation to separation distances to occupied property.

OPTION 2: Continue to include flexibility in relation to separation distances but to consider the appropriateness of the current standards and their application for wind farms and single turbines.

OPTION 3: Strengthen the current approach (for example to encompass proximity to road networks) and introduce mandatory separation distances to be applied for all wind turbines (not just wind farms).

OPTION 4: Relax current policy to provide greater flexibility on the standards to be applied in relation to separation distances.

Policy Theme 4 - Wind Turbines & Amenity Considerations (Theme 4c - Shadow Flicker)

OPTION 1: Retain the existing approach to shadow flicker, as per the SPPS and Best Practice Guidance.

OPTION 2: Strengthen the policy approach in relation to shadow flicker.

OPTION 3: Relax the policy approach in relation to shadow flicker.

Policy Theme 5 - Decommissioning And Site Restoration For New Development

OPTION 1: Retain the existing policy provisions on de-commissioning and site restoration as currently worded i.e. 'In relation to developments such as wind farms and solar farms, applicants will be required to provide details on future decommissioning, including proposals for site restoration. In such cases planning conditions (or a legal agreement where appropriate) should be used.'

OPTION 2: Revise the policy approach to strengthen the requirements for decommissioning and site restoration (For example, to provide for the express use of financial guarantees through planning agreements as part of the approval of planning permission).

Policy Theme 6 - Solar Farms And Agricultural Land

OPTION 1: Retain existing policy approach.

OPTION 2: Amend the policy approach to encourage and support, for example, a preference for the use of previously developed land for solar farms.

OPTION 3: Strengthen the policy approach to require, for example, that Greenfield land should not be developed for solar farms where alternatives exist on previously developed lands.

Policy Theme 7 - Co-Locating Renewable, Low Carbon And Supporting Infrastructure

OPTION 1: Retain the existing regional strategic planning policy approach.

OPTION 2: Revise regional strategic planning policy: Introduce new policy provisions for the co-location of renewable & low carbon technologies and supporting infrastructure.

Policy Theme 8 - Re-Powering Existing Wind and Solar Farms

OPTION 1: Retain the existing policy approach without any specific provisions in relation to the re-powering of wind farms and/or other categories of renewable development.

OPTION 2: Revise policy to include new provisions to address and support the re-powering of existing wind farm developments only.

OPTION 3: Revise policy to include new provisions to address and support the re-powering of existing wind farm developments and other renewable technologies, as appropriate.

Policy Theme 9 - Emerging Technologies & Other Issues

OPTION 1: Retain the existing regional strategic planning policy approach.

OPTION 2: Strengthen and expand existing regional strategic planning policy for evolving new and emerging technologies.

5.3 Assessment of Alternatives

High Level Matrix Assessment

5.3.1 A high level summary of how well each of these three alternative options perform against the SEA Objectives is provided in the matrix below in Table 5.1.

Table 5.1: Assessment of Alternatives

High Level Alternative Matrix		SEA OBJECTIVES										
		1	2	3	4	5	6	7	8	9	10	11
Policy Options		Ecology & Nature Conservation	Health & Quality of Life	Socio-economics	Soil & Land Use	Water	Air Quality	Climate	Material Assets	Historic Environment	Landscape	Natural Capital
POLICY THEME 1 - REGIONAL STRATEGIC PLANNING POLICY & ENERGY TARGETS												
OPTION 1:	Retain the existing policy approach of the SPPS.	+/-	+/-	+	+/-	+/-	+/-	+	0	+/-	+/-	+/-
OPTION 2:	Revise existing regional strategic planning policy to remove the reference to renewable energy targets but maintain the broad existing policy approach.	+/-	+/-	+	+/-	+/-	+/-	+	0	+/-	+/-	+/-
OPTION 3:	Revise the policy approach to reflect the latest wider contemporary context and strengthen the link between planning and the ambitions of the Energy Strategy and the Climate Change Act.	-	+/-	+	+/-	+/-	+/-	++	0	-	-	+/-
OPTION 4:	Option 3 above plus a requirement to undertake a site specific assessment which considers the impact of development on peatland, including the likely effects on carbon emissions, to assist in the determination of planning applications.	-	+/-	+	+/-	+/-	+/-	++	0	-	-	+/-
POLICY THEME 2 – LOCATIONAL CONSIDERATIONS												
OPTION 1:	Retain the existing regional strategic planning policy approach.	+/-	+/-	+	+/-	+/-	+/-	+	0	+/-	+/-	+/-

OPTION 2:	Revise regional strategic planning policy to introduce a new spatial approach to provide more clarity on where is, and where is not, acceptable for the provision of new and additional development. It is accepted that there are a number of options as to how a spatial approach for Northern Ireland could be introduced.	+/-	+	+/-	+/-	+/-	+/-	0	0	+/-	+/-	+/-
POLICY THEME 3 - SITING NEW WIND FARMS IN PERPETUITY												
OPTION 1:	Retain the existing regional strategic planning policy approach.	0	0	0	0	0	0	0	0	0	0	0
OPTION 2:	Revise the policy approach to support the long term re-use of land for new wind farm development on appropriate sites (subject to the need to satisfy the usual planning requirements when submitting new applications for wind farm development on such sites).	0	0	+	0	0	0	+	0	0	0	0
POLICY THEME 4 - WIND TURBINES & AMENITY CONSIDERATIONS (Theme 4a- Noise Assessment)												
OPTION 1:	Retain the existing policy approach to noise in the SPPS and continue to use ETSU-R-97 as the assessment methodology.	0	+/-	0	0	0	0	0	0	0	0	0
OPTION 2:	Provide new policy direction in the SPPS on noise impacts and wind turbines specifically. This could mean tailoring policy / bringing existing policy under the headline or developing new policy to provide either a more stringent or flexible approach to the consideration of noise impacts from wind turbine proposals.	0	+/-	0	0	0	0	0	0	0	0	0
POLICY THEME 4 - WIND TURBINES & AMENITY CONSIDERATIONS (Theme 4b - Separation Distances)												
OPTION 1:	Retain the existing approach and standards in relation to separation distances to occupied property.	0	+	0	0	0	0	0	0	0	0	0
OPTION 2:	Continue to include flexibility in relation to separation distances but to consider the appropriateness of the current standards and their application for wind farms and single turbines.	0	+	0	0	0	0	0	0	0	0	0
OPTION 3:	Strengthen the current approach (for example to encompass proximity to road networks) and introduce mandatory separation distances to be applied for all wind turbines (not just wind farms).	0	+	0	0	0	0	0	0	0	0	0

OPTION 4:	Relax current policy to provide greater flexibility on the standards to be applied in relation to separation distances.	0	-	+	0	0	0	+	0	0	0	0
POLICY THEME 4 - WIND TURBINES & AMENITY CONSIDERATIONS (Theme 4c- Shadow Flicker)												
OPTION 1:	Retain the existing approach and standards in relation to separation distances to occupied property.	0	+	0	0	0	0	0	0	0	0	0
OPTION 2:	Strengthen the policy approach in relation to shadow flicker.	0	+	0	0	0	0	0	0	0	0	0
OPTION 3:	Relax the policy approach in relation to shadow flicker.	0	-	+	0	0	0	+	0	0	0	0
POLICY THEME 5 - DECOMMISSIONING AND SITE RESTORATION FOR NEW DEVELOPMENT												
OPTION 1:	Retain the existing policy provisions on de-commissioning and site restoration as currently worded i.e. 'In relation to developments such as wind farms and solar farms, applicants will be required to provide details on future decommissioning, including proposals for site restoration. In such cases planning conditions (or a legal agreement where appropriate) should be used.'	+	0	+	+	0	0	+	0	0	+	0
OPTION 2:	Revise the policy approach to strengthen the requirements for decommissioning and site restoration (For example, to provide for the express use of financial guarantees through planning agreements as part of the approval of planning permission).	+	0	0	+	0	0	0	0	0	+	0
POLICY THEME 6 - SOLAR FARMS AND AGRICULTURAL LAND												
OPTION 1:	Retain existing policy approach.	+/-	0	+	0	+/-	0	+	0	+/-	+/-	+/-
OPTION 2:	Amend the policy approach to encourage and support, for example, a preference for the use of previously developed land for solar farms.	+/-	0	+/-	+	+/-	0	0	0	+/-	+/-	+/-
OPTION 3:	Strengthen the policy approach to require, for example, that Greenfield land should not be developed for solar farms where alternatives exist on previously developed lands.	+/-	0	+/-	+	+/-	0	0	0	+/-	+/-	+/-
POLICY THEME 7 - CO-LOCATING RENEWABLE, LOW CARBON AND SUPPORTING INFRASTRUCTURE												
OPTION 1:	Retain the existing regional strategic planning policy approach.	0	0	+	0	0	0	+	0	0	0	0
OPTION 2:	Revise regional strategic planning policy: Introduce new policy provisions for the co-location of renewable & low carbon technologies and supporting infrastructure.	0	0	+	0	0	0	++	0	0	0	0
POLICY THEME 8 - RE-POWERING EXISTING WIND FARMS												

OPTION 1:	Retain the existing policy approach without any specific provisions in relation to the re-powering of wind farms and/or other categories of renewable development.	0	0	+	0	0	0	+	0	0	0	0
OPTION 2:	Revise policy to include new provisions to address and support the re-powering of existing wind farm developments only.	0	0	+	0	0	0	++	0	0	0	0
OPTION 3:	Revise policy to include new provisions to address and support the re-powering of existing wind farm developments and other renewable technologies, as appropriate.	0	0	+	0	0	0	++	0	0	0	0
POLICY THEME 9 - EMERGING TECHNOLOGIES & OTHER ISSUES												
OPTION 1:	Retain the existing regional strategic planning policy approach.	+/-	+/-	+	+/-	+/-	+/-	+	0	+/-	+/-	+/-
OPTION 2:	Strengthen and expand existing regional strategic planning policy for evolving, new and emerging technologies.	+/-	+/-	+	+/-	+/-	+/-	+	0	+/-	+/-	+/-

5.4 Consideration of Alternatives

Policy Theme 1 - Regional Strategic Planning Policy & Energy Targets

5.4.1 Policy option 3 and 4 under PT1 have strong beneficial effects on climate as this would likely increase the number of planning applications for R&LC E especially where developments are shown to positively contribute towards targets. However, depending on the locations of the developments, this may increase the risk of adverse effects on historic environment, landscape and ecology and nature conservation. Option 4 which considers the effect of renewables on peatlands may lessen adverse effects by steering developments to other areas, however, it would not necessarily stop all development on peatland, and may increase development pressures and aggregation on non-peatland locations.

Policy Theme 2 – Locational Considerations

5.4.2 Policy Option 1 is deemed to be the preferred option under PT2 as this will place less restriction on the location of schemes meaning likely beneficial effects on climate and socio-economics. Under this option, the location of schemes can be assessed on a case by case basis where environmental sensitivities and landscape character can be determined at a site specific level.

Policy Theme 3 - Siting New Wind Farms in Perpetuity

5.4.3 Beneficial effects are assessed for climate under Option 2 as this will help to support the ongoing need for renewable energy infrastructure. Siting wind farms in perpetuity makes the best use of resources and existing infrastructure. Extant planning permissions are currently long term meaning developments should already be sited and designed to ensure effects are minimised and protect an acceptable level of amenity for adjacent communities.

Policy Theme 4 - Wind Turbines & Amenity Considerations (Theme 4a-Noise Assessment)

5.4.4 From an SEA perspective there are uncertainties around both options in terms of health and quality of life due to lack of certainty surrounding the effects these options would have on safeguarding residential amenity from inappropriate development in terms of noise. Otherwise the assessment is neutral as it is not expected this policy theme would have wider implications for the other SEA objectives. The ETSU-R-97 standard and its good practice guidance is the current methodology for noise assessment and remains the preferred methodology for the acoustic measurement of noise from wind turbines in Northern Ireland.

5.4.5 Most of the SEA objectives remain neutral as a policy change regarding noise assessments is unlikely to have wider significant environmental effects beyond those specifically related to noise emissions as discussed.

Policy Theme 4 - Wind Turbines & Amenity Considerations (Theme 4b - Separation Distances)

5.4.6 Option 1 - 3 perform identically in the SEA matrix. On balance, it is likely that Option 2 would allow for developments to be assessed on a case by case basis, in terms of separation distance while taking into account best practice guidance and lessons learnt in order to update standards if needed. Option 4 to relax the current policy approach is assessed to have minor adverse effects on residential amenity and therefore health and quality of life but would see minor beneficial effects for climate change due to a likely increase in R&LC E development.

5.4.7 Most of the SEA objectives remain neutral as a policy change regarding separation distance alone is unlikely to have significant environmental effects.

Policy Theme 4 - Wind Turbines & Amenity Considerations (Theme 4c- Shadow Flicker)

5.4.8 Option 1 and 2 perform similarly in the SEA matrix with positive effect on health and quality of life due to safeguarding of residential amenity. Option 3 to relax the policy approach is assessed as minor negative effect on health and quality of life, but would see minor positive effects for climate due to less restrictive policy.

5.4.9 Most of the SEA objectives remain of neutral effect as a policy change regarding shadow flicker alone is unlikely to have significant environmental effects.

Policy Theme 5 - Decommissioning and Site Restoration for New Development

5.4.10 Option 2 performs more favourably in terms of the SEA objectives; ecology and nature conservation, health, socio economics and landscape as this will ensure stronger likelihood of remediation of sites. However this may deter smaller companies who do not have the financial capability to ensure decommissioning from the onset and hence may act to limit or slow the deployment of renewable proposals.

Policy Theme 6 - Solar Farms and Agricultural Land

5.4.11 These options perform similarly in the SEA matrix. Option 2 and 3 have beneficial effects for soil and land use as the use of previously developed land usually results in less damage/disruption and would safeguard high quality agricultural soil. It is noted that Option 3 may be too prescriptive as it is not always the case that previously developed land is less biodiverse and useful in terms of ecosystem services than greenfield land. Uncertainties arise across a number of environmental objectives as at this high level it is unclear what beneficial or adverse effects may occur.

Policy Theme 7 - Co-Locating Renewable, Low Carbon and Supporting Infrastructure

5.4.12 Option 2 has a stronger beneficial effect on the climate change objective than Option 1 as a clear, consistent approach and direction to co-locating within the SPPS would help facilitate the development of renewable energy infrastructure by easing the issue of grid

capacity. At present, grid capacity is adversely effecting energy generation potential in the renewables sector.

Most of the SEA objectives remain neutral as co- locating alone is unlikely to have significant environmental effects.

Policy Theme 8 - Re-Powering Existing Wind and Solar Farms

5.4.13 Option 2 and 3 which support re-powering are assessed as having strong beneficial effects on the climate change objective. Re-powering makes the best use of resources and existing infrastructure. Re-powering can increase capacity of existing sites which will play a key role in the transition to a low carbon economy and the achievement of energy targets. It is noted that Option 3 extends re-powering to other renewable technologies and this is considered favourable. At this high level, most of the SEA objectives remain neutral as re-powering will require planning permission and a renewed EIA and AA as appropriate.

Policy Theme 9 - Emerging Technologies & Other Issues

5.4.14 Both options under PT9 perform alike in the SEA matrix. It is considered that Option 2 may better support, guide and facilitate evolving, new and emerging technologies however there is a danger of being overly prescriptive which may result in a gap in support for some that have not yet emerged.

5.5 Reasons for Selection of Chosen Strategic Alternative

5.5.1 The Department has considered the findings of the SEA alternatives assessment alongside the findings of the 'Issues Paper' circulated to key stakeholders in 2021, and their preferred alternative option is outlined below.

Policy Theme 1 - Regional Strategic Planning Policy & Energy Targets

5.5.2 OPTION 3: Revise the policy approach to reflect the latest wider contemporary context, and strengthen the link between planning and the ambitions of the Energy Strategy and the Climate Change Act.

5.5.3 The Department considers that this option is likely to support the delivery of increased deployment of appropriate renewable and low carbon development in Northern Ireland to realise the associated carbon benefits. In addition, this option will assist with ensuring a comprehensive and consistent process when considering such development proposals.

5.5.4 It is considered that the existing reference to peatland in paragraph 6.226 of the SPPS should be updated within the Policy review. Existing environmental legislation includes provision for action(s) causing harm to peatlands. The policy will look to direct decision-takers to the legislative provisions, as outlined above and highlights the value of active peatland as well as degraded peatland.

Policy Theme 2 – Locational Considerations

5.5.5 OPTION 2: Revise regional strategic planning policy to introduce a new spatial approach to provide more clarity on where is, and where is not, acceptable for the provision of new and additional development. It is accepted that there are a number of options as to how a spatial approach for Northern Ireland could be introduced.

5.5.6 It is recognised that a number of planning authorities are already bringing forward local spatial policy approaches within their emerging LDPs, including Derry City and Strabane District Council and Fermanagh and Omagh District Council. This is notable in the context of DfE's Energy in Northern Ireland 2022 Report advising that "Around two thirds of renewable electricity capacity and generation was accounted for by three of the eleven Northern Ireland district council areas namely: Causeway Coast & Glens; Derry City & Strabane; and Fermanagh & Omagh".

5.5.7 The Department considers that this option will provide greater clarity and certainty on where is, and where is not suitable for future development which benefits industry and communities alike. This option should, therefore, also assist in improving the processing speeds for determining planning applications.

Policy Theme 3 - Siting New Wind Farms in Perpetuity

5.5.8 OPTION 2: Revise the policy approach to support the long term re-use of land for new wind farm development on appropriate sites (subject to the need to satisfy the usual planning requirements when submitting new applications for wind farm development on such sites).

5.5.9 The Department considers that this option would increase clarity and certainty for communities, developers and investors alike in respect of supporting suitable sites for wind farm development in the long term. This option would make the best use of land, wind resource and existing infrastructure, including grid connections for the long term benefit of current and future generations. In addition, Option 2 would also help support the achievement of the renewable energy and climate change targets.

Policy Theme 4 - Wind Turbines & Amenity Considerations (Theme 4a- Noise Assessment)

5.5.10 OPTION 1: Retain the existing policy approach to noise in the SPPS and continue to use ETSU-R-97 as the assessment methodology.

5.5.11 The Department considers that existing provisions in the SPPS can continue to help ensure that noise is appropriately taken into account as a material planning consideration in the determination of individual applications for wind turbine development, and that such developments should not result in unacceptable adverse effects on residential amenity.

5.5.12 The Department also considered it is important to sign post that ETSU-R-97 remains the preferred UK standard for the assessment of noise from wind turbine development. It is also important to indicate to decision-takers that potential noise effects, including amplitude modulation, from wind turbines on surrounding properties must be carefully considered.

Policy Theme 4 - Wind Turbines & Amenity Considerations (Theme 4b - Separation Distances)

5.5.13 OPTION 2: Continue to include flexibility in relation to separation distances but to consider the appropriateness of the current standards and their application for wind farms and single turbines.

5.5.14 The Department intends to retain provision for the flexible application of separation distances within future regional strategic planning policy. It will review current standards in relation to the specified distance overall or a distance related to turbine size (currently '10 times rotor diameter to occupied property, with a minimum distance of not less than 500m for windfarms). The current separation distance for single wind turbines ("fall over distance plus 10%) is not currently set out in policy. The Department will consider the appropriateness of these standards for both wind farms and single turbines.

Policy Theme 4 - Wind Turbines & Amenity Considerations (Theme 4c-Shadow Flicker)

5.5.15 OPTION 1: Retain the existing approach to shadow flicker, as per the SPPS and Best Practice Guidance.

5.5.16 The Department considers that through technology and appropriate modelling at design stage there are established methods to ensure that shadow flicker can be effectively eliminated/managed by planning condition. Shadow flicker has not been raised with the Department as a significant issue post construction of approved schemes. This option would not impede the drive towards energy and climate targets and/or reduce the ability of operators to maximise electricity generation. The current approach seems to be generally supported.

Policy Theme 5 - Decommissioning and Site Restoration For New Development

5.5.17 OPTION 1: Retain the existing policy provisions on de-commissioning and site restoration as currently worded i.e. 'In relation to developments such as wind farms and solar farms, applicants will be required to provide details on future decommissioning, including proposals for site restoration. In such cases planning conditions (or a legal agreement where appropriate) should be used.'

5.5.18 The Department considered a policy direction for decision-takers to consider financial guarantees secured via planning agreement where appropriate i.e. financial bond etc. However, after further consideration, it is considered that the current arrangements remain appropriate at this time.

Policy Theme 6 - Solar Farms and Agricultural Land

5.5.19 OPTION 2: Amend the policy approach to encourage and support, for example, a preference for the use of previously developed land for solar farms.

5.5.20 The Department considers that future policy should encourage a more sustainable approach to solar farm development. Option 2 is compatible with the thrust of the SPPS overall with its focus on furthering sustainable development, reuse of previously developed land, making best use of existing assets etc. In addition, policy could provide more direction in relation to important considerations for this category of development, such as 'set-back' from roads and well screened sites. However, it is not the intention of

this option to preclude appropriate solar farm developments on agricultural lands generally. This option would still provide some flexibility for the location of solar farms, but would assist in encouraging such development in more sustainable locations. This approach should not hinder the drive to achieving the climate and energy targets in a sustainable way.

Policy Theme 7 - Co-Locating Renewable, Low Carbon And Supporting Infrastructure

5.5.21 OPTION 2: Revise regional strategic planning policy: Introduce new policy provisions for the co-location of renewable & low carbon technologies and supporting infrastructure.

5.5.22 This option is intended to ensure future policy encourages the appropriate co-location of a number of renewable and low carbon and supportive technologies in the one location to maximise the potential generation of electricity and to enable the provision of associated infrastructure to be optimised and exploited to ensure best use. For example, where this can address dispatch down and curtailment associated with grid capacity issues. It is not the intention of this option to provide new express provisions on Battery Energy Storage Systems (BESS) – see Policy Theme 9. However, it is recognised that BESS may be judged to be supporting infrastructure to a primary development for which Co-location may be beneficial.

Policy Theme 8 - Re-Powering Existing Wind Farms

5.5.23 OPTION 3: Revise policy to include new provisions to address and support the re-powering of existing wind farm developments and other renewable technologies, as appropriate.

5.5.24 The Department considers that future regional strategic planning policy should support the principle of reuse, re-powering or refurbishment of existing sites for renewable and low carbon energy, where possible. This option would ensure that benefits can be maximised from the use of established infrastructure, grid connections etc. and would provide greater support for the long term increase in renewable generation in order to help achieve the new energy targets and into the future. This option does not however, seek to subjugate the need for re-powering proposals to be subject to normal planning considerations.

Policy Theme 9 - Emerging Technologies & Other Issues

5.5.25 OPTION 2: Strengthen and expand existing regional strategic planning policy for evolving new and emerging technologies.

5.5.26 There are different ways to deliver this option. E.g. general provisions to give support to all such developments or to develop specific policy provisions for certain new, evolving and emerging technologies – to also include policy direction on micro-renewables etc. However, the Department considers that it is appropriate that future regional strategic planning policy should in principle provide appropriate strategic policy guidance for evolving, new and emerging technologies. This option represents a positive step in seeking to facilitate the increased deployment of appropriate renewable and low carbon

development in Northern Ireland to realise the associated carbon benefits while also ensuring that any amenity and/or effects are properly addressed.

6 ASSESSMENT OF IMPACTS OF CHOSEN ALTERNATIVE

6.1 High Level Matrix Assessment

6.1.1 The chosen alternatives for each policy theme (PT) have been used to revise or retain the renewable and low carbon policy text. This is set out in the Draft Revised Policy Consultation Document (SEA Version) - Review of Regional Strategic Planning Policy on Renewable & Low Carbon Energy - January 2023.

6.1.2 To assess the Policy against the SEA Objectives, the nine key themes have been used to group the policy text to allow it to be assessed within the SEA matrix. Any additional text that does not fall into one of the nine key themes has been grouped and categorised under the heading 'Additional Policy Text'.

6.1.3 A high level matrix assessment has been carried out on the chosen alternative Policy Themes; this can be seen in Table 6.2 below. The matrix is structured around qualitatively assessing each of the Policy Themes against the identified SEA Objectives.

Table 6.1: Legend

Key for Likely Effects	
++	Likely strong beneficial effect
+	Likely beneficial effect
0	Neutral / no effect
-	Likely adverse effect
- -	Likely strong adverse effect
+/-	Uncertain effect

Table 6.2: High Level Matrix Assessment of Selected Strategic Alternative

High Level Matrix Assessment of Selected Strategic Alternative			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Policy Text by Theme			Ecology and Nature Conservation	Health and Quality of Life	Population and Socio-economics	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Historic Environment	Landscape	Natural Capital
POLICY THEME (PT)	**Para**	**Policy Text**											
POLICY THEME 1 - REGIONAL STRATEGIC PLANNING POLICY & ENERGY TARGETS (PT1)	**a**	The aim of the SPPS is to maximise sustainable renewable and low carbon energy from a wide range of technologies, at various scales, in appropriate locations within the built and natural environment, without compromising other environmental assets of acknowledged importance. Full account should be taken of the target to generate 80% of electricity consumption from renewable sources by 2030, environmental legislation and relevant strategies which support the Executive's Climate Action Plan.	- / ?	0	+	- / ?	- / ?	0	+	0	- / ?	- / ?	0
	b	In plan-making and decision-taking, planning authorities must take full account of the above-mentioned aim and targets, the regional strategic objectives and policy provisions, local circumstances, and the wider environmental, economic, and social benefits of renewable and	- / ?	0	+	- / ?	- / ?	0	+	0	- / ?	- / ?	0

		low carbon energy development to local communities and to everyone in Northern Ireland.											
POLICY THEME 2 – LOCATIONAL CONSIDERATIONS (PT2)	**a**	Councils must set out policies and proposals in the LDPs to maximise its area's contribution to achieving the renewable energy targets. The preparation of local policy criteria to support a diverse range of technologies at different scales will further assist in the appropriate deployment of such development. This should include the factors to be taken into account in decision-making such as locational criteria, technology specific criteria, the integration of micro-generation and passive solar design, and opportunities for heat networks, where appropriate.	+/-	0	+	+/-	+/-	0	+	0	+/-	+/-	+/-
	b	The ability of the landscape to accommodate development depends on careful siting, the skill of the designer and the inherent characteristics of the landscape such as landform, ridges, hills, valleys and vegetation. The siting and cumulative landscape and visual impact of all renewable & low carbon energy developments (including approved development) is of great importance and must be carefully considered. The cumulative impact will increase, for example, as the number of wind turbines and/or solar farms in an area increases and local amenity deserves particular attention. Landscape and visual impact assessments will assist in the consideration of cumulative impact. Considerations will include the impact on the character and quality of the landscape, its sensitivity, and the level to which the proposed development will become a significant or dominant characteristic of the landscape. For large scale developments,	0	0	0	0	0	0	0	0	0/-	0/-	0

		developers should seek to avoid valued designated landscapes and areas close to key vantage points from roads, viewpoints, and settlements. The relevant aspects of the supplementary planning guidance 'Wind Energy Development in Northern Ireland's Landscapes' and other relevant practice notes should be taken into account in assessing all wind turbine proposals.											
	c	Having undertaken an assessment of their area's full potential, councils must bring forward spatial policies in their LDP which identify the most appropriate areas for renewable energy development, including wind farms. A presumption in favour of such development will apply in identified areas. Local policies should contain the detailed locational criteria to be considered at the planning application stage.	+/-	0	+	+/-	+/-	0	+	0	+/-	+/-	+/-
	d	It is recognised that there are landscapes across Northern Ireland where their intrinsic value should be protected against inappropriate renewable and low carbon energy development. A cautious approach for renewable and low carbon energy development proposals will apply within designated landscapes which are of significant value, such as Areas of Outstanding Natural Beauty, the Giant's Causeway and Causeway Coast World Heritage Site and their wider settings. Visually dominant development proposals should be avoided in such sensitive landscapes as it may be difficult to accommodate developments and their associated infrastructure, without detriment to the region's cultural and natural heritage assets.	0	0	0	0	0	0	0	0	0/-	0/-	0

	e	Whilst councils will have identified areas most appropriate for renewable and low carbon energy development this does not mean that remaining areas cannot facilitate any such development. Outside of identified areas (and until areas are identified) some landscapes may be able to accommodate renewable and low carbon energy development more easily than others.	+/-	0	+	+/-	+/-	0	0	0	+/-	+/-	+/-
POLICY THEME 3 - SITING NEW WIND FARMS IN PERPETUITY (PT3)	**-**	Approvals for renewable and low carbon energy development proposals may be time-limited. However, areas identified as appropriate for wind farms are expected to be suitable for use in perpetuity.	0	0	+	0	0	0	+	0	0	0	0
POLICY THEME 4 - WIND TURBINES & AMENITY CONSIDERATIONS (Theme 4a- Noise Assessment) (PT4a)	**-**	ETSU-R-97 remains the UK standard methodology for the assessment of noise from wind energy development and it should be taken into account by decision-takers, including any future update to this standard. 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise', prepared by the Institute of Acoustics has been endorsed as a supplement to ETSU-R-97. Potential noise impacts, including amplitude modulation, from wind turbines on surrounding properties must be carefully considered.	0	0	0	0	0	0	0	0	0	0	0
POLICY THEME 4 - WIND TURBINES & AMENITY CONSIDERATIONS (Theme 4b - Separation Distances) (PT4b)	**-**	For wind farm development a separation distance of 10 times rotor diameter to occupied property, with a minimum distance not less than 500m, will generally apply. This will also apply to any wind turbine development with a rotor diameter of 50m or greater.	0	0	0	0	0	0	0	0	0	0	0
POLICY THEME 4 - WIND TURBINES & AMENITY CONSIDERATIONS (Theme 4c- Shadow Flicker) (PT4c)	**-**	Applicants should seek to minimise and mitigate against any potential impacts from wind energy proposals which are likely to result in shadow flicker on nearby properties	0	0	0	0	0	0	0	0	0	0	0

POLICY THEME 5 - DECOMMISSIONING AND SITE RESTORATION FOR NEW DEVELOPMENT (PT5)	-	Applicants will be required to provide details on future decommissioning, including proposals for site restoration. Planning authorities must consider and make use of appropriate conditions (or a legal agreement, where appropriate) to ensure the decommissioning of developments and site restoration when they reach the end of their design life, taking into account any proposed after use of the site.	0	0	0	0	0	0	0	0	0	0	0
POLICY THEME 6 - SOLAR FARMS AND AGRICULTURAL LAND (PT6)	-	Planning authorities should encourage and support the use of previously developed land for solar farms in countryside locations. Solar farms which are well planned and well screened can have an acceptable visual impact if located sensitively in the local landscape. Poorly designed schemes which will have a negative impact on the landscape should not be supported. Favourable consideration should be given to large scale rooftop solar power where there are no unacceptable impacts, including glint and glare.	+/-	0	0	+	0	0	0	0	0	+	0
POLICY THEME 7 - CO-LOCATING RENEWABLE, LOW CARBON AND SUPPORTING INFRASTRUCTURE (PT7)	-	Co-location of renewable and low carbon technologies and supporting infrastructure has potential benefits and should be facilitated, where appropriate.	0	0	0	0	0	0	0	0	0	0	0
POLICY THEME 8 - RE-POWERING EXISTING WIND and solar FARMS (PT8)	-	Whilst advancements and changes in technology may mean schemes are not like for like, life extension and re-powering of existing development has the potential to continue to maintain or enhance installed renewable energy generation, where appropriate. Therefore, a presumption in favour of proposals to re-power, expand and extend the life of existing solar and wind farms applies unless the impacts identified (including cumulative impacts) are unacceptable and cannot be mitigated.	+/-	0	+	+/-	+/-	0	+	0	+/-	+/-	+/-

POLICY THEME 9 - EMERGING TECHNOLOGIES & OTHER ISSUES (PT9)	**a**	Well designed and appropriately located anaerobic digestion (AD) plants can make a positive contribution to optimising the potential for renewable and low carbon energy and should be located as close to the waste source as possible. Farm AD plants should be designed and sited to integrate and cluster with the existing group of farm buildings and be of a size and scale appropriate to the location in which it is proposed. Proposals must be carefully considered to ensure that any potential adverse impacts related to the size and scale of the development is compatible to the location in which it is proposed. As well as existing statutory environmental requirements and the normal planning considerations, impacts on the transportation network will be important.	+/-	0	+	+/-	+/-	0	+	0	+/-	+/-	+/-
	b	Planning authorities must support emerging technologies which will assist with maximising renewable energy potential such as green hydrogen production facilities, and battery energy storage systems that help with maximising efforts to decarbonise energy use by gaining full benefit from renewable sources. Planning applications for BESS development must be accompanied by details of the type, number, capacity and chemical composition of batteries to enable full assessment by planning authorities in line with their statutory responsibilities. Although such technologies may be included in planning applications, in addition to a renewable energy proposal, the development must be properly described as it will involve factors to be considered in its own right.	+/-	0	+	+/-	+/-	0	+	0	+/-	+/-	+/-
	c	In plan-making and decision-taking planning authorities should encourage the use of micro-generation energy and the retrofitting of renewable & low carbon energy technologies.	+/-	0	+	+/-	+/-	0	+	0	+/-	+/-	+/-

Additional Policy Text (APT)	**a**	Climate change is also having an adverse impact on nature and biodiversity. Within their project, developers should protect and, where feasible, seek to enhance biodiversity which could contribute to strengthening existing nature networks and restoring degraded habitats.	+	0	0	0	0	0	0	0	0	+	0
	b	For all renewable and low carbon development, developers should, as early as possible, proactively engage with the local community in the vicinity of their proposal with information on the development and technology being proposed. In preparing the planning application, and taking account of any views received, the developer should consider how to avoid or minimise any adverse impacts through the choice of location, siting, scale and design being proposed. Any voluntary community benefits offered by the developer will not be material considerations in decision-taking.	0	0	0	0	0	0	0	0	0	0	0
	c	Development proposals in the marine environment are managed under a separate consenting regime within the framework of the UK Marine Policy Statement, as amended . It is important for both terrestrial and marine planning authorities to work together, particularly regarding the assessment of offshore renewable energy proposals where it is necessary to provide a terrestrial connection point and associated supporting infrastructure on land.	0	0	0	0	0	0	0	0	0	0	0
	d	Developers should seek to avoid designated landscapes and utilise industrial or previously developed land, where feasible.	+/-	0	0	0	0	0	0	0	0	0	0
	e	Where possible, new power lines should be laid underground to reduce the visual impact, however it is accepted that consideration must take account of costs which may otherwise render a project unviable	+/-	+	0	+/-	+/-	0	0	0	-	+	0

	f	All renewable and low carbon energy development and associated buildings and supporting infrastructure will be permitted where the proposal will not result in an unacceptable adverse impact on the following planning considerations, which cannot otherwise be mitigated: • public safety, human health, or residential amenity (communities and individuals); • visual amenity and landscape character, including cumulative impact; • biodiversity, nature conservation or built heritage interests; • local natural resources, such as air quality, water quality or quantity; • the capacity of and effects on the transportation network; and, • impacts on tourism, recreation, and public access to the countryside.	+/?	+/?	0	+/?	+/?	+/?	+/?	0	+/-	+/?	+/?

6.2 Key changes outside of the matrix assessment

6.2.1 The regional strategic objectives within the Policy have been updated, they are to:

- ensure that sustainable renewable and low carbon energy development is facilitated at appropriate locations to maximise renewable energy that contributes to the transition to a low carbon economy;
- secure an appropriate mix of energy provision as indicated in the Energy Strategy and supporting documents, which maximises benefits to our economy and communities;
- ensure that the environmental, landscape, visual, safety and amenity impacts associated with or arising from renewable and low carbon energy development are adequately addressed;
- ensure adequate protection of the region's built, natural and cultural heritage features;
- facilitate the integration of renewable and low carbon energy technology into the design, siting and layout of new development and promote greater application of the principles of Passive Solar Design; and
- enable energy from offshore renewable and low carbon energy development proposals to be appropriately connected to onshore networks.

6.3 Assessment by Policy Theme

Policy Theme 1 - Regional Strategic Planning Policy & Energy Targets

6.3.1 PT1 states that full account should be taken of the target to generate 80% of electricity consumption from renewable sources by 2030. This policy direction will likely promote the increase of R&LC E development proposals being granted in order to reach these targets. It is anticipated that this would have beneficial effects for socio-economics due to increased investments in development and enhancing Northern Ireland's ability to participate in the expanding global green economy. Additional beneficial effects will be seen through job creation for those managing, installing and maintaining projects and throughout the supply chain.

6.3.2 Beneficial effects are also expected on climate change due to an overall increase in R&LC E in the energy mix and decreased reliance on imported fossil fuels. These developments emit far less, if any, carbon dioxide and other GHG that contribute to climate change. However, an increase in renewable energy developments is assessed as having uncertain but likely adverse effects on many of the environmental SEA Objectives such as biodiversity and nature conservation, soil and land use, water, historic environment, landscape and natural capital. This is due to the potential for negative effects of construction and operation of R&LC E on the environment. The effects of such projects are likely to be highly variable depending on the baseline characteristics of the environment where they occur.

6.3.3 Due to uncertain effects, PT1 was therefore taken forward for detailed assessment.

Policy Theme 2 – Locational Considerations

6.3.4 The Policy text under PT2 will call for planning authorities to set out policies and proposals in the LDPs, including spatial policies to maximise an area's contribution to achieving energy targets. A presumption in favour of development will apply in these areas.

6.3.5 Spatial policies could have varying degrees of effects on a number of SEA Objectives. This will largely depend on the environmental criteria used by planning authorities to find the most appropriate areas for renewables. Therefore uncertain effects are found for biodiversity and nature conservation, soil and land use, water, historic environment, landscape and natural capital.

6.3.6 PT2 was therefore taken forward for detailed assessment.

Policy Theme 3 - Siting New Wind Farms In Perpetuity

6.3.7 As shown in the matrix assessment, siting wind farms in perpetuity will have a positive effect on socio-economics and climate change due to the utilisation of existing infrastructure, including grid connections for long-term benefit. Extending the life of existing wind farms will contribute to the achievement of energy targets.

6.3.8 Neutral effects are assessed on the remaining SEA Objectives as wind farms are currently assessed with planning permission typically granted for a 25-year period. Projects will therefore already be sited and designed in a way which is acceptable for their 25 year lifespan, any significant effects of development should therefore be mitigated for this length of time. Going forward, sites will be assessed through planning for their suitability in perpetuity and again designed in a way where significant effects on the environment are minimised and mitigated. It is not expected that in practice this will lead to a significantly different approach to the siting or assessment of projects than currently occurs with an application for temporary but long-term permission.

6.3.9 It was identified that PT3 did not require detailed assessment.

Policy Theme 4a - Wind Turbines & Amenity Considerations (Theme 4a- Noise Assessment)

6.3.10 Policy text under this PT gives weight to the considerations of noise within planning applications and LDP spatial policies for R&LC E developments. This is a technical point in terms of assessing amenity considerations, guiding on the use of ETSU-R-97 which remains the UK standard methodology for the assessment of noise from wind energy development. This PT was assessed as having no discernible effects on the SEA Objectives and therefore neutral effects are found throughout.

6.3.11 It was identified that PT4a did not require detailed assessment.

Policy Theme 4b - Wind Turbines & Amenity Considerations (Theme 4b - Separation Distances)

6.3.12 This PT gives weight to the considerations of separation distances within planning applications and LDP spatial policies for R&LC E developments. This is a technical point which guides on the preferred separation distances of turbines that will 'generally' apply in planning. Ultimately this will be decided on a case by case basis at the planning

authority level. Overall this PT was assessed as having no discernible effects on the SEA Objectives and therefore neutral effects are anticipated.

6.3.13 It was identified that PT4b did not require detailed assessment.

Policy Theme 4c - Wind Turbines & Amenity Considerations (Theme 4c - Shadow Flicker)

6.3.14 This PT gives weight to the considerations of shadow flicker within planning applications and LDP spatial policies for R&LC E developments. Policy text states that applicants should seek to minimise and mitigate against proposals that will result in shadow flicker. Overall, this PT was assessed as having no discernible effects on the SEA objectives and therefore neutral effects are anticipated.

6.3.15 It was identified that PT4c did not require detailed assessment.

Policy Theme 5 - Decommissioning and Site Restoration for New Development

6.3.16 Decommissioning is an important step at the end of the life of a R&LC E development. Policy text under this PT states that planning authorities must consider and make use of appropriate conditions (or a legal agreement, where appropriate) to ensure the decommissioning and site restoration of developments. Overall, this is likely to have beneficial effects as decommissioning and site restoration will be a consideration when individual scheme are assessed through planning. Although this is positive, it is not predicted that this will have significant beneficial or adverse effects overall.

6.3.17 PT 5 was assessed as having a neutral effect on the SEA objectives, and therefore did not require detailed assessment.

Policy Theme 6 – Solar Farms and Agricultural Land

6.3.18 Prioritising previously developed land for solar farms will have beneficial effects on soil, land use and landscape SEA Objectives. Using previously developed land will often improve the appearance of disused/derelict land and also cause less ecological disturbance. However, uncertain effects are identified around biodiversity and nature conservation as previously developed land can have open mosaic habitat of high biodiversity importance.

6.3.19 As overall neutral and beneficial effects are identified in the high level matrix, PT6 was not taken forward for further detailed assessment. Nevertheless, amendments to policy text to exclude previously developed land of high ecological value have been recommended in section 7.4.

Policy Theme 7 - Co-Locating Renewable, Low Carbon and Supporting Infrastructure

6.3.20 It is considered that co-location of renewables is generally positive with potential economic and environmental benefits to siting infrastructure together. This will maximise electricity generation, storage potential and utilisation of grid connections. However, at

this high level, this PT was assessed as having no discernible effects on the SEA Objectives and therefore neutral effects are found.

6.3.21 PT 7 was assessed as having a neutral effect on the SEA Objectives, and therefore did not require detailed assessment.

Policy Theme 8 - Re-Powering Existing Wind Farms

6.3.22 Re-powering previously approved wind and solar farms will have likely beneficial effects on socio-economics and climate change. A presumption in favour of re-powering may apply to sites that predate the implementation of the current SPPS. In some cases this may result in taller/larger turbines being installed. In some locations this will intensify the landscape and visual impacts of developments on the wider environment. Therefore, uncertain effects have been identified for the remaining SEA Objectives.

6.3.23 PT8 was therefore taken forward for detailed assessment.

Policy Theme 9 - Emerging Technologies & Other Issues

6.3.24 PT9 states planning authorities must support emerging technologies and encourage the use of micro-generation energy. Support for emerging technologies and micro-generation is generally positive in order to take advantage of the latest technology, decentralise electricity supply, diversify the energy mix and achieve energy targets. In some cases, this will have positive socio-economic implication through farm diversification.

6.3.25 As some technologies have yet to emerge, their environmental effects remain largely unknown. Individual schemes will be assessed on a case by case basis through local planning processes, however, cumulative effects may arise from the large scale uptake of these developments. There are therefore some uncertainties around the effects that support for emerging technologies will have a number of the environmental focused SEA objectives.

6.3.26 PT9 was therefore taken forward for detailed assessment.

Additional Policy Text

6.3.27 There are six points that fell under the ‘Additional Policy text (APT)’ category these have been labelled APT (a-f). Of these, most provide high level protection text included to minimise overall adverse effects of R&LC E developments, rather than stipulating the direction lower level policy should take. Therefore five of the six APT’s are assessed as having either beneficial or neutral effects on the SEA objectives.

6.3.28 APT(e) which states that where possible powerlines should be laid underground, was assessed as having a number of uncertainties on the ecology and nature conservation, , soil and land use and water SEA Objectives. This was attributed to the potential for adverse effects during construction of underground cables. Adverse effects are

anticipated on historic environment, as risk to archaeology is considered a key issue when using this methos. APT(e) was therefore taken forward to detailed assessment.

6.4 Detailed Matrix Assessment

6.4.1 Where PT's are predicted to have multiple uncertain or adverse effects at the high level assessment stage, the PT's as a whole have been analysed further in the detailed matrix assessment to ascertain the significance of effects and how adverse effects can be avoided or minimised.

6.4.2 The detailed matrix presented below in Table 6.4 shows the likely environmental effects of these PT's.

Table 6.3: Detailed Matrix Key

Short Term	Once	Temporary	Local	Negligible	Negligible	Major	Low	Yes
Medium Term	Infrequent	Reversible	Regional	Low	Low	Major/ Moderate	Medium	No
Long Term	Regular	Permanent	National	Medium	Medium	Moderate	High	
	Continuous		Cross Border	High	High	Moderate / Minor		
					N/A	Minor		
						Minor/ Negligible		
						Negligible adverse		
						Neutral		
						Negligible beneficial		
						Minor/ Negligible		
						Minor		
						Moderate / Minor		
						Moderate		
						Major/ Moderate		
						Major		

Table 6.4: Detailed Matrix Assessment

Detailed Matrix Assessment											
POLICY THEME 1 - REGIONAL STRATEGIC PLANNING POLICY & ENERGY TARGETS											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
1	Ecology and Nature Conservation	This theme aims to maximise R&LC Energy in appropriate locations within the built and natural environment, without compromising other environmental assets of acknowledged importance. However this does not necessary safeguard against adverse effects arising from an overall increase in renewable energy developments and associated infrastructure such as access routes, grid connections and substations such as: - Loss and/or damage to biodiversity in designated and undesignated sites - Disturbance to biodiversity and flora and fauna via habitat loss, fragmentation and deterioration - Disturbance and displacement of priority, protected or migratory species.	Short to Long Term	Regular	Permanent	Cross Border	Medium	Low to high	Moderate	Medium	Yes
2	Health and Quality of Life	No effects are anticipated on health and quality of life from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
3	Population and Socio-economics	Support for R&LC E will aid economic development in the sector, likely providing green jobs.'- Positive contribution to economic development	Long term	Regular	Permanent	Local to regional	Low	Low	Minor	Medium	No

		- Potential for Green Job creation -Contributions towards energy security									
4	Soil and Land Use	Adverse effects on designated geological heritage sites. Loss of soil/subsoil/geological stability Degradation of peatlands as a result of wind farm and ancillary infrastructure (e.g. roads) development Damage to the hydrogeological and ecological function of the soil resource through compaction or pollution events Loss of potential in mineral/aggregate areas	Long term	Continuous	Permanent	Local to regional	Low	low	Minor	Medium	No
5	Water	Adverse effects on the status of water bodies arising from changes in quality, flow and/or morphology, Increase in the risk of flooding arising from wind farms and any ancillary infrastructure. Construction activities within upper catchment could cause soil disturbance which could lead to sedimentation and siltation of nearby watercourses.	Long term	Continuous	Permanent	Cross Border	Low	Mudium	Minor/ Negligible	Medium	No
6	Air Quality	No effects are anticipated on air quality from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
7	Climate Change	Support for R&LC Energy developments will reduce the consumption of non-renewables therefore reducing greenhouse gases and other emissions. This will also help achieve legally binding targets.	Long term	Regular	Permanent	Cross-border	Medium	Medium	Moderate	Medium	No
8	Material Assets	No effects are anticipated on material assets from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A

9	Historic Environment	Adverse effects arising from an overall increase in renewable energy developments, associated infrastructure such as access routes, grid connections and substations may include: '- Loss or damage to archaeological and heritage assets both designated and unknown. '-Potential effects on site and setting of heritage assets especially in Northern Ireland Areas of Significant Archaeological Interest and Sites of Archaeological Potential and conservation areas	Long Term	Continuous	Permanent	Cross-border	Low	Medium	Moderate/ Minor	Low	No
10	Landscape	Adverse effects arising from an overall increase in renewable energy developments, associated infrastructure such as access routes, grid connections and substations may include: '-Potential for adverse visual impacts on landscape designations. Occurrence of adverse visual impacts in marine and costal areas. (Regional seascape areas) '- Changes to landscape can have a detrimental effect on economic wellbeing through reductions in farmed land or negative impacts on tourism. However other text within the policy sets landscape as a material consideration stating that schemes with a negative impact on the landscape should not be supported. However, text within the policy aims to protect designated landscapes and development that will have a negative effect on landscape.	Long Term	Continuous	Permanent	Cross-border	Medium	Low to high	Moderate	Medium	Yes
11	Natural Capital	As there is potential for adverse effects on water, soil, ecology and landscape this may disrupt an area's ability to effectively offer ecosystem services such as carbon sequestration or flood resilience.	Long term	Continuous	Permanent	Local to regional	Negligible	Medium	Minor	N/A	N/A

Detailed Matrix Assessment											
POLICY THEME 2 – LOCATIONAL CONSIDERATIONS											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
1	Ecology and Nature Conservation	The effects of this PT will depend on the factors taken into account when councils bring forward spatial policies for the most appropriate areas for renewable energy development. Setting out polices and proposals to maximise an area's contribution to achieving renewable energy targets may have adverse impacts where councils do not take into account ecological sensitivities.	Long term	Continuous	Permanent	Local to regional	Medium	Low to high	Moderate	Low	Yes
2	Health and Quality of Life	No effects are anticipated on Health and Quality of Life from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
3	Population and Socio-economics	Location mapping within LDP will speed up the planning process facilitating renewable and low carbon energy developments.	Long term	Continuous	Permanent	Local to regional	Medium	Low	Moderate	Medium	No
4	Soil and Land Use	A presumption in favour of such developments will apply in identified areas. Adverse effects may occur where mapping for the most appropriate areas for R&LC E development does not take into account soil sensitivities, up to date agricultural land classification and geology.	Long term	Continuous	Permanent	Local to regional	Low	Low	Minor	Low	No

5	Water	A presumption in favour of such development will apply in identified areas. Where mapping for the most appropriate areas for R&LC E development does not take into account the water environment there may be adverse effects including deterioration in water availability, quality and increased flood risk.	Long term	Continuous	Permanent	Cross Border	Negligible	Medium	Minor	Low	No
6	Air Quality	No effects are anticipated on air quality from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
7	Climate Change	Setting out polices and proposals to maximise an area's contribution to achieving the renewable energy targets will likely increase renewable energy developments thus improving climate change resilience and adaption capacity in Northern Ireland.	Long term	Continuous	Permanent	Local to regional	Medium	Medium	Moderate	N/A	N/A
8	Material Assets	No effects are anticipated on material assets from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
9	Historic Environment	A presumption in favour of such development will apply in identified areas. Where mapping for the most appropriate areas for R&LC E development does not take into account build and natural cultural heritage, archaeology and the site and setting of heritage assets. Loss, damage and disturbance of historic assets may occur.	Long term	Continuous	Permanent	Local to regional	Low	Medium	Moderate/ Minor	Low	No

10	Landscape	The policy states that landscapes should be protected against inappropriate renewable and low carbon energy development and that a cautious approach for R&LC E development proposals will apply within designated landscapes which are of significant value, and their wider settings. It further states that 'Wind Energy Development in Northern Ireland's Landscapes' and other relevant practice notes should be taken into account in assessing all wind turbine proposals. It is therefore likely that the effects on landscape when bringing forward spatial policies within LDP's will hold strong consideration.	Long term	Continuous	Permanent	Local to cross boarder	Negligible	Low to high	Minor	Low	No
11	Natural Capital	Those spatial polices that do not take into account the adverse effects on water, soil, ecology and landscape. R&LC E developments alone or in combination with other developments may therefore disrupt an areas capability to effectively offer ecosystem services such as carbon sequestration or flood resilience.	Long term	Continuous	Permanent	Local to regional	Negligible	Medium	Minor	Low	No

Detailed Matrix Assessment											
POLICY THEME 8 - RE-POWERING EXISTING WIND and solar FARMS											
SEA Objective	Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Protected Status	Value / Vulnerability	Significance	Certainty	Mitigation Required

1	Ecology and Nature Conservation	Repowering may result in larger scale turbines and additional construction activities which may have adverse effects such as loss, damage and disturbance to biodiversity, habitats and flora and fauna. Mitigative text implies there is a presumption in favour unless the impacts identified (including cumulative impacts) are unacceptable and cannot be mitigated. This will likely lessen proposals with significant adverse impacts being granted.	Long term	Infrequent	Reversible	Local to cross boarder	Low	National to local	Medium	Moderate/ Minor	Low	Yes
2	Health and Quality of Life	No effects are anticipated on health and quality of life from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
3	Population and Socio-economics	A presumption in favour of proposals to re-power, expand and extend the life of existing solar and wind farms will enable the prolonged life of developments and associated economic gain while keeping existing infrastructure and grid connections. This can reduce the construction costs and environmental impacts of the process compared to building an equivalent wind/solar farm in a previously undeveloped area.	Long term	Infrequent	Permanent	Regional	Low	N/A	Low	Minor	Medium	No
4	Soil and Land Use	To re-power, expand and extend the life of existing solar and wind farms may have adverse effects on soil particularly where erosion or compaction is already an issue. Mitigative text implies there is a presumption in favour unless the impacts identified (including	Long term	Infrequent	Permanent	Local to regional	Low	N/A	Low	Minor	Low	No

		cumulative impacts) are unacceptable and cannot be mitigated. This will likely lessen proposals with significant adverse impacts being granted.										
5	Water	To re-power, expand and extend the life of existing solar and wind farms may lead to additional hardstanding, changes to soil compaction/erosion which can affect the quality of the water environment. However. mitigative text implies there is a presumption in favour unless the impacts identified (including cumulative impacts) are unacceptable and cannot be mitigated. This will likely lessen proposals with significant adverse impacts being granted.	Long term	Infrequent	Permanent	Cross Border	Negligible	N/A	Medium	Minor	Low	No
6	Air Quality	No effects are anticipated on air quality from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
7	Climate Change	Re-powering, expanding and extending the life of existing solar and wind farms will contribute to the reduction in use of non renewables and will support in achieving the renewable energy targets. This will aid climate change resilience and adaption in Northern Ireland.	Long term	Continuous	Permanent	Cross Border	Low	N/A	Medium	Moderate/ Minor	Low	No
8	Material Assets	No effects are anticipated on material assets from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A

9	Historic Environment	Changes to the size and scale of solar and wind developments when repowering may lead to adverse effects on historic assets and may visually impact the site and setting of these assets. Mitigative text implies there is a presumption in favour unless the impacts identified (including cumulative impacts) are unacceptable and cannot be mitigated. This will likely lessen proposals with significant adverse impacts being granted.	Long term	Infrequent	Permanent	Local to regional	Negligible	N/A	Medium	Minor	Low	No
10	Landscape	Changes to the size and scale when repowering may lead to increased cumulative visual impacts of developments or the landscape character and quality. Mitigative text implies there is a presumption in favour unless the impacts identified (including cumulative impacts) are unacceptable and cannot be mitigated. This will likely lessen proposals with significant adverse landscape impacts being granted.	Long term	Infrequent	Permanent	Local to regional	Low	N/A	Medium	Minor	Low	No
11	Natural Capital	Re-powering, expanding and extending the life of existing solar and wind farms may have adverse effects on water, soil, ecology and landscape may disrupt an areas capability to effectively offer ecosystem services such as carbon sequestration or flood resilience.	Long term	Infrequent	Permanent	Cross Border	Negligible	N/A	Medium	Minor	Low	No

Detailed Matrix Assessment											
POLICY THEME 9 - EMERGING TECHNOLOGIES & OTHER ISSUES											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
1	Ecology and Nature Conservation	The individual development of emerging technologies such as AD plants, BESS, Biomass and the encouragement of microgeneration may have local adverse effects such as loss, damage and disturbance to biodiversity, habitats and flora and fauna. Cumulative effects of multiple developments in an area may exacerbate these adverse effects. Loss of/damage to biodiversity in designated sites, fragmentation, displacement of priority and protected species and impacts on migratory species such as birds and fish.	Long term	Continuous	Permanent	Local to cross boarder	Medium	Low to high	Moderate	Medium	Yes
2	Health and Quality of Life	No effects are anticipated on health and quality of life from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
3	Population and Socio-economics	Support for emerging technologies will aid economic development in the sector, likely providing green jobs. Emerging technologies are also likely to allow for farm diversification and help towards overall energy security through decentralisation.	Long term	Continuous	Permanent	Local to regional	Low	Low	Minor	Medium	No

4	Soil and Land Use	The individual development of emerging technologies such as AD plants, BESS, Biomass and the encouragement of microgeneration may have local adverse effects on soil particularly where erosion or compaction is already an issue.	Long term	Continuous	Permanent	Local to regional	Low	Low	Minor	Low	No
5	Water	The individual development of emerging technologies such as AD plants, BESS, Biomass and the encouragement of microgeneration may have adverse effects on the water environment through increased hardstanding, increased pollution pathways, changes to run off.	Long term	Continuous	Permanent	Cross Border	Low	Medium	Minor/ Negligible	Low	No
6	Air Quality	No effects are anticipated on air quality from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
7	Climate Change	Supporting emerging technologies will contribute to the reduction in use of non renewables and will likely be a necessary part of achieving renewable energy targets. This will aid climate change resilience and adaption in Northern Ireland.	Long term	Continuous	Permanent	Cross Border	Low	Medium	Moderate/ Minor	N/A	N/A
8	Material Assets	No effects are anticipated on material assets from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
9	Historic Environment	The individual development of emerging technologies such as AD plants, BESS, Biomass and the support of microgeneration may have adverse effects such as the loss or damage to archaeological and heritage assets both designated and unknown. As well as potential adverse effects on site and setting of heritage assets.	Long term	Continuous	Permanent	Local to regional	Medium	Medium	Moderate	Medium	Yes

10	Landscape	The individual development of emerging technologies such as AD plants, BESS, Biomass and the encouragement of microgeneration may have adverse effects on visual amenity and wider landscape quality. Cumulative effects of multiple developments in an area will likely exacerbate these adverse effects. The character of a landscape may be affected resulting in adverse effects on tourism.	Long term	Continuous	Permanent	Local to regional	Medium	Low to high	Moderate	Medium	Yes
11	Natural Capital	The individual development of emerging technologies such as AD plants, BESS, Biomass alone or in combination with other developments may disrupt an areas capability to effectively offer ecosystem services such as carbon sequestration or flood resilience.	Long term	Continuous	Permanent	Local to regional	Negligible	Medium	Minor	Medium	No

Detailed Matrix Assessment											
APT (5) Where possible, new power lines should be laid underground to reduce the visual impact, however it is accepted that consideration must take account of costs which may otherwise render a project unviable											
SEA Objective	**Description of Effect**	**Duration**	**Frequency**	**Permanence**	**Geographic Extent**	**Magnitude**	**Protected Status**	**Value / Vulnerability**	**Significance**	**Certainty**	**Mitigation Required**

1	Ecology and Nature Conservation	Underground cabling may cause habitat loss as a result of construction such as the removal of trees/ hedgerows however this is likely to be small scale and not significantly worse than overhead lines or impacts from construction of renewables.	Long term	Continuous	Permanent	Local to regional	Negligible	National to local	Medium	Minor	Medium	No
2	Health and Quality of Life	Underground cabling will reduce the visual impacts of a development, therefore reducing disamenity effects.	Long term	Infrequent	Permanent	Local	Negligible	N/A	Medium	Minor	Medium	No
3	Population and Socio-economics	No effects are anticipated on Population and socio economics from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
4	Soil and Land Use	Underground cabling may cause adverse effects on soil structure and drainage, however this is likely to be small scale and not significant in the scale of overall construction of R&LC E developments. Best practice construction methods and route selection will lessen the likelihood of adverse effects.	Short Term	Infrequent	Temporary	Local	Negligible	N/A	Negligible	Negligible adverse	Low	No
5	Water	Routes will likely avoid waterways however construction of underground cabling may cause impacts to the wider water environment through sedimentation or pollution.	Short Term	Infrequent	Temporary	Local to regional	Negligible	N/A	Negligible	Negligible adverse	Low	No

		Best practice construction methods and route selection will lessen the likelihood of adverse effects.										
6	Air Quality	No effects are anticipated on air quality from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
7	Climate Change	No effects are anticipated on climate change from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
8	Material Assets	No effects are anticipated on material assets from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A
9	Historic Environment	Underground cabling may cause potential of for loss, damage and disturbance to underground archaeology. Best practice construction methods and route selection will lessen the likelihood of adverse effects.	Long term	Infrequent	Permanent	Local	Negligible	N/A	Medium	Minor	Medium	No
10	Landscape	Underground cabling will reduce visual impacts of developments in the long term. Some short term visual amenity disruption may be caused during construction however this is unlikely to be significant in comparison to overall construction.	Long term	Once	Permanent	Local to regional	Low	N/A	Low to high	Moderate/ Minor	Medium	No
11	Natural Capital	No effects are anticipated on natural capital from this PT.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	N/A	N/A

Policy Theme 1 - Regional Strategic Planning Policy & Energy Targets

6.4.3 PT 1 was taken forward for detailed assessment as a result of potential uncertain but likely adverse effects resulting from the potential large scale uptake of R&LC E developments that would be needed to achieve a target of 80% of electricity from renewable sources by 2030. This would mean almost doubling electricity from renewable energy in the next 7 years.

6.4.4 The policy text within this theme aims to maximize R&LC Energy in appropriate locations within the built and natural environment, without compromising other environmental assets of acknowledged importance. This high level environmental protection text will go some way to help avoid developments with adverse effects being granted planning permission. However, this alone does not safeguard against adverse effects arising from an overall increase in renewable energy developments and associated infrastructure such as access routes, grid connections and substations.

6.4.5 There is the potential for loss and/or damage to biodiversity in designated and undesignated sites. Disturbance via habitat loss, fragmentation and deterioration. Disturbance and displacement of protected species or migratory species, which in some cases may have transboundary effects. On-farm renewable energy developments may promote further fragmentation, the removal of vegetation and important habitats such as hedgerows, that are commonly found in countryside/agricultural landscapes. Many species rely on elements of agricultural landscapes to survive.

6.4.6 Although the potential for significant adverse effects would be controlled through the planning process, there could be effects both alone and in combination with other developments that results in a moderate adverse impact the on ecology and nature conservation SEA objective.

6.4.7 Moderate adverse effects are anticipated on landscape due to the potential for visual impacts. Landscape character is a large part of Ireland's tourism industry, increase R&LC E developments within a landscape can cause a shift from predominantly agricultural landscapes to a more industrialised landscape, affecting the overall landscape character of an area. This may also have adverse effects on coastal and marine areas where connections to offshore wind developments are made.

6.4.8 Policy text does however favour previously developed land and aims to safeguard designated landscapes *"Developers should seek to avoid designated landscapes and utilise industrial or previously developed land, where feasible."* And *"Poorly designed schemes which will have a negative impact on the landscape should not be supported. Favourable consideration should be given to large scale rooftop solar power where there are no unacceptable impacts, including glint and glare."*

6.4.9 Negligible/minor adverse effects are anticipated on soil and land use and water SEA objectives due to potential for loss of soil/geological stability, compaction and adverse effects on the status of water bodies arising from changes in quality, flow, sedimentation. As adverse effects are predicted on water, soil, ecology and landscape this may disrupt

an area's ability to effectively offer ecosystem services such as carbon sequestration or flood resilience, therefor minor adverse effects are anticipated on natural capital.

6.4.10 Moderate/minor adverse effects are anticipated on historic environment due to the potential loss or damage to archaeological and heritage assets both designated and unknown. Additionally there are potential adverse effects on site and setting of heritage assets especially in Northern Ireland Areas of Significant Archaeological Interest and Sites of Archaeological Potential and Conservation Areas.

6.4.11 Comprehensive assessment at the planning stage is paramount to understanding effects such developments would have on ecology and nature conservation, soil, water, landscape and historic environment, and to implement required mitigation techniques.

6.4.12 The scale up in R&LC E developments will contribute to economic development, support and create green jobs, contribute to energy security and lessen energy poverty. Currently, energy accounts for almost 60% of Northern Ireland's GHG emissions, this shift towards R&LC E will positively contribute towards energy security, play a key role in decarbonisation and reaching energy targets. PT1 is therefore anticipated to have minor to moderate beneficial effects on socio-economics and climate change.

6.4.13 The effect on the health and quality of life, air quality and material assets SEA Objectives is assessed as neutral.

Policy Theme 2 – Locational Considerations

6.4.14 Under PT2 planning authorities must set out policies and proposals in the LDPs to maximise its area's contribution to achieving the renewable energy targets. A presumption in favour of R&LC E development will apply in the areas identified, however, this does not mean that development proposals outside of these areas cannot be granted.

6.4.15 At this stage, it is unclear what methods will be used by planning authorities in setting spatial policies which causes uncertainty around the effects that poorly designed spatial policies may have on multiple SEA Objectives.

6.4.16 The detailed assessment found that the use of spatial plans and location mapping for R&LC E developments within LDPs may support the speeding up of the planning process, direct development towards areas where planning applications are most likely to be successful and maximise an area's contribution to achieving the renewable energy targets. The facilitation of such developments will support climate change resilience and adaption capacity in NI. Therefore moderate beneficial effects are anticipated on the socio-economic and climate change SEA Objectives.

6.4.17 The significance of potential adverse effects will largely depend on the factors taken into account when planning authorities bring forward spatial policies. A holistic approach that takes into account ecological sensitivities, geology, water, soil, land use, historic landscapes and archaeological potential and the associated designated sites, species and habitats will assist in reducing the risk of adverse environmental effects from specific proposals.

6.4.18 On the other hand, poorly designed spatial policies could cause adverse effects on the environment. Construction within sensitive water catchments may affect water quality and quantity including availability and quality of drinking water. In already depleted and

sensitive areas, such as peatland, construction may have adverse effects to the overall hydrology and structural integrity of the area. Impacts such as sedimentation or pollution may lead to the loss or disruption of migratory fish, whereas poorly sited scheme may disrupt migratory bird species.

6.4.19 As noted above, the ability of the landscape to accommodate development depends on careful siting using environmental sensitivity mapping, which takes into account cumulative effects. In order to mitigate significant adverse effects, LDPs will have to undergo SEA and AA, as appropriate, where it will be assessed whether spatial policies take full consideration of the effects on the environment before they are accepted.

6.4.20 Due to the potential for adverse effects outlined above, PT2 is anticipated to have moderate or moderate/minor adverse effects on ecology and nature conservation, historic environment, and landscape. The detailed assessment also found that there are likely minor adverse effects on soil and land use, water, and therefore natural capital.

6.4.21 The remaining SEA objectives, health and quality of life, air quality and material assets are assessed as neutral.

Policy Theme 8 - Re-Powering Existing Wind and Solar Farms

6.4.22 PT8 was taken forward for detailed assessment because of the uncertain effects that re-powering may have on multiple SEA Objectives.

6.4.23 To re-power, expand and extend the life of existing solar and wind farms may result in a larger development footprint, additional construction activities and in some cases taller/larger turbines. It is therefore predicted that there may be moderate/minor adverse effects on ecology and nature conservation due to loss, damage and/or disturbance to both designated and undesignated sites and species (effects similar to those mentioned in PT1 & PT2 and therefore not repeated in full here).

6.4.24 Minor adverse effects are anticipated on soil and land use, water, historic environment, landscape and natural capital. To re-power solar and wind farms may lead to additional hardstanding, soil sealing, changes to soil compaction/erosion, which can affect the quality of the water and soil environments.

6.4.25 Changes to the size and scale of solar and wind developments may lead to adverse effects on historic assets and landscape due to increased visual impact on the landscape and the site and setting of historic assets. These changes when re-powering, may lead to increased cumulative visual impacts of developments or the landscape character and quality. As re-powering may have adverse effects on water, soil, ecology and landscape this may disrupt an area's ability to effectively offer ecosystem services such as carbon sequestration or flood resilience. Therefore, minor adverse effects are also assessed for natural capital.

6.4.26 That being said, in many cases re-powering will not change the footprint of the development and would require only minor construction activities. The forementioned adverse effects associated with re-powering will be comparatively smaller and therefore favourable to the development of new sites. Therefore re-powering is potentially an

efficient way of meeting energy and decarbonisation targets with only relatively minimal additional environmental impact.

6.4.27 Each development will be subject to project level EIA and AA as appropriate. Mitigative text within the Policy indicates there will be a presumption in favour of re-powering unless the impacts identified (including cumulative impacts) are unacceptable and cannot be mitigated. This should therefore mean that proposals for re-powering that have significant adverse impacts, alone or in combination with other developments, will not be granted.

6.4.28 It is predicted that moderate/minor beneficial effects will be seen for climate change and socio-economics. This is due to the cost savings from upgraded current infrastructure and utilizing existing grid connection rather than developing new sites. Re-powering sites can also increase the generating capacity of sites due to the use of new higher-tech equipment. There is also the potential for fewer turbines with increased capacity to be used in cases where significant effects have been recognised.

6.4.29 Neutral effects are anticipated on material assets, health and quality of life, and air quality.

Policy Theme 9 - Emerging Technologies & Other Issues

6.4.30 PT9 was taken forward for detailed assessment because of the uncertain effects increased uptake of emerging R&LC E technology on multiple SEA Objectives.

6.4.31 PT9 was assessed to have a moderate adverse effect on biodiversity and nature conservation, historic environment and landscape. The individual development of emerging technologies such as AD plants, BESS, biomass and the encouragement of microgeneration may have local adverse effects such as loss, damage and disturbance to biodiversity, habitats and flora and fauna.

6.4.32 Minor adverse effects are anticipated on natural capital because individual development of emerging technologies such as AD plants, BESS, biomass alone, or in combination with other developments may disrupt an area's capability to effectively offer ecosystem services such as carbon sequestration or flood resilience.

6.4.33 As mentioned above, R&LC E developments may have adverse effects such as the loss or damage to archaeological and heritage assets both designated and unknown as well as the potential adverse effects on site and setting of heritage assets. There is potential for adverse effects on visual amenity and wider landscape character and quality, especially where multiple developments are situated in close proximity. Moderate adverse effects are therefore anticipated on landscape and historic environment.

6.4.34 Support for emerging technologies will have beneficial effects on the socio-economics objective as development, construction and running of these developments will create jobs and micro generation will aid farm diversification which will be key to the future of some farming businesses. The digestate by-product of AD plants can be sold as fertiliser and excess energy produced can be sold back to the grid and therefore support the economic viability of primary producers.

6.4.35 Emerging technologies therefore have the potential to cause adverse effects. However, each development will be subject to project level EIA and AA as appropriate, in addition

to standard local planning controls, to ascertain the risk of significant environmental effects and mitigate where necessary.

Additional Policy Text

6.4.36 APT(e) was taken forward for detailed assessment because of the uncertain effects of underground cabling.

6.4.37 It is likely that underground cabling would have a beneficial effect on landscape and human health, as it will reduce the visual impacts associated with the R&LC E developments. Minor adverse effects are anticipated on biodiversity and nature conservation largely due to disturbance during construction. Underground cabling may cause habitat loss as a result of construction such as the removal of trees/ hedgerows, however this is likely to be small scale and localised.

6.4.38 There are negligible adverse effects on the soil and land use, and water SEA objectives. This is due to the potential for impacts on soil quality, structure and drainage and the wider water environment through sedimentation or pollution. However, these effects are likely to be small scale and mitigated against during the overall construction of R&LC E developments.

6.4.39 Minor adverse effects are anticipated on historic environment due to the potential of loss, damage and disturbance to underground archaeology during construction of underground power lines. However, beneficial effects may also occur due to the reduced effect on setting of heritage assets due to cables being underground rather than overhead.

6.4.40 Overall, it is likely that underground cabling would only be used on developments and in locations where the effects will be beneficial to the overall construction of the development. Each development will be subject to appropriate EIA and AA. Best practice construction methods and route selection will lessen the likelihood of adverse effects.

6.5 Cumulative Effects

Cumulative Effects within the Programme

Ecology and Nature Conservation

6.5.1 Biodiversity and nature conservation is mentioned directly within the Policy text. APT(a) is likely to have beneficial effects on this SEA objective as it sets out that proposals for R&LC E developments should not only protect, but where feasible, enhance biodiversity. *"Within their project, developers should protect and, where feasible, seek to enhance biodiversity which could contribute to strengthening existing nature networks and restoring degraded habitats."*

6.5.2 APT(f) also states "…*infrastructure will be permitted where the proposal will not result in an unacceptable adverse impact on…biodiversity, nature conservation…local natural resources, such as air quality, water quality or quantity"*

6.5.3 Paragraph 1.26 within the policy states *"For all development, applicants, operators and planning authorities will be bound by environmental legislation requirements such as The*

Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 as amended and The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017."

6.5.4 This policy direction promotes high level protection under this SEA objective which will be taken into account when planning authorities bring forward spatial policies within LDPs or approve planning applications.

6.5.5 The detailed assessment identified that there is potential for minor-moderate adverse effects from PT1, PT2, PT8, and APT(e). This is due to potential adverse effects such as loss and/or damage to biodiversity in designated and undesignated sites, habitat loss, fragmentation and deterioration and the disturbance or displacement of protected or migratory species arising from an overall increase in R&LC E developments and associated infrastructure such as access routes, grid connections and substations. These adverse effects will be highly dependent on the location and design of developments. The remaining PT's within the Policy have neutral effects on ecology and nature conservation, neither having overly positive or adverse effects overall.

6.5.6 While the effects of individual R&LC E developments will be variable depending on site and project specific circumstance, a precautionary stance has been taken when describing potential adverse effects. Taking into consideration that the majority of the text within the Policy is assessed as having a neutral effect on this SEA objective and the inclusion of high level protection text surrounding biodiversity within the Policy, the overall effect of the Policy is likely to negligible.

Health and Quality of Life

6.5.7 There are no adverse effects anticipated on health and quality of life from the implementation of the Policy with the majority of PT's being assessed as having neutral effects. The Policy states that developments that result in unacceptable adverse impacts on public safety, human health and residential amenity (communities and individuals) will not be permitted. PT4 offers guidance on noise assessments, separation distance and shadow flicker. It is not anticipated that this will have a significant positive effect on health and quality of life but this guidance will go some way in preventing adverse effects on residential amenity arising from R&LC E Developments.

6.5.8 Overall the combined effects of the Policy on the human health objective are assessed to be neutral.

Socio-economics

6.5.9 Beneficial effects are anticipated on this SEA objective for PT1, PT2, PT3, PT8 PT9. R&LC E developments will contribute to economic development, support and create green jobs and increase energy security. The remaining PT's did not have a significant effect on this SEA Objective and therefore was assessed as neutral.

6.5.10 Overall the combined beneficial effects of the Policy on the socio-economics SEA objective are assessed to be significant.

Soil and Land Use

6.5.11 The majority of actions within the policy have neutral effects on the soil and land use SEA objective. However, the PT's taken forward for further analysis are assessed to have the potential for minor adverse effects. These adverse effects are linked to an overall increase in renewable energy developments, emerging technologies and associated infrastructure potentially causing soil degradation or sealing, land use changes, or effects to agricultural soils. Developments will be considered on a case-by-case basis and subject to planning controls through EIA and AA which would require significant adverse effects to be mitigated.

6.5.12 There is uncertainty around whether soil sensitivity and geological factors will be taken into account when planning authorities set spatial policies to maximise renewable energy within their LDPs. Earth Science Conservation Review (ESCR) sites, many of which overlap with ASSI's are a material consideration in the planning process and should be taken into account when forming spatial policies and determining planning applications in order to mitigate against adverse effects.

6.5.13 Paragraph 6.226 of the original Renewable Energy Policy within the SPPS relates to the importance of peatlands with NI. This paragraph has been updated in the review of the Policy. The best areas of semi-natural peatland habitats in Northern Ireland are designated and protected under National, European and International nature conservation legislation to afford them the greatest protection. However, site designation only covers around 10% of semi-natural peatland habitat in NI meaning there may be risk to undesignated peatland. The revised Policy states the importance of both active and degraded peatlands, affirming that their protection and restoration potential can, therefore, be a material consideration in the determination of planning applications on a case by case basis.

6.5.14 Overall, it has been assessed that the majority of the policy will have a neutral effect on this SEA objective, minor adverse effects will vary depending on site and project specific circumstance. It is anticipated that the combined effects from the Policy on soils and land use SEA objective would be negligible.

Water

6.5.15 The majority of actions within the policy have neutral effects on water, however, a number of PT's taken forward for detailed assessment are predicted to have minor adverse effects. In the absence of mitigation there is potential for construction and operation to adversely affect water through pollution events, sedimentation and increased hardstanding. Impacts to the water environment such as this may lead to the loss or disruption of migratory fish. Where developments are located within coastal areas this may have adverse impacts on coastal and marine habitats and species. This could also affect the quality and quantity of drinking water and the status of WFD waterbodies. Shellfish Water Protected Areas and Marine Protected Areas should be consideration should be taken into account when forming spatial policies and determining planning applications in order to mitigate against adverse effects.

6.5.16 As stated above, each development will be subject to environmental assessments which will limit the potential for significant adverse effects on water. High level protection text

within the Policy also states "…*infrastructure will be permitted where the proposal will not result in an unacceptable adverse impact… on* water quality or quantity"

6.5.17 Overall, it has been assessed that the majority of the policy will have a neutral effect on this SEA objective, minor adverse effects will vary depending on site and project specific circumstance. The combined effects from the Policy on the water SEA objective would be negligible.

Air Quality

6.5.18 There is no net effect anticipated on the SEA Objective air quality. All PT's are assessed as having an overall neutral effect as although R&LC E developments can generate air pollution, this is likely to only be during the construction phase, and even then, the levels will typically be low, and for a limited duration. The use of R&LC E will likely reduce emissions to air however as the policy does not address air quality directly it is not anticipated that this will have a discernible effect on the SEA Objective overall.

6.5.19 High level protection text within the Policy goes some way to help avoid R&LC E developments from having adverse effects on air quality, in paragraph 1.12 it states "…*infrastructure will be permitted where the proposal will not result in an unacceptable adverse impact…air quality".*

6.5.20 Overall the combined effects from the Policy on the air quality SEA objective would be neutral.

Climate Change

6.5.21 R&LC E developments will contribute to the wider environmental benefits arising from a clean, secure energy supply; reductions in GHG emissions; and contributions towards meeting Northern Ireland's energy targets.

6.5.22 There are a number of beneficial effects predicted on the climate change objectives from implementation of the Policy. As discussed, R&LC E developments including emerging technologies and micro generation are a key to mitigate climate change through decarbonisation, a reduction in the use of fossil fuels and in turn achieve NI's renewable energy and decarbonisation targets.

6.5.23 Overall, the combined effects from the Policy on the climate change SEA objective would be beneficial.

Material Assets

6.5.24 Overall the Policy is assessed as having neutral effects on material assets. The policy is not focused on factors relating to waste, recycling and reuse rates or the sustainable use of resources. All PT's assessed had a neutral effect on this SEA objectives.

6.5.25 Overall, the combined effects from the Policy on the material assets SEA objective would be neutral.

Historic Environment

6.5.26 The majority of actions within the Policy have neutral effects on the historic environment. However, there is potential for R&LC E developments to adversely impact buried

archaeological assets during construction. Additionally, the site and setting of designated and non-designated archaeological assets and/or the historic landscapes in which they sit, could be degraded. Assets of special architectural or historic interest, Scheduled Historic Monuments, Areas of Significant Archaeological Interest, Areas of Archaeological Potential and Marine Heritage Assets and should be fully considered and taken into account when forming spatial policies and determining planning applications in order to mitigate against potential adverse effects.

6.5.27 Paragraph 1.12. within the Policy aims to safeguard against unacceptable adverse impacts on built heritage interests. However, it is noted that this does not specify archaeological assets, minor wording changes have been suggested in Section 7.4 to protect below ground archaeological assets.

6.5.28 Certain types of development require EIA, consideration of the potential impacts of development upon heritage asset (and their setting) will normally be necessary as part of those assessments, or as part of a stand-alone Archaeological Impact Assessment. Developments would be subject to planning controls which would require significant adverse effects to be mitigated.

6.5.29 The effects of individual R&LC E developments will be variable depending on site and project specific circumstance, a precautionary stance has been taken when describing potential effects. Although there is potential for moderate adverse effects, it is not considered that the Policy as a whole will adversely affect the cultural heritage SEA objective. It is anticipated that the effects are likely to be negligible to minor adverse.

Landscape

6.5.30 Overall, the broad direction of the Policy had a cautious approach to adverse effects arising from R&LC E development and specifies landscape as a material consideration when bringing forward spatial plans or in the determination of planning applications. It further states that 'Wind Energy Development in Northern Ireland's Landscapes' and other relevant practice notes should be taken into account in assessing all wind turbine proposals'.

6.5.31 However, this does not necessarily safeguard in every case against adverse effects arising. Therefore the detailed assessment identified that there is potential for minor to moderate adverse effects on the landscape SEA objective from PT1, PT2, PT8 and PT9. The increase in R&LC E developments and the cumulative effects of emerging technologies may result in a change in landscape character. NI Regional Landscape Character, Seascape Character Areas, UNESCO designated sites (including geoparks) should be taken into account when forming spatial policies and in determining planning applications in order to mitigate adverse effects.

6.5.32 The judgements on cumulative impacts must be made on a case-by-case basis taking account of the specific character of the landscape and the siting, layout and intervisibility of the proposed R&LC E development with other energy developments in the same LCA, in neighbouring LCAs, in the Republic of Ireland and offshore.

6.5.33 Although there is potential for moderate adverse effects arising from some PT's, it is not considered that the Policy as a whole will adversely affect the landscape SEA objective.

It is anticipated that the combined effects from the Policy on the landscape SEA objective would be minor adverse.

Natural Capital

6.5.34 Although the assessment has identified the potential for some adverse effects which may disrupt an area's ability to effectively offer ecosystem services such as carbon sequestration or flood resilience. Overall neutral and negligible effects are predicted on the SEA objective natural capital along with others which are interconnected such as ecology and nature conservation, soils and land use, water and air quality.

6.5.35 Overall the combined effects from the Policy on the national capital SEA objective would be neutral.

6.6 Cumulative Effects with Other Plans and Programmes

6.6.1 As noted in previous sections, and in Appendix B, there are numerous interactions between the Policy and other plans and programmes.

6.6.2 The Scoping exercise found that, in general the R&LC E Policy is likely to be well-aligned with other Plans and Programmes assessed. The review of environmental protection objectives of these other Plans and Programmes shows a high level of alignment and positive environmental synergy.

6.6.3 Potential cumulative/in-combination effects include:

- Contributions towards the reduction in consumption of non-renewables and associated achievement of legally binding renewable energy targets in combination with other plans, programmes and policies;
- Contributions towards energy security as a result of facilitating R&LC E energy development in combination with other plans, programmes and policies;
- Contributions towards reductions in GHG (and other) emissions and the associated achievement of legally binding targets in combination with other plans, programmes and policies; and
- Potential effects on SEA Objectives rising from the construction of R&LC E (and other) development. The type of these effects is consistent with those described in section 6.3 and 6.4 in combination with other plans, programmes and policies.

6.6.4 Whilst significant adverse effects primarily associated with those other programmes cannot be discounted, the Policy, as demonstrated in this report, is not anticipated to have significant adverse effects on the identified SEA Objectives and therefore it is not anticipated to lead to significant adverse effects either singularly or in combination with other Plans and Programmes.

6.7 Transboundary Effects

6.7.1 The Policy when published in final form, will replace the Subject Policy 'Renewable Energy' contained within the SPPS (pages 90 – 93 refer), however this does not mean that effects of the implementation of the Policy are bound to NI alone.

6.7.2 Policies within Ireland may cause cumulative transboundary effects where both policies are supporting and encouraging the development of R&LC E developments. This may

have transboundary effects on the environment within these areas close to the Ireland/ NI border. Habitats on both side of the border are interconnected, several rivers run through both Ireland and NI and a number of lakes straddle the border. Two sea loughs, both with Shellfish Protected Areas, are located cross-border. There are also a number of designated areas and cultural heritage sites in Northern Ireland located on or near the border.

6.7.3 There is therefore some potential for transboundary effects through:

- Pollution or physical changes to rivers which flow into Ireland or into the border lakes or sea loughs;
- Impacts on marine areas;
- Impacts on mobile or migratory species; and
- Visual impacts of R&LC E developments near the border.

6.7.4 However, the assessment has identified that these adverse effects are likely to be negligible. Individual developments that come forward will need to comply with cross jurisdiction environmental legislation which extends into the marine environment. Projects must act in accordance with national environmental assessment requirements and legislation, specifically EIA and AA, within the jurisdiction of which they fall. Applications will need to take into account transboundary effects alone or in combination with other local developments.

6.7.5 It has been assessed that there will be no significant adverse transboundary effects as a result of the implementation of the Policy.

7 MITIGATION AND RECOMMENDATIONS

7.1 Introduction

7.1.1 Annex 1 of the SEA Directive requires the Environmental Report to set out ”the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme”. This chapter therefore sets out mitigation measures appropriate to minimising the adverse effects identified in Chapter 6.

7.2 Embedded Mitigation

7.2.1 High level environmental protection text is included within the Policy, this is intended to demonstrate the key aspects that need to be considered as material within planning applications and LDP policies and proposals for R&LC E.

7.2.2 Within the Policy this includes;

- Text within paragraph 1.27 favours the use of underground power lines to reduce the visual impact of developments.
- Paragraph 1.12:

  “All renewable and low carbon energy development and associated buildings and supporting infrastructure[1] will be permitted where the proposal will not result in an unacceptable adverse impact on the following planning considerations, which cannot otherwise be mitigated:

  - *public safety, human health, or residential amenity (communities and individuals);*
  - *visual amenity and landscape character, including cumulative impact;*
  - *biodiversity, nature conservation or built heritage interests;*
  - *local natural resources, such as air quality, water quality or quantity;*
  - *the capacity of and effects on the transportation network; and,*
  - *impacts on tourism, recreation, and public access to the countryside.”*
- Paragraph 1.15

  “Climate change is also having an adverse impact on nature and biodiversity. Within their project, developers should protect and, where feasible, seek to enhance biodiversity which could contribute to strengthening existing nature networks and restoring degraded habitats.”
- Paragraph 1.26

[1] Planning applications should include matters such as the power generation / capacity associated with the proposal, e.g. megawatts (MW/MWh).

"For all development, applicants, operators and planning authorities will be bound by environmental legislation requirements such as The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 as amended and The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017."

7.3 Environmental Enhancements

7.3.1 Through iterative discussion with the SEA team and the Department, minor changes have been made to the Policy text to further safeguard against potential adverse effects on the environment, these are highlighted below in green:

7.3.2 Paragraph 1.12:

"All renewable and low carbon energy development and associated buildings and supporting infrastructure[2] will be permitted where the proposal will not result in an unacceptable adverse impact ***(alone or in combination with other developments)*** *on the following planning considerations, which cannot otherwise be mitigated:*

- *public safety, human health, or residential amenity (communities and individuals);*
- *visual amenity and landscape character, including cumulative impact;*
- *biodiversity, nature conservation,* ***archaeological or*** *built heritage interests;*
- *local natural resources, such as air quality, water quality or quantity;*
- *the capacity of and effects on the transportation network; and,*
- *impacts on tourism, recreation, and public access to the countryside."*

7.3.3 Paragraph 1.17:

"Planning authorities should encourage and support the use of previously developed land ***(of low ecological value)*** *for solar farms in countryside locations."*

7.3.4 Following discussions with the Department and the SEA team the importance of peatland has been acknowledged (paragraph 6.226 of the original Renewable Energy Policy within the SPPS refers). The Department has maintained the policy direction on active peatland and enhanced the provisions to include consideration of the impacts on degraded peatland on a case-by-case basis.

7.4 Minimising Adverse Effects

7.4.1 LDP spatial proposals should be rigorously assessed for their environmental impacts. There are a variety of assessments that are relevant to the planning process, some of which are required under UK and NI legislation. These include Sustainability Appraisal (SA) and SEA for plans and programmes, EIA for projects, and Habitats Regulations

[2] Planning applications should include matters such as the power generation / capacity associated with the proposal, e.g. megawatts (MW/MWh).

Assessment for plans and projects affecting National Site Network sites. Spatial plans must take account of onshore and offshore zones and work coherently together.

7.4.2 The undertaking of lower-tier environmental assessments (SEA/EIA/AA), including compliance with the most up-to-date legislation and the use of Construction and Environmental Management Plans will reduce the likelihood of adverse effects. Environmental sensitivities and opportunities including those relating to ecology, conservation, soil, water, air quality, landscape and cultural heritage – in site location, extent, layout and design should be strongly considered.

7.4.3 Specific projects will be subject to planning and environmental controls that exist in the respective jurisdictions in which they are proposed and hence it is unlikely that projects fundamentally harmful to the environment would be allowed to proceed.

7.4.4 All re-powering should be subject to the requirement for planning permission, and a proportionate level of environmental assessment so that any changes to these developments can be fully assessed and where necessary, adverse effects mitigated.

7.4.5 A vital approach in environmentally sound strategic deployment of renewables is mapping resources (e.g., wind speeds, slope, sunlight hours) overlaid with maps of environmentally sensitive and designated areas. Spatial plans should identify and therefore avoid ecologically sensitive sites, including designated coastal and marine sites. Additionally, it is important to identify opportunities for biodiversity enhancement alongside renewable energy generation. For example, onshore wind and solar farms can be managed to provide habitat for wildlife, and power lines can be managed to support “wildlife corridors”.

7.5 Residual Effects of the Policy

It has been assessed that there will be no significant adverse effects as a result of the implementation of the Policy.

8 MONITORING

8.1 Monitoring proposals

8.1.1 Regulation 16 of the Northern Ireland Regulations requires the Department, as the Managing Authority, to monitor significant environmental effects of implementing the Policy. This must be done in such a way as to also identify unforeseen adverse effects and to take appropriate remedial action. Monitoring should commence as soon as the Policy is adopted, with annual reporting carried out over its lifespan. It may be necessary to revise the monitoring periodically so that it takes account of new methods and increased understanding of the baseline environment.

8.1.2 It is important that any monitoring proposed by the SEA should aim to specifically monitor the impact of the Policy revision rather than monitoring trends in the baseline environment that would have occurred regardless of the revision. In accordance with the NI SEA Regulations, monitoring should also focus on aspects of the Policy where environmental impacts are predicted to be significant (this can be for both adverse and beneficial effects).

8.1.3 However, the SEA did not predict any significant adverse effects of the Policy being implemented. Any singular adverse effects that do occur are likely to be negligible to moderate, and will only be realised once planning authorities publish LDP's or assess planning applications based on the Policy.

8.1.4 The draft revised Regional Strategic Planning Policy on R&LC E, when published in final form, will replace the Subject Policy 'Renewable Energy' contained within the SPPS for Northern Ireland. As the SPPS is to be read and applied as a whole, it is therefore desirable to incorporate monitoring of the effects of the Policy revision within the existing monitoring framework for the SPPS. The Department will continue to prepare and publish renewable energy statistics for the planning system, as part of its quarterly and annual statistical publications as well as the planning monitoring framework on an annual basis.

8.1.5 The Department also carries out a plan oversight role, engaging with councils as they prepare their new local policy through their LDP's. The SPPS includes a sub-section on 'Implementation, Monitoring and Review'. This includes a requirement for local authorities to review the implementation of their plans and report annually to the Department on the extent to which the objectives set out within an adopted LDP have been met.

8.1.6 The regulations referred to in the 'Implementation, Monitoring and Review' section contain specific monitoring requirements. The Planning (Local Development Plan) Regulations (Northern Ireland) 2015 states in Regulation 25 that:

"(2) The annual monitoring report must specify… (c) the supply of land for economic development purposes in the council's district, and (d) such other issues as appear to the council to be relevant to the implementation of the local development plan.

(3) Where a policy specified in a local development plan is not being implemented, the annual monitoring report must identify that policy and include a statement of- (a) the reasons why that policy is not being implemented, (b) the steps (if any) that the council intend to take to secure the implementation of it, and (c) whether the council intend to prepare a revision of the local development plan to replace or amend the policy."

8.1.7 By reporting to the Department each year on the extent to which the objectives set out within an adopted LDP has been met, councils will be able to identify any previously unforeseen adverse environmental effects and undertake appropriate remedial action where needed. This will also enable the Department to monitor the implementation of the SPPS.

8.1.8 Upon review, if it is found that significant adverse effects are arising as a result of the Policy, a monitoring programme should be proposed in the form of a Monitoring Framework Document so that the impacts of the policy can be evaluated and adverse effects mitigated.

9 NEXT STEPS

9.1.1 Consultation on the draft Policy and SEA Environmental Report (including NTS) is being presented for public and statutory consultation for a period of 12 weeks commencing April 2023. The Environmental Report has been issued to the relevant Consultation Bodies in Northern Ireland and the Republic of Ireland. Members of the public likely to participate in SEA consultation are those affected or likely to be affected by, or having an interest in the decision-making, including relevant non-governmental organisations, such as those promoting environmental protection. All documents can be found at the following web address: The Strategic Planning Policy Statement | Department for Infrastructure (infrastructure-ni.gov.uk)

9.1.2 After this consultation period, all comments received will be collated and the draft Policy and SEA Environmental Report will be reviewed and revised as necessary. Provided there are no objections or comments that will significantly alter the Policy, the final version can be drafted and adopted. Following this, an SEA Statement will be drafted that will summarise the process taken and identify the ways in which environmental considerations and consultations were taken into the final Policy.

Consultation Questions

Q1: Do you agree, that overall, the revised policy will help to ensure that the planning system can play its part in supporting wider efforts of government in addressing climate change and decarbonising the energy sector? If not, please explain how the draft policy can be improved.

Q2: Do you agree that the new provisions for a spatial approach through LDPs will assist in providing certainty and clarity to planning authorities, communities and developers alike by providing a presumption in favour of development in areas identified in LDPs? If not, please explain how the draft policy can be improved.

Q3: Do you agree with the draft revised policy approach to provide a presumption in favour of re-powering, extending and expanding solar and wind farm developments, where appropriate? If not, please explain how the draft policy can be improved.

Q4: Do you consider that the draft revised policy provides an appropriate regional strategic planning policy framework for plan-making and decision-taking for all forms of renewable and low carbon energy development? If not, please explain how the draft policy can be improved.

Where possible, your comments should include supporting evidence. Please note that all comments should relate to planning policy matters only.

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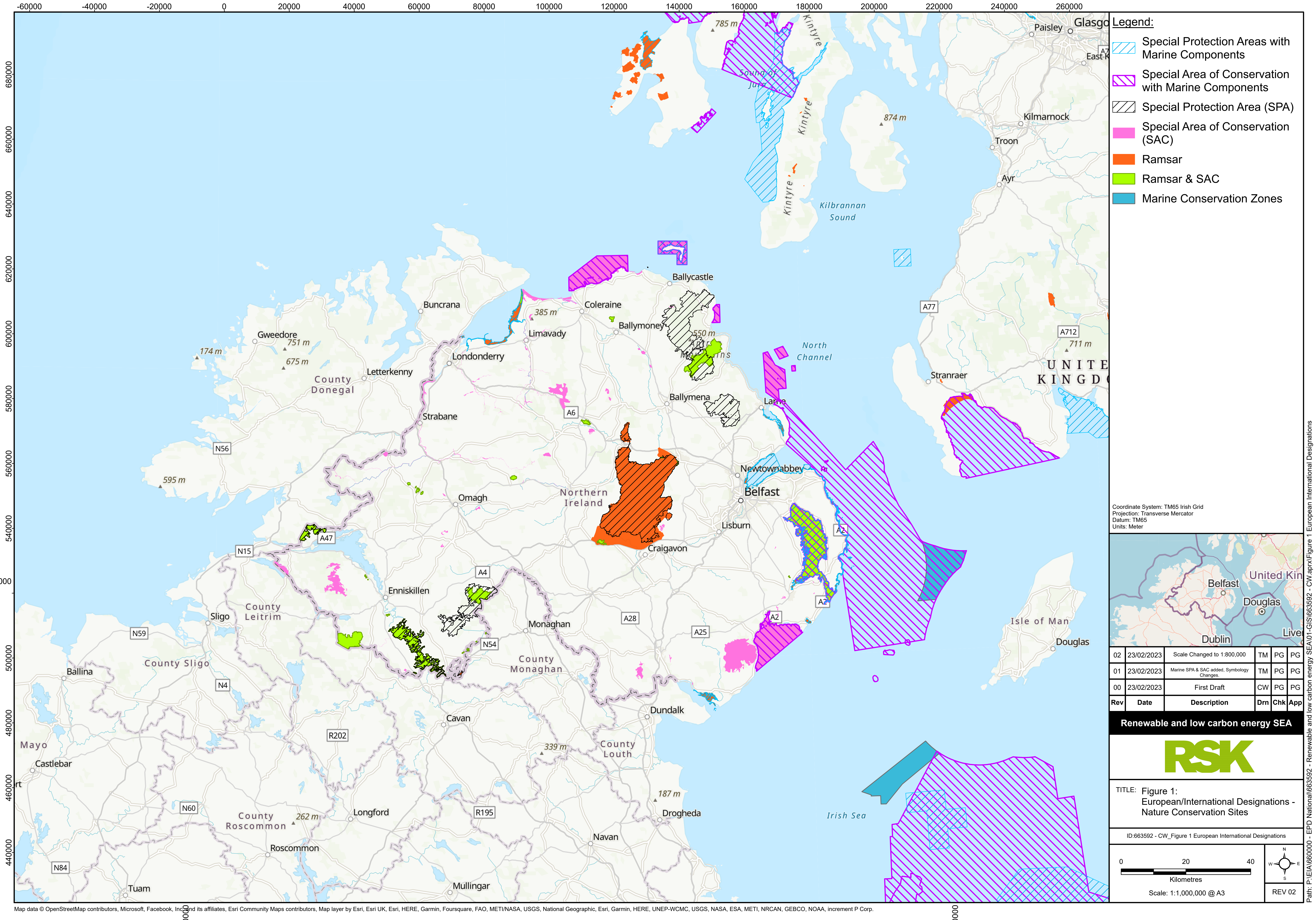
APPENDIX A: ENVIRONMENTAL BASELINE MAPS



Legend:
Special Protection Areas with Marine Components
Special Area of Conservation with Marine Components
Special Protection Area (SPA)
Special Area of Conservation (SAC)
Ramsar
Ramsar & SAC
Marine Conservation Zones
Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator
Datum: TM65
Units: Meter
02 23/02/2023 Scale Changed to 1:800,000 TM PG PG
01 23/02/2023 Marine SPA & SAC added, Symbology Changes. TM PG PG
00 23/02/2023 First Draft CW PG PG
Rev Date Description Drn Chk App
Renewable and low carbon energy SEA
RSK
TITLE: Figure 1: European/International Designations - Nature Conservation Sites
ID:663592 - CW_Figure 1 European International Designations
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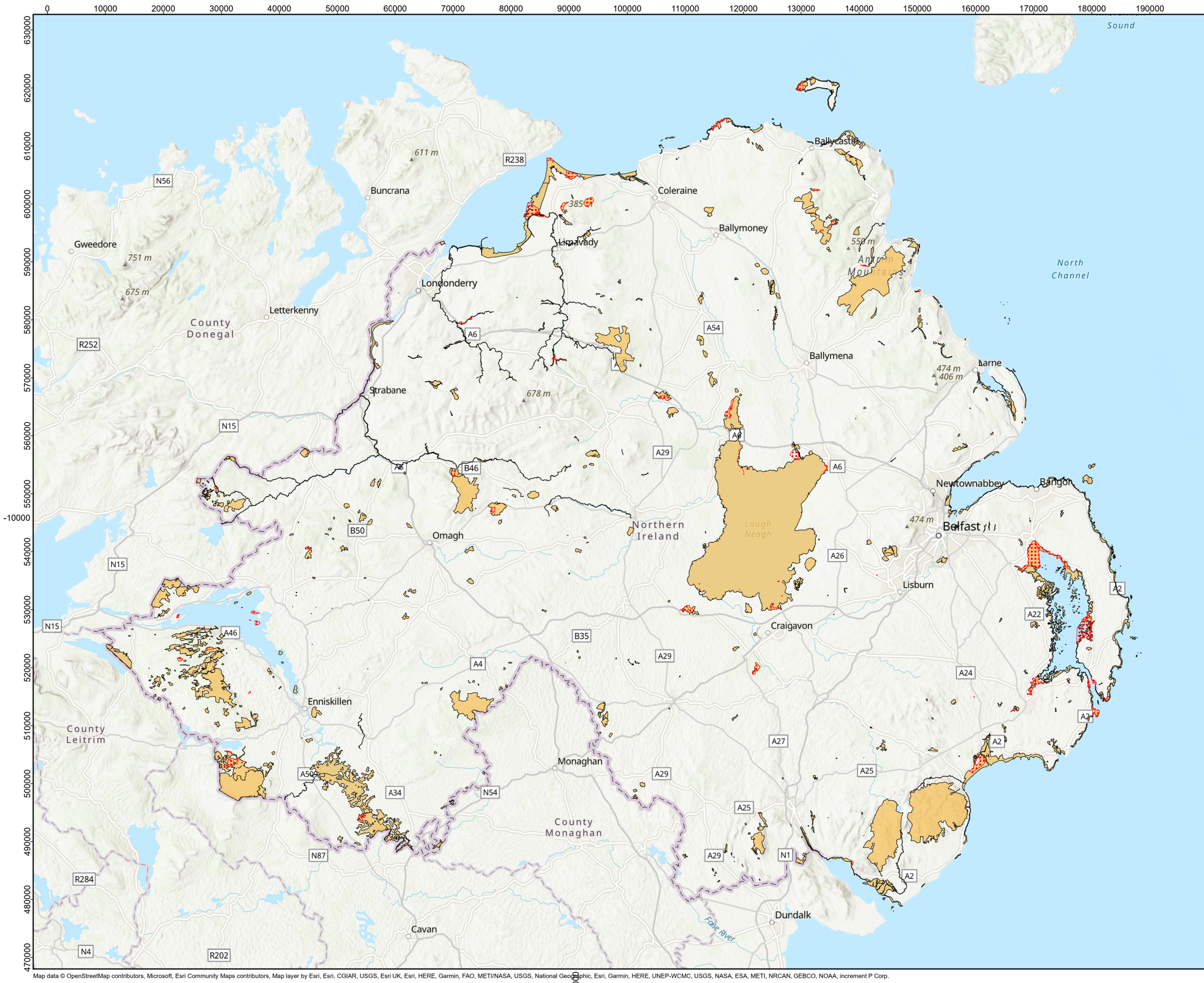
Kilometres
Scale: 1:1,000,000 @ A3
REV 02
Path: P:\EIA\660000 - EPD National\663592 - Renewable and low carbon energy SEA\01-GIS\663592 - CW.aprx\Figure 1 European International Designations
Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri, Esri UK, Esri, HERE, Garmin, Foursquare, FAO, METI/NASA, USGS, National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
Belfast
Northern Ireland
Londonderry
Coleraine
Ballycastle
Ballymena
Larne
Newtownabbey
Lisburn
Craigavon
Omagh
Strabane
Enniskillen
Monaghan
Dundalk
Drogheda
Cavan
Sligo
Letterkenny
Buncrana
Limavady
Ballymoney
North Channel
Irish Sea
Kilbrannan Sound
Isle of Man
Douglas
Stranraer
Ayr
Troon
Kilmarnock
Paisley
County Donegal
County Sligo
County Leitrim
County Monaghan
County Louth
County Roscommon



Legend:

- Areas of Special Scientific Interest (ASSI)
- National Nature Reserves (NNR) and Nature Reserves (NR)

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator
Datum: TM65
Units: Meter

Rev	Date	Description	Drn	Chk	App
00	20/04/2022	First Draft	CW	PG	PG

Renewable and low carbon energy SEA

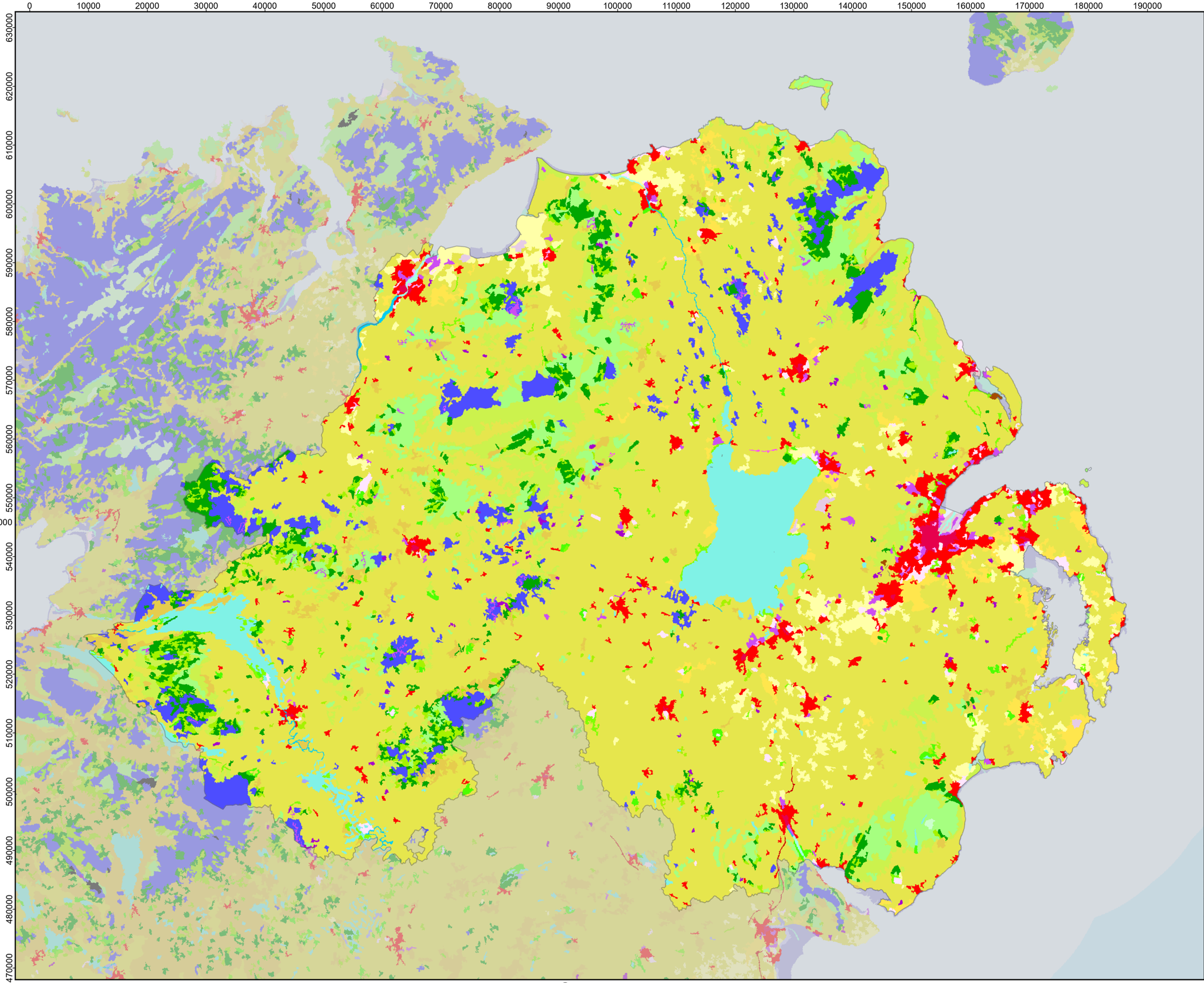
TITLE: Figure 2:
National Designations- Nature Conservation Sites

ID:663592 - CW_Figure 2 National Designations

0 10 20
Kilometres
Scale: 1:600,000 @ A3

REV 00

Path: P:\EIA\660000 - EPD National\663592 - Renewable and low carbon energy SEA\01-GIS\663592 - CW.aprx\Figure 2 National Designations



Legend:

Corine Land Cover 2018 raster

- Continuous urban fabric
- Discontinuous urban fabric
- Industrial or commercial units
- Road and rail networks and associated land
- Port areas
- Airports
- Mineral extraction sites
- Dump sites
- Construction sites
- Green urban areas
- Sport and leisure facilities
- Non-irrigated arable land
- Fruit trees and berry plantations
- Pastures
- Complex cultivation patterns
- Land principally occupied by agriculture, with significant areas of natural vegetation
- Broad-leaved forest
- Coniferous forest
- Mixed forest
- Natural grasslands
- Moors and heathland
- Transitional woodland-shrub
- Beaches, dunes, sands
- Bare rocks
- Sparsely vegetated areas
- Burnt areas
- Inland marshes
- Peat bogs
- Salt marshes
- Intertidal flats
- Water courses
- Water bodies
- Estuaries
- Sea and ocean

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator
Datum: TM65
Units: Meter

Rev	Date	Description	Drn	Chk	App
00	20/04/2022	First Draft	CW	PG	PG

Renewable and low carbon energy SEA

RSK

TITLE: Figure 3: Habitat Types (Corine Land Cover 2018 raster)

ID:663592 - CW_Figure 3 Land Cover Map

0 10 20
Kilometres

Scale: 1:600,000 @ A3

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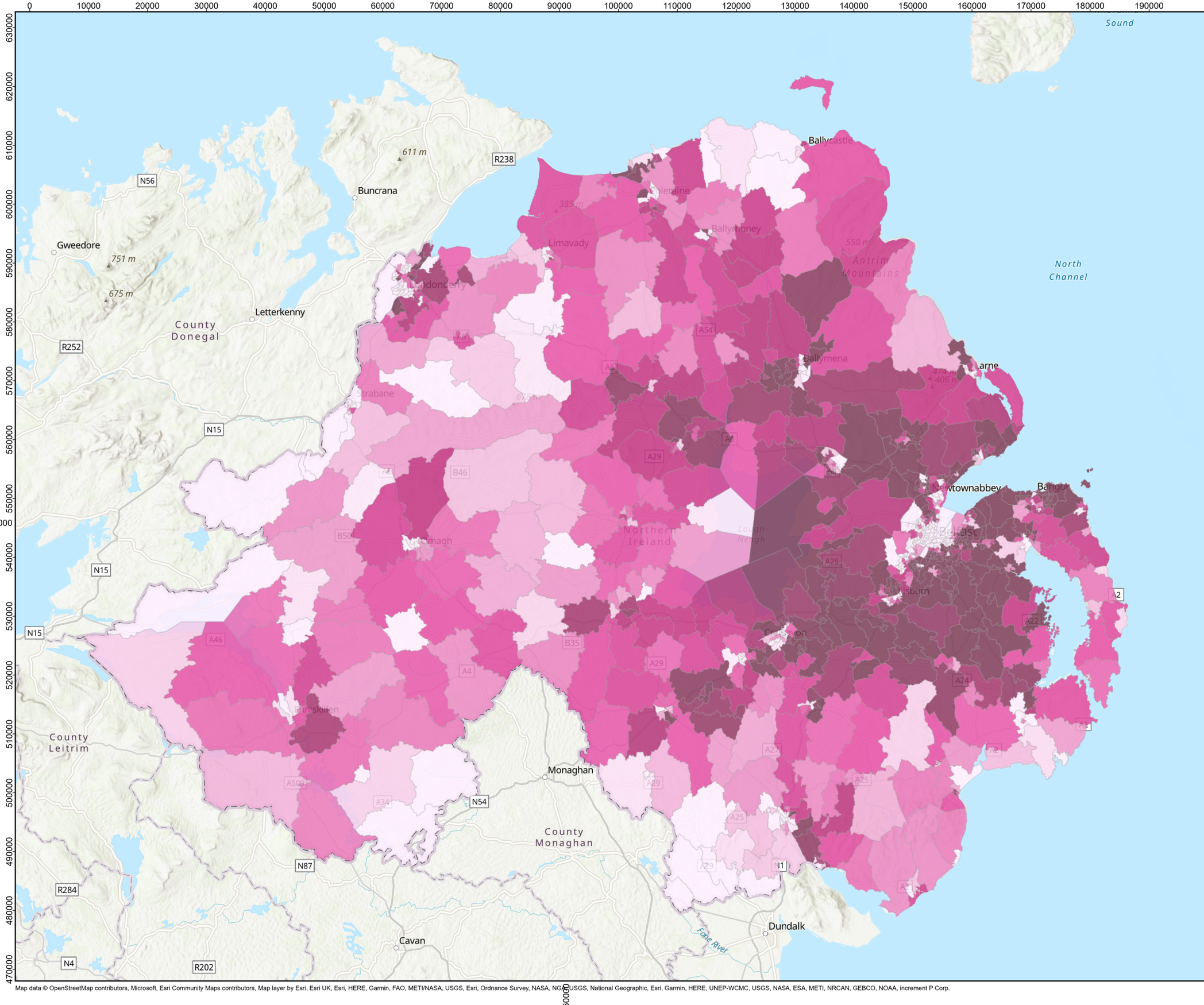
Path: P:\EIA\660000 - EPD National\663592 - Renewable and low carbon energy SEA\01-GIS\663592 - CW.aprx\Figure 3 Land Cover Map



Rev	Date	Description	Drn	Chk	App
01	22/04/2022	Notes Added	CW	PG	PG
00	22/04/2022	First Draft	CW	PG	PG

Renewable and low carbon energy SEA

RSK

TITLE: Figure 4: Overall Deprivation Rankings for Northern Ireland

ID:663592 - CW_Figure 4 Deprivation Rankings

0 10 20
Kilometres
Scale: 1:600,000 @ A3

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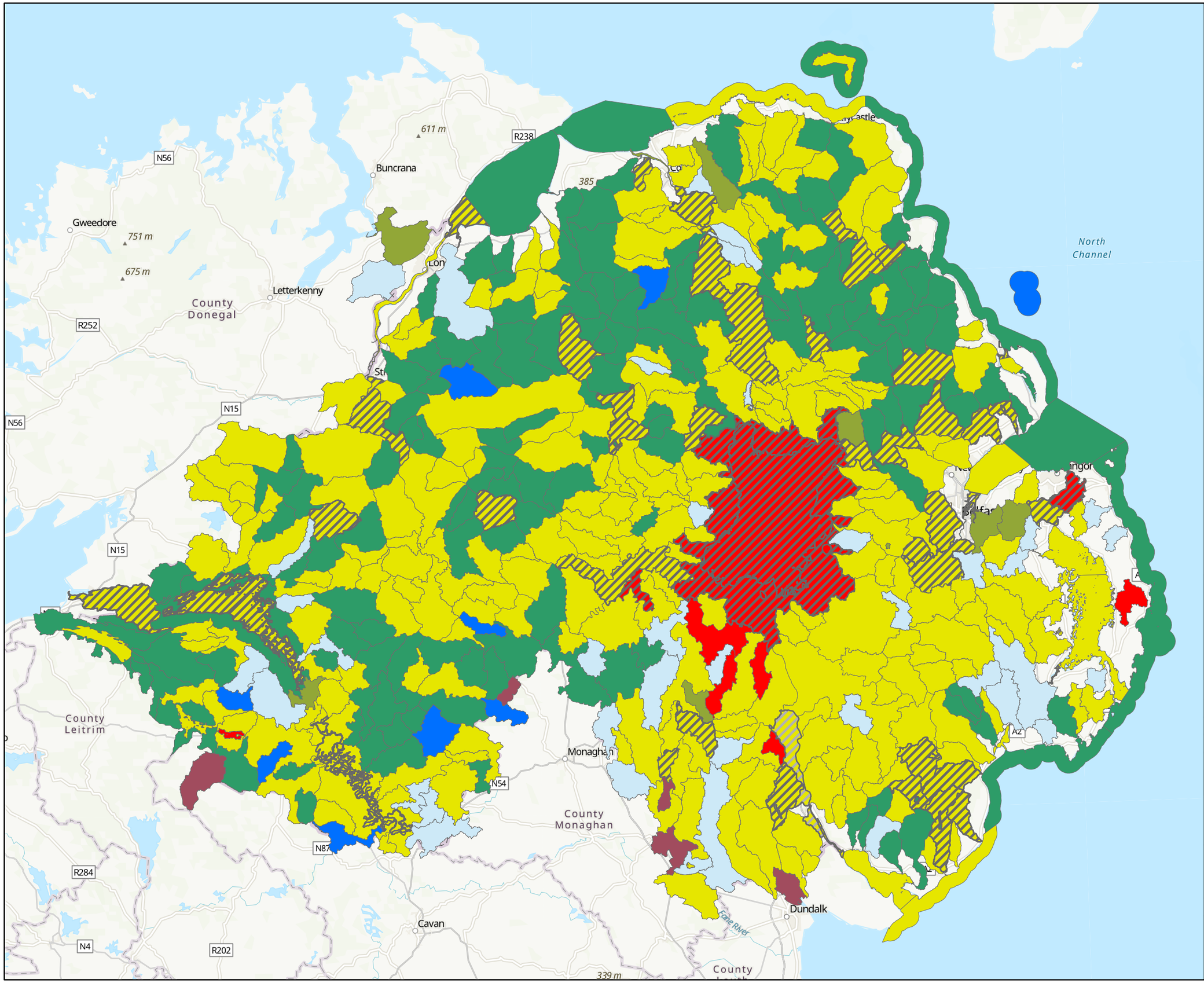
Path: P:\EIA\660000 - EPD National\663592 - Renewable and low carbon energy SEA\01-GIS\663592 - CW.aprx\Figure 4 Deprivation Rankings



Legend:

Surface Water Body Satus

- High
- Good
- Moderate
- Poor
- Bad
- Good Ecological Potential
- Moderate Ecological Potential
- Moderate Ecological Potential (Artificial Water Bodies)
- Poor Ecological Potential
- Bad Ecological Potential
- No Data

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
01	22/04/2022	Legend Changes	TM	PG	PG
00	22/04/2022	First Draft	TM	PG	PG

Renewable and low carbon energy SEA

RSK

TITLE: Figure 5 - Water Quality Status Map

ID:663592_Figure 5 - Water Quality Map

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Kilometres

Scale: 1:600,000 @ A3

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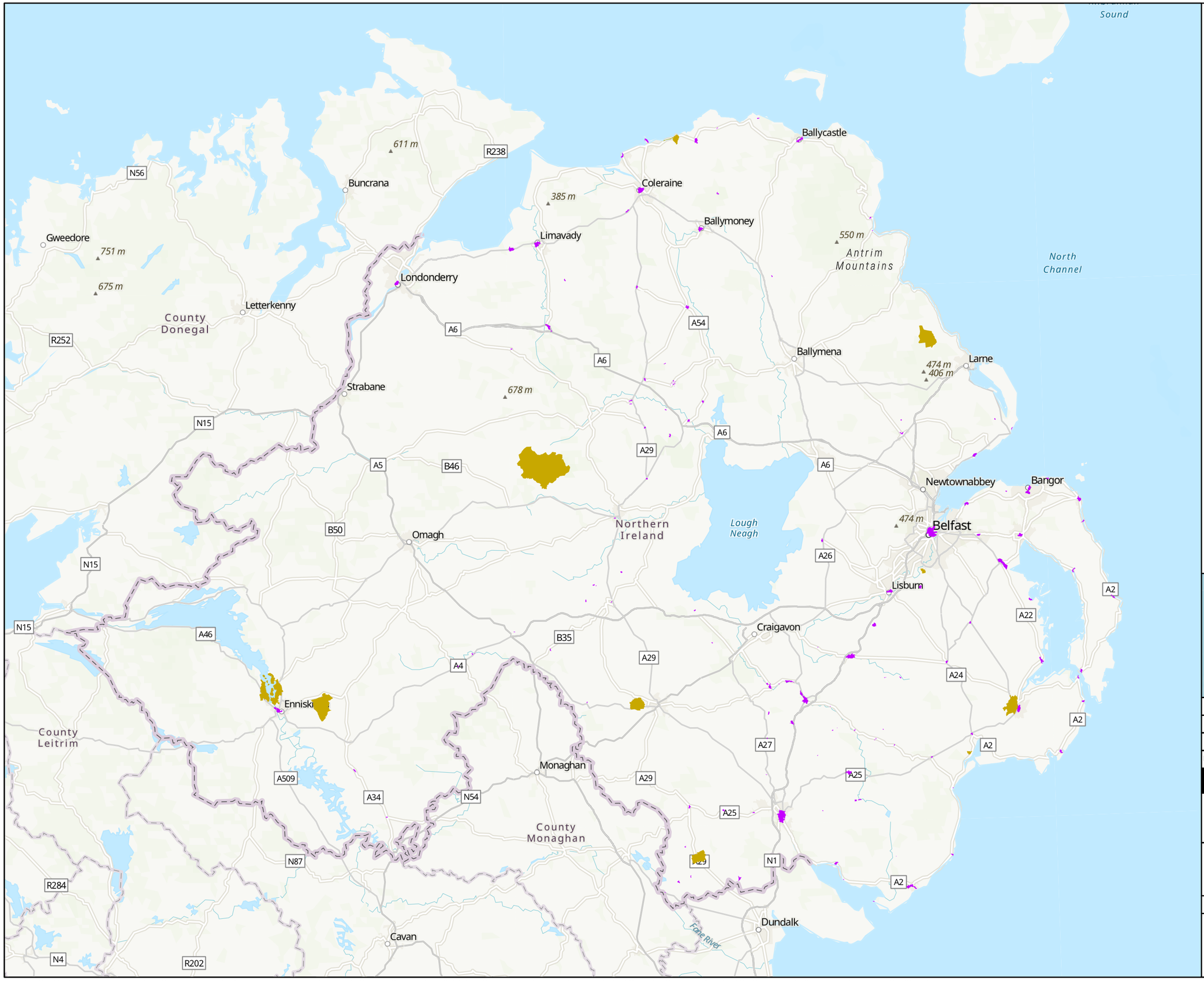
Path: C:\Work\663592 - Renewable and low carbon energy SEA\01 - GIS\663592.aprx\663592 Master Map



Legend:

- Areas of Significant Archeological Interest
- Areas of Archealogical Potential

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
00	22/04/2022	First Draft	TM	PG	PG

Renewable and low carbon energy SEA

RSK

TITLE: Figure 6 - Areas of significant archaeological interest and areas of archaeological potential

ID:663592_Areas of Significant archaeological interest and areas of archaeological potential

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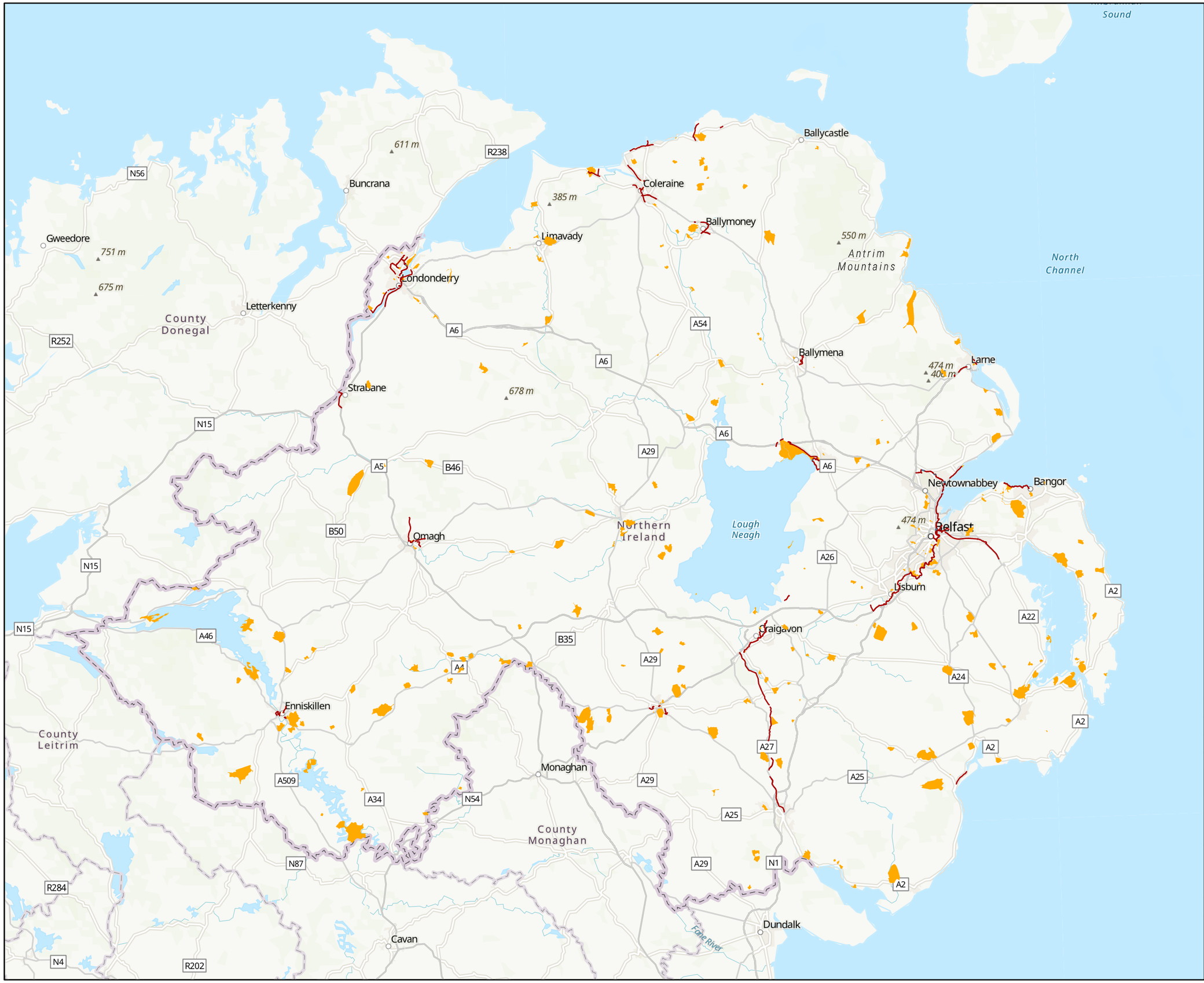
Kilometres

Scale: 1:600,000 @ A3

REV 00

Path: C:\Work\663592 - Renewable and low carbon energy SEA\01 - GIS\663592.aprx\663592 Master Map



Legend:

- Historic Parks and Gardens

National Cycle Routes

- On Road
- Traffic Free

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
00	22/04/2022	First Draft	TM	PG	PG

Renewable and low carbon energy SEA

RSK

TITLE: Figure 7: Access and Sustainable Transport

ID:663592_Access and Sustainable Transport

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Kilometres

Scale: 1:600,000 @ A3

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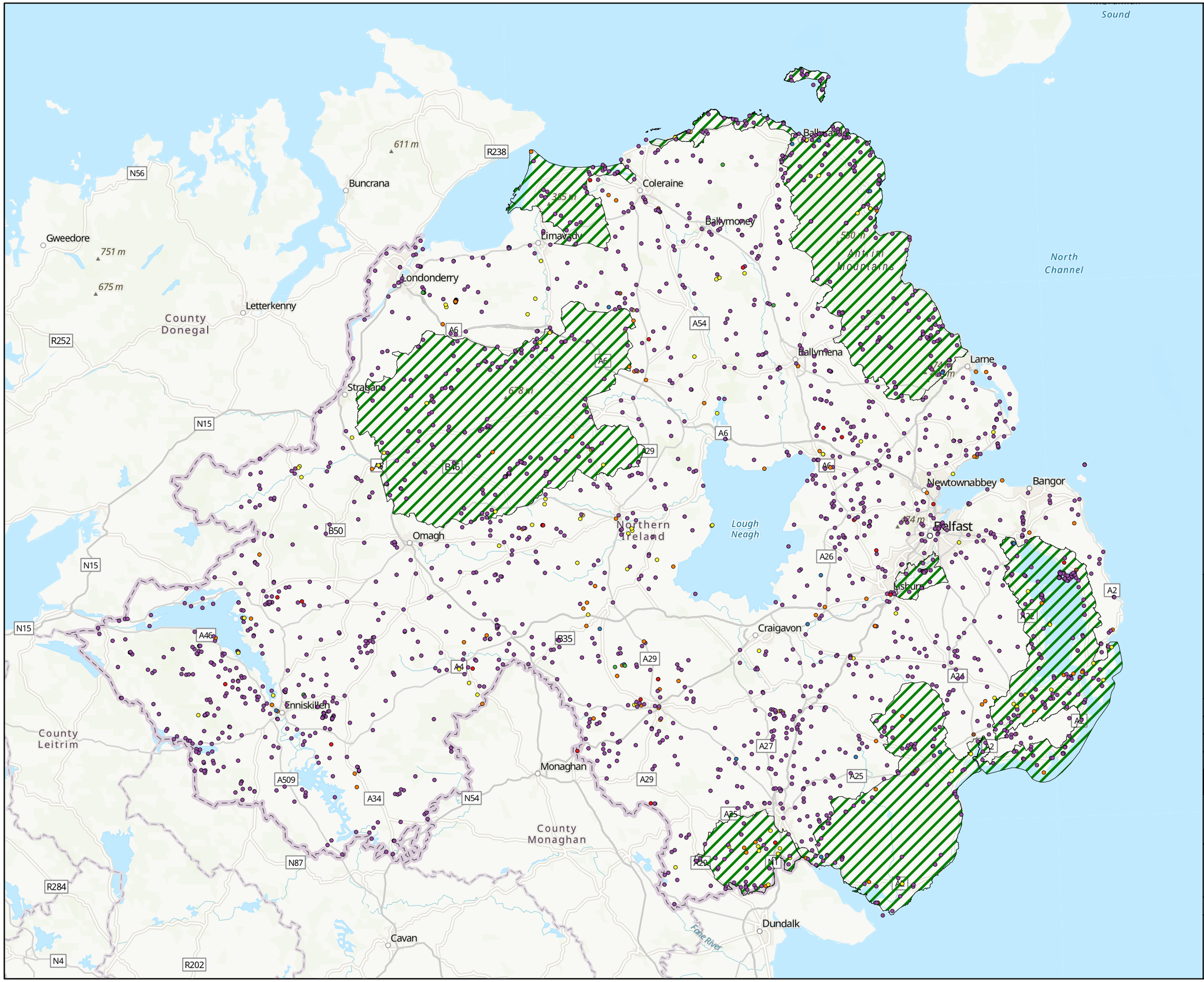

Legend:

Northern Ireland Sites and Monuments Record

- Descheduled
- Listed
- Proposed for Scheduling
- Scheduled
- State Care
- State Care and Scheduled
- State Care with Proposed Scheduled Area
- AONB

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
00	22/04/2022	First Draft	TM	PG	PG

Renewable and low carbon energy SEA

RSK

TITLE: Figure 8 - Heritage designations and AONB

ID:663592_Statutory Designations - Landscape & Cultural Heritage Sites

0 10 20
Kilometres

Scale: 1:600,000 @ A3

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Path: C:\Work\663592 - Renewable and low carbon energy SEA\01 - GIS\663592.aprx\663592 Master Map

APPENDIX B: REVIEW OF OTHER PLANS, PROGRAMMES AND ENVIRONMENTAL PROTECTION OBJECTIVES

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
Northern Ireland		
Energy Strategy - Path to Net Zero Energy 2022	The Energy Strategy sets out a pathway for energy to 2030 that will mobilise the skills, technologies and behaviours needed to take us towards our vision of net zero carbon and affordable energy by 2050. It includes the promotion of energy efficiency, renewable electricity and renewable energy sources. (This replaces the Strategic Energy Framework which ran from 2010 to 2020). NI's long-term vision of net-zero carbon and affordable energy is surrounded by three targets: energy efficiency, renewables and green economy. The Energy Strategy established a renewable electricity consumption target of 70% by 2030 that was then increased to 80% by 2030 by the Climate Change (Northern Ireland) Act 2022.	The Policy references the Strategy directly and has been established in a way to support the targets within. The Strategies policy framework includes 'Replacing Fossil Fuels with Renewable Energy' and others relating to reducing GHG emissions to zero and decarbonisation. The Policy will directly contribute to the objectives of this Strategy.
Climate Change (Northern Ireland) Act 2022	The Act places a duty on departments to ensure that the net emissions account for the year 2050 is at least 100% lower than the baseline and to ensure that the net emissions account for carbon dioxide for the year 2050 is at least 100% lower than the baseline for carbon dioxide. The Energy Strategy established a renewable electricity consumption target of 70% by 2030 that was then increased to 80% by 2030 by the Climate Change (Northern Ireland) Act 2022.	The Policy references the Act directly and has been established in a way to support the targets within. The Policy will directly contribute to the objectives of Act by facilitating R&LC E developments in appropriate locations.

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
Green Growth Strategy for Northern Ireland. (Consultation December 2021).	The Green Growth Strategy is the Northern Ireland Executive's multi-decade strategy, balancing climate, environment and the economy in Northern Ireland. It sets out the long-term vision for tackling the climate crisis in the right way. It will be delivered through a series of Climate Action Plans.	The Green Growth Strategy is aligned with a net zero deadline of 2050 and is strongly focussed on decarbonisation and sustainability. Therefore the Policy supports the principles of the Strategy.
Forests for Our Future	The 'Forests for Our Future' programme which commits to planting 18 million trees in Northern Ireland over the next 10 years, creating 9,000 hectares of new woodland.	The Policy may create a trade-off between land allocated for renewable energy schemes and that allocated for tree planting. Planning authorities will have to take Forests for Our Future into account when setting policies and proposals for R&LC E.
Programme for Government (PfG) Framework (2021)	Public consultation was held between 25 Jan and 22 Mar 2021 and the draft framework contains nine strategic Outcomes which set a clear direction of travel for the NI Executive and provide a vision for the future of all citizens. Among these nine outcomes are: 'Protecting the environment' and 'Having a good economy' (which includes growing the economy while being friendly to the environment).	The Policy will facilitate R&LC E development in appropriate locations which will contribute to economic development, create green jobs and reduce dependence on imported fossil fuels.
Investment Strategy for Northern Ireland 2050 (consultation closed on 20 April 2022)	A new strategy has been created by the Strategic Investment Board in collaboration with The Executive Office and Department of Finance to replace the previous ISNI which ran from 2011 to 2021. It helps to identify priority areas for investment, covering five key objectives, one of which is to decarbonise the economy and society.	One of the five key objectives of this Strategy is to; 'Decarbonise our economy and society'. R&LC E will play a key role in decarbonisation and therefore the Policy will contribute to the objectives of the strategy.
Northern Ireland Climate Change Adaptation Programme 2019-2024	The UK Climate Change Act 2008 requires NI departments to prepare an Adaptation programme. DAERA took the lead in developing the NICCAP2 which sets policies, strategies and actions for NICS Departments to address climate change and it is hoped it will raise awareness and encourage wider society and local government to adapt/address climate change.	The Policy is in alignment with the Programme as it will facilitate the siting of R&LC E developments which reduces the dependence on fossil fuels and in turn will help to reduce carbon emissions and address climate change.
GHG Emission Reductions Plan	This plan will set out how the NI Government intend to reduce Greenhouse Gas (GHG) emissions in the following sectors:	The Policy is in alignment with the Plan as It will facilitate the siting of R&LC E developments

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
	agriculture; energy; transport; business; residential; land use change; public; waste management; and industrial processes. The plan, once drafted and agreed by the Future Generations Working Group on Climate Change (FGWG CC) will be submitted to the NI Executive for their agreement.	which will reduces the dependence on fossil fuels which produce carbon dioxide and other GHG's.
Circular Economy Strategy (CES) for Northern Ireland (Consultation 2023)	DAERA and the Department for Economy (DfE) are working to develop a framework for the Circular Economy in NI. The draft strategy sets out our vision to create an innovative, inclusive and competitive economy where business, people and planet flourish, with responsible production and consumption at its core.	The Policy will not directly affect or be affected by the Strategy.
Waste Management Plan for Northern Ireland (2019)	This aims to consolidate current waste policies, including those detailed in the current NI strategy, 'Delivering Resource Efficiency' – Northern Ireland Waste Management Strategy, and regional waste management plans under one strategic plan with a focus on the circular economy and planning policy in one document. It should also be in line with the new Environment Strategy.	The Policy will not directly affect or be affected by the Plan.
Environment Strategy (Consultation closed on 18 January 2022)	DAERA is currently developing an Environment Strategy which covers climate change mitigation and adaptation, and GHG reductions among other key areas. The Strategy is intended to be an overarching document setting out Northern Ireland's environmental priorities for the coming decades and will form part of the Green Growth agenda.	A key outcome the Strategy sets out to achieve is "Production and consumption that doesn't damage our environment". The policy will help to achieve this outcome through facilitating R&LC E developments and setting spatial polices for the maximisation of R&LC E within LDP's.
NI Marine Plan (2018)	The Plans vision is "A healthy marine area which is managed sustainably for the economic, environmental and social prosperity of present and future generations". Objective 7 of the Plan is to contribute towards climate change mitigation and adaptation measures.	The Policy will facilitate R&LC E developments in appropriate locations. However, an expansion in the R&LC E sector may adversely affect the marine environment. LDP spatial policies and individual development should align with the NI Marine Plan to reduce adverse effects on the environment.
NI Future Agricultural Policy Framework (published August	The Framework charts the way forward for a future agricultural policy which better meets Northern Ireland's needs. It aims to	The policy has the potential to work alongside the Agricultural Policy as R&LC E micro-

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
2021; consultation closed 15 Feb 2022)	achieve four key outcomes: increased productivity, environmental sustainability, improved resilience, and an effective functioning supply chain, in order to develop a future sustainable agricultural policy.	generation can offer an opportunity to diversify farm business, as well as offsetting emissions from other farm activity and reduce energy costs. R&CL E can lead to more sustainable farm practices.
Economic Strategy (2012)	Provides details on the Executive's proposals for growing a prosperous local economy to 2030. It explores options for exploiting market opportunities in emerging sectors aimed at addressing climate change, such as low carbon/green economy. A new draft Strategy (Economy 2030) was published in 2017, however it never progressed. There have been calls to develop a new Economic Strategy for NI especially in light of COVID-19 and Brexit.	The Policy will facilitate the siting of R&CL E developments, subsequently addressing climate change and creating green jobs which will align with the strategies aim to grow the green economy.
New Skills Strategy – 'Skills for a 10X Economy' (published 25 March 2022)	Developed by the DfE based on advice given by OECD regarding the fact that climate change action will have substantial implications for labour market demand. It puts emphasis on 'green jobs' and existing jobs being transformed to meet new demands.	The Policy will facilitate the siting of R&LC E developments which will align with the strategies aim to grow the green economy and create green jobs.
Energy Management Strategy and Action Plan to 2030 (launched June 2019)	This strategy seeks to demonstrate the Government's commitment to emission reductions. One of the ways it hopes to contribute is an objective to lower net energy consumption by 30% by 2030 across Government (from a 2016/17 baseline year).	The priority of this Strategy and Action Plan is to reduce energy consumption in the first instance. R&LC E opportunities would be considered after eliminating waste and improving energy efficiency and therefore the Policy will contribute towards this.
Regional Development Strategy (RDS) 2035 (published in 2012)	This strategy aims to take account of the economic ambitions and needs of the Region, and put in place spatial planning, transport and housing priorities that will support and enable the aspirations of the Region to be met. It sets out measures on transport, energy and the location of jobs and houses to help address and adapt to climate change.	The Policy will work alongside the RDS to facilitate R&LC E development in the correct locations taking into account the needs of the region. The Policy will support RG5: Deliver a sustainable and secure energy supply.
Northern Ireland Sustainable Energy Programme	Administered by the Energy Saving Trust on behalf of the Utility Regulator, NISEP is an £8 million fund which is collected from all electricity customers (both domestic and commercial) through a public service obligation (PSO) and is used to provide funding for	The Policy will not directly affect or be affected by the Programme.

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
	energy efficiency schemes across NI. The majority of the funding has been targeted at vulnerable customers/householders to help install energy efficient heating systems and insulation, while other schemes help businesses install carbon saving technologies, e.g. intelligent heating controls.	
A Biodiversity Strategy for Northern Ireland to 2020. A new strategy is presently under preparation by DAERA which will replace the Biodiversity Strategy 2020. It is expected that the new Biodiversity Strategy will look forward to 2032.	The current Biodiversity Strategy 2020 recognises that renewable energy offers the potential for wider environmental benefits through mitigating greenhouse gas emissions from energy generation. It also recognises the potential adverse impacts which renewable energy can pose during construction and operational phases. Planning and licensing systems are cited as a means of regulation so that renewable energy projects can realise their potential for contributing to climate change mitigation while ensuring sustainable development is achieved.	The Policy will facilitate the siting of R&LC E developments in appropriate locations. Planning authorities will have to take account of the effects on biodiversity and the forthcoming Biodiversity Strategy to 2032 when setting policies and proposals or granting planning permission.
The Wildlife and Natural Environment Act (Northern Ireland) 2011	The Wildlife and Natural Environment Act (Northern Ireland) 2011 places a statutory duty on public bodies to conserve biodiversity. This act requires every public body to promote the conservation of biodiversity and defines functions of public bodies in Northern Ireland with respect to the conservation of biodiversity. It also contains provisions for the conservation of wild fauna and flora and habitats. The Act amends the Wildlife (Northern Ireland) Order 1985 and the Environment (Northern Ireland) Order 2002.	The Policy will facilitate the siting of R&LC E developments in appropriate locations. Planning authorities will have to take account of the effects on wildlife and the Act when setting policies and proposals or granting planning permission.
The Environment (NI) Order 2002	This order covers several environmental issues, including pollution prevention control, assessment and management of air quality, and designation of Areas of Special Scientific Interest.	The Policy will facilitate the siting of R&LC E developments in appropriate locations. Planning authorities will have to take account of the Order when setting policies and proposals or granting planning permission.
The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017	The regulations help developers with EIA and related pre-application procedures; preparation of environmental statements; procedures on receipt of application; publicity and consultation; coordination, decision-making, monitoring and notification decision; development by a council; development with significant	Environmental Impact Assessment (EIA) is a process undertaken by developers when it is considered that a development proposal may have a significant environmental impact. This

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
	transboundary effects, unauthorised EIA development; and permission in enterprise and simplified planning zones and permission granted by development orders.	will apply to R&LC E developments and help mitigate adverse effects.
NI Peatland Strategy 2022-2040	The Northern Ireland Peatland Strategy 2022-2040 includes restoring peatlands to restore environment to a healthy condition to meet biodiversity targets and Net Zero contribution. An Implementation Structure will be published and will focus on a series of deliverables including: • Compilation of Northern Ireland Peatland Asset Register • Establishment of peatland restoration demonstration sites • Development and implementation of Conservation Management Plans for peatlands sites • Development of Land Management schemes through new policies • Development and publication of supporting policies and strategies • Boost awareness of peatlands Assess the feasibility of access for recreation and education in any future peatland restoration plans. In terms of renewable energy, the potential impacts of wind farms on peatlands are set out including direct habitat loss through construction of wind farm infrastructure and habitat modification as well as habitat loss if there are adverse changes to the overall hydrology and structural integrity of the peatland.	The Policy will facilitate the siting of R&LC E developments in appropriate locations taking into account effects on important habitats such as peatlands and the forthcoming Peatland Strategy to 2040.
Archaeology 2030 – A Strategic Approach for Norther Ireland	This strategy aims by 2030 to archaeology be accessed and valued by as many people as possible. Aim 3 of the Strategic Approach: Sustaining the historic environment is focusing primarily on developing and delivering a better managed and protected historic environment. This would be done by (but not limited to) improving historic environment records, new policy setting out what to do with the archives and artefacts which are mostly produced as the result of excavation.	The Policy will facilitate the siting of R&LC E developments in appropriate locations and to do this planning authorities should take account of Archaeology 2030.

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
The Private Water Supplies Regulations (Northern Ireland) 2017	The regulations apply to all water suppliers that supply water intended for human consumption not provided by a water undertaker appointed under Article 13 of the 2006 Order. They include water standards, risk assessments and surveys; monitoring; action in the event of failure; offences and penalties; and transitional provisions.	The Policy will not directly affect or be affected by the Regulations. R&LC E Developments should be assessed at the project level for their effect water quality and supply.
Drinking Water Directive 98/83/EC	The Directive concerns the quality of water intended for human consumption. The objective of this Directive shall be to protect human health from the adverse effects of any contamination of water intended for human consumption by ensuring that it is wholesome and clean.	The Policy will not directly affect or be affected by the Directive. R&LC E Developments should be assessed at the project level for their effect on drinking water quality and supply.
The Water Supply (Water Quality) Regulations (Northern Ireland) 2017	The objective of this Directive is to protect human health from adverse effects resulting from the contamination of water intended for human consumption. The regulations include chapters on monitoring; drinking water abstraction points; investigations, authorisation of departures and remedial action; water treatment; records and information; revocations; and transitional provisions.	The Policy will not directly affect or be affected by the Regulations. R&LC E Developments should be assessed at the project level for their effect on water quality and supply.
Drinking Water Quality in Northern Ireland Report, 2021	This report provides an independent assessment of drinking water quality of both public and private supplies for the calendar year 2021. Including drinking water quality and drinking water cycle in public water supplies chapter, and a chapter on private water supplies.	The Policy will not directly affect or be affected by the Report. R&LC E Developments should be assessed at the project level for their effect on water quality and supply.
3rd Cycle Draft River Basin Management Plan	The draft plan provides an update on the health of Northern Ireland's water environment (the status of water bodies) and sets out our targets (objectives) and actions (programme of measures) on how NI should improve the water environment in the next six years. The draft plan covers the North Western, Neagh Bann and North Eastern river basin districts (RBD) and includes detailed status updates on each RBD.	The Policy will not directly affect or be affected by the RBMP however R&LC E Developments should be assessed at the project level for their effect on water utilising RBMP where appropriate.
Marine Act (Northern Ireland) 2013	The Marine Act (Northern Ireland) 2013 requires DAERA to establish a network of MPAs in the Northern Ireland inshore region that, together with MPAs designated by the other UK administrations, contributes to the conservation and improvement of the marine environment in the UK marine area.	The Policy will facilitate the siting of R&LC E generating developments in appropriate locations. Councils should adhere to the Marine Act when developing spatial strategies within LDP's.

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
	It is an Act to provide for marine plans in relation to the Northern Ireland inshore region; to provide for marine conservation zones in that region; to make further provision in relation to marine licensing for certain electricity works in that region; and for connected purposes.	
Strategic Planning Policy Statement for Northern Ireland 2015	The SPPS sets out the Department's regional planning policies for securing the orderly and consistent development of land in Northern Ireland under the reformed two-tier planning system.	The R&LC E Policy sits within the SPPS.
An Integrated Coastal Zone Management Strategy for Northern Ireland 2006- 2026	This strategy is intended to set out long-term objectives for achieving sustainable coastal management, through improvements to existing management systems, the development of new management systems and identifying and dealing with potential areas of conflict. The strategy is based around 4 broad themes, consistent with the principles of sustainable development. Most relevant to this work is Priority 2: Safeguarding and improving the environment within the coastal zone and Priority 4: integration of planning and effort. Each theme has a set of aims for delivery.	The Policy will facilitate the siting of R&LC E developments in appropriate locations. Planning authorities should take into account the Coastal Zone Management Strategy when developing spatial strategies within LDP's.
The Wildlife (Northern Ireland) Order 1985	The Wildlife (NI) Order 1985 prohibits the intentional killing, taking or injuring od certain wild birds and wild animals or the intentional destruction, uprooting or picking of certain wild plants. Attention to Article 10 of the Wildlife (Northern Ireland) Order 1985 (as amended) under which it is an offence to intentionally or recklessly disturb, capture, injure a Common seal (Phoca vitulina), Grey seal (Halichoerus grypus) or Basking shark (Cetorhinus maximus). In addition it is an offence to intentionally or recklessly, injure or kill a wild animal included in Schedule 5 of this Order. This includes Angel shark (Squatina squatina), Common skate (Dipturus batis), Short snouted seahorse (Hippocampus hippocampus), Spiny seahorse (Hippocampus guttulatus), Spiny lobster (Palinurus elaphus) and Fan mussel (Atrina fragilis).	The Policy will facilitate the siting of R&LC E developments in appropriate locations. Planning authorities will have to take account The Wildlife Order and the effects on biodiversity, flora and fauna when setting policies and proposals or granting permission for R&LC E developments.

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
2019 Amendment of Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995	Main part of the regulations are conservation of natural habitats and habitats of species; protection of species; adaptation of planning and other controls; and supplementary provisions. Attention is drawn to regulation 34 of The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended), which states that it is an offence to deliberately disturb, capture, injure or kill a wild animal of a European Protected Species included in Schedule 2 to these Regulations. This includes all species of dolphins, porpoises and whales and the marine turtle species.	The Policy will facilitate the siting of renewable and low carbon energy generating developments in appropriate locations. Planning authorities should take account of the Conservation Regulations when setting policies and proposals or granting permission for R&LC E developments.
Fisheries Act (Northern Ireland) 1966	The Fisheries Act 1966 makes provision for the development and improvement of fisheries in NI, consolidating amendments to the previous Fisheries Acts (NI) from 1984 to 1954. Key component of the Fisheries Act and subsequent European legislation is the monitoring of water quality and fish stocks.	The Act facilitates developments and improvements to fisheries in NI and will not directly affect or be affected by the Policy. Planning authorities should consider the Fisheries Act when setting policies and proposals or granting permission for R&LC E developments.
Draft Offshore Renewable Energy Action Plan	The Energy Strategy for Northern Ireland, launched by former Economy Minister Gordon Lyons in December 2021, established a renewable electricity consumption target of 70% by 2030 that was then increased to 80% by 2030 by the Climate Change (Northern Ireland) Act 2022. The Energy Strategy also established a commitment to diversify the renewables generation technology mix, with an initial focus on offshore wind and marine renewables. To deliver on the Energy Strategy, the Department for the Economy (DfE) published its intention to develop an action plan to deliver 1GW of offshore wind in the Energy Strategy Action Plan 2022 (published 16 January 2022). Over the course of 2022, DfE led the development of the Draft Offshore Renewable Energy Action Plan (OREAP), taking the first steps towards delivering on the commitments established in the Energy Strategy.	The Policy will facilitate the siting of R&LC E developments in appropriate locations located onshore. The Action Plan and the Policy will work alongside one another delivering on the commitments established in the Energy Strategy. Planning authorities should consider the Plan and the Policy when setting spatial policies and proposals in LDP's.
UK		

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
HM Government, Northern Ireland Executive, Scottish Government and Welsh Assembly Government (2011) UK Marine Policy Statement	The MPS will facilitate and support the formulation of Marine Plans, ensuring that marine resources are used in a sustainable way in line with the high level marine objectives and thereby: ▪ Promote sustainable economic development; ▪ Enable the UK's move towards a low-carbon economy, in order to mitigate the causes of climate change and ocean acidification and adapt to their effects; ▪ Ensure a sustainable marine environment which promotes healthy, functioning marine ecosystems and protects marine habitats, species and our heritage assets; and Contribute to the societal benefits of the marine area, including the sustainable use of marine resources to address local social and economic issues.	The Policy will facilitate R&LC E developments in appropriate locations. However, any expansion in the R&LC E sector could adversely affect the marine environment and would have to align with the UK Marine Policy Statement.
Clean Air Stratagy (2019)	This strategy sets out our plans for dealing with all sources of air pollution, making our air healthier to breathe, protecting nature and boosting the economy.	The Policy aligns with the Clean Air Strategy which will work to facilitate R&LC E developments, support new energy technologies reduce the dependence on fossil fuels.
Net Zero Strategy: Build Back Greener	This strategy sets out policies and proposals for decarbonising all sectors of the UK economy to meet our net zero target by 2050.	R&LC E will play a key role in decarbonisation and therefore the Policy is in alignment with the Strategy.
UK Climate Change Committee's Sixth Carbon Budget	This act provides ministers with advice on the volume of greenhouse gases the UK can emit during the period 2033-2037. The Sixth Carbon Budget can be met by four key steps: • Take up of low-carbon solutions • Expansion of low-carbon energy supplies • Reducing demand for a carbon-intensive activities Land and greenhouse gas removals	The Policy will facilitate the siting of R&LC E developments in appropriate locations. Planning authorities will have to take account the effects from all phases of development when setting policies and proposals or granting permission for R&LC E developments.
The Marine and Coastal Access Act 2019	The Marine and Coastal Access Act 2009 introduced a revised system of Marine Management and Licensing, including marine planning. The eight key elements are: • Establishment of the Marine Management Organisation (MMO)	The Policy will facilitate the siting of R&LC E developments in appropriate locations. Planning authorities will have to take account the effects on marine and coastal environments

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
	• Creation of a strategic marine planning system • A streamlined marine licensing system • Marine nature conservation • Fisheries management and marine enforcement • Migratory and freshwater fisheries • Coastal access • Coastal and estuarine management	when setting policies and proposals or granting permission for R&LC E developments.
The Marine Strategy Regulations 2010	The UK Marine Strategy Regulations 2010 require the UK to take the necessary measures to achieve or maintain Good Environmental Status (GES) through the development of a UK Marine Strategy. The UK Marine Strategy, made up of Parts One, Two and Three, sets out a comprehensive framework for assessing, monitoring and taking action across our seas to achieve the UK's shared vision for 'clean, healthy, safe, productive and biologically diverse ocean and seas'. In October 2019, the updated UK Marine Strategy Part One: UK updated assessment and Good Environmental Status was published. In March 2021 the updated UK Marine Strategy Part Two: UK updated monitoring programmes was published and the UK Marine Strategy Part 3: Programme for Measures is being reviewed after being out for consultation (6/09/21- 29/11/21). UK Marine Strategy Part 1 UK Marine Strategy Part 2 Overview of UK Marine Strategy Part 3	The Policy will facilitate the siting of R&LC E developments in appropriate locations. Planning authorities will have to take account the effects on marine species and habitats when setting policies and proposals or granting permission for R&LC E developments.
Flood Risk Management Plan 2021-2027	Flood risk management plans (FRMPs) set out how organisations, stakeholders and communities will work together to manage flood risk in England. These strategic plans explain the objectives and the measures (actions) needed to manage flood risk at a national and local level. National measures that apply to all river basin districts are described in the national overview (part a). Measures that apply to	The Policy will facilitate the siting of R&LC E developments in appropriate locations in NI. Planning authorities will have to take account the flood risk when siting, setting policies and proposals or granting permission for R&LC E developments.

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
	specific river basin districts and their flood risk areas are described in the 10 local flood risk management plans (part b).	
New Decade, New Approach agreement (published Jan 2020)	New Decade, New Approach was intended to help transform public service provision in Northern Ireland. The new restoration deal states a number of measures and actions to be taken by the NI Executive in relation to addressing climate change and emissions including the new Energy Strategy (2022), Climate Change Act, and the establishment of an Independent Environmental Protection Agency.	The Policy will facilitate R&LC E developments which reduces dependence on fossil fuels. This will contribute towards NI's targets for reducing carbon emissions and reduces environmental damage. The Policy is therefore in line with the New Decade, New Approach agreement.
Transboundary Considerations		
EPA (2018) River Basin Management Plan for Ireland 2018-2021	This second River Basin Management Plan (RBMP) outlines the new approach that Ireland will take as it works to protect its rivers, lakes, estuaries and coastal waters over the next four years. The following evidence-based priorities have been adopted for this river basin planning cycle: • Ensure full compliance with relevant EU legislation • Prevent deterioration • Meet the objectives for designated protected areas • Protect high-status waters Implement targeted actions and pilot schemes in focused sub-catchments aimed at (1) targeting water bodies close to meeting their objective and (2) addressing more complex issues that will build knowledge for the third cycle	R&LC E proposal in NI will take into account its transboundary effects on water in line with the River Basin Management Plan for Ireland and its priorities.
DCHG (2017) National Biodiversity Action Plan (NBAP) 2017-2021 Work on drafting Ireland's 4th NBAP is underway which will go for public consultation and launch in 2022.	The NBAP for 2017-2021 demonstrates Ireland's continuing commitment to meeting and acting on its obligations to protect their biodiversity for the benefit of future generations through a series of targeted strategies and actions. The plan has seven objectives; 1. Mainstream biodiversity into decision-making across all sectors 2. Strengthen the knowledge base for conservation, management and sustainable use of biodiversity	The Policy is within the SPPS for NI and will therefore not affect or be affected by the Plan. The Policy will facilitate the siting of R&LC E developments in appropriate locations in NI taking into account the local and transboundary effects on biodiversity.

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
	3. Increase awareness and appreciation of biodiversity and ecosystems services 4. Conserve and restore biodiversity and ecosystem services in the wider countryside 5. Conserve and restore biodiversity and ecosystem services in the marine environment 6. Expand and improve management of protected areas and species 7. Strengthen international governance for biodiversity and ecosystem services.	
DAHG (2015) National landscape strategy for Ireland (2015-2025)	A key objective of this strategy is to implement the European Landscape Convention. It highlights the importance of cultural, social, economic and environmental values within Ireland's landscapes. It aims to both support living landscapes and enhance community identity by understanding, protecting, managing by improving the quality of the landscape in decision making.	The Policy is within the SPPS for NI and will therefore not affect or be affected by the strategy in Ireland. The Policy will facilitate the siting of R&LC E developments in appropriate locations in NI taking into account transboundary effects on landscape.
National Climate Change Adaptation Framework (Ireland) (2012)	The policy contained in this framework provides a strategy for the response to climate change in Ireland and is intended to evolve and adapt over time as planning and implementation progresses. The aim of this plan is to help people deal with disruptions from the impacts of climate change and help them reduce them; comprehend the changes necessary to improve their quality of life; and facilitate economic recovery from possible changes to climate patters and extreme events.	The Policy will facilitate renewable energy in NI which will play a key role in decarbonisation and mitigating and responding to climate change.
DCCAE (2018) National Adaptation Framework: Planning for a Climate Resilient Ireland	This framework sets out a whole-of-government basis, what Ireland is doing and is planning to do to further their transition to a low-carbon, climate resilient and environmentally sustainable economy by 2050. The aim of adaptation is to reduce the vulnerability of our environment, society and economy and increase resilience. Adaptation also brings opportunity through green growth, innovation, jobs and ecosystem enhancement as well as improvements in areas such as water and air quality. Key actions under the framework:	The Policy is within the SPPS for NI and will therefore not affect or be affected by the framework.

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
	• Putting in place revised governance and reporting arrangements • Formalising the status of existing guidelines • Formalising long term operational support for key sectors • Facilitating the establishment of regional local authority climate action offices • Increasing awareness around climate adaptation and resilience Integrating climate adaptation into key national plans and policies	
DCCAE (2021) National Climate Action Plan	This plan is the Irish Governments Climate Action Plan which is committed to achieving a net zero carbon energy systems objective for Irish society and in the process, create a resilient, vibrant and sustainable country. The Government will take the lead on this agenda through this Plan in defining a roadmap to this goal and initiating a coherent set of policy actions to get us there. The plan highlights a number of actions relating to targets, governance, carbon pricing, electricity, enterprise, built environment, transport, agriculture, waste, public sector, international action, citizen engagement, and adaptation.	The Policy is within the SPPS for NI and will therefore not affect or be affected by the Plan. Although it will facilitate the sitting of R&LC E developments in line with the Plans commitment to net zero.
Government of Ireland (2018) Project Ireland 2040: National Development Plan 2021-2030	The National Development Plan (NDP) sets out the investment priorities that will underpin the successful implementation of the new National Planning Framework (NPF). The objectives of the National Development Plan match those of the NPF. A fundamental underlying objective of the NDP is, therefore, to focus on continued investment to yield a public infrastructure that facilitates priorities such as high-speed broadband and public transport in better cities and in better communities. The public goods generated through investment in physical infrastructure will be critical to strengthening Ireland's human capital and to fostering the development of clusters in important growth areas in order to attract new investment.	The Policy will facilitate renewable energy infrastructure in NI which is unlikely to impact Ireland directly in terms of the NDP.
National planning Framework (Ireland)	The National Planning Framework and the National Development Plan 2021-2030 combine to form Project Ireland 2040. The NPF sets the vision and strategy for the development of the country to	It is not anticipated that the Policy will directly affect or be affected by the NPF in Ireland as the Policy sits within the SPPS for NI however, improvements to cross boarder grid connection

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
	2040 and the NDP provides the enabling investment to implement that strategy. The NPF provides for the collaboration in the energy sector, driven by the single electricity market. The need for a new interconnector between the electricity grids of Northern Ireland and Ireland has been identified by the Irish Government and Northern Ireland Executive as a project of common interest.	may help with the facilitation of R&LC E developments.
National Marine Planning Framework 2040	The NMPF outlines our proposed approach to managing Irelands maritime activities to ensure the sustainable use of marine resources up to 2040.	The Policy will facilitate the siting of R&LC E developments in appropriate locations in NI. Planning authorities will have to take account the effects on marine species and habitats when setting policies and proposals or granting permission for R&LC E developments.
Convention for the Conservation of Salmon in the Atlantic Ocean North Atlantic Salmon Conservation Organization	The convention aims to: • Ensure the conservation of Atlantic salmon populations; • Promote North Atlantic salmon stock conservation, restoration, enhancement and rational management, creating the North Atlantic Salmon Conservation Organization (NASCO); Balance the interest of countries in whose rivers salmon originate and other countries whose jurisdictions cover where the salmon are fished.	Any LDP or R&LC E developments that arise should take account of the Convention.
Regional and Spatial Economic Strategy (2020-2032)	The RSES provides the roadmap for effective regional development – it delivered a combination of response, design and innovation; in how we do business, deliver homes, build communities and value land-use – creating healthy places and promoting sustainable communities. The RSES introduces the concept of a Growth Framework to achieve this integration because regional growth cannot be achieved in linear steps.	The Policy is within the SPPS for NI and will therefore not affect or be affected by the RSES.
Grid 25 implementation Plan 2017-2022	This plan is high-level strategy to outline how it intended to undertake the development of the grid in the short, medium and	

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
	long-term, particularly in the context of connecting new sources of renewable electricity onto the grid to meet National and European renewable energy targets. The draft Grid IP 2017-2022 is a national scale plan covering all regions in the country.	It is not anticipated that the Policy will directly affect or be affected by the Plan in Ireland as the Policy sits within the SPPS for NI however, improvements to cross boarder grid connection may help with the facilitation of R&LC E developments.
National Adaptation Framework (NAF)	The NAF provides framework to ensure local authorities, regions, and key sectors can assess the key risks and vulnerabilities of climate change and ensure climate adaptation considerations are mainstreamed into all local, regional, and national policy. The NAF also aims to improve the enabling environment for adaptation through ongoing engagement with civil society, the private sector and the research community. It also builds on the work already carried out under the National Climate Change Adaptation Framework (NCCAF).	The Policy is within the SPPS for NI and will therefore not affect or be affected by the Framework. Although, the Policy will facilitate the sitting of R&LC E development in NI.
Climate Action Plan 2021	The Climate Action Plan 2021 provides a detailed plan for taking decisive action to achieve a 51% reduction in overall greenhouse gas emissions by 2030 and setting us on a path to reach net-zero emissions by no later than 2050, as committed to in the Programme for Government and set out in the Climate Act 2021. It will put Ireland on a more sustainable path; cut emissions; create a cleaner, greener economy and society; and protect us from the devastating consequences of climate change. It is a huge opportunity to create new jobs and grow businesses in areas like offshore wind; cutting-edge agriculture; and retrofitting, making our homes warmer and safer. The Plan lists the actions needed to deliver on our climate targets and sets indicative ranges of emissions reductions for each sector of the economy. It will be updated annually, including in 2022, to ensure alignment with the legally binding economy-wide carbon budgets and sectoral ceilings.	The Policy is within the SPPS for NI and will therefore not affect or be affected by the Plan. Although ,the Policy will facilitate the sitting of renewable energy developments in NI in line with the Plan.

Plan or Programme	Main objectives and environmental / socio-economic requirements of the Plan or Programme	Inter- relationship and cumulative effects
National Water Resources Plan	The NRWP is a plan to identify how we will provide a safe, sustainable, secure and reliable water supply to our customers for now and into the future whilst safeguarding the environment. The NWRP sets out how we will balance the supply and demand for drinking water over the short, medium and long term. It is a 25-year strategy to ensure we have a safe, sustainable, secure and reliable drinking water supply for everyone.	The policy is unlikely to affect or be affected by the National Water Resource Plan.
Draft Revised Wind Energy Guidelines December 2019 of 2006 Guidelines	The draft Guidelines now being issued for public consultation primarily focus on addressing a number of key aspects including noise, visual amenity setback, shadow flicker, community consultation obligations, community dividend and grid connections. The review of the Wind Energy Development Guidelines (2006) has been a lengthy process that began with the issuing of initial draft proposals for public consultation in December 2013.	The Policy is within the SPPS for NI and is unlikely to affect or be affected by the guidelines.

APENDIX C: SCOPING CONSULTATION RESPOSNES

Appendix C: Scoping Consultation Responses			
Comment ref.	**Page of letter**	**Comment**	**Actions to address comment**
Organisation and contact: DAERA			
Date received: 22/07/2022			
1	1	DAERA request that the SEA Environmental Report contains details of both the targets and indicators in relation to the objectives which have been listed for each of the ten sustainability topics.	Targets and indicators have been set out in Appendix D
2	1	A clear statement indicating the opinion about whether or not the implementation of the of the policy change is likely to have a significant effect on Northern Ireland, in combination with any identified measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment.	This is outlined within the Environmental Report (ER).
3	1	DAERA notes that alternatives are currently in the discussion stage these should also be detailed within the SEA Environmental Report.	Alternatives are detailed in the ER
Natural Environment Division Comments (Within DAERA Doc)			
4	2	NED note that there is limited information on the current status of peatland in Northern Ireland in relation to peatlands within the Biodiversity, flora and fauna section of the report. NED advise that depending on time lines the new Peatlands Strategy for Northern Ireland should be consulted as part of the SEA Environmental Report.	Baseline contains points on peatland in NI and Ireland and peatlands have been taken into account within the assessment.
5	2	NED are content with the overall approach to SEA and the issues that will be addressed including the consideration of how Environmental impacts will be addressed and mitigated.	Noted.
6	2	We welcome that mitigation and monitoring will be put in place in due course and look forward to the opportunity to comment further as the process develops.	Noted.

7	2	**Earth Science:** Geology, or Earth Science, cuts across many areas of renewable and low carbon energy for Northern Ireland. For example, understanding the characteristics and properties of the most productive aquifer in NI, that also has geothermal energy production potential, relies on access to quality exposures at the surface – the best and most extensive of which are found within Scrabo ASSI.	Noted.
8	2	While geology is included in the scoping report, it is only referred to within landscape and soils without mention of its value and place in nature conservation. Therefore, for the environmental report, geology (or Earth Science), should be included in 'Ecology and Nature Conservation' as well as 'Landscape and Soils'.	Geology is assessed as part soils and land use however it is recognised for its importance to ecology and nature conservation, landscape and historic environment.
9	2	The potential impact on conservation of sites reported in the Earth Science Conservation Review (ESCR), many of which are already ASSIs or within ASSIs, needs to be part of the environmental report. ESCR sites are also a material consideration in the planning process.	Earth Science Conservation Review (ESCR) sites included in the assessment.
10	2	**Landscapes comments:** It is welcomed that landscape is being considered as part of the scope of the SEA review of strategic planning policy on renewable & low carbon energy.	Noted
11	3	The landscape of Northern Ireland is not only important to the culture and heritage, but also to the economic wellbeing of the country through the likes of farming and tourism, and therefore it is important to retain and enhance the landscape which renewable and low carbon energy forms have the potential for significant impact on.	Noted and included within assessment.
12	3	The landscape and visual team are content with the SEA objectives being considered for landscape within table 4.1. However as part of the SEA Environmental Report the following should be considered: NI Regional Landscape Character (https://www.daera-ni.gov.uk/services/regional-landscape-character-areas-map-viewer), the Development of local landscape designations within Council Local Development Plans, such as Special Countryside Areas and Areas of High Scenic Value. The Marble Arch Caves UNESCO Global Geopark may be worth considering within the assessment.	Noted and included within assessment.

13	3	The Department's Statement of Policy on Protected Landscapes is the Shared Horizons document (https://www.daera-ni.gov.uk/articles/shared-horizons), reference to this document may be beneficial.	Noted.
14	3	In the SEA report the figure title of Figure 8 will need updating to reflect the information presented of Landscape Designations and Archaeology from the current title of Access and Sustainable Transport.	Updated.
15	3	It may be worth including in your considerations the following: · The Wildlife (NI) Order 1985 (as amended) · Wildlife and Natural Environment Act (NI) 2011 · The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) · The Environment (NI) Order 2002 · The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017 · **The Strategic Planning Policy Statement (SPPS) for Northern Ireland** **· Planning Policy Statements (PPS – in particular PPS2 and PPS18). It should be noted that the PPS's will be superseded by Local Development Plans when they are adopted.**· Biodiversity Strategy for NI to 2020 https://www.daera-ni.gov.uk/publications/biodiversity-strategy-northern-ireland-2020-0 · Draft Environment Strategy https://www.daerani.gov.uk/consultations/esni-public-discussion-document · The Draft NI peatland policy: https://www.daerani.gov.uk/consultations/ni-peatland-strategy-consultation. · The Draft Green Growth Strategy Consultation on the draft Green Growth Strategy for Northern Ireland | Department of Agriculture, Environment and Rural Affairs (daera-ni.gov.uk) · Northern Ireland Energy Strategy 2050 Northern Ireland Energy Strategy 2050 |Department for the Economy (economy-ni.gov.uk)	Assessment of plans and programmes updated where appropriate.

16	4	A number of useful information sources that highlight the current state of the environment in Northern Ireland at a regional level and which could be referenced are: Northern Ireland State of the Environment Reports: https://www.daera-ni.gov.uk/publications/state-environment-report-2013 Northern Ireland Environmental Statistics Reports: https://www.daera-ni.gov.uk/articles/northern-Ireland-environmental-statistics-report Other relevant web-links are; Designated Scientific Sites: www.daera-ni.gov.uk/landing-pages/protected-areas Regional Landscape Character Map viewer: https://www.daera-ni.gov.uk/services/regional-landscape-character-areas-map-viewer DAERA have a map browser for NI protected sites and known priority habitat: www.daera-ni.gov.uk/services/natural-environment-map-viewer Our natural environment datasets are available at the link below: www.daera-ni.gov.uk/articles/download-digital-datasets	Noted and included within assessment.
17	4	Historic Environment Division Digital Datasets: https://www.communities-ni.gov.uk/publications/historic-environment-digital-datasets	Noted
18	4	Please note following the decision of the United Kingdom to leave the European Union, the collective term of “Natura 2000” sites the network of European protected sites are now known as “National Site Network” sites within the United Kingdom, and is including Northern Ireland.	Noted and included within assessment.
Historic Environment Division Comments (Within DAERA Doc)			
19	5	HED welcome that cultural heritage is scoped for assessment within the SEA scoping report. We advise that in assessment the intertwined nature of cultural heritage with landscape and the natural environment, including biodiversity merits recognition.	Interconnected nature of objectives considered in assessment.
20	5	Given the historic environment provides a central vein in the narrative of our landscape evolution, its character it merits consideration as a transboundary concern. A large number of heritage assets predate the border itself and correlate to other assets in either jurisdiction, with interweaving views and settings.	Noted. All aspects of the assessment are considered for their transboundary effects.
21	5	On the content of the report we advise that it would be useful for completeness to consider DfC & HED in the glossary of abbreviations on page iii.	Noted and added.

22	5	Table 1:2 Designated Sites in Northern Ireland. HED advise that the various historic environment records and evidence bases are curated and managed by ourselves and that we are no longer part of NIEA. We note the inclusion of Historic Parks Gardens and Demesnes in this table but also note that the other heritage assets referred to in the table are all statutory designations. The Register of HPGD identifies these important landscapes and affords them grading, and LDPs identify the assets based on this evidence base. We note that ASAIs, an actual plan designation are not referred to in the table although are discussed later in the report. Given the nature of many ASAI as areas of distinctive and sometimes expansive historic landscape, and how these might relate to the subject of the policy review it would be appropriate to include them here.	Noted ASAI's have been included in assessment.
23	5	Similarly inclusion of Local landscape Policy Areas, would also be appropriate. HED advise that one shipwreck is designated as a scheduled monument, one under the protection of Wrecks Act 1973, and a third under the Protection of Military Remains Act 1986.	Noted.
24	5	It is also noted that Conservation Areas, a statutory designation, and Areas of Townscape/ Village Character, plan designations, have also been excluded but later mentioned in Section 3.	Noted.
25	5	Section 3.10 Cultural Heritage We advise that scheduled monuments are managed by their owners under DfC Guidance. We note the reference to the CAMSAR report in this section on page 31 and advise that this report was not focused on scheduled monuments alone but the wider sites and monuments record referred to on page 32. Its discussion in the context of scheduled monuments alone is misconstrued and would be better related to the paragraph on the SMR. – Note that the SMR total, which now exceeds 17000 sites includes the suites of scheduled and state care monuments. In relation to this paragraph on page 32, which also refers to industrial heritage it would be merited to refer to Defence Heritage assets as well. Importantly all of these assets have weight in planning considerations.	Noted.

26	6	We note that Areas of Archaeological Potential are not discussed here but are referenced in the map on page 72. HED advise that areas of archaeological potential are specifically identified in urban contexts, and therefore consideration/assessment of their relationship to the policy review should be considered in this respect.	Areas of Archaeological Potential are considered in the assessment.
27	6	The inventory of recorded losses/shipwrecks in Northern Ireland would merit particular consideration in the context of the assessment as the impetus for offshore renewables and carbon storage may increase. Datasets specific to Northern Ireland's marine historic environment, including around wrecks and reported losses can be obtained through contacting cormac.duffy@daera-ni.gov.uk or colin.dunlop@daera-ni.gov.uk	Noted. Offshore renewables is not part of this assessment. There are no spatial elements identified through the policy and therefore at this level of assessment. Coastal and marine protected areas have been considered within the assessment.
28	6	HED maintains a 'Buildings Database' https://www.communities-ni.gov.uk/services/buildingsdatabase primarily comprised of listed buildings, but which also includes records of buildings which have been judged to be of enough architectural or historic interest to merit a survey for listing consideration. These are identified as 'Record Only' buildings and can inform a local list of historic buildings of architectural and historic interest, but is not a complete dataset. Further information on identifying and protecting these assets is available at: https://www.communities-ni.gov.uk/publications/guidance-councils-historic-buildings-localimportance.	Noted. No spatial elements identified through the policy and therefore at this level of assessment.
29	6	With reference to Urgent Works Notices, this is now a function which Councils can take forward and further guidance on the approach and procedures for UWN's is available at: https://www.communities-ni.gov.uk/publications/guidance-councils-urgent-works-notices	Noted.
30	6	Considering risks related to climate change, HED has been partnering with the National Trust and sister organisations to create a Climate change Hazard Map tool to identify future risks and help inform adaptation strategies to protect and conserve heritage assets. See link: https://www.nationaltrust.org.uk/features/tackling-climate-change-together	Noted.

31	6	3.13 Key Environmental and Sustainability Issues With regard to the key issues identified for cultural heritage, the NI Heritage Statistics publication provides further evidence on impacts of unplanned change e.g. Heritage At Risk, unauthorised works and the effects of climate change, which should be reflected in the report on p. 39. https://www.communities-ni.gov.uk/sites/default/files/publications/communities/niheritage-statistics-310319.pdf	Data included within assessment.
32	6	Table 4.1 SEA objectives HED advise that the wording of objectives a), b) and d) could usefully be amended to reflect the strategic objectives in SPPS around the historic environment/built heritage, - i.e. rather than “preserve and enhance” use “protect, conserve and where appropriate	SEA objectives amended to reflect SPPS.
33	7	Appendix A – Northern Ireland based plans, programmes and strategies. HED advise that the, Archaeology 2030 - A Strategic Approach for Northern Ireland.pdf (niheritagedelivers.org) might merit inclusion here, specifically with regard to considerations around policy development with potential for affects on heritage assets. See Aim 3 around sustaining the historic environment.	Point raised included within assessment.
34	7	Appendix B – Environmental Baseline Maps should include listed buildings. Our historic environment datasets are available to download at Historic Environment Digital Datasets | Department for Communities (communities-ni.gov.uk) and view on our historic environment map viewer Historic Environment Map Viewer | Department for Communities (communities-ni.gov.uk)	Listed buildings are included on baseline maps
Climate Change Unit Comments (Within DAERA Doc)			
35	7	Climate Change Mitigation Branch refers The Department for Infrastructure (DfI) to the requirements laid out within the UK Climate Change Committee’s Sixth Carbon Budget publication. A link for this can be found below: https://www.theccc.org.uk/publication/sixth-carbon-budget/	Assessment of plans and programmes updated where appropriate.

36	7	The UK Climate Change Committee (CCC) recently published its Climate Risk Independent Assessment 2021 which identifies the risk and opportunities posed by climate change over the next five years. A summary for Northern Ireland can be found below. https://www.ukclimaterisk.org/independent-assessment-ccra3/national-summaries/	Data included within assessment.
Drinking Water Inspectorate Comments (Within DAERA Doc)			
37	7	There is insufficient consideration provided to drinking water supplies. They are touched upon in Section 3.6 'Water' but there is no indication that this valuable resource will be protected or included in detail within the upcoming SEA report.	Drinking water considered in assessment.
38	7	When providing comment on the quality of groundwater and surface waters, we consider it prudent to consider the impacts on drinking water quality too. Drinking water would be via the public supplies which are obtained via surface water abstractions by Northern Ireland Water Limited or via private water supplies (variety of commercial, public and domestic uses)	Drinking water considered in assessment.
39		Relevant legislation relevant to Drinking water is missing. We would recommend addition of: o The Private Water Supplies Regulations (Northern Ireland) 2017 o Drinking Water Directive 98/83/EC o The Water Supply (Water Quality) Regulations (Northern Ireland) 2017	Drinking water considered in assessment.
40	8	It is anticipated that the next Drinking Water Quality in Northern Ireland report for 2021 period will be published prior to completion of the SEA report and should be included at this time.	Drinking water considered in assessment.
Water Management Unit Comments (Within DAERA Doc)			
41	8	The SEA must take cognisance of Northern Irelands River Basin Management Plans.	River Basin Management Plans considered in assessment.

42	8	DAERA has published the Draft River Basin Management Plan for the 3rd cycle period which runs from 2021-2027 which should also be considered as part of the assessment. The draft plan provides an update on the health of Northern Ireland's water environment (the status of water bodies) and sets out our targets (objectives) and actions (programme of measures) on how we want to improve our water environment in the next six years. The draft plan covers the North Western, Neagh Bann and North Eastern river basin districts (RBD) and includes detailed status updates on each RBD. The documents can be downloaded from the consultation webpage: https://www.daera-ni.gov.uk/consultations/consultation-draft-3rd-cycle-river-basin-management-plan-2021-2027	Point raised included within assessment.
43	8	It should be noted that the finalised 3rd Cycle River Basin Management Plans are due to be published later in 2022.	Point raised included within assessment.
44	8	A number of useful information sources are available that highlight the current state of the environment in Northern Ireland at a regional level which could be referenced including: Northern Ireland Environmental Statistics Reports: https://www.daera-ni.gov.uk/articles/northern-Ireland-environmental-statistics-report	Included within assessment.
45	8	Chapter 3.6 Water Water Management Unit notes this section contains information relating to the deteriorating trend in water quality demonstrated by the various measurements of nitrogen. However, the main reason for deterioration in WFD status in freshwaters is excessive levels of nutrients measured as SRP in rivers and TP in lakes and the biological quality elements that respond to these. The SEA should consider all of the relevant pressures along with the appropriate selection of measurements to demonstrate understanding of the issues.	Noted.
46	9	The authority may find the information relating to pressures to the aquatic environment contained in the following documents useful. Consultation on the Significant Water Management Issues for the Development of Third Cycle River Basin Management Plans 2021 – 2027 available at Planning for the third cycle River Basin Management Plan 2021-2027 - Consultation on Significant Water Management Issues December 2019 | Department of Agriculture, Environment and Rural Affairs (daera-ni.gov.uk)	Noted.

47	9	This section states “In 2015 and 2018, 5 of the 21 lake waterbodies monitored in NI were classified as having a ‘good’ status and 42 lake waterbodies were classified as having less than ‘good’ status”. Water Management assumes this to be a typo.	Noted.
Marine and Fisheries Division Comments (Within DAERA Doc)			
48	9	It is further understood the review will consider new technologies and approaches to renewable & low carbon energy development which will be taken into account in decision making and by councils as they continue to develop local planning policies through their Local Development Plans.	Noted.
49	9	Having reviewed the supplied documentation, the MPT are generally content with the initial scope of the document.	Noted.
50	9	Although it is recognised that the review is for the SPPS and its associated terrestrial planning system, it is still considered that there is a lack of focus on the coastal / marine environment. Given the growing importance of off-shore renewable energy to NI over the coming years to meet relevant NI energy / climate targets and the need to fully integrate both terrestrial and marine planning consideration and decision making, it is considered important to stress this at this scoping stage.	Noted, marine and coastal areas included in assessment however development proposals in the marine environment are managed under a separate consenting regime within the framework of the UK Marine Policy Statement, as amended.
51	10	The MPT comment as follows to assist with the progression of the SEA process associated with the DfI SEA Scoping Report on the Strategic Planning Policy on Renewable & Low Carbon Energy. SEA Scoping Report 1.4 (pg3) – In addition to the land focused reference, it is suggested that the characterisation of the area also refers to the marine (both in-shore and off-shore) component of NI;	Noted, marine and coastal areas included in assessment.
52	10	2.4 (pg. 9) – Again, it is suggested that the spatial scope of the review as being all of NI is clarified to define both land and our inshore and offshore marine waters.	Noted, marine and coastal areas included in assessment.
53	10	2.6 (p10) Other Plans, Programmes and Conservation Objectives – within the referenced Appendix A, it is requested that within the Transboundary section, reference is made to the February 2022 (RoI) National Marine Planning Framework.	Added to P&P assessment.
54	10	3.2 (pg11) – similar to above, it is suggested that this reference both land and sea in terms of describing sites designated for nature conservation value.	Noted.

55	10	3.6 (pg22) – the single short 2nd paragraph on page 22 is considered very brief in terms of describing the role and importance of NI's coastal / marine environment. As well as the crucial contributory role in supplying off-shore renewable energy, our marine environment also has an important role in mitigating future climate change impacts and providing vital carbon stores, in addition to recognised public benefits such as mental health / well-being, cultural and seascape enjoyment.	Noted, marine and coastal areas included in assessment.
56	10	**Marine Conservation Advice:** Section 1.3: M&FD welcomes the statement: 'The current policy approach in the SPPS in relation to renewable energy is "to facilitate the siting of renewable energy generating facilities in appropriate locations within the built and natural environment in order to achieve NI's renewable energy targets and to realise the benefits of renewable energy without compromising other environmental assets of acknowledged importance." (Paragraph 6.218).'	Noted this is contained within the Draft revised policy.
57	10	Section 1.4: M&FD recommends the sentence 'There are a number of nature conservation, landscape and cultural heritage designations in Northern Ireland' includes Seascape to cover the Regional Seascape Character Areas.	Seascapes, MCZs and Regional Seascape Character Areas included in assessment.
58	10	Table 1.2 Designated sites in Northern Ireland (NIEA and DAERA 2021). M&FD recommends the inclusion of Regional Seascape Character Areas as well as the 5 Marine Conservation Zones (MCZ): Rathlin MCZ, Waterfoot MCZ, Outer Belfast Lough MCZ, Strangford Lough MCZ and Carlingford Lough MCZ. Please refer to the DAERA Marine Map Viewer for details.	Seascapes, MCZs and Regional Seascape Character Areas included in assessment.
59	11	Table 2.2 Sustainability topics. M&FD welcomes the following Sustainability Topics: · 'Ecology and Nature Conservation' · 'Climate Change'	Noted.
60	11	M&FD recommends changing the phrase 'Global warming' to 'Climate Change' as in some regions temperatures will be cooler. In addition, M&FD recommends including sea level rise as well as coastal processes such as coastal erosion. 'Protection of habitats which act as carbon stores'	Noted R.E 'climate change'.

61	11	M&FD recommends including reference to Blue Carbon habitats which include: seagrass beds, saltmarsh, native oyster beds and blue mussel beds.	Noted.
62	11	M&FD welcomes seascape being considered in the sustainability topic 'Landscape'.	Noted.
63	11	Section 2.4. M&FD welcomes the following paragraph: 'There is no specific temporal scope. With certain aspects of the environment such as climate, ecology and landscape, any positive or negative impacts associated with the emerging Renewable & Low Carbon Energy Policy area may take effect over a time period of many decades. For this reason, a longer term view will be taken on potential impacts rather than seek to set a fixed temporal scope.'	Noted.
64	11	Section 3.2. M&FD recommends, when discussing invasive non-native species (INNS) to also consider marine INNS particularly the ones listed on Northern Ireland's Red List of Invasive Species of Concern Northern Ireland: · Crepidula fornicata (Common slipper limpet) · Didemnum vexillum (Carpet sea-squirt) · Sargassum muticum (Japanese wireweed) · Spartina towsendii (var. Anglica) (Common chordgrass) · Undaria pinnatifida (Wakeme Brown Kelp)	Noted.
65	12	Section 3.8. M&FD recommends also including the following paragraph on sea level rise: 'The recently published evidence report for CCRA3 provides a series of projections of sea level rise for Belfast Northern Ireland. The projections detailed in this report show that sea level is expected to rise between 0.14 – 0.16m in 2050 and 0.27 – 0.58m in 2080. While the IPCC report 'Climate Change 2021: The Physical Science Basis' states that global sea levels are projected to increase by 0.28-0.55m by 2100 under SSP1-1.9 (the lowest Green House Gas emissions scenario) or by as much as 0.63 – 1.01m by 2100 under SSP5-8.5 (the highest Green House Gas emissions scenario).'	Point added to baseline section and included in assessment.

66	12	M&FD welcomes the following statements: · 'Climate conditions (including temperature change, water scarcity, wildfire, flooding, coastal erosion, wind and saline intrusion). · 'Risks to terrestrial and marine species and habitats from pests, pathogens and invasive species.' · 'Risks to natural carbon stores and sequestration from changing climatic conditions, including temperature change and water scarcity.' · 'Risks to marine species, habitats and fisheries from changing climatic conditions including ocean acidification and higher water temperatures.' · 'Risks and opportunities to coastal species and habitats due to coastal flooding, erosion and climate factors.' · 'Risks to business locations and infrastructure from coastal change from erosion, flooding and extreme weather events.'	Noted.
67	12	Section 3.10. M&FD recommends also considering Marine Heritage Assets (including historic wrecks, submerged landscape sites (Archaeological and palaeo-environmental). Please refer to the DAERA Marine Map Viewer for details.	Noted - offshore renewable energy is not covered in this policy however coastal and marine areas have been taken into account within the assessment.
68	12	Section 3.11. M&FD welcomes the inclusion of the Northern Ireland Regional Seascape Character Assessment 2014.	Noted.
69	12	Section 3.12 M&FD welcomes the inclusion of the following paragraph: 'The EC has described the Atlantic area as Europe's largest and most important ecosystem. The NI coast in particular (which borders the Atlantic Ocean to the north and the Irish Sea to the east) has highly productive and biologically diverse ecosystems. The majority of NI's 650 km of coastline is protected for its nature conservation interest, but more importantly it includes productive and biologically diverse ecosystems, with features that serve as critical natural defences against storms, floods and erosion (NBN, 2019). Sea level rise will thus be a significant concern for coastal planning as coastal defences and managed retreat will need to be considered.'	Noted.
70	12	Section 3.13 M&FD recommends 'Historic Environment and Landscape' includes: 'Seascape in Northern Ireland have been affected by coastal development including housing and infrastructure.'	Noted.

71	13	Table 4.1 SEA objectives. M&FD recommends the following: SEA Objective 1) also include MCZ. SEA Objective 7) consider Nature based solutions (NbS). NbS are defined by the IUCN as 'actions to protect, sustainably manage and restore natural or modified ecosystems that address social challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.' SEA Objective 11) M&FD welcomes the inclusion of 'a. Preserve and enhance the ability of an area to provide ecosystem services such as carbon sequestration and flood resilience, as well as supporting other ecosystem services'	Objectives added and NbS considered in assessment.
72	13	Appendix A: Review of other Plans, Programmes and Environmental Protection Objectives M&FD welcomes the consideration of the following: · Northern Ireland draft Marine Plan 2018 · UK Marine Policy Statement 2011 · Northern Ireland Regional Seascape Character Assessment 2014 (mentioned elsewhere in the report)	Added to P&P assessment where appropriate.
73	13	However, M&FD recommends the consideration of the following plans, programmes and legislation: Marine Act (Northern Ireland) 2013 The Marine Act (Northern Ireland) 2013 requires DAERA to establish a network of MPAs in the Northern Ireland inshore region that, together with MPAs designated by the other UK administrations, contributes to the conservation and improvement of the marinenvironment in the UK marine area. Marine Act (Northern Ireland) 2013	Added to P&P assessment where appropriate.

74	13	The Marine and Coastal Access Act 2009 The Marine and Coastal Access Act 2009 introduced a revised system of Marine Management and Licensing, including marine planning. The eight key elements are · Establishment of the Marine Management Organisation (MMO) · Creation of a strategic marine planning system · A streamlined marine licensing system · Marine nature conservation · Fisheries management and marine enforcement · Migratory and freshwater fisheries · Coastal access · Coastal and estuarine management	Added to P&P assessment where appropriate.
75	13 & 14	The Marine Strategy Regulations 2010 The UK Marine Strategy Regulations 2010 require the UK to take the necessary measures to achieve or maintain Good Environmental Status (GES) through the development of a UK Marine Strategy. The UK Marine Strategy, made up of Parts One, Two and Three, sets out a comprehensive framework for assessing, monitoring and taking action across our seas to achieve the UK's shared vision for 'clean, healthy, safe, productive and biologically diverse ocean and seas'. In October 2019, the updated UK Marine Strategy Part One: UK updated assessment and Good Environmental Status was published. In March 2021 the updated UK Marine Strategy Part Two: UK updated monitoring programmes was published and the UK Marine Strategy Part 3: Programme for Measures is being reviewed after being out for consultation (6/09/21- 29/11/21). UK Marine Strategy Part 1 UK Marine Strategy Part 2 Overview of UK Marine Strategy Part 3	Added to P&P assessment where appropriate.

76	14	Strategic Planning Policy Statement for Northern Ireland 2015 Strategic Planning Policy Statement An Integrated Coastal Zone Management Strategy for Northern Ireland 2006-2026 This strategy is intended to set out long-term objectives for achieving sustainable coastal management, through improvements to existing management systems, the development of new management systems and identifying and dealing with potential areas of conflict. The strategy is based around 4 broad themes, consistent with the principles of sustainable development. Most relevant to this work is Priority 2: Safeguarding and improving the environment within the coastal zone and Priority 4: integration of planning and effort. Each theme has a set of aims for delivery.	Added to P&P assessment where appropriate.
77	14	Wildlife (Northern Ireland) Order 1985 Attention is drawn to Article 10 of the Wildlife (Northern Ireland) Order 1985 (as amended) under which it is an offence to intentionally or recklessly disturb, capture, injure a Common seal (Phoca vitulina), Grey seal (Halichoerus grypus) or Basking shark (Cetorhinus maximus). In addition it is an offence to intentionally or recklessly, injure or kill a wild animal included in Schedule 5 of this Order. This includes Angel shark (Squatina squatina), Common skate (Dipturus batis), Short snouted seahorse (Hippocampus hippocampus), Spiny seahorse (Hippocampus guttulatus), Spiny lobster (Palinurus elaphus) and Fan mussel (Atrina fragilis). It is also an offence to intentionally or recklessly; ...	Added to P&P assessment where appropriate.
78	15	The Wildlife (Northern Ireland) Order 1985 Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 Attention is drawn to regulation 34 of The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended), which states that it is an offence to deliberately disturb, capture, injure or kill a wild animal of a European Protected Species included in Schedule 2 to these Regulations. This includes all species of dolphins, porpoises and whales and the marine turtle species. ...	Added to P&P assessment where appropriate.

79	15	Appendix B: Environmental Baseline maps Figure 1: International designations – Nature Conservation Sites M&FD recommends the inclusion of the East Coast Marine pSPA, North Channel SAC and MCZs. Further advice can be sought from the Marine Conservation Advice Team, DAERA Marine and Fisheries Division, Klondyke Building, Cromac Avenue, Belfast, BT7 2JA. Tel: 028 90 569 757 or email: Marine.Wildlife@daera-ni.gov.uk	Added to baseline maps and considered in assessment.
80	15	Marine Historic Environment Advice: In reference to: Pg. 9 – Under Historic Environment: - 'Quality and character of townscape / villagescape' should include seascape; i.e. 'Quality and character of townscape / seascape / villagescape'.	Added to historic environment SEA sub objectives.
81	15	3.10 cultural heritage - Pg 32 – an additional line should be added to state that: '340 ship wrecks and 8 aircraft wrecks are currently recorded within NI waters (DFC 2020); 2 of the shipwrecks have statutory protection; La Girona under the Protection of Wrecks Act 1973, and HMS Drake under the Historic Monuments and Archaeological Objects (NI) Order 1995. All military aircraft are automatically afforded protection under the Protection of Military Remains Act 1986.'	Added to baseline and included in assessment.
82	15& 16	7. References should include: https://www.infrastructure-ni.gov.uk/publications/wind-energy-development-northern-ireland-landscapes though this is out of date in respect of offshore wind and its potential impacts	Included in assessment.
83	15& 16	https://www.communities-ni.gov.uk/sites/default/files/publications/communities/guidance-on-setting-and-the-historic-environment.pdf	Included in assessment.
Inland Fisheries Advice: (Within DAERA Doc)			

84	16	Inland fisheries is content with the Geographical Extent of the SEA however would advise that the area includes that which is within the jurisdiction of the Loughs Agency and as the lead body for provision of advice regarding impacts to salmonid and inland fisheries interests within the catchments of Lough Foyle and Carlingford Lough said agency should be consulted in relation to this application. As mentioned in section 2.4 there is also the potential for transboundary impacts on cross-border catchments and relevant authorities should be consulted.	Loughs Agency consulted in regard to HRA screening on 6 September 2022 with nil return.
85	16	Inland Fisheries welcomes the inclusion within Table 2.2: Sustainability Topics of Priority Species and Priority Habitats, this will ensure that all rivers will be considered and not solely designated sites, this will also include migratory fish species which have the potential to be impacted. It is also noted within table 2.2 that GI has the potential to impact connectivity within habitats and this issue is to be considered.	Noted.
86	16	Section 3.2 discusses Ecology and Nature Conservation, on page 15 aquatic habitats are mentioned with reference to 'internationally important bird populations' this section should include 'internationally significant populations of migratory fish species'.	Noted migratory fish considered during assessment.
87	16 &17	Inland Fisheries welcomes the inclusion within Table 4.1: SEA Objectives – 1. Ecology and Nature Conservation – Protect, enhance and manage biodiversity assets and ecosystems, a. Maintain and enhance internationally and nationally designated terrestrial, freshwater and marine designated sites, specifically SPAs, SACs, Ramsar sites and Natural Heritage Areas b. Maintain and enhance locally designated sites c. Maintain and restore terrestrial, freshwater and marine habitats, species and natural heritage sites d. Maintain and enhance priority habitats and species e. Prevent, minimise or address the spread of invasive species f. Protect and maintain migratory species, connectivity and cross border habitats And;	Noted.

88	17	Water – Protect, enhance and manage water resources and flood risk a. Protect water resources from over-abstraction and pollution b. Improve the quality of surface water, groundwater and marine c. Protect and enhance the status of aquatic and wetland ecosystems d. Minimise exposure to flood risk and droughts	Noted.
89	17	As Hydro-generation is referenced earlier within the document section 3.6 Water – 'Key legislation around water in NI that will need to be taken into account is:' should make reference to the Fisheries Act (NI) 1966, as amended. More information can be found at https://www.daera-ni.gov.uk/articles/authorisations-under-fisheries-act-ni-1966.	Added to P&P assessment.
90	17	Within APPENDIX A: REVIEW OF OTHER PLANS, PROGRAMMES AND ENVIRONMENTAL PROTECTION OBJECTIVES Inland Fisheries would recommend the inclusion of – Northern Ireland as part of the UK is also committed to meeting international obligations to implement the Convention for the Conservation of Salmon in the Atlantic Ocean North Atlantic Salmon Conservation Organization - NASCO These obligations are delivered through the development and delivery of Implementation Plans Third Reporting Cycle -NASCO	Added to P&P assessment.
91	17	Whilst mentioned in relation to transboundary impacts the UK NI is also required to implement the third cycle of the Water Framework Directive Consultation on the Draft 3rd Cycle River Basin Management Plan 2021 to 2027 | Department of Agriculture, Environment and Rural Affairs (daera-ni.gov.uk) which includes specific fisheries and water abstraction measures.	Added to P&P assessment.
92	17	As a statutory consultee DAERA Inland Fisheries will continue to provide comment on any proposals through the normal planning consultation process and provide consideration/advice in relation to fisheries interests.	Noted.
Organisation and contact: EPA			
Date received: 18/07/2022			
93	1	It should be noted that this submission is not part of a formal transboundary consultation process under the SEA Directive. Our comments and observations are provided in the context of ongoing cooperation and discussion between the EPA and plan-making authorities in Northern Ireland. It is worth noting that formal transboundary consultations can be conducted via the provisions of the SEA Protocol.	Noted.

94	2	State of the Environment Report – Ireland's Environment 2020 The EPA State of the Environment Report (SOER) 'Ireland's Environment – An Integrated Assessment (EPA, 2020) sets out the recommendations, key issues and challenges described and could be considered, as relevant and appropriate. This report can be consulted at: http://www.epa.ie/irelandsenvironment/stateoftheenvironmentreport/ Some relevant chapters of the SOER are highlighted in Appendix 3 of this submission.	Transboundary data included in baseline and assessment.
95	2	**Environmental Authorities** The other environmental authorities specified under Ireland's national SEA Regulations should also be consulted as relevant and appropriate: • Minister for Housing, Local Government and Heritage; • Minister for Environment, Climate and Communications; and, • Minister for Agriculture, Food and the Marine. Full details of the designated statutory environmental authorities for SEA are available at: https://www.gov.ie/en/publication/3539d-strategic-environmental-assessmentsea/#environmental-authorities-contact-details	Consulted during ER consultation where appropriate.
96	3	Chapter 2 – Approach to the SEA We welcome the reference to many of the available SEA guidance documents and resources on the EPA website in this chapter. We also provide a list of SEA-relevant spatial environmental datasets, available at the link below that may be useful to consider: https://www.epa.ie/publications/monitoring--assessment/assessment/strategic-environmental-assessment/sea-spatial-informationsources-inventory-.php.	Noted.
97	3	Environmental Sensitivity Mapping (ESM) WebTool This is a decision support tool to assist SEA and planning processes in Ireland. It is available at www.enviromap.ie. The tool brings together over 100 datasets and allows users to create plan-specific environmental sensitivity maps. These maps can help planners examine environmental considerations, anticipate potential land-use conflicts, and help identify suitable development locations while also protecting the environment. It may be useful for considering environmental sensitivities within the border areas	Noted.

98	3	EPA WFD Application Our WFD Application provides access to water quality and catchment data from the national WFD monitoring programme. The Application is accessed via the www.catchments.ie website.	Noted.
99	3	Section 2.6 - Other Plans, Programmes and Conservation Objectives Appendix 2 of our submission includes a list of some national and regional level plans in the Republic of Ireland to consider. These include Ireland's National Planning Framework(NPF), which sets out the vision for how Ireland will develop up to 2040 and how it aims to provide for continued economic growth and population increase, with the associated demands on infrastructure, including electricity / energy.	Added to P&P assessment.
100	3	The Regional Spatial and Economic Strategies for the Northern and Western Regional Assembly (RSES-NW) and the Eastern and Midlands Regional Assembly (RSES-EM) are responsible for achieving and implementing the commitments within the NPF. These would also be useful to consider.	Noted.
101	3	With regards climate change adaptation and mitigation, Ireland's National Mitigation Plan and National Adaptation Framework have been published and set out the actions and ambitions to reduce greenhouse gas emissions and adapt to climate change and build up resilience to the effects of climate change. The need to build up resilience in the electricity transmission network will also be important and could be explored within the Policy.	Noted.
102	3	How the pathway to achieving a climate resilient and low-carbon society can be progressed is determined poses a challenge. The Policy could consider how this aspect can be supported, within the context of possible future requirements / connectivity aspects, that may be encountered within the existing grid infrastructure network and in relation to future infrastructure requirements.	Noted.
103	4	It is worth noting that Ireland's Wind Energy Guidelines are currently in the process of being updated by the DHLGH. This can be consulted at the following link: https://www.gov.ie/en/pu	Added to P&P assessment.
104	4	Ireland's National Marine Planning Framework may be useful to consider, in terms of potential opportunities and synergies relating to marine-related grid connectivity.	Noted.

105	4	The National CFRAMS Programme includes many relevant flood risk and assessment study areas with respect to transboundary considerations. These include the following CFRAMS study areas Neagh Bann, North Western, Shannon and Western areas.	Noted.
106	5	**Appendix 2 – Suggested high level plans to consider** We acknowledge the extensive list of plans, programmes and environmental protection objectives described in Appendix A of the Scoping Report. Some key relevant plans and programmes in **Ireland,** at national and regional level to consider include: - National Planning Framework (Department of Housing, Local Government and Heritage) - Regional Spatial and Economic Strategies (Northern & Western and Eastern & Midlands Regional Assemblies) - Grid 25 Implementation Plan (Eirgrid) - National River Basin Management Plan for Ireland (Department of Housing, Local Government and Heritage) - National Adaptation Framework (Department of Environment, Climate and Communications) - Draft Offshore Renewable Energy Development Plan (currently undergoing SEA) - National Marine Planning Framework ((Department of Housing, Local Government and Heritage) - National Climate Action Plan 2021 (Department of Environment, Climate and Communications) - National Water Resources Management Plan (Irish Water) - Relevant flood risk management plans prepared as part of the National CFRAMS programme should also be useful to consider. (Office of Public Works)	Added to P&P assessment.
107	6	Appendix 3: State of the Environment Report Consideration	Noted and included in assessment.

108	6	Our State of Environment Report, Ireland's Environment - An Integrated Assessment2020 (SOER2020) identifies thirteen Key Messages for Ireland. Delivering Ireland's long-term sustainable development and environmental protection goals will require a concerted effort by government departments to address these key actions. The report recognises the need for full implementation of existing environmental legislation and review of governance/coordination on environmental protection across public bodies.	Noted and included in assessment.
109	6	The Executive Summary of Ireland's Environment - An Integrated Assessment and Chapter 13 - "Environmental Challenges and Emerging Issues for Ireland" of this report may be useful to consider in preparing the Policy, from a transboundary environmental perspective, as appropriate.	Noted and included in assessment.
110	6	Chapter 2 of the SOER2020 relates to climate and highlights the clear need for systemic change in Ireland to ensure the country will become the climate neutral and climate resilient society it aspires to be. The report states that more urgency is needed to deliver actions on climate mitigation and adaptation and to ensure that Ireland meets its international obligations to reduce greenhouse gas (GHG) emissions. While Ireland's GHG emissions, with full implementation of the National Climate Action Plan (NCAP), are projected to decrease by an annual average reduction of 3% between 2021 and 2030, further measures are required to meet national and EU ambitions to keep the global temperature increase to 1.5°C (EPA, 2020). These measures will contribute to Ireland achieving climate neutrality by 2050.	Noted.
111	6	Environmental challenges are complex, interconnected and require sustained techno sociological solutions. It is important that the SEA acknowledges the complex and cross cutting nature of climate issues and includes targets and measures that can tackle Ireland's climate crisis as part of an integrated approach to tackling environmental problems.	This is addressed through transboundary consideration in assessment.

112	6	Chapter 9 of the SOER2020 report relates to Energy and highlights that almost 90% of Ireland's total energy is provided by the combustion of fossil fuels, most of which are imported. We need to transform this situation and begin to fast track the required measures set out in the NCAP 2021. The Policy can play a key role in supporting our shared efforts at transforming our energy profile and climate change commitments. The benefits of transitioning to using cleaner and more sustainable renewable energy sources should be recognised. This includes benefits for our health, our climate and our environment.	Noted.
113	6	Additionally, the marine environment, water and nature chapters of the SOER2020 may also be of relevance to the Policy and SEA being prepared.	Noted.

Appendix D: SEA Objectives – Targets and Indicators

SEA Objective	Sub-objective (Will the Renewable & Low Carbon Energy policy…?)	Indicators	Targets
1. Ecology and Nature Conservation – Protect, enhance and manage biodiversity assets and ecosystems	a. Maintain and where appropriate enhance the integrity of internationally and nationally terrestrial, freshwater and marine designated sites, specifically SPAs, SACs, Ramsar sites and Natural Heritage Areas, Marine Conservation Zones b. Maintain and where appropriate enhance locally designated sites c. Maintain and where appropriate enhance priority habitats and species d. Prevent and minimise the spread of invasive species e. Protect and maintain migratory species, connectivity and cross border habitats f. Maintain terrestrial, freshwater and marine habitats, species and natural heritage sites	Status, condition, area and number of International and European sites and species SPAs, SACs, Ramsar sites and Natural Heritage Areas. Status, condition, area and number of ASSI, SLNCI, NRs, LNRs and local conservation designations and their species. Number of significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites. Percentage change in functional connectivity of habitats.	Potential to maintain of favourable conservation status for habitats and species protected under National and International legislation. Potential to avoid significant impacts on relevant habitats, species (including migratory species), environmental features or other sustaining resources. Potential to encourage the protection and enhancement of biodiversity alongside development.
2. Socio-economics – Improve prosperity and reduce deprivation	a. Facilitate ongoing development b. Support local businesses, enhancement of the local economy and overall prosperity c. Reduce energy poverty d. Create green jobs	Percentage increase/decrease of renewable and low carbon energy developments granted. Jobs created within the R&LC energy sector.	Potential to contribute to the NI economy, generating income and provide employment.
3. Health and Quality of Life – Improve health and quality of life	a. Improve long-term health and wellbeing, reduce health deprivation b. Encourage walking, cycling and other physical activity through outdoor recreational spaces c. Minimise the number of people exposed to and levels of noise and vibration pollution d. Safeguard and ensure protection of residential amenity from inappropriate development	Number of instances of deterioration in human heath resulting from noise, shadow flicker, visual amenity disturbance, water quality, air quality, flood events or soil stability issues arising from R&LC development (including associated development) permitted by planning authorities. Disruption to the use and access of amenities Number of developments incorporating amenity and recreation benefits	Potential to provide amenity and recreational areas, with multi-benefit integrated into design. Potential to avoid R&LC E developments which would be likely to result in deterioration in human health arising from environmental factors, such as noise, shadow flicker, visual amenity disturbance, water quality, air quality, flood events or soil stability issues.

SEA Objective	Sub-objective (Will the Renewable & Low Carbon Energy policy…?)	Indicators	Targets
			Potential to avoid and minimise disruption to access and use of amenities including rights of way, parks, playing fields and walk and cycle ways
4. Soil and Land Use – Protect and enhance soil quality	a. Safeguard and improve the highest quality soil and agricultural land b. Reduce soil pollution, compaction, erosion and degradation c. Encourage local production of fuel d. Encourage use of previously developed land e. Encourage strategic land use planning f. Protection of sites designated for geodiversity importance	Number of developments on use previously developed or industrial land. Area and zoning of land use within LDP's. Loss or damage to sensitive soils and land uses e.g. peatlands and productive agricultural land.	Potential to minimise negative effects to soil structure and maintain hydrological and ecological function. Potential to minimise loss of sensitive soil and land resources. Potential to encourage the use of previously developed land of low ecological importance.
5. Water – Protect, enhance and manage water resources and flood risk	a. Protect water resources from over-abstraction and pollution b. Maintain the quality of surface water, groundwater and marine c. Minimise exposure to flood risk and droughts	Rivers, flood extents and receptor data – Fluvial, Coastal, Pluvial. Number of waterbodies achieving 'good status' under WFD.	Potential to cause no deterioration in water body status and potential to contribute to the achievement of water body objectives under the WFD. Potential to cause no increase in flood risk and potential to contribute towards managing flood risk. Potential to avoid developments which are at elevated risk of flooding or would significantly increase flood risk elsewhere.
6. Air Quality – Reduce air pollution and ensure continued improvements to air quality	a. Improve air quality b. Minimise nitrogen deposition on designated sites and priority habitats c. Encourage the uptake of low carbon renewable energy sources	Percentage electricity consumption from renewable energy. Number of instances of deterioration in human heath resulting from noise, shadow flicker, visual amenity disturbance, water quality, air quality, flood events or soil stability issues	Increase in proportion of electricity generated from R&LC E development to contribute towards achievement of energy and decarbonisation targets.

SEA Objective	Sub-objective (Will the Renewable & Low Carbon Energy policy…?)	Indicators	Targets
		arising from R&LC E development (including associated development) permitted by planning authorities.	
7. Climate Change – Minimise contribution to climate change and adapt to its predicted effects	a. Improve energy conservation and efficiency b. Improve climate change resilience and adaption capacity c. Increase the supply of energy from low carbon/renewable energy sources d. Minimise the impacts of new infrastructure in the transition to renewable energy	Rivers, climate change flood extents and receptor data – Fluvial, Coastal, Pluvial Number of new R&LC E Developments Number of R&LC E developments repowered and/or decommissioned	Potential to provide adaptability to future climatic change. Increase in proportion of electricity generated from R&LC E development to contribute towards achievement of energy and decarbonisation targets.
8. Material Assets – Protect and conserve natural resources and reduce waste production	a. Safeguard natural resources (including minerals, forestry and peatland) and minimise unsustainable use b. Increase recycling and re-use of materials c. Maximise use of the existing built environment	Preparation and implementation of construction and environmental management plans that include provisions relating to waste minimisation and recycling. % of peatland restored. % of R&CL E developments on previously developed land. Reuse and recycling rates when decommissioning R&LC E developments.	Potential to increase reuse and recycling when decommissioning. Potential to direct R&LC E developments to prioritise previously developed land.
9. Cultural Heritage – Protect, enhance and manage archaeological and cultural heritage	a. Preserve, conserve and where appropriate enhance designated and non-designated sites and areas and their settings b. Preserve, conserve and where appropriate enhance archaeological sites and the setting of historical and architectural assets including marine cultural heritage c. Preserve, conserve and where appropriate enhance the quality and character of historic landscapes (townscape, seascape and villagescape) d. Protect, conserve and enhance historic landscapes and their settings	Potential for impacts on known archaeological or architectural heritage features or their settings. Percentage of heritage assets protected or restored due to development activities. Percentage of entries to the Record of Monuments and Places - including Zones of Archaeological Potential protected from significant adverse effects.	Potential to protect, and where possible enhance, heritage features and historic landscape through LDP's and R&LC E development.

SEA Objectives – Targets and Indicators

SEA Objective	Sub-objective (Will the Renewable & Low Carbon Energy policy…?)	Indicators	Targets
10. Landscape – Protect, enhance and manage the character and quality of the landscape	a. Preserve, conserve and where appropriate enhance the quality and character of landscape, seascape and coastal areas b. Preserve, conserve and where appropriate enhance designated sites, public open space and green infrastructure assets c. Preserve, conserve and where appropriate enhance and enhance cross border landscapes d. Minimise light pollution and light spill	Number of significant adverse effects on statutory designations relating to the landscape. % of agricultural land use change to accommodate R&LC E developments. Disruption to use of and access to amenities including rights of way, parks, playing fields and walk and cycle ways.	Potential to avoid significant adverse effects on statutory designations relating to the landscape. Potential to avoid and minimise disruption to use of and access to amenities including rights of way, parks, playing fields and walk and cycle ways. Potential to guide R&CL E development to previously developed land.
11. Natural Capital and Inter-relationships – To support the transition to renewable energy while maintaining natural capital benefits including carbon sequestration, protection from flooding and access to the countryside.	a. Preserve, conserve and where appropriate enhance the ability of an area to provide ecosystem services such as carbon sequestration and flood resilience, as well as supporting other ecosystem services b. Encourage multifunctionality of land used for renewables to provide numerous ecosystem services simultaneously c. Encourage biophysical changes such as restoration of degraded land and enhanced connectivity of habitats and greenspace	Number of R&LC E developments that include nature based solutions, blue and/or green infrastructure. % of R&LC E developments build within peatland. % of developments that incorporate amenity and recreation benefits into R&LC developments.	Potential to avoid significant impacts on relevant habitats, species (including migratory species), environmental features or other sustaining resources. Potential to guide or minimise development on peatland. Potential to avoid and minimise disruption to use of and access to amenities including rights of way, parks, playing fields and walk and cycle ways.