SONI TRANSMISSION DEVELOPMENT PLAN FOR NORTHERN IRELAND 2023-2032

SEA Scoping Report

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Prepared by:

RPS

Richard Bingham
Technical Director
Water Environment and Flood Risk Management

Elmwood House
74 Boucher Road, Belfast
Co. Antrim BT12 6RZ

T 02890 667 914
E richard.bingham@rpsgroup.com

Prepared for:

SONI LTD

Rónán Davison-Kernan

12 Manse Road
Belfast
BT6 9RT

T
E Ronan.Davison-Kernan@soni.ltd.uk

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ABBREVIATIONS

AA	Appropriate Assessment
AONB	Area of Outstanding Natural Beauty
AoHSV	Area of High Scenic Value
APIS	Air Pollution Information System
APSFR	Area of Potential Significant Flood Risk
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
ASSI	Area of Special Scientific Interest
ASAI	Area of Significant Archaeological Interest
BGE	Bord Gáis Energy
BGTL	Belfast Gas Transmission Limited
DAERA	Department of Agriculture, Environment and Rural Affairs
DAFM	Department of Agriculture, Food and the Marine
DECC	Department of the Environment, Climate and Communications
DEFRA	Department for Environment, Food & Rural Affairs
DfI	Department for Infrastructure
DHLGH	Department of Housing, Local Government and Heritage
DoH	Department of Health
DSD	Department for Social Development
DWPA	Drinking Water Protected Area
EAR	Environmental Appraisal Report
EIA	Environmental Impact Assessment
EMF	Electromagnetic Field
EPA	Environmental Protection Agency
EPO	Environmental Protection Objective
FCS	Favourable Conservation Status
FRMP	Flood Risk Management Plan
GBF	Global Biodiversity Framework
GES	Good Environmental Status
GHG	Green House Gas
GIS	Geographical Information System
GSNI	Geological Survey of Northern Ireland
HED	Historic Environment Division
HERoNI	Historic Environment Record of Northern Ireland
HRA	Habitats Regulations Assessment
HVDC	High Voltage Direct Current
INNS	Invasive Non Native Species
JNCC	Joint Nature Conservation Committee

LAQM	Local Air Quality Management
LCA	Landscape Character Area
LPSNI	Land & Property Services Northern Ireland
MCZ	Marine Conservation Zones
MSFD	Marine Strategy Framework Directive
NHA	Natural Heritage Area
NIE	Northern Ireland Electricity
NIEA	Northern Ireland Environment Agency
NIFRA	Northern Ireland Flood Risk Assessment
NILCA	Northern Ireland Landscape Character Assessment
NIO	Northern Ireland Office
NIRLCA	Northern Ireland Regional Landscape Character Assessment
NISRA	Northern Ireland Statistics and Research Agency
NNR	National Nature Reserve
PNHA	Proposed Natural Heritage Area
PPC	Pollution Prevention and Control
RBD	River Basin District
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SEO	Strategic Environmental Objective
SLNCI	Sites of Local Nature Conservation Importance
SMR	Site and Monuments Record
SONI	System Operator for Northern Ireland
SPA	Special Protection Area
TDP	Transmission Development Plan
TDPNI	Transmission Development Plan for Northern Ireland
TESNI	Tomorrow's Energy Scenarios Northern Ireland
TSO	Transmission System Operator
UKCP	United Kingdom Climate Prediction
UNCLOS	United Nations Convention on the Law of the Sea
UNESCO	United Nations Educational, Scientific and Cultural Organization
WFD	Water Framework Directive

EXECUTIVE SUMMARY

This Environmental Scoping Report is presented as part of the scoping phase of the Strategic Environmental Assessment (SEA) for the draft Transmission Development Plan for Northern Ireland (TDPNI) 2023-2032. The purpose of this Scoping Report is to provide sufficient information on the draft TDPNI 2023-2032 to enable the consultees to form an opinion on the appropriateness of the scope, format, level of detail, methodology for assessment and the consultation period proposed for the SEA Environmental Report.

The System Operator for Northern Ireland (SONI) is developing the draft TDPNI for the period 2023-2032, in accordance with Article 22 of European Directive 72/2009 and Condition 40 of the SONI TSO Licence. Under its licence, a TDPNI must be published annually by SONI. It outlines the proposed asset replacement and development requirements of the Northern Ireland electricity transmission system over a period of ten years. In addition, future needs that may drive future potential projects are discussed. SONI has commissioned RPS to undertake an SEA of the draft TDPNI 2023-2032. This will provide further information to SONI on the potential positive and negative implications of implementing the draft TDPNI, which will feed into the development process.

While a TDP has defined timelines, it must be understood that the long-term development of the network is under review on an on-going basis. It is possible that changes will occur in the need for, scope of, and timing of the listed developments over the 10-year outlook period of the TDPNI 2023-2032. Similarly, it is likely, given the continuously changing nature of electricity requirements, that new developments will emerge that could impact the plan as presented. These changes will be identified in future studies and accommodated in future annual TDPNIs.

The SEA Directive aims to integrate environmental considerations into the preparation of plans and programmes and is a means of ensuring a high level of protection for the environment, while also promoting sustainable development. The SEA Directive, and Northern Ireland's implementing Regulations, will ensure that consideration is given to the environment in implementing the TDPNI 2023-2032. SONI have determined that an update to the SEA assessment is appropriate for the TDPNI 2023-2032. This SEA Scoping Report is the next step in the process. This document establishes the scope of works involved for the SEA for the draft TDPNI 2023-2032.

An Environmental Report will be produced as part of the SEA and this will be available, together with the draft TDPNI 2023-2032, for public consultation. All comments received during this SEA Scoping consultation, and the public consultation on the draft TDPNI, SEA Environmental Report, and Habitats Regulations Assessment (HRA) Report, will be considered in the development and finalisation of the TDPNI 2023-2032.

Please send all comments on the scope of the SEA of the draft TDPNI to:

By post	Richard Bingham RPS 74 Boucher Road Belfast BT12 6RZ Northern Ireland
By email	Richard.bingham@rpsgroup.com

1 INTRODUCTION

1.1 Background

This Strategic Environmental Assessment (SEA) Scoping Report has been prepared in accordance with the European Communities Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (SEA Directive), and in accordance with the Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004 (S.R. 280/2004).

The purpose of this Scoping Report is to provide sufficient information on the draft Transmission Development Plan for Northern Ireland (TDPNI) 2023-2032, to enable the consultees to form an opinion on the appropriateness of the scope, format, level of detail, methodology for assessment and the consultation period proposed for the SEA Environmental Report.

The SEA of the draft TDPNI 2023-2032 is being completed on behalf of the System Operator for Northern Ireland (SONI). The views and opinions of the consultees are sought on the following questions:

1. Is there any information missing from the key plans and programmes listed, relevant to the draft TDPNI 2023-2032 that you think should be included, and why?
2. Do you agree with the proposed initial screening of projects and developments, as to whether they should be assessed further within the SEA and AA processes?
3. Do you agree with the geographical and temporal scope of the assessment?
4. Do you agree with the scoping of the environmental assessment topics?
5. Have we identified the key environmental issues relevant to the draft TDPNI 2023-2032?
6. Are we proposing the most appropriate data and scale of data to be used?
7. Can you propose any other data to be used in the SEA, and why it would be beneficial?
8. Do you agree with the approach to the assessment?
9. Do you agree with the draft SEA objectives?
10. Do you agree with the data and scores proposed for the constraints modelling?
11. Do you agree with the proposed project timescales, and proposed consultees in the SEA process?

1.2 Strategic Environmental Assessment and purpose of this Scoping Report

The SEA Directive requires that certain Plans and Programmes, prepared by statutory bodies, which are likely to have a significant impact on the environment, be subject to the SEA process. The SEA process is broadly comprised of the steps shown in **Figure 1-1**. These are given a summary description in **Table 1.1**. SONI has commissioned RPS to undertake an SEA of the draft TDPNI 2023-2032. This will provide further information to SONI on the potential positive and negative implications of implementing the draft TDPNI 2023-2032, which will feed into the development process.

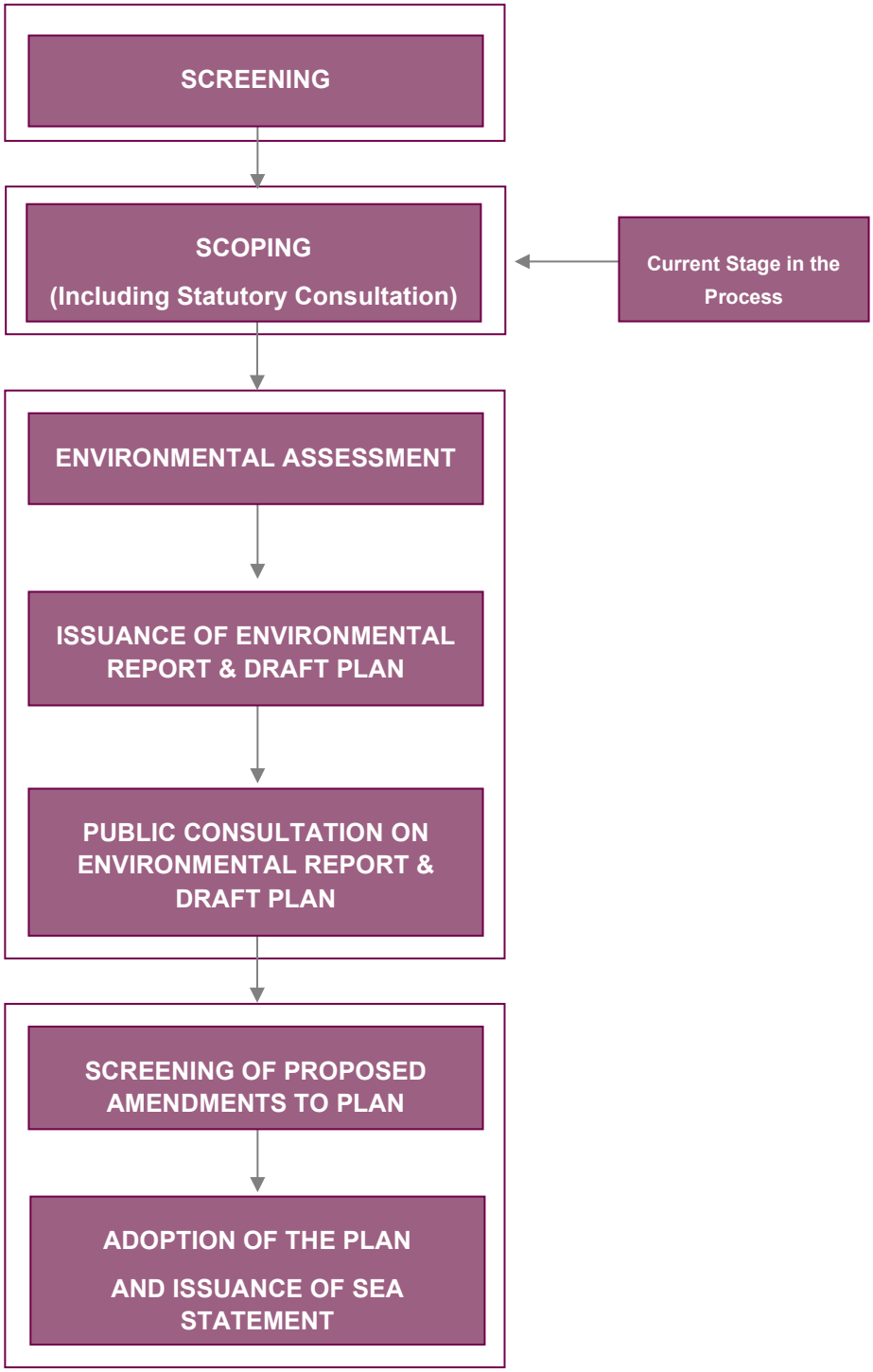


Figure 1-1 Overview of the SEA Process

Table 1-1 Summary Descriptions of the Main Stages in the SEA Process

Stage	Description	Status
Screening	Determines whether SEA is required for a Plan / Programme in consultation with the designated statutory consultees.	Completed
Scoping	Determines the scope and level of assessment detail for the SEA, in consultation with the designated statutory consultees.	Current stage
Environmental Assessment	Formal and transparent assessment of the likely significant impacts on the environment arising from implementation of the Plan / Programme, including all reasonable alternatives. The output from this is an Environmental Report, which must go on public display along with the draft Plan / Programme.	July – September 2023
SEA Statement	Summarises the process undertaken and identifies the manner in which environmental considerations and consultations have been integrated into the final Plan / Programme.	Anticipated Q4 2023

1.3 Screening for SEA

Under Article 2 (2) of the SEA Directive, energy plans require mandatory SEA. The TDPNI 2018-2027 committed to a review and, if considered appropriate, an update of the SEA and HRA every five years following the first version of the Plan. SONI have concluded that it is appropriate to update these assessments for the draft TDPNI 2023-2032.

1.4 Scoping for SEA

This SEA Scoping Report is presented as part of the scoping phase of the SEA for the draft TDPNI 2023-2032. The purpose of this Scoping Report is to provide sufficient information on the Plan to enable the consultees to form an opinion on the appropriateness of the scope, format, level of detail, methodology for assessment and the consultation period proposed for the Environmental Report. A Scoping Report can inform stakeholders about the key environmental issues and the key elements of the Plan. In addition, the Scoping Report can be used as a tool to generate comments from stakeholders on the scope and approach of the SEA.

1.5 SEA Guidance

Key guidance documents that are to be used in the SEA for the TDPNI 2023-2032 are listed in **Appendix A** of this Scoping Report.

1.6 Statutory Consultees for SEA

Under Article 6 of the SEA Directive, the competent authority (in this case SONI) preparing the plan or programme is required to consult with specific “environmental authorities” (statutory consultees) on the scope and level of detail of the information to be included in the Environmental Report.

The statutory consultee established within the SEA legislation for Northern Ireland is:

- The Department of Agriculture, Environment and Rural Affairs (DAERA)

As some projects and developments from the TDPNI may be close to the border with the Republic of Ireland and having regard to the potential cross-border nature of some of the SONI / EirGrid projects, there is the potential for transboundary impacts from implementation of the Plan. For this reason, there is a requirement to undertake transboundary consultations as part of this SEA process.

The statutory consultees are established within the Irish national legislation, European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 [S.I. 435/2004] and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 [S.I. 436/2004], and their recent amendments of European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 [S.I. 200/2011] and the Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011 [S.I. 201/2011], as being:

- Environmental Protection Agency (EPA);
- Department of Housing, Local Government and Heritage (DHLGH);
- Department of the Environment, Climate and Communications (DECC); and
- Department of Agriculture, Food and the Marine (DAFM).

EirGrid are developing the Grid Implementation Plan 2023-2028 for the electricity transmission system in Ireland. Transboundary consultation on this plan was undertaken with the Northern Ireland statutory consultees in late 2022 / early 2023. The SEA Scoping Report is currently at consultation stage, and is available at: https://www.eirgridgroup.com/site-files/library/EirGrid/EirGrid-SEA-Scoping-2022_Final_revised-for-consultation_CLEAN.pdf. SONI commit to engaging with EirGrid on the draft Implementation Plan 2023-2028 (due for publication in Q3-Q4 2023).

1.7 Appropriate Assessment

The Habitats Directive (Council Directive 92/43/EEC) on the conservation of natural habitats and of wild fauna and flora obliges Member States to designate, protect and conserve habitats and species of importance in a European Union context. Article 6(3) of the Habitats Directive requires that "*Any plan or project not directly connected with or necessary to the conservation of a site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives*." The Directive was transposed into Northern Ireland legislation through the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995. Any proposed plan or project that has potential to result in a likely significant effect on a designated European site will require an Appropriate Assessment (AA). Case law has determined that the likelihood need not be great, merely possible, and that the precautionary principle must apply as set out in European Commission Guidance and as required by CJEU case law (i.e., C 127/02 '*Waddenzee'*).

Habitats Regulations Assessment (HRA) for the draft TDPNI 2023-2032 is being carried out in parallel with the SEA process. The first stage of the HRA process is Screening, which is to determine whether implementation of the TDPNI 2023-2032 has the potential to have a likely significant effect on designated European sites.

1.8 SEA Monitoring Update

Article 10 of the SEA Directive requires that monitoring is carried out to identify, at an early stage, any unforeseen adverse effects due to implementation of a Plan or Programme, and to enable remedial action to be taken. Monitoring was not formally undertaken during the annual review of the TDPNI, however is now being undertaken as part of the SEA review cycle.

Table 1-2 shows those projects included in the 2018-2027 TDPNI that are now complete. This includes the Agivey (Garvagh) Cluster project and the Castlereagh – Knock cable uprate project that were assessed within the SEA for the 2018-2027 Plan, as well as the Curraghmulkin (Drumquin) Cluster project that was included in the 2018-2027 Plan but not assessed in the SEA as planning permission had been approved at that time and it was therefore considered to be past the stage at which SEA could influence the project.

Table 1-2 Projects included in the TDPNI 2018-2027 that are now complete

Project Name	Development Type
Agivey (Name subsequently changed to Garvagh) 110/33 kV Cluster	New Substation and Transmission Line

Castlereagh – Knock 110 kV Cables Uprate	Transmission Line Restring / Uprate
Curraghmulkin (Drumquin) 110/33 VCluster	New Substation and Transmission Line

Monitoring is carried out by reporting on a set of Indicators established in the SEA Objectives, which allow effects on the environment to be measured. The SEA Environmental Report for the first iteration of the TDPNI 2018-2027 proposed a set of strategic-level targets, indicators and data sources to be used for monitoring of SEA topics. These will be used to identify any unforeseen adverse effects that have occurred from implementation of projects from the first iteration of the TDPNI. In addition, project-level environmental assessment has been undertaken for some projects completed, and will be used to provide further, more detailed, information where relevant. This monitoring update has been undertaken for each SEA environmental topic and is included within the relevant topic sections in **Section 4.3** of this Scoping Report.

2 DESCRIPTION OF THE TRANSMISSION DEVELOPMENT PLAN FOR NORTHERN IRELAND 2023-2032

2.1 Background to the TDPNI

SONI is the licensed independent electricity Transmission System Operator (TSO) for Northern Ireland; this licence is granted through the Northern Ireland Authority for Utility Regulation under Article 10(1)(b) of the Electricity (Northern Ireland) Order 1992 (the Order). SONI is responsible for operating and planning the development of a safe, secure, economic and reliable electricity system. Working in co-operation with the system owner NIE Networks, SONI plans the development of the electricity grid infrastructure for Northern Ireland. Investment in grid development is required to improve the grid for reliability, to support economic growth, to enable competition, and to connect more renewable energy.

The TDPNI is an annual report published by SONI that sets out the planned development to be carried out by SONI and NIE Networks on Northern Ireland's electricity transmission system over the next ten-year period. This comprises works required both to maintain the system and to enable the energy transition and further decarbonisation of energy usage. The first TDPNI covered the ten-year period from 2018-2027. Since this time, rolling annual plans have been published by SONI. The most recent TDPNI covers the period 2021-2030[1], and presents the projects that are expected to be needed for the operation of the network in the short and medium-term.

The Energy Strategy for Northern Ireland – The Path to Net Zero Energy was published in 2021[2] and sets out a roadmap 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'. To reduce energy emissions, one of the primary targets of the Energy Strategy is to meet at least 70% of electricity consumption from renewable energy sources by 2030. In preparation for the publication of the Energy Strategy, SONI and EirGrid consulted on and published Shaping our Electricity Future[3], investigating how this target could be met.

SONI has updated the way the electricity grid is developed through the production of Tomorrow's Energy Scenarios Northern Ireland (TESNI)[4]; this is a recent approach that involves developing a range of possible energy scenarios dealing with renewables and the electrification of heat and transport. The first TESNI was published in 2020 and will be reviewed and updated every two years. The final scenarios set out in the TESNI will act as an input to the grid development process. The most recent TDPNI 2021-2030 was the first plan to fully take on board the results of the TESNI in planning for the Northern Ireland transmission network. The TDPNI for 2023-2032 continues this process, taking on board the results of the TESNI in its network planning. The TDPNI will present the potential projects required in Northern Ireland over the next 10 years (2023-2032) to reinforce the electrical transmission grid and ensure the connection of generation and demand for Northern Ireland.

2.2 Existing Electricity System in Northern Ireland

The basic function of an electricity system is to connect the sources of energy (generators) with the ultimate users (demand) of that energy. The electricity network can be sub-divided into the transmission and distribution systems. The transmission system moves bulk electricity on high voltage lines or underground cables from where it is generated to bulk supply points. This can be likened to a motorway or high-capacity road which facilitates the bulk of vehicle movements. The separate distribution system, which operates at lower voltages, is like smaller lower-capacity roads, delivering electricity from these bulk supply points into homes and businesses.

The existing electricity transmission system in Northern Ireland was largely in place by the late 1960s, with an electrically strong transmission system having been developed to link major fossil fuelled power stations and

[1] https://www.soni.ltd.uk/media/documents/Transmission-Development-Plan-Northern-Ireland-2021-2030.pdf

[2] https://www.economy-ni.gov.uk/publications/energy-strategy-path-net-zero-energy

[3] https://www.eirgridgroup.com/site-files/library/EirGrid/Shaping_Our_Electricity_Future_Roadmap.pdf

[4] https://www.soni.ltd.uk/newsroom/press-releases/tesni-2020/index.xml

to deliver bulk electricity to the more heavily populated areas. There are three large fossil fuel power stations in Northern Ireland, Ballylumford, Kilroot, and Coolkeeragh.

The transmission system uses voltages at or above 110kV, which can deliver large quantities of power over long distances in a very efficient manner. The transmission system in Northern Ireland is operated at 275kV and 110kV. The 275kV network includes approximately 713km of 275kV overhead line (which is almost all double circuit line) and 1km of cable, the majority of which was developed between 1963 and 1978. The 110kV system includes 934km of overhead line and 112km of cable, the majority of which was installed between 1944 and 1958. The existing electrical transmission system in Northern Ireland is shown in **Figure 2.1**.

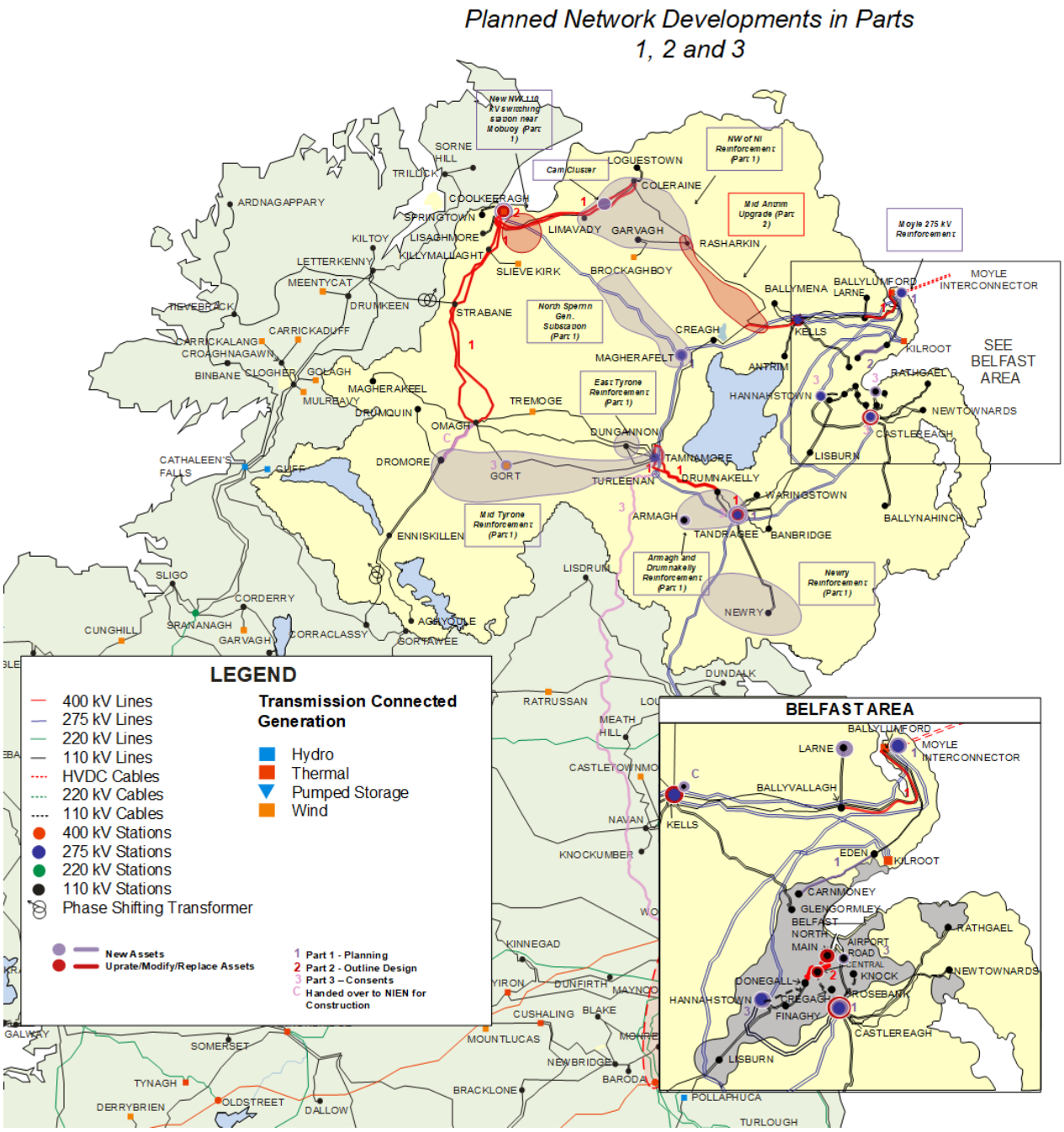


Figure 2-1 Current SONI Electricity Transmission System in Northern Ireland

The electrical system in Northern Ireland is a synchronous system, which has limited High Voltage Direct Current (HVDC) interconnection to Great Britain. Northern Ireland's electrical system is connected to the Scottish system via the 0.5 GW Moyle Interconnector, which runs between Islandmagee (Northern Ireland)

and Ayrshire (Scotland). The transmission systems in Northern Ireland and the Republic of Ireland are also connected, by means of a 275 kV double circuit from Louth station in Co. Louth (Republic of Ireland) to Tandragee substation in Co. Armagh (Northern Ireland). There are two smaller 110kV standby connections at Enniskillen and Strabane. A second North-South interconnector (also known as the Tyrone to Cavan Interconnector), which will operate at 400 kV, has acquired statutory planning approval in both Ireland and Northern Ireland and is planned to be fully operational by 2026.

The transmission system is designed to certain standards known as the Transmission System Security and Planning Standards[5], approved by the Utility Regulator. These standards include, among other things, a requirement that the system is designed, built and operated in such a way that if a single component fails (known as a credible contingency) an alternative will be available, and therefore there will be no interruption to customer supply. SONI is obliged to plan (including outline design and consents) an electrical system that will economically maintain compliance with these standards based on reasonable assumptions regarding the evolution of the generation, supply, and consumption of energy and exchanges with other countries. The type of generation technology deployed, and the geographical location of that generation, is not within SONI's remit, but is a matter for developers and the planning process. This implies a level of uncertainty for regulators and licensees in planning, delivering and funding system development. To reflect uncertainty SONI will perform sensitivity studies, as appropriate.

As set out in Shaping our Electricity Future, there will be major changes in how and where electricity is generated, how it is connected to the grid, how it is bought and sold, and how it is used for transport and heat, in moving the energy sector towards a more sustainable and low-carbon future. There will be a need for the electricity system to carry more power, most of which will be from renewable sources such as wind and solar. To facilitate Northern Ireland's new energy policy the transmission grid needs to be made stronger and more flexible to transport the planned increases in clean energy generation. It also needs to be secure to ensure a high quality and reliable electricity supply for consumers, with the timely maintenance or replacement of assets required to provide the necessary level of security of supply. When considering system reinforcement SONI is obliged to balance the costs to the consumer, system security and its impact on the environment.

2.3 Objectives and Policies of the TDPNI 2023-2032

Development of the electricity sector in Northern Ireland is guided by several national and European Union strategic objectives, including The Energy Strategy for Northern Ireland, The UK Climate Change Strategy and the EU 2030 Climate and Energy Framework. These objectives guide investment in the Northern Ireland transmission network and, in accordance with The Electricity (Northern Ireland) Order 1992, require SONI to:

- Ensure the development and maintenance of an efficient, co-ordinated, and economical system of electricity transmission which has the long-term ability to meet reasonable demands for the transmission of electricity.
- Contribute to security of supply through adequate transmission capacity and system reliability.
- Facilitate competition in the supply and generation of electricity.

SONI is responsible for the planning and operation of the transmission network within Northern Ireland. To ensure the strategic objectives described above are met, it must provide ongoing and timely reinforcement of the Northern Ireland transmission network.

SONI has a licence obligation to produce a TDPNI annually and, according to European requirements, to also contribute to a European Ten-Year Network Development Plan every two years. In accordance with Article 22 of European Directive 72/2009, the ten-year network development plan shall:

a) Indicate to market participants the main transmission infrastructure that needs to be built or upgraded over the next ten years.

b) Contain all the investments already decided and identify new investments which have to be executed in the next three years.

c) Provide for a time frame for all investment projects.

[5] https://www.soni.ltd.uk/media/Northern-Ireland-TSSPS-September-2015.pdf

Section 4 of the TDPNI outlines Environmental policies (ENVP) that have been compiled to ensure that SONI has due regard for existing environmental protection legislation and environmental best practice when developing projects. Environmental objectives (ENVO) have also been developed for several environmental topics. These objectives ensure that legislative requirements and good environmental practice are integrated into the development of all Grid projects. In addition to these, the TDPNI sets out policies in relation to Technology, Project Development, Planning and Consenting, and Consultation and Engagement. These policies and objectives included in the TDPNI 2023-2032 are shown in **Table 2.1**. It is proposed that these Policies and Objectives that SONI work to in development and implementation of the TDPNI will be subject to an objective compatibility appraisal to test their compatibility with the Strategic Environmental Objectives (SEOs), described in **Section 5.2**.

Table 2-1 Policies and Objectives included in the TDPNI 2023-2032

Policy / Objective	Description
	General
ENVP1	To promote best environmental practice in the design and appraisal of transmission development projects.
	Biodiversity
ENVP2	To exercise its functions as a TSO in line with the Wildlife and Natural Environment Act (Northern Ireland) 2011 and the Northern Ireland Biodiversity Strategy (2015) to further the conservation of biodiversity so far as is consistent with the proper exercise of those functions.
ENVP3	To avoid adverse effects on sites designated for nature conservation including, Special Conservation Areas, Special Protection Areas, RAMSAR Sites, Areas of Special Scientific Interest and National Nature Reserves.
ENVP4	To protect NI priority species and habitats and other species protected under legislation in the development of any transmission infrastructure and to preserve key ecological linkage features.
ENVP5*	To go beyond nature protection and seek funding, or other mechanisms to deliver site-specific, measurable and lasting biodiversity restoration and enhancement on suitable projects to fulfil the 'Biodiversity Duty' attaching by law to public authorities in Northern Ireland.
ENVO1	To prepare and utilise industry specific Ecology Guidelines for the development of Transmission projects. This will ensure a standard approach to ecological impact assessment for transmission projects.
ENVO2*	To regularly monitor, document, and report specific actions taken for biodiversity restoration and enhancement under ENVP5.
	Climate Change
ENVP6	To integrate measures related to climate change into grid development, by way of both effective mitigation and adaptation responses, in accordance with available guidance and best practice.
	Noise
ENVP7	To employ methods on transmission infrastructure which minimise noise emissions in line with best industry practice.
ENVO3	To give careful consideration to the siting of transmission infrastructure so as to ensure that noise-sensitive receptors are protected from potential noise emissions.

ENVO4	To seek to preserve and maintain noise quality in accordance with good practice and relevant legislation.
	Landscape
ENVP8	To have regard to the Northern Ireland Landscape Character Assessment 2000, and the Northern Ireland Seascape Character Assessment in the design and appraisal of its transmission development projects.
ENVO5	To protect landscapes through the sustainable planning and design of transmission infrastructure and to have regard to important landscape designations including AONBs and the World Heritage Site.
	Cultural Heritage
ENVP9	To take reasonable measures to ensure that the special interest of protected structures, including their curtilages and settings, are protected when considering site or route options for the planning of transmission infrastructure.
ENVP10	To protect archaeological material when planning transmission infrastructure, by avoidance or by best practice mitigation measures.
	Water
ENVP11	That there is no increase in flood risk as a result of transmission development, and to ensure any flood risk to the development is appropriately managed.
ENVP12	To promote the use of sustainable urban drainage systems in any new developments where it is appropriate.
ENVP13	To have regard to Planning Policy Statements and Supplementary Planning Guidance: PPS 15 Planning and Flood Risk Development Control Considerations in the preparation of grid development strategies and plans.
ENVO6	That all grid development proposals, and in particular, transmission substation developments, shall carry out, to an appropriate level of detail, a site-specific Flood Risk Assessment that shall demonstrate compliance with all current Guidelines, standards and best practice. The Flood Risk Assessment shall pay particular emphasis to residual flood risks, site-specific mitigation measures, flood-resilient design and construction, and any necessary management measures.
	Air Quality
ENVP14	To preserve and maintain air quality in accordance with good practice and relevant legislation in the proposed construction of its transmission projects.
ENVP15	To ensure appropriate dust suppression during construction works.
	Tourism
ENVP16	To consider the potential impact upon tourism in the planning of transmission projects.
ENVO7	To identify the nature of tourism in a project area; to consider the cumulative / in combination impact on tourism of a project and to consider short term and long-term impacts of grid development projects on tourism as appropriate.
	Technology

TP1	To promote and facilitate the sustainable development of a high-quality transmission grid to serve the existing and future needs of the NI population.
TP2	To consider all practical technology options in the development of projects, including maximising use of existing transmission grid.
	Project Development
PDP1	To develop projects in accordance with SONI's *Process for Developing the Grid in Northern Ireland.*
PDP2	To promote sustainable grid development by balancing complex and/or competing technical, economic, environmental, social and deliverability goals and priorities in decision-making.
PDP3	To ensure that grid development is carried out in an economically efficient manner, and seek derogation from the Utility Regulator when this is not possible.
	Planning and Consenting
PCP1	To have regard to relevant legislation and guidelines in respect of planning and consenting of transmission infrastructure development projects, and make provision for any policies for the provision of transmission infrastructure set out in these documents.
PCP2	To have regard to precedent arising from decisions of the Competent Authorities, and of the High Court in Judicial Review of decisions, relating to the planning and consenting of transmission infrastructure development projects.
PCP3	To promote sustainable grid development by balancing complex and/or competing technical, economic and environmental goals and priorities in decision-making.
	Consultation and Engagement
CEP1	To consult and engage with statutory and non-statutory stakeholders, including communities, landowners and the general public, at the earliest appropriate stage of a project's development.
CEP2	To recognise and develop the essential role that communities, landowners and other stakeholders play in transmission infrastructure development, and to engage with different stakeholders as appropriate during the life of a grid development project.
CEP3	To ensure consultation and engagement feedback is appropriately considered in decision making.

*Proposed new environmental policy and objective of the TDPNI 2023-2032

2.4 Overview of Policy Context

The SEA Environmental Report will set out how the draft TDPNI 2023-2032 interacts with other key relevant plans and programmes and their environmental protection objectives, as required by Article 5(1) of Annex 1 of the SEA Directive, i.e., the environmental protection objectives (EPOs) within these plans / programmes that will directly influence, or be influenced by, the draft TDPNI. These EPOs shall be used to create the Strategic Environmental Objectives (SEOs) that will inform the assessment of the draft TDPNI.

Table 2.2 identifies the main significant environmental plans, programmes and legislation, adopted at International / European level, National / Regional level or Sub-Regional level, which would be expected to influence, or be influenced by, the draft TDPNI. More information on these plans and programmes, along with their potential interaction with the draft TDPNI, is given in **Appendix B** of this Scoping Report.

Table 2-2 Summary of Key Plans and Programmes Relevant to the draft TDPNI 2023-2032

Level	Plan / Programme / Policy / Legislation
International / EU Level	*Biodiversity* • UN Convention on Biological Diversity (1992) • Ramsar Convention on Wetlands of International Importance (1971 and amendments) • Bern Convention (Convention on European Wildlife and Natural Habitats) (1982) • The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) (1992) • Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals) (1983) • EU Biodiversity Strategy to 2030 • EU Birds Directive (Directive on the conservation of wild birds) [2009/147/EC] • EU Habitats Directive (Directive on the conservation of natural habitats and of wild fauna and flora) [92/43/EEC] • Convention for the Conservation of Salmon in the North Atlantic *Population / Human Health* • Seveso III Directive [2012/18/EU] *Climate Change* • Paris Agreement (UNFCCC, 2015) • UN Kyoto Protocol, The United Nations Framework Convention on Climate Change (UNFCC, 1997) • EU 20-20-20 Climate and Energy Package Agreement (2007) • The European Green Deal 2019 • Renewable Energy Directive [2009/28/EC] • EU Strategy on Adaptation to Climate Change 2013 • Forging a climate-resilient Europe – the new EU Strategy on Adaptation to Climate Change 2021[COM(2021)82] • Second European Climate Change Programme (ECCP II) 2005 • EU Green Infrastructure Strategy (COM(2013) 249 final) *Air quality* • Stockholm Convention (2004) • WHO Air Quality Guidelines – global update (2005) • The Gothenburg Protocol (1999) • Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive [2008/50/EC] & 4th Daughter Directive of the Air Quality Framework Directive [2004/107/EC] • Industrial Emissions Directive [2010/75/EU] • National Emissions reduction Commitments (NEC) Directive [2016/2284/EU] • Geneva Convention (1979) *Sustainable Development* • Seventh Environmental Action Programme to 2020 of the European Community • EUROPE 2020 A strategy for smart, sustainable and inclusive growth (COM/2010/2020) • Roadmap to a Resource Efficient Europe (COM(2011) 571) • SEA Directive [2001/42/EC] • EIA Directive [85/337/EEC] [2014/52/EU] • Energy Efficiency Directive [2012/27/EU] • EU Thematic Strategy for Soil Protection [COM/2006/231] and Report on its implementation [COM/2012/046] • Integrated Pollution Prevention Control Directive [96/61/EC], as amended by Directive 2008/1/EC • UN 2030 Agenda for Sustainable Development

Level	Plan / Programme / Policy / Legislation
	Water • Water Framework Directive [2000/60/EC] and amendments • Marine Strategy Framework Directive [2008/56/EC] • Floods Directive [2007/60/EC] • Bathing Water Directive [2006/7/EC] • Groundwater Directive [80/68/EEC] and Daughter Directive [2006/118/EC] • Drinking Water Directive [98/83/EC] • Environmental Quality Standards Directive [2008/105/EC] (also known as the Priority Substances Directive), as amended by Directive 2013/39/EU. • Environmental Liability Directive [2004/35/EC] • A Blueprint to Safeguard Europe's Water Resource (COM(2012)73) *Waste* • Waste Electrical and Electronic Equipment Directive [2002/96/EC], as recast by [201219/EU] • Waste Framework Directive [2008/98/EC] *Cultural Heritage* • Valetta Treaty (1992) • Granada Treaty (1985) • World Heritage Convention [WHC-2005/WS/02] *Landscape* • European Landscape Convention [ETS No. 176]
National / Regional Level	*Biodiversity* • Biodiversity Strategy for Northern Ireland to 2020 • UK Post-2020 Biodiversity Framework • Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) • Wildlife and Natural Environment Act (NI) 2011, amending The Wildlife (Northern Ireland) Order 1985 • The Environment (Northern Ireland) Order 2002 • DAERA Conservation Management Plans for SACs (in prep.) • UK National Ecosystem Assessment (2011) • Northern Ireland Species and Habitat Action Plans • Northern Ireland Peatland Strategy 2021-2040 • (ROI) National Biodiversity Action Plan 2017-2022 *Population / Human Health* • Control of Major Accident Hazards Regulations (Northern Ireland) 2015 *Climate Change / Air Quality* • Northern Ireland's second Climate Change Adaptation Programme (NICCAP2) 2019 – 2024 • UK Climate Change Act 2008 • Change Act 2008 (2050 Target Amendment) Order 2019 • Climate Change (Northern Ireland) Act 2022 • UK Climate Change Risk Assessment 2022 • (RoI) National Adaptation Framework 2018 • (RoI) Climate Action Plan 2019 • The National Emissions Ceiling Regulations 2018 • UK National Air Pollution Control Programme (NAPCP) 2023 • The Environment Act 2021 and The Environment (2021 Act) (Commencement and Saving Provision) Order (Northern Ireland) 2022

Level	Plan / Programme / Policy / Legislation
	• Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 (due to be amended May 2023) • Air Quality Standards Regulations (Northern Ireland) 2010 • The Pollution Prevention and Control (Industrial Emissions) (Amendment) Regulations (Northern Ireland) 2018 • Clean Air Strategy for Northern Ireland – A Public Discussion Document, 2020 *Sustainable Development* • Northern Ireland Energy Strategy – the Path to Net Zero (2021) • Energy Strategy for Northern Ireland – the Path to Net Zero Energy. Action Plan (2022) • Draft Offshore Renewable Energy Action Plan 2022 • (RoI) Offshore Renewable Energy Development Plan (OREDP) 2014, and draft OREDP II • A Green Future: Our 25 Year Plan to Improve the Environment 2018 • Draft Environment Strategy for Northern Ireland 2022 • Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004 • The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017 • Northern Ireland Executive Programme for Government 2016-2021 • Programme for Government Draft Outcomes Framework 2021 • Strategic Planning Policy Statement for Northern Ireland 2015 • Planning Policy Statements 1 – 23 • The Regional Development Strategy 2035 – Shaping Our Future • (RoI) National Planning Framework (Project Ireland 2040) • UK Sustainable Development Strategy • 10X Economy – An Economic Vision for a Decade of Innovation 2021 • Draft Green Growth Strategy for Northern Ireland – Balancing our Climate, Environment and Economy 2021 • Draft Rural Policy Framework for Northern Ireland 2021 • (ROI) Grid Implementation Plan 2017-2022 for the Electricity Transmission System in Ireland *Water* • Water Environment (Floods Directive) (Amendment) Regulations (Northern Ireland) 2018 • The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017 • Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015 • UK Marine Strategy Regulations 2010 • The Quality of Bathing Water Regulations (Northern Ireland) 2008 • Private Water Supplies Regulations (Northern Ireland) 2017 • Water Supply (Water Quality) Regulations (Northern Ireland) 2017 • Environmental Liability (Prevention and Remediation) Regulations 2009 and amendment • Groundwater Regulations (Northern Ireland) 2009 and amendments • Pollution Control and Local Government (Northern Ireland) Order 1978 • Water Abstraction and Impoundment (Licensing) Regulations (Northern Ireland) 2006 and amendment Regulations 2007 • Water (Northern Ireland) Order 1999 (including amendments up to 2004) • NI Flood Risk Management Plan, 2021-2027 • Marine Act (NI) 2013 • Marine and Coastal Access Act 2009

Level	Plan / Programme / Policy / Legislation
	• UK Marine Policy Statement 2011 • Draft Marine Plan for Northern Ireland 2018 • Integrated Coastal Zone Management Strategy for Northern Ireland 2006-2026 • Draft 3rd cycle River Basin Management Plan (RBMP) for Northern Ireland 2021-2027 *Waste* • Northern Ireland Waste Management Strategy, 2012 (new Strategy under development 2023) • Draft Waste Management Plan for Northern Ireland 2019 • Waste and Contaminated Land (Northern Ireland) Order 1997 (including updates) *Cultural Heritage* • Archaeology 2030 – A Strategic Approach for Northern Ireland • Historic Monuments and Archaeological Objects (NI) Order 1995 • Planning Act (NI) 2011 • The Regional Development Strategy 2035 – RG11 *Landscape* • Nature conservation and Amenity Lands Order (NI) 1985 • (ROI) National Landscape Strategy for Ireland 2015-2025
Sub-Regional Level	• Local Biodiversity Action Plans (LBAPs) • Local Development Plans / Draft Plan Strategies

Scoping Question:

1. Is there any information missing from the key plans and programmes listed, relevant to the draft TDPNI, that you think should be included, and why?

3 SCOPING FOR THE TRANSMISSION DEVELOPMENT PLAN FOR NORTHERN IRELAND 2023-2032

The following section outlines the proposed scope of the SEA for the draft TDPNI 2023-2032, including the geographic and temporal scope of the assessment, the likely significant impacts arising from implementation of the draft TDPNI, and what elements of the draft TDPNI will be part of the assessment.

3.1 Scope of the Plan

As part of the SEA scoping process, decisions need to be made as to what parts of the draft TDPNI 2023-2032 should be assessed, and to what level of detail. The purpose of the SEA is to provide a meaningful assessment of those parts of the programme that may lead to *significant* environmental effects. This will contribute to more transparent decision making, whilst ensuring that the objective of integrating environmental considerations into plan making is realised.

The objectives of the draft TDPNI are described in **Section 2.3** of this report. **Table 3.1** below sets out the proposed elements of the draft TDPNI and identifies those that are proposed to be assessed as part of the SEA, and why. This information is provided to generate discussion during the consultation process and is subject to change based on the comments received.

Table 3-1 Proposed elements of the draft TDPNI 2023-2032 to be assessed

	Draft TDPNI Document Section	Will this be assessed in the SEA?
1	**Introduction** Introduces statutory and legal obligations. The purpose and context of the TDPNI is outlined.	**No** – This provides background and introduction for the TDPNI.
2	**Strategy for Developing the Grid** Describes the overall strategy followed when developing the grid and the key strategic considerations when identifying reinforcements.	**No** – This is a description of the approach to grid development.
3	**General Approach to Developing the Grid** Describes SONI's approach to the network planning process and how it plans the development of the transmission network.	**No** – This is a description of the approach to planning for grid development.
4	**Implementation** Describes how the strategy for developing the grid will be implemented, based on policies and objectives derived from Section 3.	**Yes** – The policies and objectives will be assessed for compatibility with the SEOs.
5	**Investment Needs** Describes the drivers of network development and the needs of the network which result from these drivers. The needs are identified through the application of the transmission development approach outlined in Section 2.	**No** – This is a description of the drivers and subsequent needs for grid development.
6	**Planned Network Developments** Provides an overview of the development projects that are currently in progress. These are the planned NI transmission projects which solve the network needs identified in Section 3.	**Yes** – This outlines the potential upcoming transmission projects.
7	**Project Description** Provides a description of individual development projects that are currently in progress by location.	**Yes** – This describes the potential upcoming transmission projects.

8	**Summary of Strategic Environmental Assessment**	**No** – This is a summary of the SEA process and how it has influenced the TDPNI.

Early work on the draft TDPNI 2023-2032 has defined an initial list of the potential developments and projects that might be considered as part of the final TDPNI, as summarised in **Table 3.2**. A number of these potential developments and projects are proposed to be screened out of assessment in the SEA, as the works are of such a scale as not to be considered significant and / or are localised to within existing electrical transmission sites / substations, or as the proposals have gone beyond strategic planning to the detailed planning stage and so will only be considered for cumulative and in-combination impacts. The outcomes of this initial screening are also summarised in **Table 3.2**. Many of these proposals may require future environmental studies at the project level, such as Environmental Impact Assessment under the Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017.

Table 3-2 Screening of draft list of potential TDPNI 2023-2032 developments and projects

Project Name	Description	In TDPNI 2018?	Screened In / Out of Assessment
Asset Replacement projects			
Shunt Reactors	New shunt reactors at Tamnamore, Tandragee, Castlereagh and Hannahstown substations. *Estimated Completion Date: 2024*	Partially	**Out**. Very localised impacts only within existing sites.
CVT PQ	Upgrading equipment within substation. *Estimated Completion Date: 2023*	No	**Out**. Very localised impacts only within existing sites.
Larne Transformer Replacement	Replacement of transformers within existing substation. *Estimated Completion Date: 2026*	No	**Out**. Very localised impacts only within existing sites.
Limavady Transformer Replacement	Replacement of transformers within existing substation. *Estimated Completion Date: 2026*	No	**Out**. Very localised impacts only within existing sites.
Interconnector			
North-South Interconnector	New 400 kV circuit from existing Woodland 400 kV station in County Meath (RoI) to a proposed 400/275 kV station at Turleenan in County Tyrone (NI). *Estimated Completion Date: 2026*	Yes (no change in scope)	**Out**. Planning approved. Cumulative / in-combination impacts only.
Moyle 275 kV Reinforcement	2 x 275 kV cable from Ballycronan More to Ballylumford Involves laying of 2 x 275 kV circuits through road and field (crossing SNIP gas pipeline) from Ballycronanmore to Ballylumford substation. The overhead line currently connecting Ballycronanmore will be disconnected. *Estimated Completion Date: 2024*	No	**In.** Potential for impacts.
Load Related and Security of Supply			

Airport Road 110/33 Substation	New 110/33 kV substation on Sydenham Road, Belfast; upvoltaging of 33 kV line from Rosebank to 110 kV *Estimated Completion Date: 2026*	Yes (no change in scope)	**Out**. Planning approved. Cumulative / in-combination impacts only.
Armagh and Drumnakelly Reinforcement	New 110/33 kV substation at Armagh, supplied by 2 x 110 kV circuit from Tandragee *Estimated Completion Date: 2029*	Yes (as Drumnakelly and Armagh Development Plan)	**In.** Potential for impacts.
East Tyrone Reinforcement	Extension of Dungannon main and installation of 2 new 110/33 kV transformers. The substation itself will be expanded onto adjacent land. *Estimated Completion Date: 2027*	No	**In.** Potential for impacts.
Newry Reinforcement	Increase in capacity at Newry Main. This project is at an early stage and options are still to be fully developed. Likely alternatives include construction of a 2nd substation adjacent to Newry Main and uprating of the overhead lines to Tandragee; a new substation near Newtownhamilton connecting to the Louth - Tandragee 275 kV overhead double circuit; or new 33 kV (distribution) circuits transferring load from Newry to Armagh. *Estimated Completion Date: 2030*	No	**In.** Potential for impacts.
Coolkeeragh 110 kV cable uprate	Replacement of cable within substation. *Estimated Completion Date: 2026*	Yes (no change in scope)	**Out**. Very localised impacts only within existing sites.
Coolkeeragh - Limavady - Coleraine 110 kV Uprating	Uprating of all existing overhead lines between Coolkeeragh, Limavady and Coleraine *Estimated Completion Date: 2029*	No	**In.** Potential for impacts.
Drumnakelly - Tamnamore 110 kV Uprating	Undergrounding of overhead line through Killyman village and replacement with cable in road. Refurbishment of remainder of both overhead lines between Tamnamore and Drumnakelly. *Estimated Completion Date: 2029*	No	**In.** Potential for impacts.
Ballylumford - Ballyvallagh uprate	Uprating of existing overhead lines between ballylumford and Ballyvallagh. *Estimated Completion Date: 2033*	No	**In.** Potential for impacts.
Northwest Special Protection Scheme	Upgrading equipment within Coolkeeragh and Magherafelt substations. *Estimated Completion Date: 2023*	Yes (no change in scope)	**Out**. Very localised impacts only within existing sites.
Gort 2nd Transformer	Additional transformer at existing substation. *Estimated Completion Date: 2024*	No	**Out**. Very localised impacts only within existing sites.
New NW 110 kV Switching Station	New 110 kV substation south of Derry (Mobuoy area) marshalling several 110 kV	No	**In.** Potential for impacts.

	circuits together. Early-stage project with little detail as yet. *Estimated Completion Date: 2032*		
Coolkeeragh 110 kV Extension	Extension of existing 110 kV substation to the North (up to road). *Estimated Completion Date: 2029*	No	**In.** Potential for impacts.
Dual Asset Replacement / Load Related and Security of Supply Projects			
Energising Belfast	New cables and substations in city centre, commissioning of transformer 4 at Castlereagh, removal in stages of Carnmoney - Castlereagh 110 kV overhead line. *Estimated Completion Date: 2028*	No	**In.** Potential for impacts.
Eden-Carnmoney Reinforcement	Removal of overhead line in Carnmoney and Carrickfergus and replacement with new underground cable laid in roads. Refurbishment of overhead line in rural area between Carnmoney and Carrickfergus. Installation of a 2nd 110/33 kV transformer at Glengormley Main. *Estimated Completion Date: 2027*	No	**In.** Potential for impacts.
Renewable Integration Developments			
Coolkeeragh-Killymallaght-Strabane 110 kV Uprating	Uprating of all existing overhead lines between Coolkeeragh, Killymallaght, and Strabane *Estimated Completion Date: 2031*	No	**In.** Potential for impacts.
Omagh - Strabane 110 kV Uprating	Uprating of both existing overhead lines between Omagh and Strabane *Estimated Completion Date: 2029*	No	**In.** Potential for impacts.
Mid Antrim Upgrade	New 110 kV circuit from Terrygowan to Rasharkin (mostly OHL, route TBD), new substation at Terrygowan, uprate of Kells - Terrygowan 110 kV double circuit overhead line *Estimated Completion Date: 2029*	Yes (as Creagh/Kells-Rasharkin New 110 kV circuit)	**In.** Potential for impacts
Northwest 110 kV Reinforcement	New 110 kV circuit from Cam Cluster to Rasharkin. Route TBD. *Estimated Completion Date: 2030*	Yes (as part of North West of NI Reinforcement).	**In.** Potential for impacts.
Omagh - Dromore Uprating	Uprate of existing double circuit overhead line between Dromore and Omagh *Estimated Completion Date: 2023*	Yes (as Omagh - Omagh South. No change in scope)	**In.** Potential for impacts.
Mid Tyrone Upgrade	New 110 kV circuit from Dromore to Tamnamore. Mostly overhead line but anticipated to have c. 6km of cable at Eastern end. Route TBD. *Estimated Completion Date: 2030*	Yes (as part of North West of NI Reinforcement)	**In.** Potential for impacts.

North Sperrin Generation Substation	New substation in North Sperrins area (near Feeny) connecting a number of windfarms, connected to magherafelt at 110 kV (mix of cable and OHL, route TBD). Extension of Magherafelt and installation of shunt reactor and 275/110 kV transformer. *Estimated Completion Date: 2030*	No	**In.** Potential for impacts.
Renewable Generation Cluster Substations and New Connections			
Kells 110/33 kV Cluster	Establish a 110/33 kV cluster substation at existing Kells 275/110 kV substation to connect new renewable generation to the transmission system, connected to the existing Kells 110 kV station via an underground cable. *Estimated Completion Date: 2025*	Yes (no change in scope)	**Out**. Planning approved. Cumulative / in-combination impacts only.
Cam Cluster	New cluster substation between Limavady and Coleraine (near Cam quarry). *Estimated Completion Date: 2029*	No	**In.** Potential for impacts.
Fault Level Replacements			
Castlereagh 275 kV Redevelopment	Refurbishment or offline replacement of existing 275 kV substation on adjacent site *Estimated Completion Date: 2034*	No	**In.** Potential for impacts if substation replaced at new location.
Coolkeeragh 275 kV Redevelopment	Refurbishment or offline replacement of existing 275 kV substation on adjacent site. *Estimated Completion Date: 2031*	No	**In.** Potential for impacts if substation replaced at new location.
Kells 275 kV Redevelopment	Refurbishment or offline replacement of existing 275 kV substation on adjacent site. *Estimated Completion Date: 2031*	No	**In.** Potential for impacts if substation replaced at new location.
Magherafelt 275 kV Redevelopment	Refurbishment or offline replacement of existing 275 kV substation on adjacent site. *Estimated Completion Date: 2031*	No	**In.** Potential for impacts if substation replaced at new location.
Tandragee 275 kV Redevelopment	Refurbishment or offline replacement of existing 275 kV substation on adjacent site. *Estimated Completion Date: 2038*	No	**In.** Potential for impacts if substation replaced at new location.

Castlereagh 110 kV Switchgear Uprate	Upgrading equipment within substation. *Estimated Completion Date: 2028*	Yes (No change in scope)	**Out**. Very localised impacts only within existing sites.
Tandragee 110 kV Switchgear Uprate	Upgrading equipment within substation. *Estimated Completion Date: 2028*	Yes (No change in scope)	**Out**. Very localised impacts only within existing sites.

Scoping Question:

2. Do you agree with the proposed initial screening of projects and developments, as to whether they should be assessed further within the SEA and AA processes?

3.2 Geographic Scope

The draft TDPNI 2023-2032 is a national level plan for the electricity transmission system of Northern Ireland. It will also link with the transmission systems of the Republic of Ireland and Great Britain. The geographical extent of the existing SONI electricity transmission system is shown in **Figure 2.1**. The geographical scope of the SEA (i.e., the area with potential to be affected by the proposed developments outlined in the draft TDPNI) will primarily focus on grid development projects at a national to regional scale, while having careful regard to any likely significant environmental effects of a transboundary nature in the Republic of Ireland. It is unlikely that the upgrading and development of the electricity transmission system in Northern Ireland will have any significant transboundary effects upon Great Britain.

3.3 Temporal Scope

The draft TDPNI is proposed to cover the period from 2023 to 2032. Projects from the TDPNI that are likely to be progressed over the next 10 years will be detailed within the Plan. The TDPNI will be a rolling plan, and will be subject to annual updates, as per licence requirements set out by the Utility Regulator.

As set out in the SEA Environmental Report for the TDPNI 2018-2027, although not a statutory obligation, it is proposed that the SEA environmental reporting for the TDPNI will continue to have a nominal life span of five years. This SEA process represents the first full SEA review of the TDPNI. It is proposed that the process will continue whereby each annual revision of the TDPNI following the 2023-2032 Plan will be subject to an Environmental Appraisal to monitor the impacts of the TDPNI, in line with the adopted environmental monitoring from the SEA, and that every five years the relevant TDPNI will be reviewed for the purpose of undertaking a new SEA, if required. On that basis, the next TDPNI to be subject to a full SEA review, if required, will be for the period 2028-2037.

As implementation of many of the projects outlined in the TDPNI 2023-2032 will be on a supply and demand basis, there may be no specific timeframe for their development, or certainty as to whether they will be developed. It is proposed that the SEA will consider the potential for short-term (construction phase), medium-term (re-establishment and initial operational phase, considered as 0-5 years post-construction), and long-term (operational phase, 5 years post-construction onwards) impacts from implementing the proposed projects set out in the draft TDPNI 2023-2032 (including reference to secondary, cumulative, synergistic, permanent and temporary, positive and negative effects), in line with the requirements of the SEA Directive.

3.4 Scoping of Strategic Environmental Assessment Topics

In accordance with the SEA Regulations (NI), consideration has been given to the type of environmental effects, both positive and negative, that could be expected to arise from implementation of the draft TDPNI 2023-2032 through development and maintenance of the electrical transmission infrastructure. **Table 3-3** has been created to generate discussion in the scoping process and consultations. It is anticipated that this table may evolve as the TDPNI develops, and as a clearer picture of the likely construction and management practices and the receiving environment becomes fully apparent. **Table 3.4** illustrates the potential inter-relationships between SEA topics.

Table 3-3 Scoping of SEA Issues

SEA Topic	Scoped In / Out	Potential Environmental Issues
Biodiversity, Flora & Fauna	**In**	• Potential for effects on protected areas, including those of international (SACs, SPAs, Ramsar Sites), national (ASSIs, MCZs, NHAs/pNHAs, NNRs) and local (SLNCIs) importance. • Potential for effects on protected Annex I habitats or Annex II species outside of designated sites and on Northern Ireland priority habitats and species. • Potential for effects on fauna, including construction-phase disturbance or longer-term effects). • Potential for effects on habitats sensitive to construction (e.g., peatlands). • Potential for effects on water-dependent habitats and species (including effects on freshwater pearl mussel, salmonids, and other protected fish and shellfish species). • Potential for habitat loss, fragmentation or deterioration (temporary or permanent). • Potential for introduction of invasive, non-native species during construction.
Population & Human Health	**In**	• Potential for disturbance of the local population during construction (e.g., dust, noise). • Potential for disturbance of the local population during operation (e.g., noise). • Potential for health and safety impacts on the local population. • Interaction between transmission infrastructure and settlement patterns. • Potential / perception of Electromagnetic Field (EMF) risk from electricity transmission lines. • Potential for cumulative effects on local populations, including in deprived or sensitive areas. • Potential effects on air quality (reduced emissions).
Geology, Soils & Land Use	**In**	• Potential for effects on sensitive soils (e.g., peat). • Potential for effects on sensitive land uses (e.g., cultivated lands, forests). • Potential for interaction with contaminated land, mines or quarries. • Potential effects of topography to risk of construction impacts.
Water	**In**	• Potential for effects on the status of WFD surface water bodies or marine water bodies during construction (via pollution or sedimentation). • Potential for effects on the status of WFD Protected Areas, including for water-dependent habitats and species, economically significant aquatic species, drinking water, recreation and nutrient sensitive areas. • Potential for interaction with areas of flood risk (fluvial, pluvial or coastal).
Air	**In**	• Potential for localised effects of air pollutants during the construction phase (plant emissions), including in sensitive areas. • Potential for localised noise effects during construction and operation. • Potential for a reduction in emissions from power stations owing to new renewable energy connections.
Climatic Factors	**In**	• Potential for effects on climate resilience (mitigation and adaptation), including extreme weather events. • Potential for interaction with areas of climate change influenced flood risk (fluvial, pluvial or coastal). • Potential for effects on lands that are carbon sinks (e.g., peatland, forests). • Potential effects on GHG emissions owing to new renewable energy connections.
Material Assets	**In**	• Potential for effects on energy infrastructure. • Potential for effects on transport infrastructure. • Potential for effects on agricultural lands.

Cultural, Architectural & Archaeological Heritage	**In**	• Potential for effects on archaeological features or their settings. • Potential for effects on architectural features or their settings. • Potential for effects on wrecks or other marine heritage features. • Potential for the discovery of new cultural heritage features during construction.
Landscape & Visual Amenity	**In**	• Potential for effects on areas of designated landscape quality and scenic views (i.e., in Local Area Plans). • Potential for effects on the general landscape (including riverscapes, lakescapes and seascapes) and its sensitivity to development.

Scoping Questions:

3. Do you agree with the geographical and temporal scope of the assessment?
4. Do you agree with the scoping of the environmental assessment topics?
5. Have we identified the key environmental issues relevant to the draft TDPNI?

Table 3-4 Potential Inter-Relationships between SEA Topics

Environmental Topic	Air	Biodiversity, Flora & Fauna	Climatic Factors	Cultural Heritage	Geology, Soils & Land use	Landscape & Visual Amenity	Material Assets & Infrastructure	Population & Human Health	Water
Air									
Biodiversity, Flora & Fauna	Y								
Climatic Factors	Y	Y							
Cultural Heritage*	N	Y	N						
Geology, Soils & Land Use	Y	Y	Y	Y					
Landscape & Visual Amenity	Y	Y	N	Y	Y				
Material Assets & Infrastructure	Y	Y	Y	Y	Y	Y			
Population & Human Health	Y	Y	Y	Y	Y	Y	Y		
Water	N	Y	Y	Y	Y	Y	Y	Y	

Y = interrelationship anticipated N = No interrelationship anticipated

*Including Architectural and Archaeological Heritage

4 BASELINE AND ENVIRONMENTAL PROBLEMS

In line with the SEA Directive, an environmental baseline will be compiled for the SEA Environmental Report of the draft TDPNI 2023-2032. This will include: a description of the state of the environment at present; a discussion of the key problems / issues currently being faced in the area; and a description of the expected evolution of the environment should the TDPNI 2023-2032 not be implemented, i.e., in the absence of the plan.

4.1 Environmental Baseline Data

The SEA Environmental Report will contain a full description of the environmental baseline data within the study area. The key baseline information intended to be used are detailed in **Table 4.1**. It is proposed that much of the baseline information will be presented in the form of maps and tables, with supporting text in the Environmental Report which focuses on data directly relevant to the draft TDPNI.

The baseline description will focus in the first instance on Northern Ireland, however given the shared land boundary with the Republic of Ireland, there may be potential for environmental impacts on water quality, air quality, biodiversity etc. in the Republic of Ireland. As such, the baseline description will include reference, where relevant, to conditions in the Republic of Ireland.

Much of the proposed baseline information has been included within this SEA Scoping Report, with the anticipation of receiving more specific responses or recommendations from consultees at this scoping stage that can be taken into account in the SEA Environmental Report.

Table 4-1 Summary of Proposed Environmental Baseline Data and Sources

Environmental Baseline Data	Data Sources
Biodiversity, Flora & Fauna	
Location and Condition of Designated Nature Conservation Sites and Species	NIEA, DAERA, JNCC (Article 17 Reporting), National Trust, RSPB, NPWS, Local Authority data: • SACs (NI & RoI) • SPAs (NI & RoI) • Ramsar Sites (NI & RoI) • Designated Sites condition / monitoring • ASSIs • NHAs and pNHAs • SLNCIs • Nature Reserves • Marine Conservation Zones • Habitats and species sensitive to construction • Invasive non-native species EirGrid Evidence Based Environmental Studies (Habitats; Birds; Bats). Wildlife and power lines: guidelines for preventing and mitigating wildlife mortality associated with electricity distribution networks IUCN 2022[6].
Population & Human Health	

[6] https://portals.iucn.org/library/node/50657

Population Density, Perceived Health of the Population, and Potentially Sensitive Areas	NISRA data: • Census Small Areas • Settlements • Population Health and wellbeing DoH data: • Population Health and wellbeing
	NIO data: • NI Peace Lines DSD Data • Neighbourhood Renewal Areas EirGrid Evidence Based Environmental Studies (Settlement and land use; Noise)
Geology, Soils & Land Use	
Soil and Geological Features	GSNI, NIEA data: • Bedrock geology • Soil types • Active quarries and historic mines EirGrid Evidence Based Environmental Studies (Soils and Geology)
Land Use	GSNI, LPSNI, NIEA, Woodland Trust, Forest Service data: • CORINE landcover • Cultivated lands • Ancient and established woodland • Forest Service lands • Historical landuse • PPC sites • Topography (upland areas and steep slopes) EirGrid Evidence Based Environmental Studies (Settlement and land use)
Water	

Locations, Status and Risk of Water Bodies	NIEA, NI Water, WFD data:
	• Number, status and trends of WFD surface water bodies (rivers, lakes, coastal, transitional)
	• WFD Register of Protected Areas, including:
	  • Water Dependent Habitats & Species (NI & RoI)
	  • Economically Significant Aquatic Species
	  • Drinking Water Protected Areas (DWPAs)
	  • Recreation and bathing waters
	  • Nutrient Sensitive Areas
	• Number, status and trends of WFD groundwater bodies
	• Marine Strategy status and marine planning
	EirGrid Evidence Based Environmental Studies (Water Quality and Aquatic Ecology)

Flood Extents	DfI data: • Flood extents and areas of risk

Air	
Air Quality and Emissions	Local Authority, DAERA, DEFRA, APIS data: • Air Quality Management Areas • Air Quality Monitoring (National / Regional emissions) • Air pollution and sensitive habitats • Air pollution and human health
Climatic Factors	
General Climatic Summary & Climatic Change Information	Met Office regional information • Climatic information for Northern Ireland DAERA data: • Climate change projections • GHG emissions monitoring
Material Assets	
Number and Type of Infrastructure Assets	Transport NI data: • Roads Translink data: • Rail LPSNI • Airports SONI & NIE data: • Power stations and substations • Electricity transmission lines BGE / BGTL / Premier Transmission data: • Gas transmission lines CORINE landcover: • Agricultural lands
Cultural, Archaeological and Architectural Heritage	
Location and Status of Heritage Assets	DfC, HED, DAERA, UNESCO data: • Northern Ireland Historic Buildings Database • NI Sites and Monuments Records • Historic Environment Record of Northern Ireland • UNESCO World Heritage Sites • Register of Historic Parks, Gardens and Demesnes • Areas of Significant Archaeological Interest (ASAI) • Areas of Archaeological Potential • Defence Heritage Sites • Industrial Heritage • Scheduled Zones • Battle sites • Marine Historic Environment EirGrid Evidence Based Environmental Studies (Cultural Heritage)
Landscape and Visual Amenity	
Landscape Character Areas and Sensitive Landscapes	NIEA, National Trust data: • Landscape Character Areas – Sensitive landscapes

- NIEA Country Parks
- AONBs
- National Trust Lands
- Areas of High Scenic Value

EirGrid Evidence Based Environmental Studies (Landscape & Visual)

4.2 Current State of the Environment in Northern Ireland

Northern Ireland's most recent state of the environment review (2013)[7] found the situation to be variable. Air quality shows continuing improvement, while water quality has benefitted significantly from improved control of effluents, and rates of municipal waste recycling have been steadily increasing. Significant challenges remain, however, in reversing biodiversity declines and meeting EU objectives for water bodies, landscapes, habitats and heritage.

The main threats identified in the previous 2008 review, namely climate change, land use, and socio-economic growth, continue to create pressures on the environment in Northern Ireland. These key challenges are outlined below:

- Economic downturn –

The most significant change since 2008 with regards to socio-economic growth has been the economic downturn, which has had impacts on housing, development, energy and resource use and on waste production. The 2008 recession has intensified the need to stimulate growth and to use our resources, such as agricultural lands more efficiently whilst protecting and enhancing our natural environment.

- Living within our limits –

Living within our limits relates to the impact of ever-increasing populations on the environment in terms of food production, imports, energy use, and water security. There is an increasing realisation that living within our limits, both economically and environmentally, locally and globally, is now a major challenge.

- Sustainable rural land use –

It has been identified that the marine environment, from biodiversity indicators and the status of our waters are under threat. The 2013 State of the Environment report[8] notes the relationship between rural land practices and the water environment and identifies that a fully integrated approach to management of the land and water environment is needed.

- Climate change –

Climate change remains an important issue for Northern Ireland and indeed globally. However recent legislation such as the UK Climate Change Act along with renewable energy policies and increasing energy costs are likely to contribute to already positive advancements.

Following on from the key challenges identified, three key principles underpinning the way forward were also listed, and comprise the following:

- Working to achieve **resilient, diverse ecosystems** capable of providing vital services while absorbing pressures and responding to change;
- Valuing and **managing natural resources** to support economic and social prosperity; and
- Protecting the quality of life by **reducing pollution, protecting heritage** and promoting **sustainable land use**.

[7] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/corporate-report-from-evidence-to-opportunity-second-assessment-of-state-of-ni-environment-2013.pdf

[8] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/corporate-report-from-evidence-to-opportunity-second-assessment-of-state-of-ni-environment-2013.pdf

A summary of the relevant aspects of the current state of the environment in Northern Ireland, as presented in the most recent state of the environment review (2013) and updated, where possible, by taking into account the most recent Northern Ireland Environmental Statistics Report (2022)[9], has been provided in **Table 4.2**.

Table 4-2 Summary of Current State of the Environment in Northern Ireland, as presented in 'From Evidence to Opportunity: Second assessment of State of NI Environment 2013' and updated by the 'NI Environmental Statistics Report 2022'.

Theme	Key Findings
Air Quality	There are 21 air quality monitoring stations in Northern Ireland. Air quality in Northern Ireland has shown substantial improvement in recent years. The average annual mean concentration of NO_2 across Northern Ireland's urban background sites remained relatively stable between 2011 and 2016, varying between 20 and 23µg/m^3. However, since 2017 the average annual mean concentration of NO_2 has fallen below this level and was 14.4µg/m^3 across Northern Ireland's urban background sites in 2021. In 2021, there was no breach of the UK Strategy Objective or EU Limit Values of 40 µg/m^3 for the annual mean concentration of particle matter (PM_{10}). The annual mean PM_{10} concentration across Northern Ireland's urban monitoring sites reached a maximum of 22 µg/m^3 (in 2010) but has shown a gradual decline since that time. The agriculture sector accounted for the majority of ammonia emissions in Northern Ireland in 2020. Other sources include transport, commercial and domestic combustion and industrial processes. Overall, ammonia emissions have increased, by 7.7%, from 28.9kt in 2001 to 31.2kt in 2020.
Climate	Since the start of the 20th century records show that the climate in Northern Ireland is changing. In 2019, Northern Ireland's greenhouse gas emissions were estimated to be 21.4 $MtCO_2e$, a reduction of 17.9% since 1990. Agriculture (26%), transport (20%) and residential (14%) were the largest contributing sectors to greenhouse gas emissions in Northern Ireland in 2019. The UK Climate Change Act commits the UK to reducing emissions by 100% by 2050 from 1990 baseline levels. The same 100% emission reduction target is now true of Northern Ireland, due to the Climate Change Act NI, as of June 2022. In 2019, Northern Ireland's total greenhouse gas emissions accounted for 5% of the UK total, higher than its population share of 3%. For the period January to December 2021, 41.3% of the total electricity consumption in Northern Ireland was generated from renewable sources based in Northern Ireland.
Water	The overall status of water bodies in Northern Ireland has not significantly changed from that recorded in 2012, but improvements have been identified in water utility discharges and drinking water quality. In 2021, there were 1,893 water incident reports made to the NIEA of which 54% were unsubstantiated. Long-term seasonal trend analysis shows that the monthly trends in average nitrate concentrations in rivers in Northern Ireland are predominantly decreasing or stable over the 28-year period, 1992-2019, which may be attributed to the measures implemented through the Nitrates Action Programme.
Marine	The majority of Northern Ireland's 650 km of coastline is protected for its special interest, and a number of our coastal species and habitats are recognised as internationally important. Combined indicators for Soluble Reactive Phosphorus (SRP) in rivers and Winter Dissolved Inorganic Nitrogen (DIN) show little change in recent years. However, in January 2014, the Shellfish Waters Directive was subsumed into the Water Framework Directive, resulting in more stringent *E. coli*

[9] https://www.daera-ni.gov.uk/sites/default/files/publications/daera/ni-environmental-statistics-report-2022.pdf

	standards and a noticeable “drop” in the percentage of designated shellfish waters. Five out of nine designated shellfish water protected areas (SWPAs) complied with the Water Framework Directive guideline *E. Coli* standard in Shellfish Flesh in 2021, an increase from 33% compliance in 2020. Of the 25 inshore coastal waterbodies in Northern Ireland, 13 have been assessed as good or better ecological condition.
Land and Landscape	Agri-environment schemes encourage farmers and landowners to manage their land to benefit the environment. At the end of 2021, 62,000 hectares of land in Northern Ireland were under an agri-environment scheme agreement. In Northern Ireland, over 52% of forests and woodlands are state-owned or managed. The NI Environmental Statistics Report 2022, reported that in 2021/22, 422 hectares of new woodland (92 ha conifer and 330 ha broadleaf) were planted by NI Forest Service and private landowners supported by grant aid.
Biodiversity	The Northern Ireland Environmental Statistics Report 2022 reported that in 2021/22, the area of terrestrial protected sites under favourable management in Northern Ireland was recorded as 348.35km^2, which has increased since 2015/2016, when just 2.63km^2 were under favourable management. In 2021/22, 55% of features within marine and terrestrial protected sites were in Favourable condition while 36% were in Unfavourable condition. Approximately 3% were in Unfavourable-Recovering condition with less than 1% Destroyed. The wild bird population indicator using 56 bird species shows broadly similar levels in 2019 as in 1996. However, bird populations peaked in 2005 and have been in decline since, driven principally by bird species found in farmland habitats.
Built Heritage	In 2020/21, there were a total of 2,012 scheduled historic monuments protected under Article 3 of the Historic Monuments and Archaeological Objects (NI) Order 1995. Overall, there has been a 33% increase in the number of scheduled monuments since 2001/02, reflecting ongoing survey, designation and assessment. In addition, there has been a modest increase in the number of buildings listed in recent years with a total of 9,020 statutory listings in 2020/21, compared with 8,191 in 2003/04. The figures provide an indication of this aspect of the rich cultural and built heritage of Northern Ireland, an increasingly important source of “soft power” and an important contributor to the Northern Ireland economy, through attracting tourism and filming. In 2020/21, 762 historic buildings and structures were recorded on the HARNI register as ‘at risk’.
Waste and Resources	Waste is produced by households, by industrial processes, by the construction and demolition industry, through commercial activities and agricultural practices and by public services and utilities. Waste can affect the environment through its visual impact or by emissions to the air, groundwater and surface water as well as the contamination of land. The Northern Ireland Environmental Statistics Report 2022 notes that The Local Authority Municipal Waste Management Statistics show that amount of waste sent for energy recovery via incineration has grown exponentially since 2006-07, whilst the proportion of waste sent to landfill has more than halved in the same timescale. Recycling of waste is becoming much more common in Northern Ireland. The revised Northern Ireland Waste Management Strategy (Delivering Resource Efficiency, 2013) proposed to achieve a 50% recycling rate by 2020 for local authority collected municipal waste. This was achieved in both 2019/20 at 51.9% and 2020/21 at 50.9%. The recycling rate for all waste collected, both household and non-household waste, was 50.0 per cent in 2020/21.

4.3 Environmental Characteristics

This section describes the environmental baseline for Northern Ireland, of relevance to the draft TDPNI 2023-2032. The baseline has been divided by topic into the issues requiring assessment under SEA legislation. The purpose of this section is to demonstrate the level of baseline environmental information to be used when assessing the potential impacts of implementing the draft TDPNI. This baseline information forms the indicators

which the potential projects set out in the draft TDPNI will have the potential to impact upon. Future variation in these indicators owing to implementation of the draft TDPNI will be monitored as part of the TDPNI and SEA review.

4.3.1 Biodiversity, Flora & Fauna

Biodiversity is the variety of all plants and animals, and the communities that they form. The conservation of biodiversity is important in its own right. Humans are also dependent on biodiversity for the provision of ecosystem services such as clean air and water, food and shelter, as well as for the health and amenity value that the natural environment can provide.

The importance of preserving biodiversity has increasingly been recognised from an international to a local level, and Northern Ireland has legal obligations under International and EU commitments and legislation. The UN Convention on Biological Diversity (1992) is an international legally binding treaty with three main goals: conservation of biodiversity; sustainable use of biodiversity; and the fair and equitable sharing of the benefits arising from the use of genetic resources. It requires the development of national strategies for the conservation and sustainable use of biological diversity. The most recent Biodiversity Strategy for Northern Ireland, "Valuing Nature", was published by DAERA in 2015 and covered the period up to 2020. This set out how Northern Ireland planned to meet its international obligations and local targets to protect biodiversity, and to ensure that the environment can continue to support the population and economy of Northern Ireland. Its overall mission was "To make progress towards halting overall biodiversity loss, establish an ecosystem approach and help business and society in general have a greater understanding of the benefits that nature can bring to everyday life in Northern Ireland". Following the UN Biodiversity Conference in December 2022 (COP15), a Global Biodiversity Framework (GBF) was agreed that aims to see 30% of land protected globally by 2030. A new Biodiversity Strategy for Northern Ireland is currently in production, that will reflect the targets set out by the GBF.

The draft TDPNI must also have regard for the Habitats Directive and the Birds Directive, as transposed through the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995, which require that any plan or project not directly connected with or necessary to the management of a European site but likely to have a significant effect on such a site, must undergo an appropriate assessment in view of best scientific knowledge and in view of the conservation objectives of the site. The draft TDPNI falls under this remit, and an Appropriate Assessment is being undertaken in parallel to the SEA process, to assess the potential implications of the Plan for European Sites.

It is considered that the key issues associated with implementation of the draft TDPNI and Biodiversity, Flora and Fauna comprise:

- Potential for effects on protected areas, including those of international (SACs, SPAs, Ramsar Sites), National (ASSIs, MCZs, NHAs / pNHAs, NNRs) and local (SLNCI) importance.
- Potential for effects on protected Annex I habitats or Annex II species outside of designated sites and on Northern Ireland priority habitats and species.
- Potential for effects on fauna, including construction-phase disturbance or longer-term effects.
- Potential for effects on habitats sensitive to construction (e.g., peatlands).
- Potential for effects on water-dependent habitats and species (including effects on freshwater pearl mussel, salmonids, and other protected fish and shellfish species).
- Potential for habitat loss, fragmentation, or deterioration (temporary or permanent).
- Potential for introduction of invasive, non-native species during construction.

4.3.1.1 Designated Sites

4.3.1.1.1 Overview of Designated Sites

There are a wide variety of natural habitats and species within Northern Ireland. The Northern Ireland Environment Agency (NIEA) has compiled a list of those habitats and species considered to be priority, based

on their listing as a UK Priority Habitat[10] / Species[11] or importance in an all-Ireland context, and current downward trends; the most recent lists comprise 51 Northern Ireland Priority Habitats, and 594 species. Priority Habitats include coastal saltmarsh, hedgerows, lowland raised bog and rivers, while Priority Species include River and Sea Lamprey, Small and Large Heath butterflies, Shoveler and Wigeon and several Saxifrage species.

Sites have been designated to provide protection to those habitats and species considered to be of particular conservation value. These include features whose conservation is of importance at a European level, for which 58 Special Areas of Conservation (SACs), 16 Special Protection Areas (SPAs), and 20 Ramsar Sites have been designated, to date. Northern Ireland has 49 habitats listed in Annex I of the Habitats Directive, of which 13 are priority habitats at a European level, and 18 species listed in Annex II of the Directive[12].

At a national level, 394 Areas of Special Scientific Interest (ASSIs) and 50 statutory Nature Reserves have been designated to provide protection to features considered to be of national importance, while 940 sites have been designated for their importance at a more local level. These designated sites in Northern Ireland are detailed in **Table 4.3** and their locations shown in **Figure 4.1**. In addition, there are 10 sites in Northern Ireland protected as RSPB nature reserves, and 18 sites protected as Ulster Wildlife nature reserves. There is over 110km^2 of ancient woodland (land continuously wooded since at least 1600) within Northern Ireland. There are also five Marine Conservation Zones (MCZs) designated under the Marine Act (Northern Ireland) 2013 to safeguard vulnerable or unique marine species and habitats of national importance in the inshore region of Northern Ireland.

Sites have also been designated for nature conservation within the Republic of Ireland. Some sites within the Republic of Ireland extend into Northern Ireland, and others are in close proximity; there may therefore be potential for transboundary effects on these sites from implementation of the draft TDPNI. There are 30 SACs, 12 SPAs, 13 Natural Heritage Areas (NHAs) and 100 proposed Natural Heritage Areas (pNHAs) in the Republic of Ireland within 15km of the boundary with Northern Ireland, as shown in **Figure 4-1**.

[10] https://www.daera-ni.gov.uk/publications/northern-ireland-list-priority-habitats

[11] https://www.daera-ni.gov.uk/articles/northern-ireland-priority-species

[12] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/natural-information-ni-habitats-and-species-2013.pdf

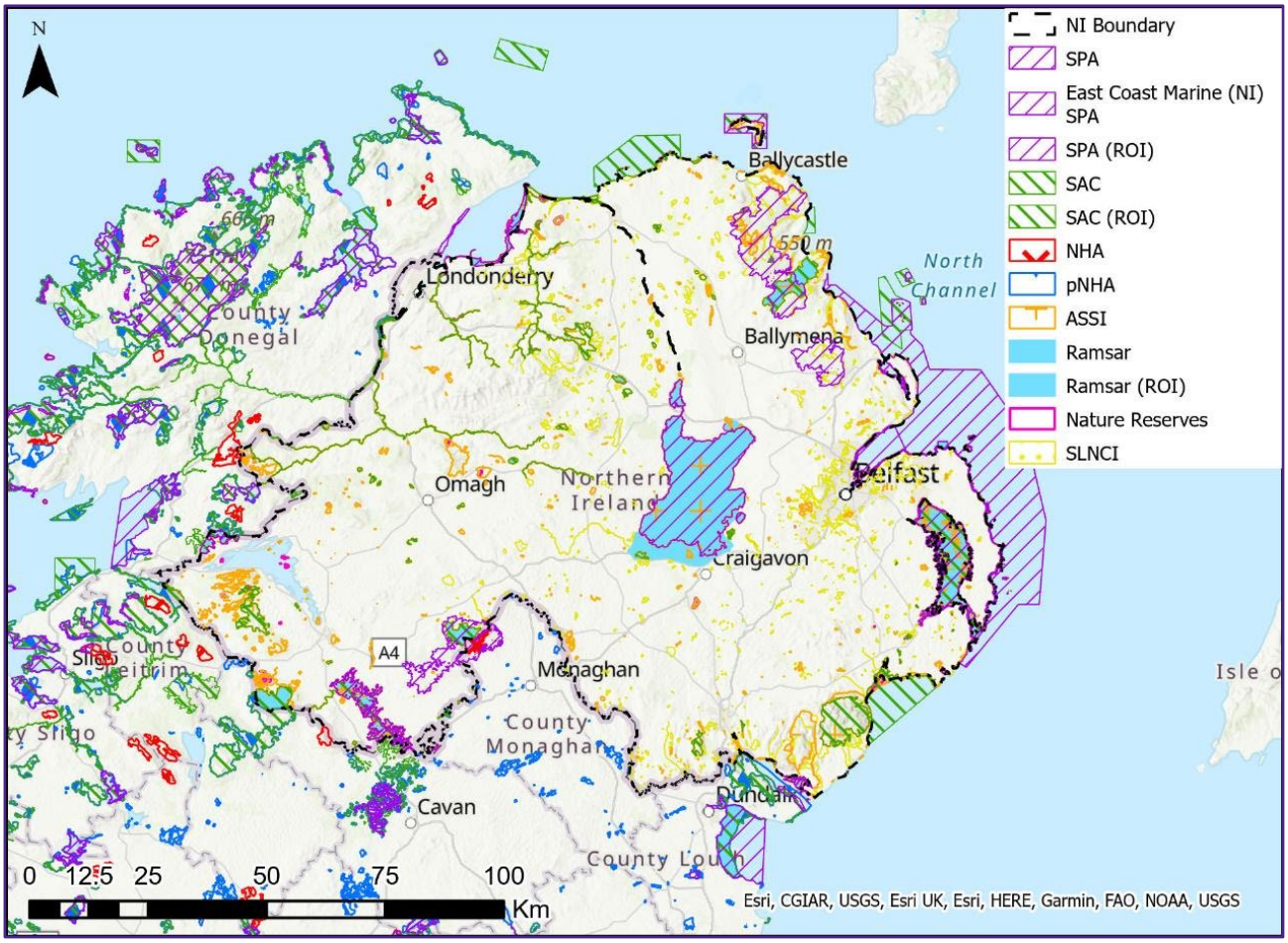


Figure 4-1 Designated sites across Northern Ireland and the border regions with the Republic of Ireland

Table 4-3 Number and type of sites designated for conservation of Biodiversity, Flora and Fauna in Northern Ireland

Site Designation	Description	Number
Special Areas of Conservation (SACs)	Existing SACs in Northern Ireland were designated in accordance with the Habitats Directive (92/43/EEC) for the conservation of certain habitats and species while SPAs were designated under the EU Directive on the Conservation of Wild Birds (EC/79/409), "The Birds Directive", as areas that are important for breeding, feeding, wintering or migration of rare and vulnerable bird species. Together these formed part of the Natura 2000 network of protected sites. Following the UK's exit from the EU, there is now a UK National Site Network of European sites, comprising existing designated sites and any further sites designated under the Habitats Regulations. SACs and SPAs in the Republic of Ireland remain part of the Natura 2000 site network.	58
Special Protection Areas (SPAs)		16
Ramsar Sites	Ramsar sites are designated under the "Ramsar Convention" (Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat, Iran 1971), an international treaty for the conservation and sustainable use of wetlands.	20

Areas of Special Scientific Interest (ASSIs)	Areas of Special Scientific Interest (ASSI) are protected under the Environment (Northern Ireland) Order 2002. This requires NIEA to designate land as an ASSI that it considers to be of special scientific interest, owing to the flora or fauna present, or the presence of geological features	394
National Nature Reserves	Statutory Nature Reserves are areas of importance for flora, fauna, geological or other special features for conservation purposes and to provide the opportunity for research. They are designated under the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985.	50
Sites of Local Nature Conservation Importance (SLNCIs)	Each council area in Northern Ireland reports on locally important sensitive or valued habitats through the production of Local Biodiversity Action Plans (LBAPs). These Plans outline the areas of importance for natural heritage reasons within the council area, guiding development policy and potential enhancement of local biodiversity. These are known as SLNCIs.	940
Marine Conservation Zones (MCZs)	Marine Conservation Zones (MCZs) protect nationally important marine species, habitats and features of geological or geomorphological interest. Priority Marine Features (PMF) is a collective term for the features considered to be of conservation importance in the Northern Ireland inshore region and form the basis of MCZ designation under the Marine Act (NI) 2013.	5

4.3.1.1.2 Status and Trends for Sites important at an International Level (SACs and SPAs)

Article 17 of the Habitats Directive requires that, every six years, all EU Member States report on the implementation of the Directive, including on the conservation status of habitats and species (informally known as the Article 17 report). The 4th UK Habitats Directive Report was submitted to the European Commission in August 2019, and included a General Implementation Report, Habitat Reports and Species Reports. These outlined any changes in designated habitats and species, for the UK as a whole, in the period 2013-2018[13]. Only six habitats were given an overall conservation status of 'Favourable', with eight habitats classified as 'Inadequate', 62 as 'Bad' and one classified as 'Unknown' conservation status. Of these, 22 habitats showed improvement in overall conservation status, 29 habitats showed no change, 22 habitats showed a decline, and 4 were uncertain in comparison with the results of the 3rd UK Habitats Directive Report. Of the designated species reported, 33 were given an overall conservation status of 'Favourable', 24 a status of 'Inadequate', 16 a status of 'Bad' and 20 a status of 'Unknown'. Of these, 9 species showed improvement in overall conservation status, 47 showed no change, 12 showed decline and 25 were uncertain in comparison with the results of the 3rd UK Habitats Directive Report.

Article 12 of the Birds Directive requires that, every six years, all EU Member States report on the implementation of the Directive. The 11th UK Report for Article 12 of the EU Birds Directive was submitted to the European Commission in October 2019. The report format includes both a General Report on the implementation of the Directive (Annex A), and a Bird Species Status and Trends Report containing individual assessments for all relevant bird species (Annex B). Of the 319 birds included in this assessment (including in some cases both breeding and wintering populations separately), 131 showed a short-term decreasing population trend, while 108 showed a long-term decreasing population trend.

Following the UK's exit from the EU, reporting to the European Commission will no longer be required, however DAERA will report periodically every 6 years following exit from the EU. The first of these reports is due in 2026.

[13] https://jncc.gov.uk/our-work/article-17-habitats-directive-report-2019-habitats/

4.3.1.1.3 Status and Trends for Sites important at a National Level (ASSIs)

Northern Ireland launched its first State of the Environment Report in 2008, containing 30 indicators that were designed to assist future comparison and measurement of the changing environment. The last full State of the Environment Report for Northern Ireland was published in 2013 and, in the interim period, the NIEA has published annually a Northern Ireland Environmental Statistics Report, providing annual reports on a range of environmental indicators. The most recent report is for 2022[14], and Section 5 provides key information regarding the current status of biodiversity indicators in Northern Ireland.

In 2022 a combined feature condition standard for all network features on land and sea in Northern Ireland was produced. This is a new metric collated for the country which helps align with UK reporting.

The 2022 report indicated that:

- 55% of all features were in a Favourable condition.
- 36% of all features were in an Unfavourable condition.
- 3% of all features were in an Unfavourable Recovering condition.
- Less than 1% of all features were destroyed.
- 6% of all features had an undetermined condition due to a lack of formal assessment.

When this is partitioned into the biological and earth science features assessed, 38% of habitats and 56% of species features were in Favourable condition, compared to 95% of earth science features in Favourable condition, reflecting the greater pressures on the natural environment.

These results remain very similar to the previous 10 years of reporting. NIEA is aiming to achieve favourable condition for a much higher proportion of the ASSI network, and there is now a focus on improving the overall condition of sites towards “favourable conservation status (FCS)” through effective land management to support recovery of the special features within the site. The Environmental Statistics Report 2022 states that, in 2021/2022, the area of terrestrial protected sites under favourable management in NI was 348.35 km^2, a significant increase since the baseline year for reporting (2015/2016) when just 2.63 km^2 of terrestrial sites were under favourable management.

The area of marine protected sites under favourable management in 2021/22 was recorded as 211.68 km^2, which has increased since the baseline year for PfG reporting (2015/16) when 83.62 km^2 of marine protected sites were under favourable management. The focus between 2018 and 2022 is on bringing the protected area network into favourable management, through identification and introduction of necessary management measures for marine protected areas.

4.3.1.2 Habitats and Species Sensitive to Construction

Certain habitats and species have a higher sensitivity to disturbance; this includes the potential for impacts from the construction, maintenance or decommissioning of transmission infrastructure. These impacts may include habitat degradation, fragmentation, or loss, disturbance or displacement, or the introduction of invasive non-native species.

4.3.1.2.1 Water-Dependent Habitats and Species

The construction, operation, maintenance and decommissioning of transmission infrastructure can impact on the aquatic environment. An evidence-based study[15] has been completed to determine the impact of transmission development on water quality and aquatic ecology, in the Republic of Ireland. This study indicated that sediment release is the most significant risk to water quality and aquatic ecology from transmission infrastructure projects. This can occur when land is being cleared for construction, through erosion and run-off. Pollutants can also come from concrete and hydrocarbons, which are used in the foundations for towers and for culverts. These pollutants can lead to an increase in the sediment load and a lowering of the pH of surface water bodies, with implications for sensitive species including freshwater pearl mussel and species of

[14] https://www.daera-ni.gov.uk/sites/default/files/publications/daera/ni-environmental-statistics-report-2022.pdf

[15] RPS Group 2016. EirGrid Evidence Based Environmental Studies Study 6: Water Quality and Aquatic Ecology. Literature and evidence based field studies on the effects of high voltage transmission lines on water quality and aquatic ecology in Ireland.

aquatic plants. Impacts particularly result from construction works near to watercourses that have limited to no buffer zones, from site clearance, from damage or alteration to riverbanks / riparian zones and from site flooding.

The Water Framework Directive (WFD) (200/60/EC), transposed in Northern Ireland through The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017, required Member States to develop a Register of Protected Areas comprising lands that have been designated as requiring special protection under specific Community legislation for protection of surface water or groundwater, or for conservation of habitats and/or species that depend upon water. These components, which had to be established for each River Basin District (RBD), are outlined in Annex IV of the WFD, and include sites that are used for water abstraction, those designated for salmonids, those designated for bathing, those designated for shellfish production, nutrient sensitive areas, and those designated "for the conservation of habitats and species directly depending on water". The Water (Amendment) (Northern Ireland) (EU Exit) Regulations 2019 ensured that the WFD (as transposed) and the various supporting pieces of water legislation continued to operate in Northern Ireland after 1 January 2021. Where a European site (SAC or SPA) lies within a water body, the WFD status objectives apply in addition to the requirement to maintain the site at favourable conservation status or restore it to that status.

Table 4.4 details the surface water-dependent European sites within the North Eastern, North Western and Neagh Bann RBDs. For the draft 3rd cycle RBMP 2021-2027[16], a total of 27 water-dependent European sites were identified for the North Western RBD. Of these, 81% are currently in unfavourable condition, and for 30% of sites this is due, at least in part, to pressures from the water environment. In the Neagh Bann RBD there were 24 water-dependent European sites; of these 75% are currently in unfavourable condition, and for 25% this relates to water pressures. A total of 25 water-dependent European sites were identified for the North Eastern RBD, of which 56% are currently in unfavourable condition, with 12% of sites due to water pressures. For Northern Ireland as a whole, 71% of water-dependent European sites are currently in unfavourable conservation condition (i.e., failing to meet their conservation objectives), with these failures relating to pressures from the water environment in 23% of sites.

Table 4-4 Surface water-dependent European Sites in unfavourable condition owing to pressures from the water environment*

	NWRBD		NBRBD		NERBD		Northern Ireland	
	No.	%	No.	%	No.	%	No.	%
Number of sites	27	100	24	100	25	100	66**	100
Number of sites in unfavourable condition	22	81	18	75	14	56	47	71
Number of sites in unfavourable condition due to pressures from the water environment	8	30	6	25	3	12	15	23

*(Reproduced from Table 29, Draft 3rd Cycle RBMP)
**Note: some protected sites straddle more than one RBD, hence the NI total does not equal the sum of the RBDs.

The freshwater pearl mussel, *Margaritifera margaritifera*, is a large bivalve mollusc that lives in the bed of rivers and streams. It is highly sensitive to changes in water quality, particularly concerning nutrient pollution and sediment loading. In Northern Ireland, the species formerly occurred widely in several catchments, with past records existing for 11 rivers from which no recent records have been obtained. Freshwater pearl mussel populations are now only found in 6 rivers in Northern Ireland (**Figure 4.2**), the Owenkillew River, Cladagh /

[16] https://www.daera-ni.gov.uk/sites/default/files/consultations/daera/Draft%203rd%20cycle%20River%20Basin%20Management%20Plan%20for%20Northern%20Ireland%202021-2027_0.PDF

Swanlibar River, upper Ballinderry River, Owenreagh River and Tempo River. The Owenkillew, Cladagh / Swanlibar and Upper Ballinderry Rivers are designated as SACs, while the Owenreagh and Tempo Rivers are designated as ASSIs. A Species Action Plan for freshwater pearl mussel in Northern Ireland was published in 2005[17], which outlined the status of populations at that time, factors contributing to loss or decline of the species, and both current and proposed actions to protect the species. This indicated that the species had undergone a large decline in absolute numbers and range but, in at least three rivers, over one million individuals remained. However, populations were characterised by an ageing cohort, with little or no recent recruitment. Article 17 reporting for the UK as a whole, in the period 2013-2018 indicates that freshwater pearl mussel is currently at 'Unfavourable-Bad' conservation status[18]. Northern Ireland's supporting documentation for the conservation status assessment of the species[19] states that the area and quality of occupied / unoccupied habitat is not sufficient to maintain the species at Favourable Conservation Status, and that the lack of juvenile recruitment and an ageing population is expected to lead to the future extinction of the species from Northern Ireland, unless a significant improvement of their habitat conditions occurs. Owing to the sensitivity of the species, pressures and threats relating to water quality are of great importance.

Shellfish water protected areas (**Figure 4-2**) are areas designated for the protection of shellfish growth and production. Good water quality within these areas is important for the production of high-quality shellfish. Both the Shellfish Directive (79/923/EEC) and Freshwater Fish Directive (78/659/EEC) were revoked in 2013 and subsumed into the WFD. Areas previously designated under these Directives are now areas designated for the protection of economically significant aquatic species under the WFD and listed on the Protected Areas register.

Within the North Eastern RBD, 662km of rivers, 5.5km^2 of canals and 2km^2 of lakes are designated for fish[20], while in the North Western RBD there are 1681km of rivers and 149km^2 of lakes designated[21] and in the Neagh Bann RBD there are 1936km of rivers, 43km of canals and 292km^2 of lakes designated[22]. In Northern Ireland as a whole, 20 lakes and 413 rivers have been designated as salmonid waters (**Figure 4-2**). In addition to designated species, fish species in general can be significantly affected by changes in water quality and sedimentation, particularly in spawning and nursery areas, as well as by changes in the hydrology of surface water bodies, including those that may affect the passage of migratory species.

[17] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/Natural-plan-species-action-freshwater-pearl-mussel.pdf

[18] https://jncc.gov.uk/our-work/article-17-habitats-directive-report-2019-habitats/

[19] https://jncc.gov.uk/jncc-assets/Art17/S1029-NI-Habitats-Directive-Art17-2019.pdf

[20] https://www.daera-ni.gov.uk/publications/north-eastern-river-basin-management-plan-2015-2021

[21] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/water-report-north-western-river-basin-plan-2015.pdf

[22] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/water-report-neagh-bann-river-basin-plan-2015.pdf

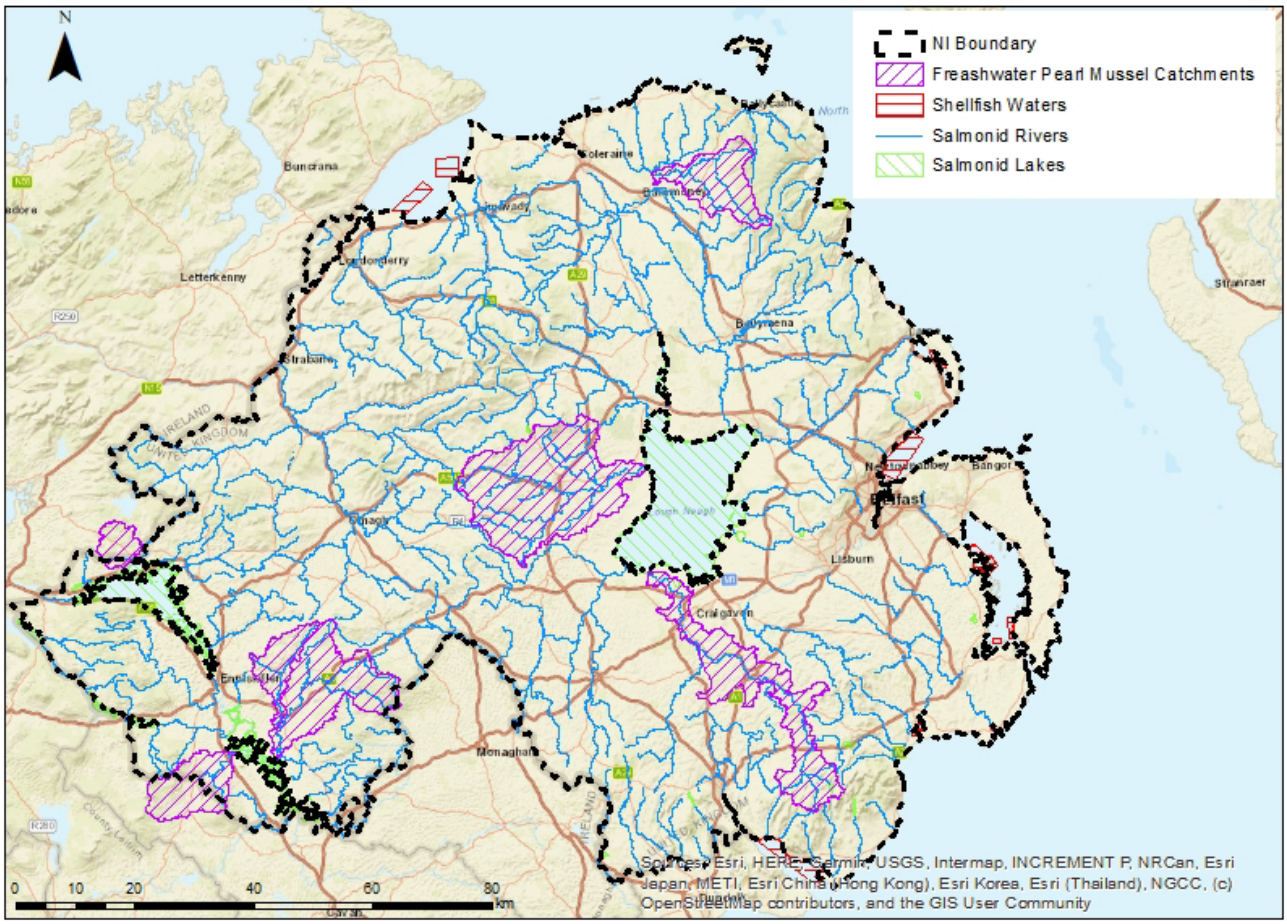


Figure 4-2 Designated Freshwater Pearl Mussel sites, Shellfish Waters and Salmonid waters across Northern Ireland

4.3.1.2.2 Terrestrial Habitats and Species

Evidence-based studies[23] have been completed to determine the impact of transmission development on natural and semi-natural habitats, and on risks to birds[24] and bats[25], in the Republic of Ireland.

The construction, maintenance and decommissioning of electricity transmission infrastructure can potentially damage habitats. Habitats of particular conservation importance include those that are protected as Annex I habitats under European law (Habitats Directive and implementing Habitats Regulations (NI)), including active peatlands and hay meadows. A comprehensive review of literature for the evidence-based study of effects of transmission development on natural and semi-natural habitats found that linear construction projects can affect habitats in several ways, including through habitat loss, habitat change, fragmentation and hydrological change. Some habitats are more sensitive to disturbance and therefore the potential impacts of the construction and maintenance of transmission infrastructure. Peatlands were found to be the most sensitive to construction work, while grassland habitats were found to recover rapidly following the completion of construction activity. Further information regarding the potential for effects on land use types sensitive to construction and operation of electricity transmission infrastructure, such as peatlands is provided in **Section 4.3.3** of this report.

[23] RPS Group 2016. EirGrid Evidence Based Environmental Studies Study 4: Habitats. Literature and evidence based field studies on the effects of high voltage transmission lines on natural and semi-natural habitats in Ireland.

[24] RPS Group 2016. EirGrid Evidence Based Environmental Studies Study 5: Birds. Literature and evidence based field studies on the effects of high voltage transmission lines on birds.

[25] RPS Group 2015. EirGrid Evidence Based Environmental Studies Study 3: Bats. Literature and evidence based field studies on the effects of high voltage transmission lines on bats in Ireland.

There are eight species of bat known to commonly occur in Northern Ireland (of the nine species found in Ireland); these are Common pipistrelle, Soprano pipistrelle, Nathusius' pipistrelle, Leisler's bat, Brown long-eared bat, Whiskered bat, Natterer's bat and Daubenton's bat. These are all strictly protected under the Habitats Regulations (NI) 1995 (as amended) and are known as European protected species. Their protection includes deliberate capture, injury killing and disturbance, as well as protection of their breeding and resting places (roosts). Habitats of importance to bats include woodlands, hedgerows, ponds, caves and stone buildings. The evidence-based study of effects of transmission development on bats included a comprehensive literature review on the potential impacts of these developments on bats, including the risk of collision and electrocution, and the risk from electromagnetic fields (EMFs), as well as a field study to determine the effects of existing infrastructure on bat activity. This found there to be little evidence of potential for direct impacts of electricity transmission infrastructure on bats, however indirect effects were found from habitat alteration to hedgerows and trees of importance for feeding and navigation (through construction phase impacts). In terms of the potential for effects on electricity transmission lines during operation, power lines were found not to have a deterrent effect on the more common resident Irish bats while in flight.

The potential for adverse effects of electricity transmission infrastructure on birds relates primarily to the potential for temporary or permanent disturbance, loss or fragmentation of habitat during the construction phase, that may affect roosting or nesting sites, or habitats used for foraging. The operation of this infrastructure can also pose a risk to birds through collision with power lines, electrocution of perching birds, and displacement or loss of habitat quality in areas used for breeding or overwintering[26]. The Wildlife (Northern Ireland) Order 1985 (as amended) is the main piece of legislation that protects all wild birds in Northern Ireland. It is illegal to intentionally or recklessly take, injure or kill any wild bird, or to take, damage or destroy an active nest or its contents. The evidence-based study of effects of transmission development on birds[25] included a comprehensive literature review. This found that large species such as swans, geese and cranes are most at risk of collision with transmission lines, and that bird species considered to be poor fliers, such as grouse, pheasants and rails are also vulnerable to collision. The main cause of bird collisions is due to the thin wire present at the top of powerlines. The associated field study of bird mortality and flight activity in relation to high voltage transmission lines at sites in Ireland found that the highest risk sites were adjacent to wetland areas, and that a lower density of birds was found within a maximum distance of 100m from powerlines.

4.3.1.3 Invasive Non-Native Species

Non-native species comprise those species that have been introduced outside of their natural range, intentionally or unintentionally. Some of these species are known as 'invasive non-native species' (INNS), as they thrive within their introduced environment, and can out-compete native species of flora and fauna. INNS can pose a significant threat to native biodiversity. Removal of habitat, such as for a road or other utility corridors, can encourage the spread of INNS through direct introduction of non-native species by the transfer of vector material present on vehicles or other equipment used in construction, or through the creation of edge effects.

The Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 makes it an offence to cause the spread of certain species of plants and animals that are on the EU List of Union Concern. The Wildlife (Northern Ireland) Order 1985 (as amended) also continues to provide regulation of other INNS. Management measures have been established for those species of plants and animals on the Species of Union Concern list that are considered to be established and widely spread within Northern Ireland. These include eight species of plants, including Giant hogweed and Himalayan balsam, and three species of animal, including New Zealand flatworm, Grey squirrel and Slider terrapin[27].

[26] file://belf-eh-fs-02/40/Section%2040/Environmental%20Information/Energy/Guidelines/EirGrid-Ecology-Guidelines-for-Electricity-Transmission-Projects.pdf

[27] https://www.daera-ni.gov.uk/articles/widely-spread-species-management-measures

4.3.1.4 Summary of Existing Pressures and Issues for Biodiversity, Flora and Fauna in Northern Ireland

Despite an increase in actions to halt biodiversity loss, many elements of biodiversity in Northern Ireland are continuing to show declines[28]. Impacts of human activities, particularly land use change associated with agriculture and development, pollution and fisheries (particularly in the marine environment), are key pressures affecting biodiversity in Northern Ireland. Invasive non-native species are also a significant threat to native biodiversity. Development such as housing and infrastructure associated with population growth has contributed to a loss of terrestrial and freshwater habitats, with over 40,000 hectares of countryside lost through urban development since the 1950s.

Priority habitats, and particularly grassland habitats, in Northern Ireland have shown an overall decline since 2000, while a significant number of priority species such as breeding waders are also showing declines[14]. The latest UK Article 17 reporting for habitats and species protected at a European level found that only 6% of habitats and 35% of species are currently in a favourable conservation condition, and that 22 habitats and 12 species showed a decline in condition since the previous reporting period. Monitoring of features within nationally protected sites has shown that just 38% of habitats and 56% of species features are in a favourable condition.

Any linear construction project, such as the construction of transmission infrastructure, has the potential for direct and indirect impacts on biodiversity, including on international, national and local designated sites, habitats or species alone, or in combination with, these existing pressures. Such impacts include habitat loss, damage or fragmentation as well as changes in hydrological conditions for wetland habitats, hazards to birds through collision and / or electrocution, and loss of species. Introduction of additional people to rural and natural areas during the construction, maintenance or decommissioning of transmission infrastructure has the potential to increase disturbance to local habitats and species, and to encourage the spread of invasive non-native species. The construction and operation of such infrastructure can increase the risk of fire within the vicinity of the transmission corridor. There is potential to avoid or minimise impacts on biodiversity, flora and fauna by following best practice measures during route planning and construction, including consideration of Eirgrid's Ecology Guidelines for Electricity Transmission Projects (2020) and the IUCN guidelines for preventing and mitigating wildlife mortality associated with electricity distribution networks (2022)[29].

4.3.1.5 SEA Monitoring Update for Biodiversity, Flora and Fauna

For the Biodiversity, Flora and Fauna topic, the monitoring proposed for the first iteration of the TDPNI is shown in **Table 4.5**.

Table 4-5 Monitoring of Biodiversity, Flora and Fauna proposed in the TDPNI 2018-2027

Objective	Sub-Objective		Indicators	Possible Data / Responsible Authority
Avoid damage to, and where possible enhance, biodiversity, flora and fauna	A	Preserve, protect, maintain and where possible enhance internationally protected species and their key habitats.	Status, condition, area and number of internationally protected species and their key habitats. SACs, SPAs, Ramsar sites	NIEA / NPWS – Conservation Action Plans NIEA / NPWS reporting on Habitats and Species – Article 17 Reports, and Birds – Article 12 Reports
	B	Preserve, protect, maintain and where possible enhance national and local nature conservation sites	Status, condition, area and number of ASSI, NHA, pNHA, SLNCI and local	NIEA / NPWS – Status of Protected Sites and Species in Northern Ireland / Ireland Reporting

[28] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/corporate-report-from-evidence-to-opportunity-second-assessment-of-state-of-ni-environment-2013.pdf

[29] https://portals.iucn.org/library/node/50657

	and protected species, or other known species of conservation concern.	conservation designations and their species.	Local Authority – Local Area Plans

A status update and description of completed projects that were part of the TDPNI 2018-2027 is shown in **Table 1-2** of this Scoping Report. This indicates that three projects included in the TDPNI 2018-2027 are now complete; the Agivey (Garvagh) Cluster project and the Castlereagh – Knock cable uprate project that were assessed within the SEA for the 2018-2027 Plan, and the Curraghmulkin (Drumquin) Cluster project that was not assessed in the SEA as planning permission had already been approved at that time. **Table 4.6** outlines these schemes and the designated sites associated with these project areas.

Table 4-6 Projects completed from the TDPNI 2018-2027 and associated designated sites

Project Name	Designated Sites
Agivey (Name subsequently changed to Garvagh) 110/33 kV Cluster	*Identified by the SEA as within the study area:* Brockaboy SLNCI Dunnavenny Bridge Bog SLNCI Glenullin Bog SLNCI *Identified by the HRA as potential downstream connectivity:* River Roe and Tributaries SAC River Faughan and Tributaries SAC Lough Foyle SPA and Ramsar Site
Castlereagh – Knock 110 kV Cables Uprate	*Identified by the SEA as within the study area:* 14 SLNCIs Existing line crosses Hillfoot Scrub SLNCI Stormont SLNCI has potential hydrological connectivity *Identified by the HRA as potential downstream connectivity:* Belfast Lough SPA and Ramsar Site Belfast Lough Open Water SPA East Coast (NI) Marine SPA Strangford Lough SAC, SPA and Ramsar Site
Curraghmulkin (Name subsequently changed to Drumquin) 110/33 kV Cluster	*Not assessed in SEA, the following sites were considered by the project EIA as potential downstream connectivity:* River Foyle and Tributaries SAC

For the Agivey (Garvagh) Cluster project, the SEA Environmental Report for the TDPNI 2018-2027 identified three local nature conservation sites (SLNCIs) within the study area that could be affected by this project. The project EIA identified that Brockaboy SLNCI is the nearest non-statutory site at >50m from the project and concluded that no direct or indirect impacts were likely as the project and associated activities were sufficiently removed from this SLNCI. At the strategic level, the HRA also identified potential hydrological connectivity of the project to three European Sites, and that potential water quality and habitat deterioration effects on these sites could not be excluded. A shadow project-level HRA concluded that the possibility of likely significant water quality and habitat deterioration effects could be discounted for all European sites.

For the Castlereagh – Knock 11 kV cable uprate project, the SEA Environmental Report for the TDPNI 2018-2027 identified 14 local nature conservation sites (SLNCIs) within the study area. In particular it identified that Hillfoot Scrub could be subject to short term, temporary, direct disturbance and indirect sedimentation impacts during the restring as the existing cable crossed this site, and that Stormont SLNCI could be subject to short term, temporary, indirect, downstream sedimentation impacts due to the existence of a potential pathway. Owing to the nature of the works there is no potential for strategic level adverse effects on these sites, and there are no reported changes to the status of these sites. The HRA for the 2018-2023 TDPNI also identified

potential hydrological connectivity of the project to several downstream European Sites, and that potential water quality and habitat deterioration effects on these sites could not be excluded. Potential connectivity to these sites is via the Connswater river water body / tributaries. As discussed in Section 4.3.4.5, which details SEA monitoring for the Water topic, monitoring data available via the NIEA Water Information Request Viewer[30] indicates that the WFD status of the Connswater river water body was poor ecological potential in both 2018 and 2021. There is no indication of any degradation in status of WFD monitored water bodies associated with this completed project that have potential connectivity to these European sites. All of the associated European sites are designated for the presence of bird species. The most recent strategic-level monitoring of the status of these sites is the 11th UK report for Article 12 of the Birds Directive, which covers the period 2013-2018. There is not currently any strategic-level monitoring available that covers the period since the 2018 (i.e., the TDPNI 2018-2027 implementation period).

The Curraghmulkin (Drumquin) Cluster project was not assessed as part of the SEA for the TDPNI 2018-2027 as planning had already been approved at that stage, however this project has subsequently been completed within the plan period. The project EIA did not identify any nationally or regionally important nature conservation sites where there was a potential pathway for effect from the project. The potential for water quality and habitat deterioration effects on River Foyle and Tributaries SAC was assessed and it was concluded that the project would not give rise to any significant effects on the features of this site. The most recent strategic-level monitoring of the status of designated features of this site (Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitricho-Batrachion* vegetation, Otter and Atlantic Salmon) is the 4th UK Habitats Directive Report, which covered the period 2013-2018. There is not currently any strategic-level monitoring available that covers the period since the 2018 (i.e., the TDPNI 2018-2027 implementation period).

Regarding the objective to 'enhance' biodiversity where possible, no known biodiversity enhancement occurred during the 2018-2027 plan cycle; resourcing will be reviewed to assess the viability to undertake biodiversity enhancement for the next plan cycle, in light of the biodiversity duty[31].

4.3.2 Population & Human Health

Population and human health considers the presence and wellbeing of people, and their activities and use of receiving environments. Population size, growth predictions and distribution within an area can indicate both the potential pressures that people may exert on resources and infrastructure, and the potential to which they may be exposed to pollution, disturbance, or other risks. Health of a population can be adversely affected through several direct and indirect pathways, including through emissions to water and air, health and safety risks, noise and other disturbance.

It is considered that the key issues associated with implementation of the draft TDPNI and Population and Human Health comprise:

- Potential for disturbance of the local population during construction (e.g., dust, noise).
- Potential for disturbance of the local population during operation (e.g., noise).
- Potential for health and safety impacts on the local population.
- Interaction between transmission infrastructure and settlement patterns.
- Potential / perception of Electromagnetic Field (EMF) risk from electricity transmission lines
- Potential for cumulative effects on local populations, including in deprived or sensitive areas.
- Potential effects on air quality (reduced emissions).

[30] https://gis.daera-ni.gov.uk/arcgis/apps/webappviewer/index.html?id=7e234827aa7a405d990359aa92c7c287

[31] The biodiversity duty is outlined in Section 1 of the Wildlife and Natural Environment (WANE) Act (NI) 2011 and states: 1 – (1) It is the duty of every public body, in exercising any functions, to further the conservation of biodiversity so far as is consistent with the proper exercise of those functions. (2) In complying with subsection (1), a public body must in particular have regard to any strategy designated under section 2 (1). (3) Conserving biodiversity includes – (a) In relation to any species of flora or fauna, restoring or enhancing a population of that species; (b) In relation to any species of habitat, restoring or enhancing the habitat.

4.3.2.1 Population Demographics for Northern Ireland

The total population of Northern Ireland in 2021 was approximately 1.903 million people[32], and is predicted to increase to approximately 1.99 million individuals by 2043[33]. Population growth has been positive for the past 25 years, and over the decade from mid-2010 to mid-2020 increased at an annual growth rate of 0.5%. The period from mid-2019 to mid-2020 showed the lowest level of population growth in over 20 years, at 0.1%, influenced by the Covid-19 pandemic and the EU Exit, and their effects on the death rate and net migration[34].

The population density of Northern Ireland in 2021 was 135 people per km^2, varying across the Local Government Districts, and with a more dispersed population in rural areas. The current population by km^2 by census small areas is shown in **Figure 4-3**. Rural populations in Northern Ireland are defined by their distance to Belfast, as the largest urban centre, as this tends to govern the type of rural land use that occurs as well as access to urban employment and to various services. The population of Northern Ireland estimated to be living in urban and rural areas in 2019 is shown in **Table 4.7**.

Table 4-7 Northern Ireland population in Urban and Rural Areas, 2019

Urban / Rural	No.	%
Urban	1,128,725	60%
Rural <= 60 mins from Belfast	432,334	23%
Rural > 60 mins from Belfast	244,687	13%
Mixed urban / rural	87,945	5%

Over two-thirds of all residents in Northern Ireland aged 16 to 64 years were economically active in the 2021 census (70.2%); these were primarily composed of full-time and part-time employees. In 2021, most district council areas in Northern Ireland saw an increase in employee jobs[35].

It is best practice in route planning to seek to avoid, whenever possible, heavily populated areas on the grounds of general amenity, to minimise the number of people affected and to reduce the potential for adverse effects of overhead line transmission development projects[36]. An evidence-based study has been completed to determine the effects of high voltage transmission development (including overhead lines, underground cables and substations) on patterns of settlement and land use in the Republic of Ireland[37]. A review of literature found that impacts on land use and settlement were rarely significant and tended to be local, i.e., within the vicinity of towers and circuits, while issues are more likely to arise owing to possible restrictions on future land uses, particularly in built-up areas. An investigation into transmission projects and levels of coexistence found there to be low levels of coexistence (coexistence of buildings along transmission infrastructure) found in rural areas, but significant coexistence found in urban and urban / rural areas in Ireland. A study of four transmission construction sites to identify any impacts of these projects on patterns of settlement and land use found that, following the announcement of the projects, there continued to be applications for planning permission within their vicinity. This indicated that other factors were of overriding importance. No evidence was found of any significant impact arising from the construction or existence of transmission infrastructure in terms of patterns

[32] https://www.nisra.gov.uk/system/files/statistics/census-2021-main-statistics-for-northern-ireland-phase-1-report.pdf

[33] https://www.nisra.gov.uk/statistics/births-deaths-and-marriages/registrar-general-annual-report

[34] https://www.nisra.gov.uk/publications/long-term-international-migration-statistics-northern-ireland-2020

[35] https://www.nisra.gov.uk/statistics/annual-employee-jobs-surveys/business-register-and-employment-survey

[36] https://www.nationalgrid.com/sites/default/files/documents/Development%20near%20overhead%20lines_0.pdf

[37] RPS Group 2016. EirGrid Evidence Based Environmental Studies Study 9: Settlement and land use. Literature review and evidence based field study on the effects of high voltage transmission development on patterns of settlement and land use.

of settlement and land use; however, it was found that transmission infrastructure could pose a local physical constraint on development. The existing electricity transmission network is shown alongside the current population densities across Northern Ireland in **Figure 4-3**.

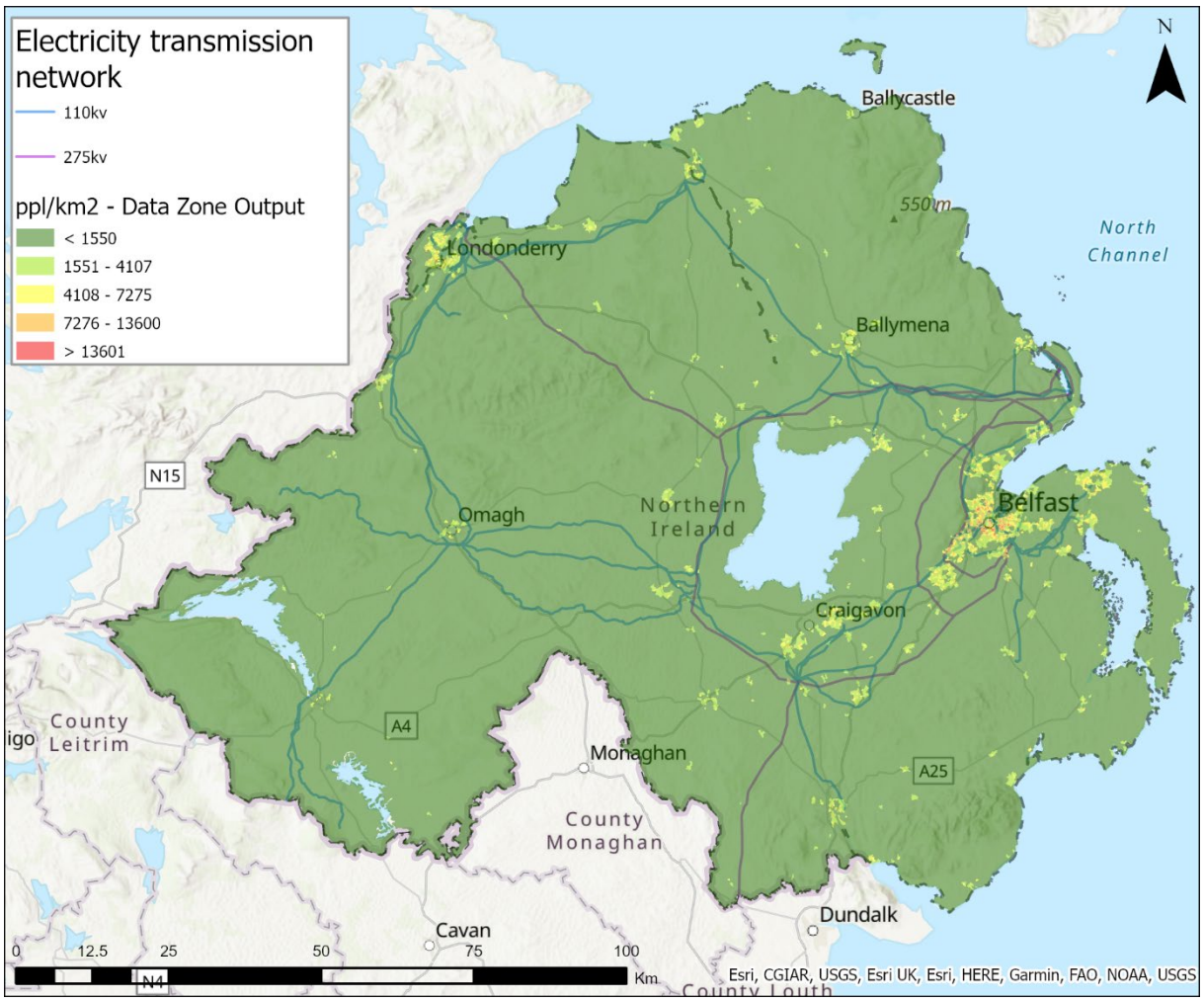


Figure 4-3 Population per km^2 by Census Small Areas and existing electricity transmission network

4.3.2.2 Population Health

In 2019-2021, life expectancy at birth was 78.4 years for men and 82.2 for women living in Northern Ireland[38], an increase from 69 and 76, respectively, since the base reporting period of 1980-1982. Northern Ireland has an ageing population, with 17.2% aged over 65 years, and it is projected that the over 65-year population will be larger than the number of children (0-15 years) from mid-2028 onwards[39]. The primary causes of death for people in Northern Ireland in 2021 were cancer (26.1%, most commonly bronchus or lung) and circulatory (21.1%), followed by Covid-19 (10.5%), respiratory (8.8%), other causes (17.5%) and Alzheimer's / dementias (10.7%)[40].

In the NI census in 2021, just under four-fifths (78.7%) of Northern Ireland residents reported themselves to be of good or very good general health. Over one in five of the resident population (24.3%) had a long-term health problem or disability, which limited their day-to-day activities. The most common long-term conditions

[38] https://www.health-ni.gov.uk/sites/default/files/publications/health/hscims-life-expectancy-ni-2019-21.pdf

[39] https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/MYE20-Bulletin.pdf

[40] https://www.nisra.gov.uk/system/files/statistics/RG%20Annual%20Report%202021.pdf

among the resident population were long-term pain or discomfort (11.6%) and a mobility or dexterity problem (10.9%)[41].

Electric and magnetic fields are produced when electric current flows; electromagnetic fields (EMFs) from electricity are in the extremely low frequency end of the electro-magnetic spectrum. As these occur wherever electricity is generated, transmitted or used, people are regularly exposed to them from sources other than electricity lines, including at home and in places of work. Although there can be concern from the public about EMF and health, extremely low frequency EMFs have been researched and monitored and the consensus from health and regulatory authorities is that they do not pose a health risk[42]. An evidence-based study[43] has been completed that measured the EMF generated by single and double circuit overhead 110 kV, 220 kV and 400 kV lines, transformer substations, and underground cables at 110 kV and 220 kV, in the Republic of Ireland. Results were compared to health protection guidelines for public exposure to EMF developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). From this study it was found that the maximum magnetic field strength, measured at all lines and substation perimeters, was well below the ICNIRP public exposure reference level, set to protect public health. Within Northern Ireland there are no transmission lines being proposed by the TDPNI above 275 kV. Therefore, there is unlikely to be any risk to public health from EMF resulting from the proposed TDPNI projects, and EMF is not considered further in the assessment of potential impacts on population and human health.

Construction activities associated with the development of the transmission infrastructure may lead to short-term disturbances to the local communities, including through noise disturbance. An evidence-based study[44] has been completed to determine the noise effects of the construction and presence of high voltage transmission infrastructure, including overhead lines and substations, in the Republic of Ireland. Noise may be generated from electricity infrastructure in several ways, which fall within four main categories:

- Audible noise, associated with “Corona Noise” from high voltage transmission lines – generally heard as crackling and hissing.
- Audible noise associated with dirty, damaged or cracked insulators.
- Audible noise associated substation equipment.
- Audible noise associated with wind blowing through electricity infrastructure (Aeolian Noise).

A review of the literature for the evidence-based study of noise effects indicated that the level of noise impact likely from electricity transmission lines increases with the increase of the voltage strength of the line, and that “Corona Noise” only becomes a significant issue for 350-500 kilovolts (kV) and above. This would suggest that significant “Corona Noise” impacts may not be likely for 110 kV and 220 kV transmission lines and that the potential for more significant impacts may only relate to 400 kV lines. This was substantiated by field surveys, which found that 110 kV and 220 kV overhead lines were not likely to result in significant noise impacts in their vicinity, but that 400 kV overhead lines do produce significant corona noise effects under certain conditions (especially at night under humid or wet conditions), with potential for noise impacts from such corona effects on properties located very close to such infrastructure in quiet rural locations. Steady state noise levels were also found in the vicinity of the boundaries of 110 kV, 220 kV and 400 kV substations.

4.3.2.3 Socially Sensitive Areas

Within Northern Ireland there are several areas that can be considered socially sensitive. There are 22 peace lines constructed as barriers separating neighbourhoods from one another, which have been built at urban interface areas in Belfast (16), Derry/Londonderry (3), Portadown (2) and Lurgan (1). There are 36 Neighbourhood Renewal Areas in Northern Ireland, which have been identified as deprived areas. Neighbourhood Renewal Partnerships have been key to creating local plans to improve everyday life for people

[41] https://www.nisra.gov.uk/system/files/statistics/census-2021-main-statistics-for-northern-ireland-phase-2-report.pdf

[42] https://www.soni.ltd.uk/media/SONI_Power_Lines_and_your_Health.pdf

[43] RPS Group 2014. EirGrid Evidence Based Environmental Studies Study 1: EMF. Literature review of electromagnetic fields (EMF) and human health, and an evidence base of EMF measurements from the Irish Transmission System.

[44] RPS Group 2016. EirGrid Evidence Based Environmental Studies Study 8: Noise. Literature review and evidence based field study on the noise effects of high voltage transmission development.

in these areas. Neighbourhood Renewal Areas are found throughout Northern Ireland, although higher densities are found in Belfast and Derry/Londonderry.

Construction of permanent structures such as transmission lines and substations could have potential to lead to cumulative negative effects on already deprived and socially sensitive areas. However, there is also potential for increased employment within these areas resulting from construction and maintenance activities, as well as indirectly through effects on the supply chain. Furthermore, the provision of electricity to meet future needs within Northern Ireland will ensure the population receive secure and reliable electricity into the future.

4.3.2.4 Summary of Existing Pressures and Issues for Population and Human Health in Northern Ireland

According to the most recent State of the Environment report (2013), air and water quality pose little overall risk to public health in Northern Ireland[45]. However, recent research has indicated that the effects of air pollution on human health are more extensive and complex than previously thought[46], and a report by Public Health England in 2014 estimated that, in 2010, 553 deaths in the over-25s in Northern Ireland were attributable to exposure to anthropogenic air pollution ($PM_{2.5}$)[47]. Risks from radioactivity exposure are also considered very low and, while the health impacts of hazardous chemicals are not fully known, recent legislation regulating chemical supply and use ensures increased safeguarding of the population from health risks. The report considers noise to be an emerging environment and health issue (according to some WHO findings, noise is the 2nd largest environmental cause of health problems, just after the impact of air pollution (particulate matter))[48], as well as the effects of climate change, depletion of stratospheric ozone, biodiversity loss and land degradation.

Implementation of the draft TDPNI, and the construction and operation of electricity transmission projects therein, has the potential to lead to positive or negative effects on population health and settlement. Potential negative effects include localised construction-phase disturbance from noise, dust, etc., noise disturbance during operation of transmission infrastructure, or through posing a local physical constraint on development. Potential positive effects comprise a secure and reliable ability to provide electricity to meet the future needs of the Northern Ireland population.

4.3.2.5 SEA Monitoring Update for Population and Human Health

For the Population and Human Health topic, the monitoring proposed for the first iteration of the TDPNI is shown in **Table 4.8**.

Table 4-8 Monitoring of Population and Human Health proposed in the TDPNI 2018-2027

Objective	Sub-Objective		Indicators	Possible Data / Responsible Authority
Minimise the risk to, and provide benefit for, the community and human health.	A	Minimise disruption and displacement to the local population, while providing robust transmission infrastructure.	Population density within proximity to potential transmission system developments.	NISRA – Census data.
	B	Minimise risks to human health and	Perceived health of the local population within proximity to	NISRA – Census data

[45] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/corporate-report-from-evidence-to-opportunity-second-assessment-of-state-of-ni-environment-2013.pdf

[46] https://www.daera-ni.gov.uk/clean_air_strategy_discussion_document

[47] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/332854/PHE_CRCE_010.pdf

[48] https://ec.europa.eu/environment/noise/health_effects_en.htm

	social deprivation, while providing robust transmission infrastructure.	potential transmission system developments. Socially sensitive areas within proximity to potential transmission system developments.	NIO data on NI Peace Lines DSD data on Neighbourhood Renewal Areas

A status update and description of projects that were assessed as part of the SEA for the TDPNI 2018-2027 is shown in **Table 1-2** of this Scoping Report. This indicates that three projects included in the TDPNI 2018-2027 are now complete; the Agivey (Garvagh) Cluster project and the Castlereagh – Knock cable uprate project that were assessed within the SEA for the 2018-2027 Plan, and the Curraghmulkin (Drumquin) Cluster project that was not assessed in the SEA as planning permission had already been approved at that time. **Table 4.9** outlines these schemes and the population and human health indicators associated with these project areas.

Table 4-9 Projects completed from the TDPNI 2018 and associated population and health data

Project Name	Population density	Perceived health	Sensitive areas
Agivey (Name subsequently changed to Garvagh) 110/33 kV Cluster	No main settlements within the study area. Maximum population density of the study area relatively low at 36 people/km^2.	No areas of lower perceived health within the study area.	No peace lines No Neighbourhood Renewal Areas
Castlereagh – Knock 110 kV Cables Uprate	Two main settlements within the study area (Castlereagh Urban Area and Belfast Urban Area). Mean population density of the study area relatively high at 5,399 people/km^2.	Several areas of lower perceived health within the study area, with clustering of poor perceived health in the Castlereagh Urban and Belfast Urban areas.	No peace lines Two Neighbourhood Renewal Areas, namely Tullycarnet and Inner East Belfast
Curraghmulkin (Name subsequently changed to Drumquin) 110/33 kV Cluster	*From project EIA:* The project study area is in a rural environment; the villages of Drumquin and Dromore and the hamlet of Dooish are the only settlements within the immediate locale of the proposed development. The project connects one substation located 4.5km south of the village of Drumquin to a second substation located approximately 4.5km north-east of the village of Dromore.	No areas of lower perceived health identified within the study area.	No peace lines or Neighbourhood Renewal Areas identified within the study area.

For the Agivey (Garvagh) Cluster project, the SEA Environmental Report for the TDPNI 2018-2027 identified a relatively low population density of 36 people/km^2 within the study area and no main settlements. As the project progressed within this defined area, sub-objective A of minimising disruption and displacement while providing robust transmission infrastructure is expected to have been met. Furthermore, as there were no areas of lower perceived health, or sensitive areas such as peace lines or Neighbourhood Renewal Areas within the study area for this project, sub-objective B of minimising risks to human health and social deprivation while providing robust transmission infrastructure is also expected to have been met. The associated project-level EIA concluded that there would be no significant impact on the surrounding highway network from construction-related traffic. The short-term and temporary nature of the works involved in this project would only result in minor disruption to the local population and would not lead to any strategic-level effects.

For the Castlereagh – Knock 110 kV Cables Uprate, the SEA Environmental Report for the TDPNI 2018-2027 identified a relatively high population density of 5,399 people/km^2 within the study area and two main settlements, Castlereagh Urban Area and Belfast Urban Area. The SEA also identified several areas of lower perceived health within the study area, and two Neighbourhood Renewal Areas, Tullycarnet and Inner East Belfast. However, the short-term and temporary nature of the works involved in this project would only result in minor disruption to the local population and would not lead to any strategic-level effects. There are no reported adverse effects on population health or sensitive areas within the area.

The Curraghmulkin (Drumquin) Cluster project was not assessed as part of the SEA for the TDPNI 2018-2027 as planning had already been approved at that stage, however this project has subsequently been completed within the plan period. The project was situated within a rural area of relatively low population density, with no identified areas of lower perceived health or sensitive areas. The associated project-level EIA concluded that there would be no significant impact on the surrounding highway network from construction-related traffic. The short-term and temporary nature of the works involved in this project would only result in minor disruption to the local population and would not lead to any strategic-level effects.

4.3.3 Geology, Soils & Land Use

Soils are a non-renewable resource, which provide vital ecosystem services such as: filtration and transformation of nutrients; storage of carbon; regulating flows and storing surface water; providing habitats; and supporting biodiversity and food production. Depending on their condition and land use, soils may be degraded, disturbed or lost through activities that result in compaction, poaching, erosion, sediment loss or changes in fertility. The building of any infrastructure, including electricity transmission infrastructure, can impact on the local soils and geology. Transmission development projects can have effects due to the variety of ground conditions that may be crossed, and the excavations involved.

It is considered that the key issues associated with implementation of the draft TDPNI and Geology, Soils and Land use comprise:

- Potential for effects on sensitive soils (e.g., peat).
- Potential for effects on sensitive land uses (e.g., cultivated lands, forests).
- Potential for interaction with contaminated land, mines or quarries.
- Potential effects of topography to risk of construction impacts.

4.3.3.1 Geology of Northern Ireland

4.3.3.1.1 Bedrock Geology

The geological landscape of Northern Ireland is remarkably varied considering its relatively small area of about 14,000km^2, and reflects the diverse geology on which it has been shaped. Northern Ireland has widespread geological deposits of relatively recent origin, known as superficial deposits, which formed during the last 2-3 million years of the Earths' history, spanning the Ice Ages and Interglacial periods. By far the most abundant of these are glacial sediments, made of mixtures of clay, silt, sand and gravel that were laid down by the

repeated growth and decay of former ice sheets. Other sediments continue to form in lakes, rivers, estuaries and coastlines, whilst on high ground raised bogs of peat have steadily accumulated[49].

Below the superficial deposits, or with just a cover of soil where such deposits are absent, are older rocks which geologists broadly split into two distinct types: sedimentary bedrock and basement bedrock. Sedimentary bedrock geology consists of younger sequences, including limestones, sandstones and clays and older sequences, including sandstones, siltstones and mudstones. Basement geology (which underlies the sediment geology) consists of rocks that formed from the solidification of molten rock below volcanoes (igneous rocks) and sediments or intrusions that have changed as a result of high temperatures and pressures (metamorphic rocks).

At a high level, the bedrock geology of Northern Ireland (**Figure 4.4**) can be separated into four contrasting areas from oldest to youngest:

- The Sperrin Mountains in Derry/Londonderry and Tyrone contain the oldest basement rocks (Neoproterozoic);
- The Down-Longford area to the south-east is composed of basement rocks (Rhuddanian);
- The Lakelands in the south-west are predominantly a combination of various Palaeozoic sedimentary bedrock; and
- The Antrim Hills in the north-east contain the youngest sedimentary bedrock (Paleocene).

There are 148 ASSIs in Northern Ireland that are designated for, or partially for, their Earth Science interest, and may be considered as geological heritage. The one UNESCO world heritage site in Northern Ireland, the Giant's Causeway, is also designated for its unique geological heritage.

4.3.3.2 Soil Types in Northern Ireland

Throughout Northern Ireland, superficial deposits are made up largely of peat, alluvium (clay, silt and sandstone) and till. A General Soil Map of Northern Ireland has been produced by the Agri-food and Biosciences Institute (AFBI)[50]. This map identifies 9 main soil types across Northern Ireland, as recognised by The World Reference Base map. These soils and their general occurrence are identified in **Table 4.10**.

Contaminants generally pass through high permeability, well-drained soils, such as Leptosols, Cambisols, Fluvisols etc., and can reach groundwater through locally and regionally important aquifers where they can be transported long distances. On the other hand, poorly draining and waterlogged soils, such as organic soils (peats), Stagnosols or Gleysols, cause increased surface run-off and siltation issues which can impact on downstream surface waterbodies. Stagnosols are the most abundant soil type across Northern Ireland in areas of lower elevation.

An evidence-based study was undertaken on the effects of high voltage transmission development on soils and geology[51]. As part of this study, a review of the literature regarding common impacts from linear developments such as pipelines, roads and overhead lines found that impacts on soils and geology are most likely to occur during the construction phase. The main negative impact from construction on soils and geology is soil movement due to shear failure, erosion, or wash-out of fine materials. This can result in sedimentation and siltation and often ends up in watercourses. Other impacts include contamination of soils or geological features by cement or fuel / oil spills during construction, while soil compaction and ground disruption are additional temporary impacts. Field surveys, undertaken as part of the evidence-based study, found no significant impacts on soils or geology from transmission projects during site visits; however, determined that this was influenced by the careful planning of these line routes to avoid sensitive areas. This survey included a range of soil types, with the expected worst-case site in an upland peat area with steep slopes (peat is naturally much weaker than mineral soils, owing to its low shear strength). Minor, localised impacts were found during construction on some of the sites studied, particularly associated with bad weather events that can increase the amount of soil released; however, in no case was there evidence of soil release post-construction.

[49] https://www.bgs.ac.uk/download/regional-geological-summaries-northern-ireland/

[50] http://www.ukso.org/static-maps/soils-of-northern-ireland.html

[51] RPS Group 2014. EirGrid Evidence Based Environmental Studies Study 7: Soils and Geology. Literature review and evidence based field study on the effects of high voltage transmission development on soils and geology.

This study recommended that route planning avoids areas with soft / fine soils, as these are weaker and harder to construct on, and tend to have a higher risk of soil release.

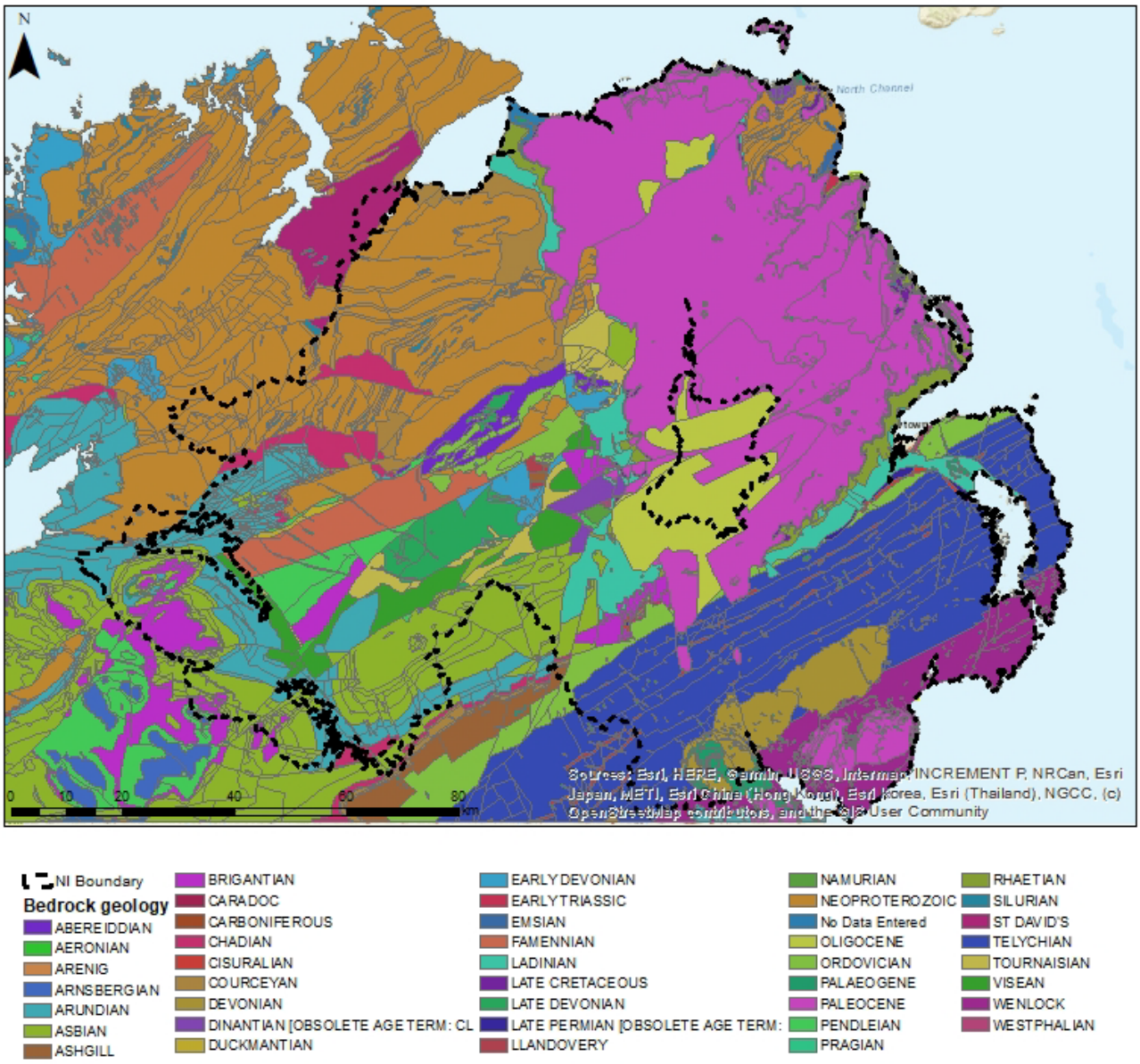


Figure 4-4 Bedrock geology mapping across Northern Ireland by age

Table 4-10 AFBI World Reference Base soil types across Northern Ireland

AFBI World Reference Base	General occurrence across Northern Ireland
Arenosols (sandy-textured soils that lack any significant soil profile development).	Located in coastal areas such as Murlough in County Down and Portrush in County Antrim.
Cambisols (soil in the beginning of soil formation)	Most prevalent in the south-east, around County Down.
Fluvisols (genetically young soil in alluvial deposits).	Generally widely dispersed across Northern Ireland in small pockets.
Gleysols (wetland soils, which in the natural state are continuously water-saturated within 50 cm of the surface, for long periods of time).	Generally occur in small, isolated pockets across Northern Ireland.

Histosols (soil consisting primarily of organic materials).	Generally present in the north-west, around the Sperrin Mountains and in the Antrim Hills.
Leptosols (shallow soils with minimal development, formed typically on hard rock or highly calcareous materials).	Generally most prevalent in the south-east, around the Mourne Mountains and surrounding Strangford Lough.
Podzols (soils with an ash-grey subsurface horizon, bleached by organic acids, on top of a dark accumulation horizon with brown or black illuviated humus and/or reddish iron compounds).	Most prevalent in the south-east and west.
Stagnosols (soil with strong mottling of the soil profile due to redox processes caused by stagnating surface water).	Most abundant soil type, which is present across Northern Ireland but most dominant in the south and south-west.
Urban (soil material having a non-agricultural, man-made surface layer more than 50 cm thick).	Mostly present around the Greater Belfast, Bangor and Lisburn urban areas.

4.3.3.3 Topography and Land Use in Northern Ireland

The topography of Northern Ireland is such that areas of lower elevation are predominantly located within the centre, where the largest lake in the British Isles, Lough Neagh, is situated. In all directions from this point, the land generally becomes steeper, culminating in highland regions on all sides. The Antrim Hills, which reach a height of over 550m at Trostan, are to the north and east. In the south-east, the rounded landscape of drumlin hills is punctuated by Slieve Croob in County Down and culminates in the Mourne Mountain range which rises to its highest point at Slieve Donard at over 850m in elevation.

Land use in Northern Ireland, as identified within the Corine Dataset, is shown in **Figure 4-5** and summarised in **Table 4.11**. The predominant land use is 'Pastures' (8,889 km^2), followed by 'Natural grassland' (1024 km^2), 'Moors and heathland' (640 km^2) and 'Peat bogs' (550 km^2). Pastures, which comprise approximately 63% of land cover across Northern Ireland, are located across the country, with the exception of upland areas such as the Mourne Mountains in the south-east, the Antrim Hills in the north-east, the Sperrins in the west and raised bog peatland areas in mid-Ulster.

Areas of sensitive land use and soils for transmission infrastructure development in Northern Ireland have been identified as cultivated lands, peatlands, ancient woodland and commercial forestry. Land use across Northern Ireland is dominated by agricultural use, and most transmission infrastructure is routed across / located within agricultural lands. There is approximately 10,000 km^2 of agricultural land in Northern Ireland; comprised of pastures, complex cultivation patterns, land principally occupied by agriculture, non-irrigated arable land and annual crops associated with permanent crops. There is over 1,300 km^2 of peatland in Northern Ireland, most of which is in the western and northern areas of the country. There is over 750 km^2 of forestry lands and over 110 km^2 of ancient woodland within Northern Ireland.

Additional land types and land uses that may be constraints to transmission development include quarries, mines, landslide areas, unstable grounds, and potentially contaminated sites. There are over 237 active quarries within Northern Ireland, the majority of which extract sand and gravel, along with mines which extract limestone, basalt and igneous rock, and clay and shale. There are also 660 known historic mines within Northern Ireland. Landslides and unstable ground materials are present throughout the country and may provide unsuitable areas for stable foundations of infrastructure. Potentially contaminated sites include those from historic industrial operations and existing Pollution Prevention and Control (PPC) sites. There are over 14,500 potentially contaminated sites from historic operations and over 483 PPC sites within Northern Ireland. Development of infrastructure through or on these sites has the potential for mobilising contaminants to other areas, including into water bodies.

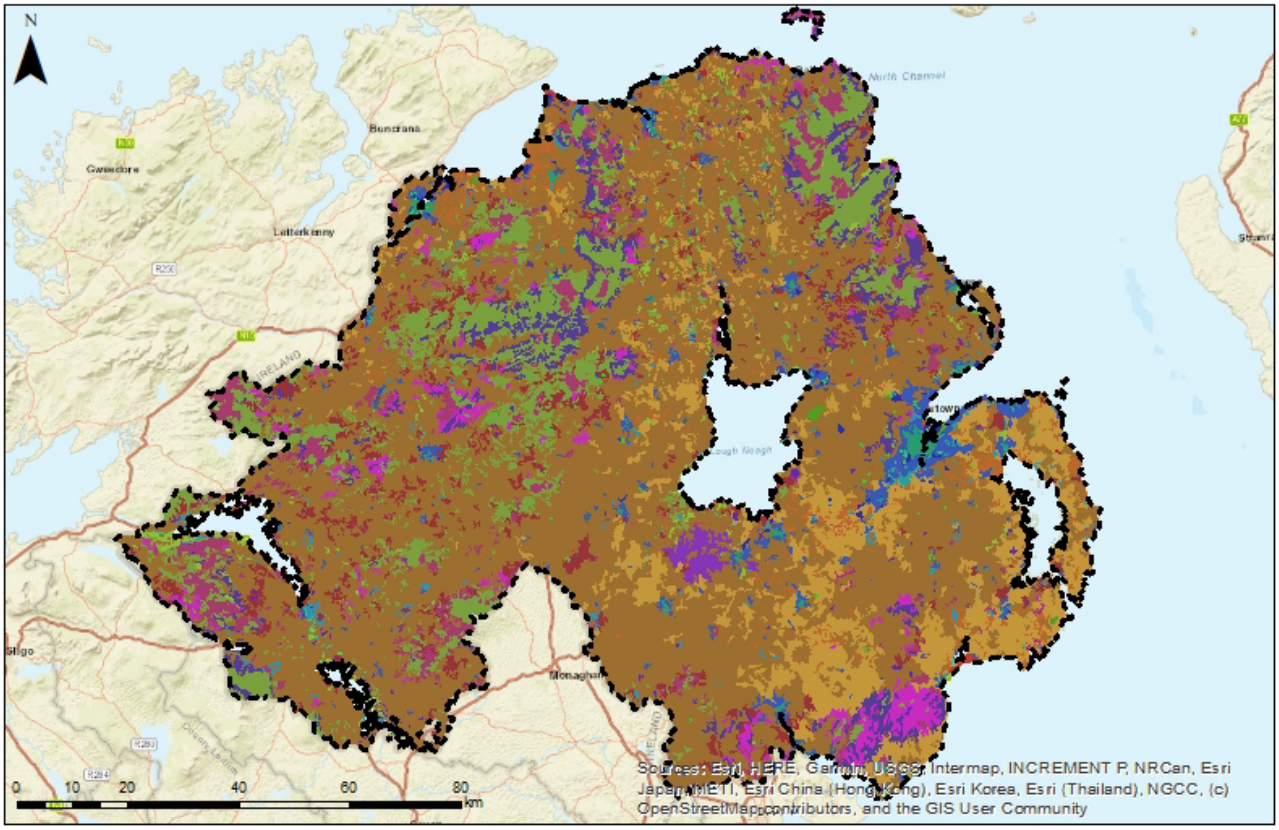


Figure 4-5 Corine land use mapping across Northern Ireland

Table 4-11 Dominant Land Cover Types within Northern Ireland

Land Cover Class	Total Land Cover (km^2)	% of Total
Pastures	8,889	63
Complex Cultivation Patterns	227	2
Peat Bogs	550	4
Land Principally Occupied by Agriculture	243	2
Natural Grassland	1024	7
Coniferous Forest	463	3
Moors and Heathland	640	5
Non-Irrigated Arable Land	405	3

Urban (Continuous urban fabric)	30	0
Sub-urban (Discontinuous urban fabric)	249	2

4.3.3.4 Summary of Existing Pressures and Issues for Geology, Soils and Land Use in Northern Ireland

Existing pressures and issues for geology across Northern Ireland relate to the presence of permeable sedimentary bedrock or where the occurrence of fracture flows results in highly productive aquifers, such as those in the north-east Antrim Hills and south-west Fermanagh Lakelands. Where these areas are overlain by freely draining soils, contaminants may be leached into groundwater or into nearby water bodies and therefore may be transported considerable distances from their source. In general, the areas of highest groundwater vulnerability are those with bedrock outcrops present, or where glacial sand and gravels are present, particularly in areas of higher elevation such as the Antrim Hills, Mourne Mountains and Sperrin Mountains. In poorly draining or waterlogged soils, contaminants can be mobilised during runoff and erosion and, as such, streams, lakes and other water bodies in the vicinity of the source are at highest risk. This is particularly important, given that Stagnosols (which are given their name due to stagnating surface water) are the most abundant soil type across Northern Ireland, particularly in areas of lower elevation.

Electricity transmission developments, undertaken through implementation of the draft TDPNI, have the potential for impacts on soils and geology alone, or in combination with existing pressures, associated with construction phase impacts on soil movement, or contamination. The development of transmission infrastructure is all within shallow workings and is unlikely to have any impacts on geology or geological heritage within Northern Ireland; however, it is still best if the more sensitive areas can be avoided. Some soils and land use types are particularly susceptible to development, including peatlands and soft / fine soils, while steep slopes increase the risk of soil movement and loss, which may result in sedimentation and siltation to nearby watercourses, impacting on water quality. This can have medium to long term impacts in some cases, dependent upon the soil and geology of the area, as erosion can continue after construction has been completed. Unstable lands and previous landslide areas should be avoided, where possible, to prevent the construction of infrastructure on unsound material. Similarly, the development of infrastructure at higher elevations and on steep slopes can provide significant technical issues. Transmission infrastructure development may also lead to the contamination of soils or geological features by cement or fuel spills during the construction phase, or the accidental transfer of materials along a construction corridor from contaminated sites.

4.3.3.5 SEA Monitoring Update for Geology, Soils and Land Use

For the Geology, Soils and Land use topic, the monitoring proposed for the first iteration of the TDPNI is shown in **Table 4.12**.

Table 4-12 Monitoring of Geology, Soils and Land use proposed in the TDPNI 2018-2027

Objective	Sub-Objective	Indicators	Possible Data / Responsible Authority
Minimise damage to the function and quality of the soil resource in the study area in construction and operation of transmission infrastructure.	Minimise damage to the function and quality of the soil resource in the study area in construction and operation of transmission infrastructure.	Loss or damage to sensitive soils and land uses, e.g., peatlands, ancient woodland, commercial forestry, cultivated lands. Interactions with potentially hazardous soils and activities, e.g., PPC sites, mines, quarries, historically contaminated sites. Interactions with topographically difficult sites, e.g., steep slopes and uplands.	GSNI / NIEA data Woodland Trust, LPSNI, NIEA, GSNI, and Forest Service data Local Area Plans

A status update and description of projects that were assessed as part of the SEA for the TDPNI 2018-2027 is shown in **Table 1-2** of this Scoping Report. This indicates that three projects included in the TDPNI 2018-2027 are now complete; the Agivey (Garvagh) Cluster project and the Castlereagh – Knock cable uprate project that were assessed within the SEA for the 2018-2027 Plan, and the Curraghmulkin (Drumquin) Cluster project that was not assessed in the SEA as planning permission had already been approved at that time. **Table 4.13** outlines these schemes and the Geology, Soils and Land use indicators associated with these project areas.

Table 4-13 Projects completed from the TDPNI 2018 and associated Geology, Soils and Land use data

Project Name	Sensitive soils / Land uses	Potential hazards	Topographical sensitivities
Agivey (Name subsequently changed to Garvagh) 110/33 kV Cluster	Potential for permanent, direct loss of agricultural land, and moors and heathland from the new substation / temporary soil compaction and loss of crops from the new transmission line.	Two potentially historically contaminated sites (waste treatment sites) within the vicinity of Cuilbane.	Potential for difficulties during construction and maintenance works in the upland and steep slope areas in the south and east, along with unstable ground areas in the north-west of the lower sensitivity area of the study area, therefore these areas should be avoided if possible.
Castlereagh – Knock 110 kV Cables Uprate	Potential for short term impacts to discontinuous urban fabric, urban green space and pastures during the restring.	Four potentially hazardous soils and activities in close proximity to the existing line: one mineral work, one road depot, one railway land and one road vehicle refuelling site.	Unlikely to be any interactions with topographically unsuitable areas as the existing line does not cross, and is not in close proximity to, any of the unstable ground or upland and steep slope areas identified within the study site.
Curraghmulkin (Drumquin) 110/33 kV Cluster	*From project EIA:* Potential for a permanent loss of a relatively small area of agricultural land.	*From project EIA:* A number of past industrial activities within the vicinity of the proposed route	None identified.

For the Agivey (Garvagh) Cluster project, the SEA Environmental Report for the TDPNI 2018-2027 identified the potential for a permanent loss of agricultural land, moors and heathland in the footprint of the new substation and temporary soil compaction and/or loss of crops from construction associated with the new transmission line. The associated project-level EIA identified that agricultural land was the only land type to be affected, and only a small area of moderate quality agricultural land would be lost, considered to be insignificant at a strategic level. The SEA also identified two potentially historically contaminated sites within the vicinity of Cuilbane that should be avoided, upland and steep sloping areas in the south and east, and unstable ground areas in the north-west that should be avoided by the project. The project EIA considered that the project was situated at a sufficient distance from potential sources of contamination in respect of historic land uses to result in any impact during the construction and operational phases.

For the Castlereagh – Knock 110 kV Cables Uprate project, the SEA Environmental Report for the TDPNI 2018-2027 identified the potential for short term impacts to discontinuous urban fabric, urban green space and pastures during the restring. Owing to the nature of the project, there is no potential for permanent loss of existing land uses; any temporary disturbance would not lead to strategic-level effects. The SEA also identified four areas of potentially hazardous soils and activities in proximity to the existing line. There are no reported adverse effects from interaction with potentially hazardous sites.

The Curraghmulkin (Drumquin) Cluster project was not assessed as part of the SEA for the TDPNI 2018-2027 as planning had already been approved at that stage, however this project has subsequently been completed

within the plan period. The associated project-level EIA identified that agricultural land was the only land type to be affected, and only a small area would be lost, considered to be insignificant at a strategic level. The project EIA considered that a number of past industrial activities were within the vicinity of the proposed route, however minimal amounts of contamination would currently be present in association with these past uses.

4.3.4 Water

Water is essential for the maintenance of biodiversity, supports the population through the provision of drinking water and supports many of our core activities[52]. Although there have been improvements in drinking water quality and water utility discharge quality, and a decrease in incidents of water pollution, the most recent status of WFD surface water bodies in Northern Ireland (2021) highlights that none have achieved a good or high overall status[53]. While the overall failure for any water bodies to achieve a good or high status relates to an update in the monitoring of persistent chemicals, as discussed below, pressure assessments have identified that two significant pressure sources related to nutrients are continuing to prevent the achievement of good status for water bodies: agricultural activities and sewage-related problems[54].

It is considered that the key issues associated with implementation of the draft TDPNI and Water comprise:

- Potential for effects on the status of WFD surface water bodies or marine water bodies during construction (via pollution or sedimentation).
- Potential for effects on the status of WFD Protected Areas, including for water-dependent habitats and species, economically significant aquatic species, drinking water, recreation, and nutrient sensitive areas.
- Potential for interaction with areas of flood risk (fluvial, pluvial or coastal).

4.3.4.1 WFD Surface Water Bodies and Protected Areas in Northern Ireland

The EU Water Framework Directive (WFD) (2000/60/EC), transposed in Northern Ireland through 'The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017' the "WFD Regulations", established a new legal framework for the protection, improvement and sustainable use of rivers, lakes, transitional waters, coastal waters and groundwater across Europe. This was undertaken to prevent deterioration and to enhance the status of aquatic ecosystems, promote sustainable water use and reduce pollution. The WFD is implemented through River Basin Management Plans (RBMPs). Northern Ireland has three River Basin Districts (RBDs): North Western RBD, Neagh Bann RBD and North Eastern RBD. The Water (Amendment) (EU Exit) Regulations 2019 ensure that the WFD (as transposed) and the supporting pieces of water legislation continue to operate in Northern Ireland following the UK's exit from the EU; as the preparation and implementation of a RBMP is a key part of the implementation of the WFD Regulations, this process will continue within Northern Ireland.

The WFD Regulations require the production and implementation of a RBMP for Northern Ireland in six yearly cycles. The most recent is the draft third cycle RBMP (2021), which runs from 2021-2027. This classifies the status of all WFD surface water bodies according to chemical, biological and hydromorphological parameters, providing an overall status of either 'High', 'Good', 'Moderate', 'Poor' or 'Bad' for each surface water body (if the surface water bodies have been designated as artificial or heavily modified, they are classified using ecological 'potential' rather than ecological 'status'). 'Water Bodies' are the basic management units for reporting and assessing compliance with the environmental objectives of the WFD Regulations. There are 496 WFD surface water bodies in Northern Ireland, comprising 450 rivers, 21 lakes and 25 transitional and coastal waters.

[52] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/corporate-report-from-evidence-to-opportunity-second-assessment-of-state-of-ni-environment-2013.pdf

[53] https://www.daera-ni.gov.uk/sites/default/files/publications/daera/NI%20Water%20Framework%20Directive%20Statistics%202021_0.pdf

[54] Draft 3rd cycle River Basin Management Plan for Northern Ireland 2021-2027_0.PDF (daera-ni.gov.uk)

There are 75 WFD groundwater bodies in Northern Ireland (66 bedrock and 9 superficial), comprised of 45 in the North Western RBD, 14 in the North Eastern RBD and 16 in the Neagh Bann RBD. Under the WFD, groundwater bodies are classified as 'good' or 'poor' status for quantitative and chemical status, and overall good status requires that both the quantitative and chemical status are good.

The third cycle RBMP for Northern Ireland 2021-2027 will identify those water bodies which can be classified as being at 'good or better' status and set objectives and a programme of measures for the next six-year cycle to help improve those water bodies which are classified as below 'good' status. This is currently at a draft stage, however an updated classification for water bodies was published in December 2021 in the WFD Statistics Report prior to the production of the third cycle RBMP 2021-2027[55]. This report highlights that there have been significant changes in the monitoring and overall classification for rivers, lakes and transitional and coastal water bodies. New priority substances were introduced into the monitoring programme in 2018, and the 'chemical status assessment' no includes the presence of ubiquitous, persistent, bioaccumulative, toxic (uPBT) substances. Although a number of these substances are now banned or have restricted use, their widespread past use has resulted in accumulation in the aquatic environment and breaching of Environmental Quality Standards (EQS). These substances were found at all monitoring stations, and uPBT failures were extrapolated to all surface water bodies across Northern Ireland; as the 'Overall Surface Water Status' from 2021 will incorporate the chemical classification including uPBT substances, as well as cypermethrin failures, this has resulted in no water bodies meeting a good or high 'Overall Surface Water Status'.

Table 4.14 compares the number and percentage of water bodies within the North Eastern, Neagh Bann and North Western RBDs at good or high status in 2015, 2018 and 2021. This indicates the following:

- River status – In 2015, 33% of the 450 river water bodies in Northern Ireland were classified as good or high overall status. In 2018, 31% were classified as good or high overall status. In 2021, no river water bodies achieved good or high overall status. Considering ecological status, 32% of river water bodies achieved good or high ecological status in 2021, in comparison to 31% in 2018 and 33% in 2015. In addition, when the chemical status of river water bodies is considered excluding uPBT substances and cypermethrin for comparative purposes, 93% achieved good chemical status in 2021, compared to 91% in 2018 and 52% in 2015.

- Transitional and Coastal status – In 2015, 36% of the 25 transitional and coastal water bodies were classified as good or high overall status. In 2018, 40% were classified as good or high overall status. In 2021, no water bodies achieved good or high overall status. Considering ecological status, 40% of water bodies achieved good ecological status in 2021, in comparison to 40% in 2018 and 3% good and 6% high status in 2015. In addition, when the chemical status of water bodies is considered excluding uPBT substances and cypermethrin for comparative purposes, 88% achieved good chemical status in 2021, compared to 44% in 2018 (of 16 assessed water bodies) and 20% in 2015 (of 16 assessed water bodies).

- Lake status – In both 2015 and 2018, 24% of the 21 lake water bodies were classified as good overall status. In 2021, no lake water bodies achieved good or high overall status. Considering ecological status, 14% of water bodies achieved good ecological status in 2021, in comparison to 24% achieving good or high status in 2018 and 2015. In addition, when the chemical status of water bodies is considered excluding uPBT substances and cypermethrin for comparative purposes, in 2015, 2018 and 2021, all 21 (100%) lake water bodies were classified as good chemical status.

- Groundwater body status- In 2015, 65% of the 75 groundwater bodies achieved good overall status, while in 2021 68% achieved good overall status.

The results of the draft third cycle RBMP classification mean that Northern Ireland will not achieve the objective to have 70% of its water bodies at 'good or better' status. Little improvement has occurred since 2015; at that time 37% of all water bodies were at good or high status. While the failure of all surface water bodies to achieve good or high status in 2021 primarily relates to the changes in monitoring and inclusion of additional priority substances, comparison of ecological status shows little to no change in status from the previous cycle, and a decline in status for lake water bodies. Pressure assessments undertaken have identified that the main

[55] https://www.daera-ni.gov.uk/sites/default/files/publications/daera/NI%20Water%20Framework%20Directive%20Statistics%202021_0.pdf

pressures acting upon the water environment in Northern Ireland are nutrient pressures, relating primarily to agricultural activities and sewage-related problems[56].

Figure 4-6 illustrates the most recent digitally available (2018) ecological status of WFD surface water bodies (i.e., river, lake, transitional and coastal water bodies), and **Figure 4-7** the most recent digitally available (2020) status of groundwater bodies within Northern Ireland.

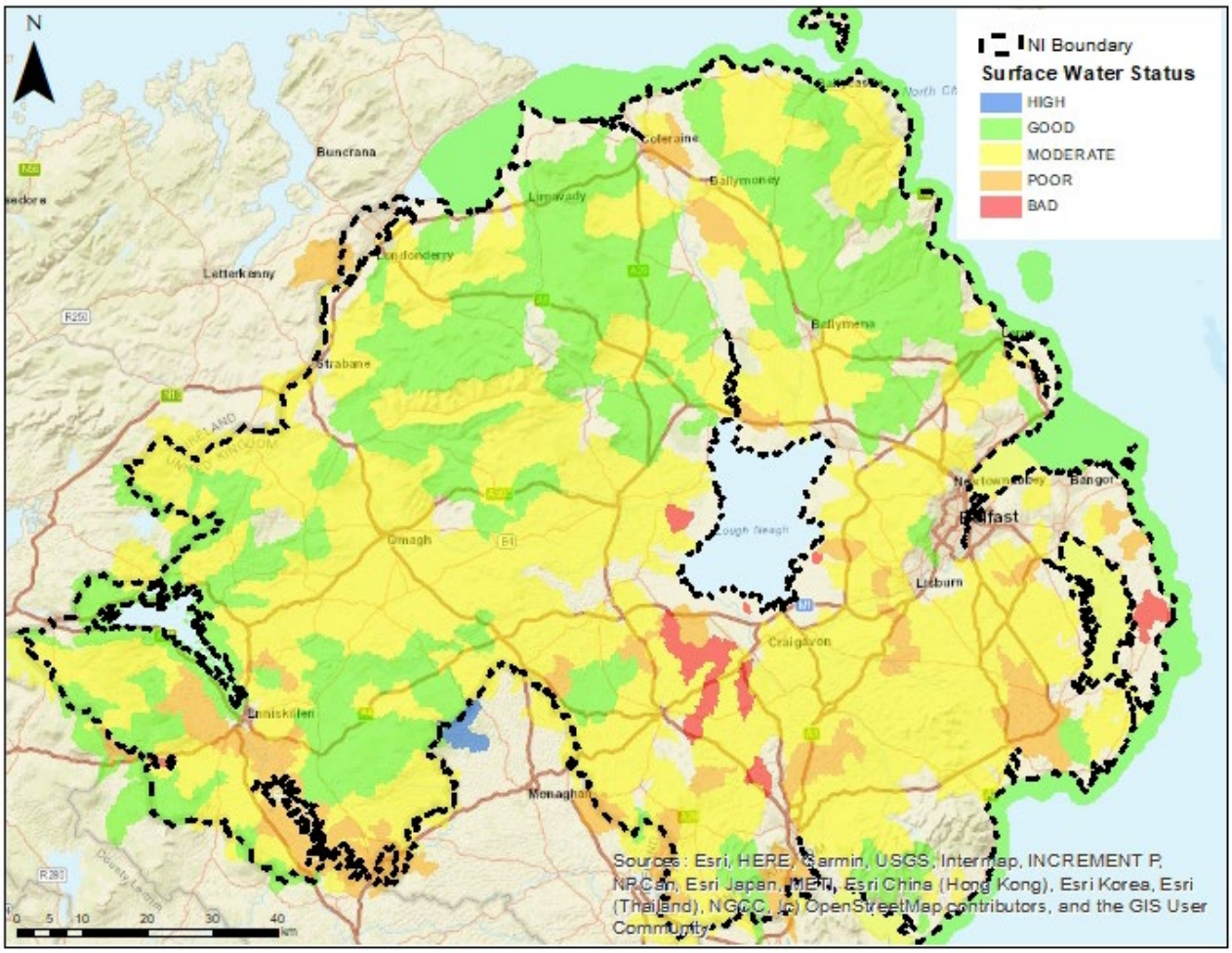


Figure 4-6 WFD Surface Water Ecological Status 2018

[56] https://www.daera-ni.gov.uk/sites/default/files/consultations/daera/Draft%203rd%20cycle%20River%20Basin%20Management%20Plan%20for%20Northern%20Ireland%202021-2027_0.PDF

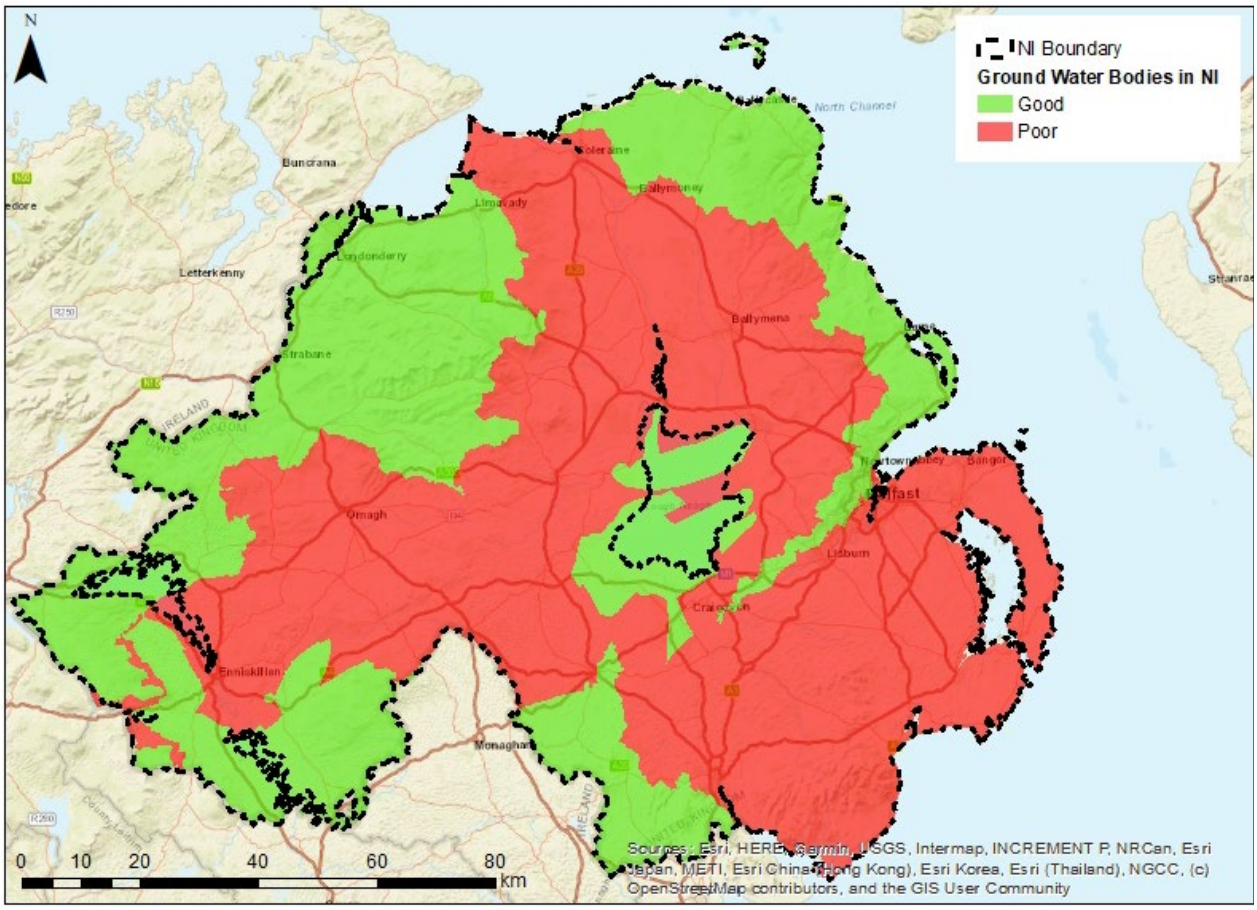


Figure 4-7 WFD status of groundwater bodies in Northern Ireland 2015

Table 4-14 Comparison of WFD Water Bodies at 'Good or Better' Status for 2015 and 2018

	No. in NW IRBD	No. in NB IRBD	No. in NE RBD	Northern Ireland	
				No.	%
Rivers 2015	74	54	18	147	33
Rivers 2018	68	56	17	141	31
Rivers 2021	0	0	0	0	0
Transitional & coastal 2015	1	1	7	9	36
Transitional & coastal 2018	1	2	7	10	40
Transitional & coastal 2021	0	0	0	0	0
Lakes 2015	2	2	1	5	24
Lakes 2018	2	2	1	5	24
Lakes 2021	0	0	0	0	0
Groundwater 2015	37	6	6	49	65

Groundwater 2021	36	10	5	51	68
All water bodies 2015	115	63	32	210	37
All water bodies 2018/2020	111	70	34	215	38

The WFD Regulations required the establishment of a register of protected areas for Northern Ireland, for water bodies, or parts thereof, that require additional water quality protection owing to their importance to people or wildlife. This is outlined in Article 10 of the WFD Regulations.

The register comprises the following protected areas:

a) A drinking water protected area.

b) An area or body of water requiring special protection in accordance with any EU instrument protecting surface water, groundwater or conservation of habitats and species, including:

(i) Areas designated for the protection of economically significant aquatic species (including shellfish water protected areas).

(ii) Bodies of water designated as recreational waters.

(iii) Nutrient-sensitive areas.

(iv) Areas designated for the protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection.

The WFD protected areas in Northern Ireland are summarised in **Table 4.15**.

Table 4-15 WFD Register of Protected Areas

WFD Protected Area Type		North Eastern RBD	North Western IRBD	Neagh Bann IRBD	Total Number
Drinking Water Protected Areas	Surface water	8	10	8	26
	Groundwater	10	42	13	65
Shellfish Water Protected Areas		7	2	1	10
Bathing Waters		22	3	1	26
Urban Waste Water Sensitive Areas		16	4	3	23
Water Dependent Protected Areas		25	27	24	66*
Groundwater-dependent terrestrial ecosystems		2	5	2	9

*Note: some protected sites straddle more than one RBD, hence the NI total does not equal the sum of the RBDs.

As discussed in Section 4.3.1, evidence-based studies[57] have been completed to determine the impact of transmission development on water quality and aquatic ecology, in the Republic of Ireland. These studies indicated that sediment release is the most significant risk to water quality from transmission infrastructure projects, occurring when land is being cleared for construction, through erosion and run-off. Pollutants can also come from concrete and hydrocarbons used in the foundations for towers and for culverts and can result

[57] RPS Group 2016. EirGrid Evidence Based Environmental Studies Study 6: Water Quality and Aquatic Ecology. Literature and evidence based field studies on the effects of high voltage transmission lines on water quality and aquatic ecology in Ireland.

in an increased sediment load and a lowering of the pH of surface water bodies, with implications for sensitive species including freshwater pearl mussel and species of aquatic plants. Impacts particularly result from construction works near to watercourses that have limited to no buffer zones, from site clearance, from damage or alteration to riverbanks / riparian zones and from site flooding.

4.3.4.2 The Marine Strategy and Marine Planning

The Marine Strategy Regulations 2010 require action to be taken to achieve or maintain Good Environmental Status (GES) in marine waters within the marine strategy area by 2020. GES is defined in the Regulations as "the environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations".

The Marine Strategy Regulations required the production of a marine Strategy for UK waters, coordinated across the four UK Administrations. The Strategy aims to help in the delivery of international obligations and commitments such as those under the UN Convention on the Law of the SEA (UNCLOS), UN Sustainable Development Goal 14, OSPAR Strategy and Convention on Biological Diversity, and the OSPAR North-East Atlantic Environment Strategy (NEAES) 2030. The UK Marine Strategy applies an ecosystem–based approach to the management of human activities, and considers the following 11 quality descriptors:

- D1 – Biological diversity (cetaceans, seals, birds, fish, pelagic habitats and benthic habitats)
- D2 – Non-indigenous species
- D3 – Commercially-exploited fish and shellfish
- D4 Food webs (cetaceans seals, birds, fish and pelagic habitats)
- D5 – Eutrophication
- D6 – Sea-floor integrity (benthic habitats)
- D7 – Hydrographical conditions
- D8 – Contaminants
- D9 – Contaminants in fish and other seafood
- D10- Marine litter
- D11 – Underwater noise

The UK Marine Strategy comprise three parts, to be updated every six years: assessment, monitoring programmes and a programme of measures. The first UK assessment of our seas was published in 2012[58], and set objectives, targets and indicators for achieving GES; this was updated in 2019[59], and the status of descriptors for the UK is summarised in **Table 4.16**.

Table 4-16 UK Assessment of Environmental Status for the MSFD

Descriptor	GES Achieved	Trend	Description
D1 & D4 Cetaceans	Partially	Stable/mixed	Achievement of GES uncertain. Status of coastal bottlenose dolphin & minke whale consistent with GES in the Greater North Sea, but unknown/uncertain elsewhere. Unknown if GES achieved for other species.
D1 & D4 Seals	Partially	Improving	GES achieved for grey seals in the Greater North Sea and Celtic Seas. Harbour seals have not achieved GES in the Greater North Sea; in the Celtic Sea, significant increase in West Scotland but status uncertain in other areas.

[58] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69632/pb13860-marine-strategy-part1-20121220.pdf

[59] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/921262/marine-strategy-part1-october19.pdf

D1 & D4 Birds	No	Declining	GES achieved for non-breeding waterbirds in the Greater North Sea but not the Celtic Sea. Breeding seabirds have not achieved GES.
D1 & D4 Fish	No	Improving	Demersal fish communities recovering from past over-exploitation, but GES not yet achieved in the Greater North Sea or Celtic Seas. Partial assessment of pelagic shelf fish did not provide a clear result.
D1 & D4 Pelagic Habitats	Partially	Stable/mixed	Achievement of GES uncertain; prevailing environmental conditions likely driving changes in plankton communities but influence of human activities not certain.
D1 & D6 Benthic habitats	No	Stable/mixed	GES achievement uncertain for intertidal & soft sediment habitats; for soft sediments, the level of physical damage are considered consistent with GES in UK waters to the west of the Celtic Seas but not in the Celtic Seas or the Greater North Sea. GES not achieved for sublittoral rock and biogenic habitats.
D2 Non-indigenous species (NIS)	No	Stable/mixed	GES not achieved. Ability to detect new NIS has improved but no significant change in the number of new records of NIS between 2003 and 2014.
D3 Commercial fish	No	Improving	GES achieved for some commercially exploited fish. In 2015, 53% of marine fish (quota) stocks fished below maximum sustainable yield (MSY) and has increased significantly since 1990. Most national shellfish stocks have not achieved GES or their status is uncertain.
D4 Food webs	Partially	Improving	Extent to which GES has been achieved is uncertain, components of the marine food web are changing but it is not clear how they are affecting each other.
D5 Eutrophication	Yes	Stable/mixed	GES largely achieved. A small number of problems remain in coastal and estuarine waters, representing 0.03% of the UK EEZ and 0.41% of estuarine and coastal waters.
D7 Hydrographical conditions	Yes	Stable/mixed	GES continuing to be achieved.
D8 Contaminants	Yes	Improving	GES largely achieved. Concentration of hazardous substances and their biological effects generally meeting agreed target thresholds. Highly persistent legacy chemicals cause of new failures, mainly in coastal waters close to polluted sources.
D9 Contaminants in seafood	Yes	Improving	GES achieved, high level of compliance with agreed safety levels.
D10 Marine litter	No	Stable/mixed	GES not achieved. Beach litter levels in the Celtic Seas largely stable since assessment in 2012, whilst levels in the Greater North Sea have slightly increased.
D11 Underwater noise	Partially	Stable/mixed	Achievement of GES is uncertain, but research and monitoring programmes are improving understanding.

Consideration should be given to the potential for impacts on marine descriptors when planning for transmission infrastructure in coastal or marine environments. In addition, the Marine and Coastal Access Act (2009) and the Marine Act (NI) 2013, required DAERA to prepare marine plans, for the better management of the Northern Ireland marine area and to facilitate the sustainable development of the marine area. The draft Marine Plan for Northern Ireland[60] has set out 'Key Activity' policies, including for energy. Under this plan, there is a presumption in favour of energy proposals that improve the security and diversity of energy supply, where it can be demonstrated that:

a) There will be no unacceptable adverse impact throughout the lifetime of the proposal on marine activities, uses and / or the marine area and any potential adverse impact is, in order of preference, avoided, minimised and / or mitigated; and

b) Restoration / decommissioning measures have been agreed, where necessary.

4.3.4.3 Flood Risk in Northern Ireland

The Floods Directive (2007/60/EC), implemented in Northern Ireland through 'The Water Environment (Floods Directive) Regulations (Northern Ireland) 2009' and amendments, the "Floods Directive Regulations" requires the establishment of a framework for the assessment and management of flood risks, with the aim of reducing the adverse consequences of flooding on human health, the environment, cultural heritage and economic activity. This works on a six-year cycle of flood risk assessment, prioritisation, updated flood mapping and planning for flooding. As part of the second cycle of flood risk management planning, the Northern Ireland Flood Risk Assessment (NIFRA) 2018[61] reviewed the situation regarding flood risk within Northern Ireland. It identified that the main sources of flooding within Northern Ireland are rivers (fluvial flooding), the sea (coastal flooding), and overland surface water flows (pluvial flooding). In total, the NIFRA 2018 identified that approximately 45,000 properties, comprising 5% of the total in Northern Ireland, are at risk from flooding from these sources.

The NIFRA 2018 identified twelve Areas of Potential Significant Flood Risk (APSFRs). The names of these areas, along with the RBD in which they are located are listed in **Table 4-17**, and they are shown in **Figure 4-8**. The Northern Ireland Flood Risk Management Plan (FRMP) 2021-2027 is the second cycle Plan for Northern Ireland. It focuses on planning for measures to manage flood risk in these twelve APSFRs.

Table 4-17 Areas of Potential Significant Flood Risk in Northern Ireland

APSFR Name	River Basin District
Belfast	North Eastern RBD
Londonderry	North Western IRBD
Newry	Neagh Bann IRBD
Lurgan	Neagh Bann IRBD
Glengormley and Mallusk	Neagh Bann IRBD
Larne	North Eastern RBD
Bangor	North Eastern RBD
Portadown and Craigavon	Neagh Bann IRBD
Omagh	North Western IRBD
Newtownabbey	North Eastern RBD

[60] https://www.daera-ni.gov.uk/sites/default/files/consultations/daera/Marine%20Plan%20for%20NI%20final%2016%2004%2018.PDF

[61] https://www.infrastructure-ni.gov.uk/sites/default/files/publications/infrastructure/northern-ireland-flood-risk-assessment-report-2018-updated-may2019.pdf

Carrickfergus	North Eastern RBD
Ballymena	Neagh Bann IRBD

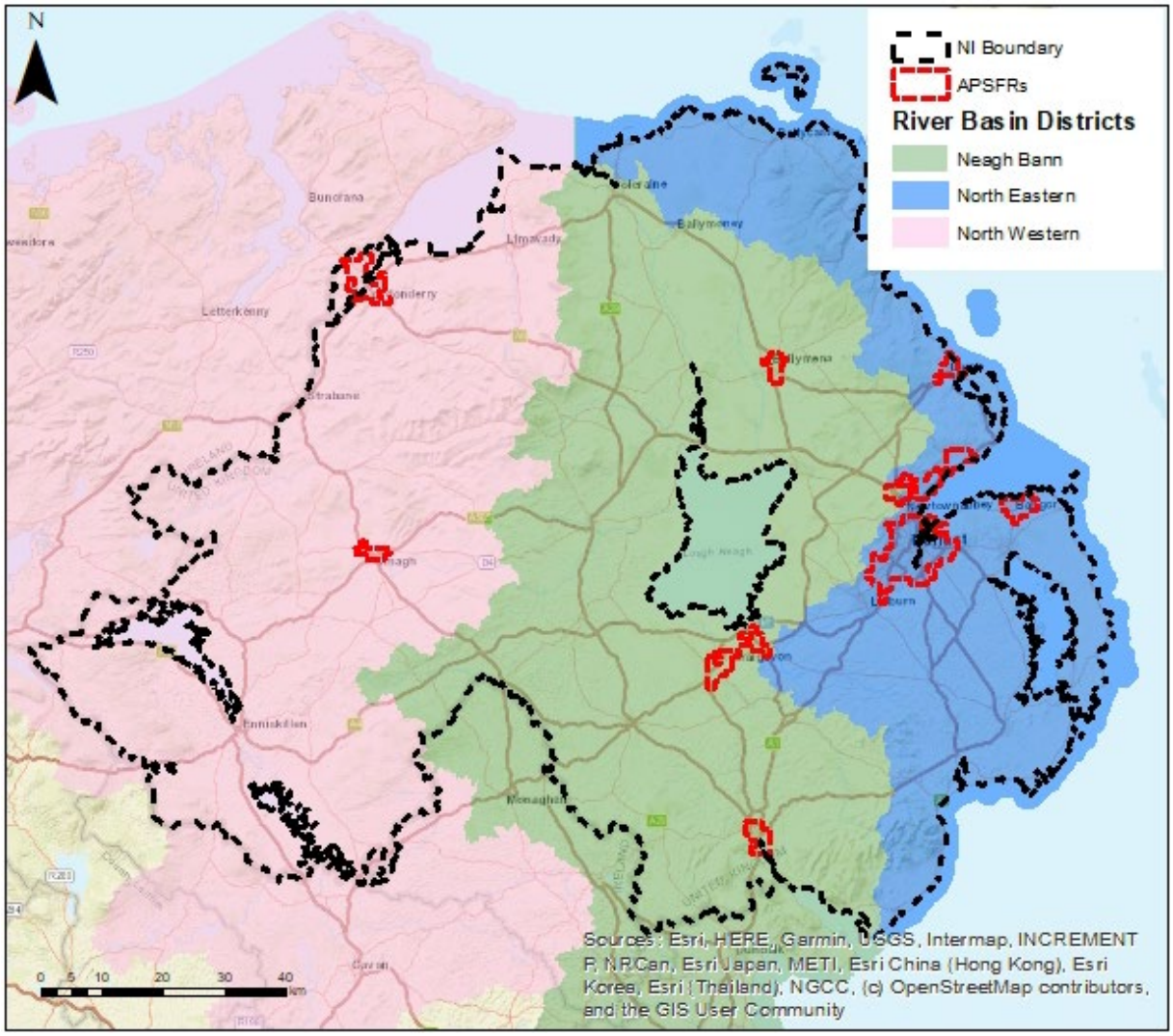


Figure 4-8 Location of Areas of Potential Significant Flood Risk in Northern Ireland

Owing to the large number of rivers within Northern Ireland, there is a significant degree of fluvial flood risk, particularly in relation to large rivers such the River Foyle and those which feed Lough Neagh, such as the River Bann. Fluvial flooding occurs when the channel capacity of rivers is exceeded, and water overtops the riverbanks and flows across the natural floodplain of the river. The impact of fluvial flooding is significantly greater within urban and suburban areas (such as Belfast, Portadown, Derry/Londonderry and Strabane), in part due to the density of receptors and the impact of land use upon drainage patterns. Significant risk of surface water (pluvial) and coastal flooding also exists throughout Northern Ireland. Significant coastal flooding is relatively rare in Northern Ireland but can potentially cause major damage in low lying areas, with effects of saltwater inundation causing long term economic and environmental damage. Pluvial flooding results from rainfall that has not reached, or has overwhelmed, man-made drainage systems, and leads to overland flows and ponding within low-lying areas. It can be exacerbated by the extensive areas of hard, impermeable surfaces that are frequently present within urban areas. Consideration needs to be given to such flood risks in planning for transmission infrastructure to avoid the poor siting of facilities, risk of inundation or knock-on flooding to local receptors or material assets.

4.3.4.4 Summary of Existing Pressures and Issues for Water in Northern Ireland

The most recent State of the environment report for Northern Ireland states that industry, power generation, agriculture and forestry, development, transport and infrastructure pressures all potentially impact on Northern Ireland's water environment[62]. Under the WFD, pressures on the quality of the water environment have been assessed according to two types, as follows:

- Point source pollution pressures on water quality – e.g., effluent discharges arising from industry and WWTWs; sewer overflows during heavy rainfall events; and
- Diffuse source pollution pressures on water quality – e.g., contaminated surface run-off from roads, construction sites, fuel storage areas; septic tank discharges; acid and nutrient deposition from the air; run-off of pesticides, soils and nutrients from agriculture and forestry, and migration of these to groundwaters and surface waters.

Abstractions and impoundments of water for drinking water supply, industry, agriculture, recreation, and hydropower can lead to pressures on water quantity and flow and can exacerbate existing water quality issues. The introduction and spread of invasive non-native species, including aquatic plants such as Floating Pennywort and Curly Waterweed, can impact upon native aquatic biodiversity, and can adversely affect water-based recreational activities. The risk of flooding following heavy rainfall events can be increased by land management practices that influence water storage potential and run-off, such as in urban areas where impermeable surfaces are common. Flood events can also lead to increased run-off of sediments and pollutants from agricultural lands, with consequences for receiving water quality, while land management practices can have a significant influence on flood risk in downstream areas.

Implementation of the draft TDPNI, and potential transmission development projects therein, has the potential to lead to negative effects on the quality of water bodies in Northern Ireland (as well as to cross-border water bodies in the Republic of Ireland) alone, or in combination with, these existing pressures. Consideration should be given to the potential impact of transmission infrastructure upon the water environment. Impacts might include changes to waterbody morphology (with the potential to impact upon issues such as bank stability and vegetation, the riparian buffer zone and infiltration of riverbed substrate with silt and fines), water quality (and thus aquatic ecology), water flows and levels and the presence of invasive species. The sensitivity of waterbodies will dictate the significance of impacts upon the water environment. Consideration should also be given to areas of flood risk when planning for transmission infrastructure projects, to avoid siting these in areas of risk, or affecting flood risk to other receptors.

4.3.4.5 SEA Monitoring Update for Water

For the Water topic, the monitoring proposed for the first iteration of the TDPNI is shown in **Table 4.18**.

Table 4-18 Monitoring of Water proposed in the TDPNI 2018-2027

Objective	Sub-Objective		Indicators	Possible Data / Responsible Authority
Avoid impacts and interaction with water quality, quantity and resource.	A	Avoid damage to or deterioration of water status, quality and resource.	WFD water status of surface, coastal, transitional and groundwater's within proximity to potential transmission system developments. Sensitive waterbodies, e.g., drinking and bathing waters within proximity to potential transmission system developments.	NIEA and WFD data.

[62] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/corporate-report-from-evidence-to-opportunity-second-assessment-of-state-of-ni-environment-2013.pdf

	B	Avoid interactions with coastal, pluvial or fluvial flood extents.	Medium probability flood extents - Pluvial and fluvial 100 year and coastal 200 year flood extents.	DfI Rivers data – flood extents / risk – Flood Risk Management Plans.

A status update and description of projects that were assessed as part of the SEA for the TDPNI 2018-2027 is shown in **Table 1-2** of this Scoping Report. This indicates that three projects included in the TDPNI 2018-2027 are now complete; the Agivey (Garvagh) Cluster project and the Castlereagh – Knock cable uprate project that were assessed within the SEA for the 2018-2027 Plan, and the Curraghmulkin (Drumquin) Cluster project that was not assessed in the SEA as planning permission had already been approved at that time. **Table 4.19** outlines these schemes and the Water indicators associated with these project areas.

Table 4-19 Projects completed from the TDPNI 2018 and associated Water data

Project Name	WFD Water Bodies	Sensitive Water Bodies	Flood Extents
Agivey (Name subsequently changed to Garvagh) 110/33 kV Cluster	Five sections of river within the study area. Four river water bodies of good or high ecological status.	None identified in the SEA	Significant area of 0.5% AEP pluvial flood risk in the vicinity of Dunnavenny Bridge.
Castlereagh – Knock 110 kV Cables Uprate	One section of river in the Knock area of the study area crossed by the existing line. Potential connectivity to the Connswater river water body, which is of poor ecological potential.	None identified in the SEA	Significant area of 0.5% AEP pluvial flood risk in the Braniel region of Castlereagh that is crossed by the existing line.
Curraghmulkin (Drumquin) 110/33 kV Cluster	*From project EIA:* Project traverses several tributaries of 4 no. WFD Waterbodies: Derrynaseer Tributary (Owenreagh River) Drumquin River Owenreagh (Drumragh) River (Drumlish) Ballynahatty (Drumragh)	*From project EIA:* All associated water bodies designated as Salmonid waters.	*From project EIA:* OHL located in the vicinity of 1% AEP floodplains

For the Agivey (Garvagh) Cluster project, the SEA Environmental Report for the TDPNI 2018-2027 identified the potential for construction phase sedimentation and pollution impacts to five sections of river within the study area from construction of the new substation, however also identified that this risk should be avoidable if there is a sufficient buffer zone between the new substation and these sections of river. It also identified the potential for construction phase direct sedimentation and pollution impacts to four river water bodies of good or high ecological status from construction of the new substation and transmission line, that should be minimised with good working practices. The associated project-level EIA identified potential interaction with three river water bodies: Brockagh Water, Agivey River and Glenullin River. It considered there to be only potential for negligible effects on these water bodies with standard mitigation applied to protect watercourses. Monitoring data available via the NIEA Water Information Request Viewer[63] indicates that the WFD ecological

[63] https://gis.daera-ni.gov.uk/arcgis/apps/webappviewer/index.html?id=7e234827aa7a405d990359aa92c7c287

status of these water bodies has not changed between 2018 and 2021 monitoring periods. There is no indication of any strategic-level degradation in water quality associated with this completed project. There were no sensitive water bodies identified within the study area for this project. The SEA identified an area of 0.5% AEP pluvial flood risk in the vicinity of Dunnavenny Bride within the study area, which could lead to difficult working conditions and flooding of the new substation and should be avoided in the development of the new substation and transmission line. The project EIA concluded that, as with any development adjacent to a watercourse, there is always a residual flood risk as the required standard of protection can be exceeded. However, the mitigation measures afforded would reduce the likelihood of such an occurrence and any residual flood risk would be considered as low.

For the Castlereagh – Knock 110 kV cable uprate project, the SEA Environmental Report for the TDPNI 2018-2027 identified the potential for construction phase sedimentation, pollution or damage to riverbanks, at one section of river (a tributary of the Connswater river) in the Knock area of the study area, which is crossed by the existing line, during the restring. It also identified the potential for construction phase sedimentation and pollution impacts to the Connswater river water body, which is of poor ecological potential, during the restring, that should be avoidable with good working practices. Monitoring data available via the NIEA Water Information Request Viewer[64] indicates that the WFD status of the Connswater river water body was poor ecological potential in both 2018 and 2021. There is no indication of any degradation in water quality of WFD monitored water bodies associated with this completed project. There were no sensitive water bodies identified within the study area for this project. The SEA identified an area of 0.5% AEP pluvial flood risk in the Braniel region of Castlereagh within the study area, which is crossed by the existing line and could lead to difficult working conditions. There are no reported adverse effects from interaction with areas of flood risk from this project.

For the Curraghmulkin (Drumquin) Cluster project, the associated project-level EIA identified potential interaction with four WFD river water bodies: Derrynaseer Tributary (Owenreagh River), Drumquin River, Owenreagh (Drumragh) River (Drumlish) and Ballynahatty (Drumragh). It considered that there would only be potential for negligible non-significant effects on these water bodies with the application of mitigation to protect watercourses. The 2018 WFD classification of these water bodies was moderate status, good status, moderate status, and moderate status, respectively. The 2021 WFD status remained the same for these water bodies with the exception of the Drumquin River, which was given a classification of Moderate status (combined ecology and chemistry) but remaining at Good Ecological status. However, this change in status is considered extremely unlikely to be associated with the completion of this project. The project EIA identified that, in terms of the overhead lines, the majority of towers and poles are located outside identified floodplains and their small footprint would lead to a negligible increase in flood risk, while the cluster and switching substations were outside the 1% AEP floodplain. Mitigation was included, in terms of attenuation, to ensure no additional risk in surface water flood risk – any residual flood risk was considered to be low.

4.3.5 Air

Good air quality is vital for human health and wellbeing, for our climate, habitats and built environment. Air pollution is the result of a range of substances that are introduced into the atmosphere from a variety of different sources. On the whole, air quality in Northern Ireland has improved significantly over the past few decades; in particular, concentrations of sulphur dioxide, originating from the combustion of coal and oil, has reduced. However, some pollutants are continuing to exceed air quality objectives. This has consequences on both human health and on some of our most important habitats that are sensitive to the effects of atmospheric pollutant deposition.

It is considered that the key issues associated with implementation of the draft TDPNI and air comprise:

- Potential for localised effects of air pollutants during the construction phase (plant emissions).
- Potential for localised noise effects during construction and operation.
- Potential for a reduction in emissions from power stations owing to new renewable energy connections.

[64] https://gis.daera-ni.gov.uk/arcgis/apps/webappviewer/index.html?id=7e234827aa7a405d990359aa92c7c287

4.3.5.1 Air Quality in Northern Ireland

Air quality is monitored regularly at 21 stations within Northern Ireland. At each of these locations, levels of pollutants including Nitrogen dioxide (NO_2), Nitric oxide (NO), Nitrogen oxides as nitrogen dioxide (NOX as NO_2), Ozone (O_3), PM_{10} particulate matter, $PM_{2.5}$ particulate matter, Sulphur dioxide (SO_2), and Carbon monoxide (CO) are monitored, and measured with regard to EU Air Quality Directives and the 2007 UK Air Quality Strategy (AQS) objectives. Data is available regarding the pollutants monitored at 19 of these sites, and the latest measured air quality is shown in **Table 4-20**[65].

Table 4-20 Air pollution monitoring sites and pollutants measured in Northern Ireland

Monitoring Site	Pollutants monitored	Latest pollution level*
Derry Dale's Corner	NO_2, NO, NOX as NO_2	Low (NO_2)
Derry Rosemount	O_3, PM_{10}, $PM_{2.5}$, SO_2, NO_2, NO, NOX as NO_2	Low (NO_2, SO_2, O_3, PM_{10}, $PM_{2.5}$)
Ballymena Ballykeel	$PM_{2.5}$, PM_{10}, NO_2, SO_2, NOX as NO_2, NO	Low ($PM_{2.5}$, PM_{10})
Armagh Lonsdale Road	PM_{10}, NO_2, NOX as NO_2, NO	Low (NO_2, PM_{10})
Newry Canal Street	PM_{10}, NO_2, NOX as NO_2, NO	Low (NO_2, PM_{10})
Downpatrick Roadside	NO_2, NO, NOX as NO_2	Low (NO_2)
Lisburn Dunmurry Seymour Hill	$PM_{2.5}$, PM_{10}, SO_2	Low (All)
Belfast Stockman's Lane	PM_{10}, NO_2, NOX as NO_2, NO	Low (NO_2, PM_{10})
Belfast Westlink Roden Street	NO_2, NOX as NO_2, NO	Low (NO_2)
Belfast Ormeau Road	NO_2, NOX as NO_2, NO	Low (NO_2)
Belfast Centre	$PM_{2.5}$, PM_{10}, SO_2, NO_2, O_3, CO, NOX as NO_2, NO	Low ($PM_{2.5}$, PM_{10}, SO_2)
Belfast Newtownards Road	NO_2, NOX as NO_2, NO	Low (NO_2)
Castlereagh Dundonald	NO_2, NOX as NO_2, NO	Low (NO_2)
North Down Holywood A2	$PM_{2.5}$, PM_{10}, NO_2, NOX as NO_2, NO	Low (NO_2, PM_{10}, $PM_{2.5}$)
Newtownabbey Antrim Road	NO_2, NOX as NO_2, NO	Low (NO_2)
Ballymena Antrim Road	NO_2, NO, NOX as NO_2	Low (NO_2)
Strathfoyle Bawnmore Place	$PM_{2.5}$, PM_{10}	Low (All)
Newtownstewart	$PM_{2.5}$, PM_{10}	Low (All)
Lough Navar	$PM_{2.5}$, PM_{10}, O_3	Low (All)
Strabane Springhill Park	No Data	No Data
Limavady Dungiven	NO_2, NO, NOX as NO_2	No Data

* https://www.airqualityni.co.uk/ Accessed 17 April 2023

Air quality in Northern Ireland is reported annually by DAERA, the most recent report in 2021[66], and is compiled from data supplied by the monitoring stations. This highlights any exceedances of air quality objectives and

[65] https://www.airqualityni.co.uk/

[66] https://www.daera-ni.gov.uk/publications/air-pollution-northern-ireland-2021

highlights any emerging air quality trends. The most significant air pollutants for Northern Ireland and their sources are the following:

- Nitrogen oxides (NO_x, including nitric monoxide NO and nitrogen dioxide NO_2), arising from fuel combustion in transport and energy generation.
- Sulphur dioxide (SO_2), arising from combustion of fuels that contain sulphur, from power generation, industry and domestic solid fuel combustion.
- Particulate matter (PM_{10} and $PM_{2.5}$), arising from road transport and domestic solid fuel combustion, and as a secondary pollutant from ammonia.
- Ground-level ozone (O_3), arising from the interaction of various air pollutants with sunlight.
- Ammonia (NH_3), arising from agricultural activities and handling of manure. NH_3 reacts with other pollutants (NO_x, S), producing fine particles of ammonium nitrate and ammonium sulphate.
- Polycyclic aromatic hydrocarbons (PAHs), arising from incomplete combustion primarily from domestic sources.

The following pollutants were monitored in Northern Ireland during 2021: carbon monoxide (CO), oxides of nitrogen (NO_x), comprising nitric oxide (NO) and nitrogen dioxide (NO_2), sulphur dioxide (SO_2), particles (as PM_{10}, $PM_{2.5}$ and black carbon), ozone (O_3), benzene, polluting elements (including lead, arsenic, cadmium, nickel, and mercury) and polycyclic aromatic hydrocarbons (PAHs). The Regulations limit values, target values and AQS objectives were met for the following pollutants in Northern Ireland in 2021: PM_{10} and $PM_{2.5}$ particulate matter, NO_2, O_3, CO, benzene, SO_2 and polluting elements. The three sites monitored for PAHs exceeded AQS objectives; these are likely due to solid fuel burning. This has potential to decrease, however, as Northern Ireland's new Energy Strategy - Path to Net Zero Energy[67], published in 2021, details restrictions on burning fossil fuels for home heating.

Local Air Quality Management (LAQM) provides the framework under the Environment Order (NI) 2002 within which air quality is managed by Northern Ireland's local authorities (District Councils). LAQM requires the District Councils to review and assess a range of air pollutants against the objectives set by the Air Quality Strategy (AQS), using a range of monitoring, modelling, and other methods. For locations where objectives are not expected to be met by the relevant target date, District Councils are required to declare an Air Quality Management Area (AQMA), and to develop an Action Plan to address the problem. There are 19 active AQMAs in Northern Ireland, set for one or more of the pollutants PM_{10}, NO_2, or SO_2; the locations of these AQMAs are shown in **Figure 4-9**.

[67] https://www.economy-ni.gov.uk/publications/energy-strategy-path-net-zero-energy

Figure 4-9 Air Quality Management Areas in Northern Ireland

The UK National Atmospheric Emission Inventory (NAEI) is the standard reference air emissions inventory for the UK, and includes emission estimates for England, Scotland, Wales and Northern Ireland for a wide range of important pollutants including GHGs, regional pollutants leading to acid deposition and photochemical pollution, persistent organic pollutants (POPs) and other toxic pollutants such as heavy metals. The NAEI is compiled annually, when the latest set of data are added, and the full time series updated and reported internationally. The latest report was published in October 2022 and covers the period 2005-2020[68]. This summarises emissions in Northern Ireland for the eight priority air pollutants: ammonia (NH_3), carbon monoxide (CO), nitrogen oxides (NO_x as NO_2), non-methane volatile organic compounds (NMVOCs), particulate matter less than 10 micrometres (PM_{10}), particulate matter less than 2.5 micrometres ($PM_{2.5}$), sulphur dioxide (SO_2) and lead (Pb). Most pollutant emission levels were lower in 2020 than they were in 2005. A switch in energy generation has created a reduction in sulphur dioxide (SO_2) levels in NI due to the development of a natural gas pipeline to Northern Ireland, this has allowed for fuel switching away from oil and coal-fired generation.

Construction and maintenance activities associated with the development of transmission infrastructure may lead to temporary, localised increases in air pollution, including ambient PM_{10} and nitrogen dioxide emissions. This has potential to lead to short-term secondary negative impacts on human health and biodiversity. Good air quality is essential for human health and wellbeing; air pollution generally, and particularly that arising from the transport sector, is recognised as a significant health burden in terms of illness and premature death. NO_2 belongs to a group of gaseous air pollutants that are produced by road traffic and other forms of fossil fuel combustion. This can be a lung irritant and can lower resistance to respiratory infections such as influenza; frequent or continuous exposure to high concentrations can result in increased incidence of acute respiratory

[68] https://uk-air.defra.gov.uk/assets/documents/reports/cat09/2210251052_DA_Air_Pollutant_Inventories_2005-2020_FINAL_v1.2.pdf

illness in children[69]. PM_{10} originates from both natural and man-made sources; in urban locations the majority of particulate matter in the air originates from road transport and fossil fuel combustion. Fine particles can cause lung inflammation, and can exacerbate symptoms of heart and lung disease, as well as potentially transmitting carcinogenic compounds.

Nitrogen oxides contribute to nitrogen deposition through dry deposition, close to the pollutant source or through wet deposition of nitrogen compounds in rainfall, which can be transported much further than the source. The deposition of nitrogen compounds aids the growth of some plant species but can lead to significant negative effects on plant species that are adapted to low nitrogen concentrations. In designated sites, which protect sensitive and environmentally important habitats and species, the availability of excess nitrogen through deposition can lead to out-competition of sensitive species by those that are more nitrogen-tolerant, and subsequent changes in community composition, biodiversity loss and changes in the structure and function of the ecosystem. A search of the Air Pollution Information System (APIS)[70] indicates that, of the 58 SACs in Northern Ireland, 48 are receiving nitrogen deposition that is above the critical load for the designated habitat or species present.

4.3.5.2 Summary of Existing Pressures and Issues for Air in Northern Ireland

According to Northern Ireland's most recent state of the environment review (2013), air pollution from domestic combustion and from road transport remain as challenges in the improvement of air quality for the protection of human health[71], while pollutants can also lead to secondary effects on sensitive habitats. However, air quality has improved significantly over the past few decades, and the most recent air quality monitoring report shows that all pollutants, except for PAHs, met EU limit and target values and AQS objectives. Northern Ireland's new Energy Strategy - Path to Net Zero Energy is expected to support further improvements in air quality.

Implementation of the draft TDPNI, and the construction and maintenance activities associated with the potential transmission development projects therein, has the potential to lead to temporary, localised, increases in air pollution, including ambient PM_{10} and nitrogen dioxide emissions, resulting in short-term negative impacts upon air quality, climatic factors, human health and biodiversity. There is also potential for these projects to lead to localised disturbance impacts during construction or maintenance, through dust deposition and visible plumes, resulting from ground movement and influenced by the ambient weather conditions. However, implementation of the draft TDPNI also has potential to lead to positive effects on air quality in the medium and long-term, with the potential for connection of new renewable energy generators, such as wind and tidal turbines, to the national grid expected to support a reduced dependence on fossil fuels and a net reduction in the quantity of pollutants released into the atmosphere. This could have far-reaching positive consequences upon other factors such biodiversity, climate, and human health.

4.3.5.3 SEA Monitoring Update for Air

For the Air topic, the monitoring proposed for the first iteration of the TDPNI is shown in **Table 4.21**.

Table 4-21 Monitoring of Air proposed in the TDPNI 2018-2027

Objective	Sub-Objective		Possible Data / Responsible Authority
Minimise risk to local air quality and contribute to improving	Minimise risk to local air quality and contribute to improving regional emissions.	Development in air quality sensitive areas.	Local Authorities, DAERA, DEFRA data – Annual air quality monitoring summaries and

[69] https://www.daera-ni.gov.uk/publications/northern-ireland-environmental-statistics-report-2020

[70] Air Pollution Information System | Air Pollution Information System (apis.ac.uk)

[71] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/corporate-report-from-evidence-to-opportunity-second-assessment-of-state-of-ni-environment-2013.pdf

regional emissions.	Enable increased renewable energy connection to reduce requirements for fossil fuel burning.	Continuous air quality monitoring.

A status update and description of projects that were assessed as part of the SEA for the TDPNI 2018-2027 is shown in **Table 1-2** of this Scoping Report. This indicates that three projects included in the TDPNI 2018-2027 are now complete; the Agivey (Garvagh) Cluster project and the Castlereagh – Knock cable uprate project that were assessed within the SEA for the 2018-2027 Plan, and the Curraghmulkin (Drumquin) Cluster project that was not assessed in the SEA as planning permission had already been approved at that time. **Table 4.22** outlines these schemes and the Air indicators associated with these project areas.

Table 4-22 Projects completed from the TDPNI 2018 and associated Air data

Project Name	Air Quality Sensitive Areas	Renewable Energy Connection
Agivey (Name subsequently changed to Garvagh) 110/33 kV Cluster	None identified in the SEA.	Project facilitates renewable energy connection.
Castlereagh – Knock 110 kV Cables Uprate	Existing line crosses through the Upper Newtownards Road AQMA Ormeau Road AQMA and Normandy Court AQMA within the study area but not in close proximity to the existing line.	Project does not facilitate renewable energy connection.
Curraghmulkin (Drumquin) 110/33 kV Cluster	None identified in the project EIA.	Project facilitates renewable energy connection.

For the Agivey (Garvagh) Cluster project, the SEA Environmental Report for the TDPNI 2018-2027 identified no air quality sensitive areas within the study area for the project. The associated project-level EIA concluded that there would be no significant impact on the surrounding highway network from construction-related traffic. The short-term and temporary nature of the works involved in this project would only result in minor vehicle emissions and would not lead to any strategic-level effects. Furthermore, this project facilitates the connectivity of renewable energy sources. Therefore, it is considered that this project meets the objective for the Air topic to 'minimise risk to local air quality and contribute to improving regional emissions'.

For the Castlereagh – Knock 110 kV Cables Uprate, the SEA Environmental Report for the TDPNI 2018-2027 identified the potential for construction phase increases in local air emissions in the Upper Newtownards Road AQMA, as the existing line crossed this sensitive area. The Upper Newtownards Road AQMA (also known as Belfast AQMA No.3) was declared for nitrogen dioxide NO_2. The short-term and temporary nature of the works involved in this project would only result in minor vehicle emissions and would not lead to any strategic-level effects. This project does not directly facilitate any renewable energy connections.

The Curraghmulkin (Drumquin) Cluster project was not assessed as part of the SEA for the TDPNI 2018-2027. Air quality was scoped out of the associated project-level EIA. According to this report, there are no air quality sensitive areas identified by (the former) Fermanagh District Council within the vicinity of this project, and emissions from the construction plant equipment were not considered to be significant when compared to the existing emissions including those emitted from the traffic on the existing road network within this rural area. The short-term and temporary nature of the works involved in this project would only result in minor vehicle emissions and would not lead to any strategic-level effects. Furthermore, this project facilitates the connectivity of renewable energy sources.

4.3.6 Climatic Factors

Climate change represents one of the most important threats to our environment, and to our economy, and projections indicate that hotter, drier summers and warmer wetter winters will occur over the next century because of climate change. The Paris agreement, signed in 2015, committed to strengthening the global response to the threats of climate change, by holding the global temperature rise to no more than 2°C and

preferably below 1.5°C. Key to this agreement is the reduction of Greenhouse Gas (GHG) emissions fast enough to achieve this temperature goal.

The recent European Green Deal 2019 aims to make significant advances in climate action, providing a more sustainable low-carbon economy for the EU. It plans to boost the efficient use of resources by moving to a clean circular economy, and to restore biodiversity and cut pollution. The Deal has set a goal of net zero carbon emissions by 2050, and a 50-55% reduction in emissions by 2030. The UK Climate Change Act 2008 introduced a legally binding target for the reduction of GHG emissions in the UK by at least 80% below 1990 baseline levels by 2050. The target for the current 2018-2022 period is a reduction in emissions by 37% by 2020 and, for the next period (2025) to reduce emissions by 51%. The Act was amended in 2019, and now commits the UK to reducing emissions by 100% by 2050 from 1990 baseline levels (in line with the EU's 'net zero 2050 target'). The first climate change legislation was passed by the Northern Ireland Assembly in 2022; the Climate Change Act (Northern Ireland) 2022 sets out the legal framework for tackling climate change by reducing GHG emissions in Northern Ireland, with a net zero target by 2050 from baseline levels.

It is considered that the key issues associated with implementation of the draft TDPNI climatic factors comprise:

- Potential for effects on climate resilience (mitigation and adaptation), including extreme weather events.
- Potential for interaction with areas of climate change induced flood risk (fluvial, pluvial or coastal).
- Potential for effects on lands that are carbon sinks (e.g., peatland, forests).
- Potential effects on GHG emissions owing to new renewable energy connections.

4.3.6.1 Northern Ireland's Climate

Northern Ireland has a moderate climate, due to the effects of the Atlantic Ocean, with relatively mild winters and cool summers. There are localised differences in temperature, cloud and precipitation across the region, introduced by the indented shape of the coastline and the presence of high ground. The mean annual temperature at low altitudes in Northern Ireland varies from about 8.5 °C to 10.0 °C, with the higher values occurring around or near to the coasts. January and February are usually the coldest months, and July the warmest. Rainfall varies widely across Northern Ireland, with the wettest places being in the Sperrin, Antrim and Mourne Mountains, and the highest areas having average annual totals of about 1600mm. Higher averages occur in the more western counties of Fermanagh, Derry / Londonderry and Tyrone, while the driest places occur further east around Strangford Lough and close to the east coast, and near to the southern and eastern shores of Lough Neagh - where the annual totals are less than 800mm[72].

4.3.6.2 Climate Change and GHG Emissions in Northern Ireland

According to the UK Climate Change Risk Assessment, infrastructure in Northern Ireland is exposed to a range of climate hazards; flooding poses the greatest long-term risk to infrastructure from climate change, however there are growing risks from heat, water scarcity and slope instability caused by severe weather[73].

The UK Climate Change Projections (UKCP18)[74] anticipate a greater chance of hotter, drier summers and warmer, wetter winters with more extreme weather and rising sea levels. The high emission scenario for Northern Ireland shows that by:

- 2070 winters could be up to 3.9 °C warmer and summers could be up to 4.9°C hotter.
- 2070 winters could be 25% wetter and summers 38% drier.
- 2100 sea levels in Belfast could rise by up to 94cms.

[72] https://www.metoffice.gov.uk/climate/uk/regional-climates/ni#rainfall.

[73] https://www.theccc.org.uk/wp-content/uploads/2016/07/UK-CCRA-2017-Northern-Ireland-National-Summary.pdf

[74] https://www.daera-ni.gov.uk/articles/uk-climate-change-projections

These effects of climate change are likely to increase pluvial, fluvial and coastal flooding and will require future development to be adaptable or resilient to future climatic changes and associated impacts. Climate change could have considerable impacts on riparian and coastal developments from increases in flood risk, with sea level rise already being observed and wetter winters anticipated. These potential impacts could have serious consequences in Northern Ireland, where many of the main cities and towns are on the coast or on large rivers. This could also have significant consequences for transmission infrastructure that proposes to cross and/or run parallel to natural or artificial waterbodies.

The Northern Ireland GHG Inventory includes data on GHG emissions in Northern Ireland, forming part of the UK GHG Inventory reported at an international level in line with UK commitments under the Kyoto Protocol. The Inventory is updated annually, the latest available covers the period 1990-2020[75].

In 2020, Northern Ireland accounted for 5.2% of the UK total GHG emissions, which is higher than its population share of 2.8%. Since the base year (1990), Northern Ireland's total GHG emissions have decreased by 24% from 27.5 to 20.9 million tonnes of carbon dioxide equivalent ($MtCO_2e$), with a 4.2% decrease from 2019 to 2020, largely attributable to the transport sector which was impacted by travel restrictions imposed during the COVID-19 pandemic. Travel reduction was seen across all vehicle types, but particularly buses and passenger cars. Residential emissions also declined in this period, driven by fuel switching from coal to natural gas.

Agriculture was the sector responsible for the greatest amount of GHG emissions in 2020 (26.6%), followed by transport (16.2%), residential (13.7%), energy supply (13.6%) and business (13.4%) sectors. The energy supply sector experienced a fall in emissions of 2.5MtCO2e from 2019 to 2020 (2.5% decrease), due mainly to fuel switching from coal and oil to natural gas. Since the base year, there has been a 46.4% decrease in emissions from this sector.

The composition of GHG emissions for Northern Ireland in 2020 was as follows:

- 68% Carbon dioxide (UK 79%)
- 23% Methane (UK 13%)
- 8% Nitrous oxide (UK 5%)
- 1% Fluorinated and other gases (UK 3%)

Across all sectors other than agriculture and waste management, carbon dioxide was the most common emitted GHG. Within the energy supply sector, CO_2 comprised the total amount of GHG emissions.

The energy supply sector is currently responsible for 13.6% of GHG emissions in Northern Ireland, comprised entirely of CO_2. Energy-related sectors (business, energy supply, industrial process, public, residential and transport) together account for almost 60% of Northern Ireland's GHG emissions and, to target changes in the overall energy sector, an Energy Strategy for Northern Ireland – Path to Net Zero Energy was published in 2021[76]. The primary targets of this strategy are:

1. Energy Efficiency: Deliver energy savings of 25% from buildings and industry by 2030.
2. Renewables: Meet at least 70% of electricity consumption from a diverse mix of renewable sources by 2030
3. Green Economy: Double the size of our low carbon and renewable energy economy to a turnover of more than £2 billion by 2030.

GHG emissions are an indicator in the draft 2016-2021 PfG, based on a criteria for change set at +/ 1.0 percentage points annually since the baseline of 21.9 $MtCO_2e$ in 2014. The decrease of 7.7% from 2014 to 2020 is considered as 'no change' for PfG reporting. On the whole, the UK has reduced emissions by nearly 50% since the base year, however the different parts of the UK vary in their reduction, with Northern Ireland achieving the lowest reduction of 24% in emissions to date (Scotland 51%; England 53%; Wales 40%).

[75] https://www.daera-ni.gov.uk/sites/default/files/publications/daera/NI%20Greenhouse%20Gas%20Statistics%201990-2020%20Report%20FINAL-revised.pdf

[76] https://www.economy-ni.gov.uk/sites/default/files/publications/economy/Energy-Strategy-for-Northern-Ireland-path-to-net-zero.pdf

4.3.6.3 Summary of Existing Pressures and Issues for Climatic Factors in Northern Ireland

Climate change represents a significant challenge internationally. GHG emissions in Northern Ireland have decreased by 24% since 1990, owing to improvements in energy efficiency, switching from coal to natural gas as a fuel source, and improvements in the management of landfills. The energy supply sector has lower emissions of GHGs currently than it had in 1990. The UK has committed to a target of a 37% reduction in GHGs by 2020 and, through the Climate Change Act (Northern Ireland) 2022, Northern Ireland has committed to a target of 100% reduction by 2050; although in 2020 the UK as a whole had a 49.9% reduction, in Northern Ireland GHG reduction stood at only 23.9%. This has implications for successfully contributing to the UK and Northern Ireland targets for 'net zero emissions' by 2050.

Activities associated with the development of transmission infrastructure, including manufacturing, transportation, construction, maintenance and decommissioning, may lead to increased emission of pollutants into the atmosphere, and contribute towards anthropogenic climate change. However, the government, in its Energy Strategy, has set a green energy target for at least 70% of electricity consumption from renewable sources by 2030. Progress has been made towards this target; the most recent figures[77] showing that 49.3% of electricity consumption came from indigenous renewable sources for the 12-month period October 2021 to September 2022, an increase of 7.2% from the previous 12-month period. Of all renewable energy generated within Northern Ireland in this period, 84.9% was generated from wind. Continued progress in this way, through the ongoing connection of renewable energy generators to the national grid, is likely to result in a reduced dependency upon fossil fuels, a net reduction in the emission of pollutants into the atmosphere, and support climate change mitigation. The draft TDPNI should aim to advance these targets.

4.3.6.4 SEA Monitoring Update for Climatic Factors

For the Climatic Factors topic, the monitoring proposed for the first iteration of the TDPNI is shown in **Table 4.23**.

Table 4-23 Monitoring of Climatic Factors proposed in the TDPNI 2018-2027

Objective	Sub-Objective	Indicators	Possible Data / Responsible Authority
Adaption of infrastructure to potential climatic change and reduced GHG emissions.	Adaption of infrastructure to potential climatic change and reduced GHG emissions.	Medium probability climate change (cc) influenced flood extents - Pluvial and fluvial 100 year + cc and coastal 200 year +cc flood extents. Enable increased renewable energy connection to reduce requirements for fossil fuel burning.	Dfl Rivers data – flood extents / risk – Flood Risk Management Plans. Met Office regional information. SONI / NIE – Annual Reporting and Plans.

A status update and description of projects that were assessed as part of the SEA for the TDPNI 2018-2027 is shown in **Table 1-2** of this Scoping Report. This indicates that three projects included in the TDPNI 2018-2027 are now complete; the Agivey (Garvagh) Cluster project and the Castlereagh – Knock cable uprate project that were assessed within the SEA for the 2018-2027 Plan, and the Curraghmulkin (Drumquin) Cluster project that was not assessed in the SEA as planning permission had already been approved at that time. **Table 4.24** outlines these schemes and the Climatic Factors indicators associated with these project areas.

[77] https://www.economy-ni.gov.uk/news/electricity-consumption-and-renewable-generation-northern-ireland-year-ending-september-2022#:~:text=In%20terms%20of%20the%20volume,sources%20located%20in%20Northern%20Ireland.

Table 4-24 Projects completed from the TDPNI 2018 and associated Climatic Factors data

Project Name	Climate Change Flood Extents	Renewable Energy Connection
Agivey (Name subsequently changed to Garvagh) 110/33 kV Cluster	Significant areas of 0.5% AEP climate change pluvial flood risk in vicinity of Glen Ullin and Dunnavenny Bridge.	Project facilitates renewable energy connection.
Castlereagh – Knock 110 kV Cables Uprate	Significant area of 0.5% AEP climate change pluvial flood risk within the vicinity of the existing line in the Braniel region of Castlereagh.	Project does not facilitate renewable energy connection.
Curraghmulkin (Drumquin) 110/33 kV Cluster	*From project EIA:* No specific information available.	Project facilitates renewable energy connection.

For the Agivey (Garvagh) Cluster project, the SEA Environmental Report for the TDPNI 2018-2027 identified significant areas of 0.5% AEP climate change pluvial flood risk in the vicinity of Glen Ullin and Dunnavenny Bridge, that could lead to difficult working conditions and flooding of the new substation and should be avoided in the construction of the new substation and transmission line. As discussed in Section 4.3.4.5 monitoring of the Water topic, the associated project-level EIA concluded that, as with any development adjacent to a watercourse, there is always a residual flood risk as the required standard of protection can be exceeded. However, the mitigation measures afforded would reduce the likelihood of such an occurrence and any residual flood risk would be considered as low. This project facilitates the connectivity of renewable energy sources.

For the Castlereagh – Knock 110 kV Cables Uprate project, the SEA Environmental Report for the TDPNI 2018-2027 identified a significant area of 0.5% AEP climate change pluvial flood risk within the vicinity of the existing line in the Braniel region of Castlereagh, that could lead to difficult working conditions during construction. However, it was noted that the climate change flood risk within the study area is not significantly different from the current day scenario risk, and that ensuring that the 275 kV line infrastructures in these flood risk areas are resilient to flooding would minimise the impacts of potential future flood events on transmission infrastructure within the study area. This project does not directly facilitate the connectivity of renewable energy sources.

The Curraghmulkin (Drumquin) Cluster project was not assessed as part of the SEA for the TDPNI 2018-2027. According to the associated project-level EIA, the substations will include an allowance for climate change through the raising of finished floor levels and development levels at least 600mm above the nearest 1% AEP flood levels. This project facilitates the connectivity of renewable energy sources.

4.3.7 Material Assets

The term ‘Material Assets’ can be considered very broadly within the SEA process, encompassing for example infrastructure, settlements, transport and utilities.

Given the geographic scope of the TDPNI and the large-scale nature of proposed alternatives, there is potential for transmission infrastructure development and operation to impact upon, or be impacted by, existing material assets. It is considered that the key issues associated with implementation of the draft TDPNI and material assets comprise:

- Potential for effects on transport infrastructure.
- Potential for effects on energy infrastructure.
- Potential for effects on agricultural lands.

4.3.7.1 Transport Infrastructure and Assets in Northern Ireland

The road network of Northern Ireland intersects both urban and rural areas in the form of motorways, A roads, B roads and local roads; together these comprise approximately 25,700km of public road[78]. Approximately 9,700 km of footways, 5,800 bridges and 290,000 streetlights[79] are associated with this network of roads. Northern Ireland also has six railway routes, which together cover a distance of 329,855km; with the exception of the Portrush-Coleraine line, these all serve the city of Belfast along their route. Air travel infrastructure includes three main commercial airports: Belfast International Airport, City of Derry Airport and George Best Belfast City Airport. There are also 23 small commercial, private and military airfields throughout Northern Ireland, including St Angelo Airport in Enniskillen and Newtownards Airport. The main transport infrastructure in Northern Ireland is shown in **Figure 4-10**.

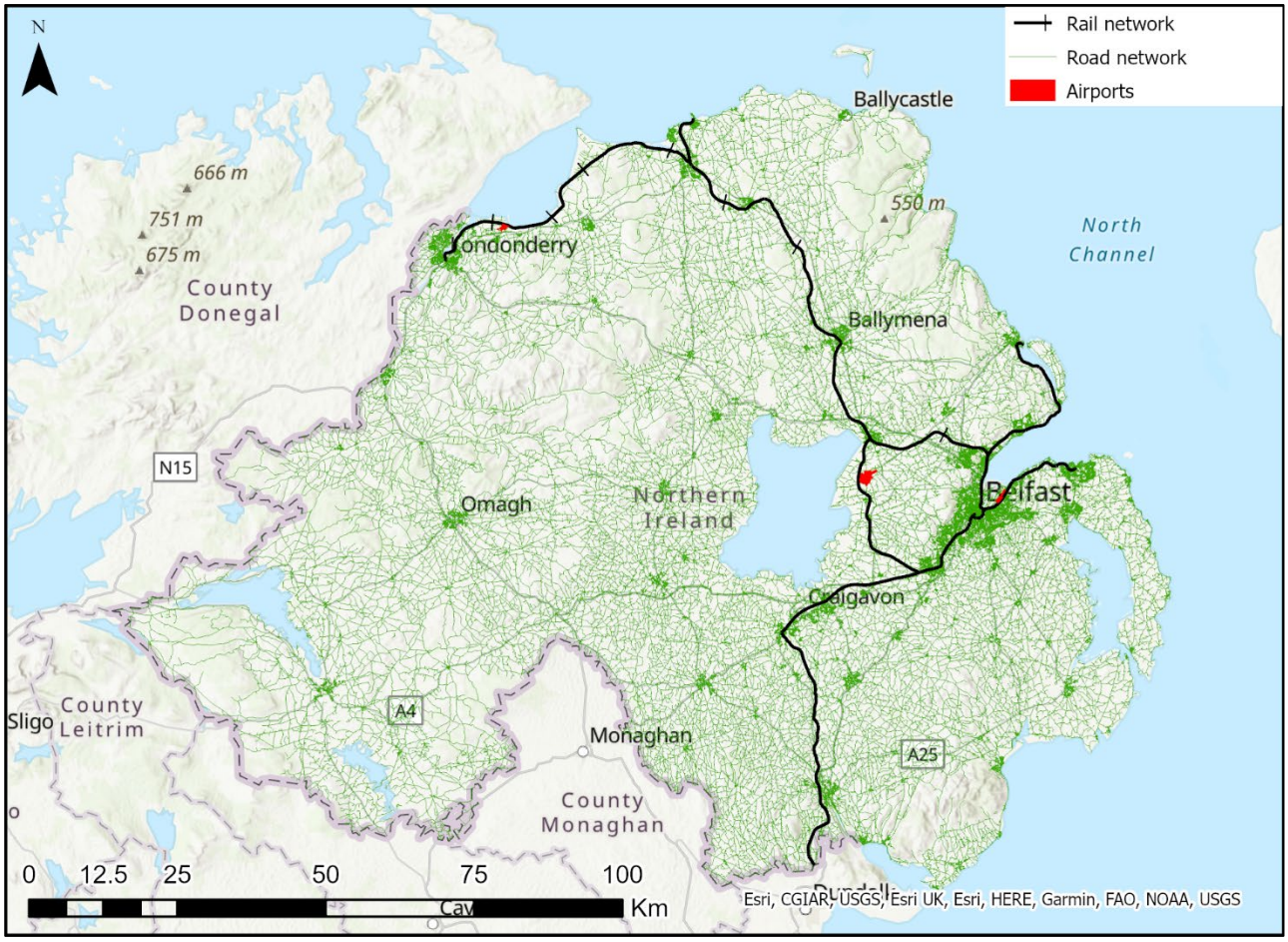


Figure 4-10 Main transport infrastructure within Northern Ireland

4.3.7.2 Energy Infrastructure and Assets in Northern Ireland

Northern Ireland Electricity Networks (NIE Networks) owns the electricity transmission and distribution networks in Northern Ireland. The existing electricity transmission infrastructure in Northern Ireland comprises 2,300km of transmission network, and includes 713km of 275 kV overhead line and 1km of cable, 934km of 110kV overhead line, 112km of 110 kV cable and 8,427 substations. The distribution infrastructure includes 47,000km of distribution network, and serves over 910,000 customers including homes, businesses and farms. Northern Ireland has three fossil fuel generating plants, located at Ballylumford, Kilroot and Coolkeeragh, which

[78] https://www.infrastructure-ni.gov.uk/news/northern-ireland-transport-statistics-2019-2020-statistical-report-has-been-published-today

[79] https://www.infrastructure-ni.gov.uk/transportni-overview-0#:~:text=DfI%20Roads%20is%20responsible%20for,and%20367%20public%20car%20parks.

sell electricity into the Single Electricity Market pool along with other generators, including renewable energy. Electricity is also supplied to this pool by Mutual Energy Limited via the Moyle interconnector.

There are four gas transmission pipelines within Northern Ireland. These are:

- South North Pipeline (SNP), owned by BGE NI. This pipeline is 156km long and runs from Co. Antrim to Gormanstown in Co. Meath, where it links into the NWP.
- North West Pipeline (NWP), owned by BGE NI. This pipeline is 112km long and runs from Carrickfergus to Coolkeeragh Power Station.
- Scotland to Northern Ireland Pipeline (SNIP), owned by Premier Transmission Limited. This pipeline is 135km long and runs from Twynholm in Scotland to Ballylumford.
- Belfast Gas Transmission Pipeline (BGTP), owned by Belfast Gas Transmission Limited. This pipeline is 26km long and is connected to the SNIP and the NWP, while also supplying gas to the Belfast distribution network.

Gas distribution conveys gas to licenced areas within Northern Ireland through medium and low pressure gas mains. There are three distribution licenced areas within Northern Ireland: the Greater Belfast and Larne distribution licenced area, operated by Phoenix Natural Gas Limited; the Ten Towns distribution licenced area, operated by Firmus Energy (Distribution) Limited; and the West distribution licenced area, operated by SGN Natural Gas Limited.

The main existing energy infrastructure in Northern Ireland is shown in **Figure 4-11**.

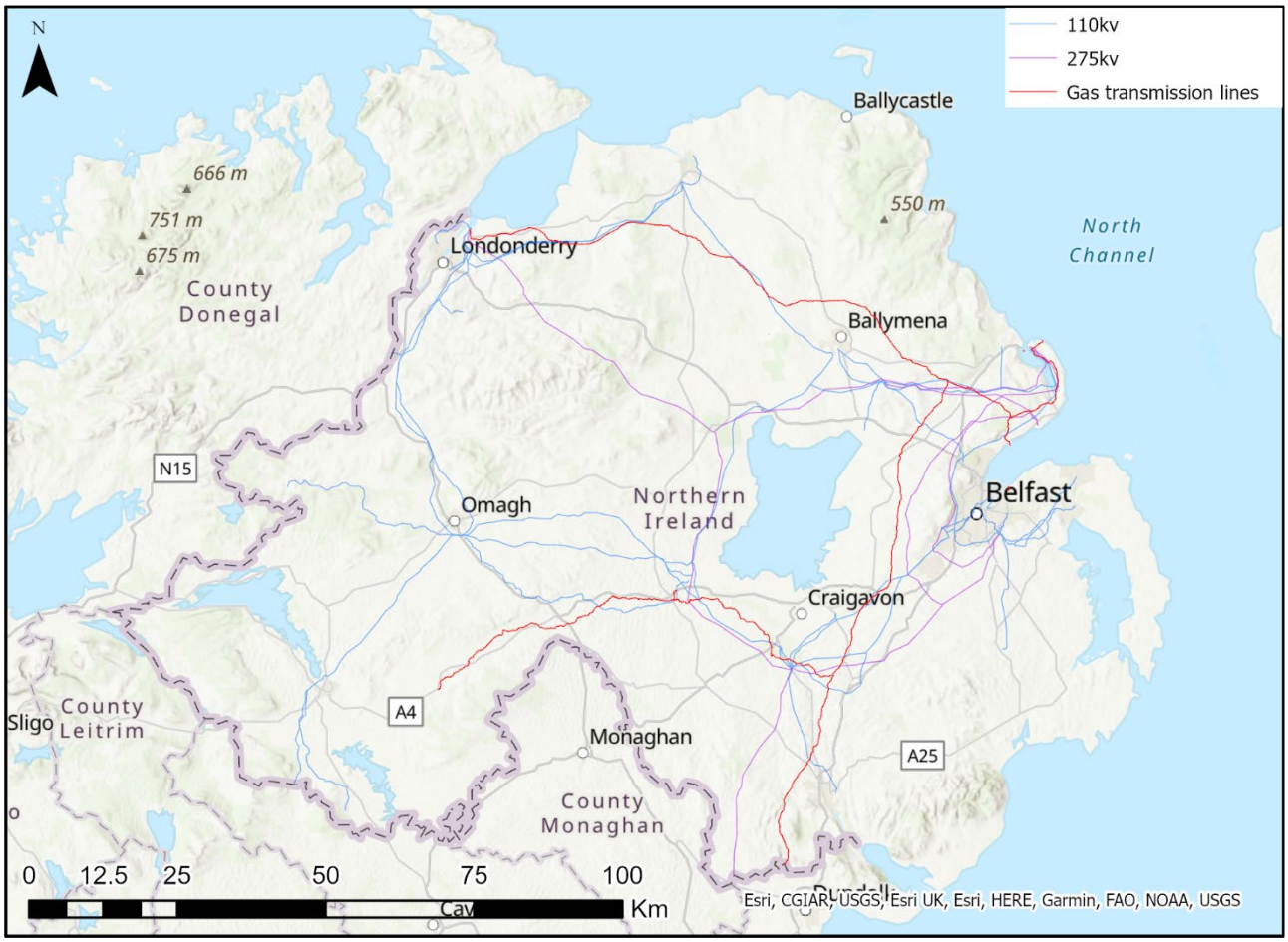


Figure 4-11 Main energy infrastructure within Northern Ireland

4.3.7.3 Summary of Existing Pressures and Issues for Material Assets in Northern Ireland

Population growth and development are placing increasing pressure on many infrastructure assets, such as water treatment and supply and wastewater treatment, particularly in urban areas. Annual population growth has been positive for the past 25 years in Northern Ireland, and the total population is predicted to increase from approximately 1.9 million in 2021 to approximately 1.99 million by 2043. Population growth is likely to increase the demand for infrastructure and the consumption of energy.

Implementation of the draft TDPNI, and the proposed transmission infrastructure projects therein, has the potential to lead to short-term temporary disruption to material assets, including existing electricity infrastructure (and thus power supply) during the construction phase. There is also potential for short-term negative impacts on transport infrastructure (roads and rail) resulting from power-supply disruptions and increased construction related traffic. In addition, as discussed in Section 4.3.3, land use across Northern Ireland is dominated by agricultural use (comprising >74%), and most transmission infrastructure is routed across / located within agricultural lands. There is therefore also potential for short-term disruption to agricultural land use activities in the vicinity of works.

4.3.7.4 SEA Monitoring Update for Material Assets

For the Material Assets topic, the monitoring proposed for the first iteration of the TDPNI is shown in **Table 4.25**.

Table 4-25 Monitoring of Material Assets proposed in the TDPNI 2018-2027

Objective	Sub-Objective	Indicators	Possible Data / Responsible Authority
Provide new, robust electrical transmission infrastructure with minimal disruption to other assets and infrastructure.	Provide new, robust electrical transmission infrastructure with minimal disruption to other assets and infrastructure.	Transmission infrastructure developed or upgraded. Potential for impacts on transport (road, rail, air) and energy infrastructure (gas). Potential for loss of or impacts to agricultural land assets.	SONI and NIE– Annual Reporting and Plans SGN data Transport NI and Translink data LPSNI data EEA - CORINE Landcover

A status update and description of projects that were assessed as part of the SEA for the TDPNI 2018-2027 is shown in **Table 1-2** of this Scoping Report. This indicates that three projects included in the TDPNI 2018-2027 are now complete; the Agivey (Garvagh) Cluster project and the Castlereagh – Knock cable uprate project that were assessed within the SEA for the 2018-2027 Plan, and the Curraghmulkin (Drumquin) Cluster project that was not assessed in the SEA as planning permission had already been approved at that time. **Table 4.26** outlines these schemes and the Material Assets indicators associated with these project areas.

Table 4-26 Projects completed from the TDPNI 2018 and associated Material Assets data

Project Name	Transmission infrastructure developed / upgraded	Interaction with transport / energy infrastructure	Loss of / impact on agricultural lands
Agivey (Name subsequently changed to Garvagh) 110/33 kV Cluster	Moderate scale local development of new electricity grid infrastructure – new substation and associated transmission line.	Expected to be minimal disruption to other assets and infrastructure.	Potential for disturbance to or loss of agricultural land within the study area.

Castlereagh – Knock 110 kV Cables Uprate	Reinforced electricity infrastructure	Potential for construction phase disturbance impacts, such as power supply disruptions and increased construction related traffic to four sections of A road within the study area during the restring. Potential for construction phase difficulties in the areas in which 33 kV lines are crossed by the 110 kV line that is to be uprated.	Potential for construction phase disturbance to areas of agricultural land that are crossed by the existing 110 kV line, during the restring.
Curraghmulkin (Drumquin) 110/33 kV Cluster	Moderate scale local development of new electricity grid infrastructure – new substation and associated transmission line.	*From project EIA:* Expected to be minimal disruption to other assets and infrastructure.	*From project EIA:* Potential for a permanent loss of a relatively small area of agricultural land.

For the Agivey (Garvagh) Cluster project, the SEA Environmental Report for the TDPNI 2018-2027 identified the potential for disturbance to, or loss of, agricultural land. The disruption to other assets and infrastructure was expected to be minimal. As discussed in Section 4.3.3.5 monitoring of Geology, Soils and Land Use, the associated project-level EIA identified that only a small area of moderate quality agricultural land would be lost, considered to be insignificant at a strategic level. It also concluded that there would be no significant impact on the surrounding highway network from construction-related traffic, and only temporary impacts on existing utilities. The completion of this project, comprising a new substation and associated transmission line is considered to provide a moderate scale local development of robust transmission infrastructure.

For the Castlereagh – Knock 110 kV Cables Uprate project, the SEA Environmental Report for the TDPNI 2018-2027 identified the potential for temporary disturbance to agricultural land crossed by the restring route, for construction phase disturbance to power supply, increased traffic to sections of A road and potential difficulties in the crossing of 33 kV lines. The temporary nature of the works involved in this project would only result in minor disruption to the local traffic network from construction-related traffic and temporary impacts on existing utilities and would not lead to any strategic-level effects.

The Curraghmulkin (Drumquin) Cluster project was not assessed as part of the SEA for the TDPNI 2018-2027. According to the associated project-level EIA, only a small area of agricultural land would be lost, considered to be insignificant at a strategic level. It also concluded that there would be no significant impact on the surrounding highway network from construction-related traffic, and only temporary impacts on existing utilities. The completion of this project, comprising a new substation and associated transmission line is considered to provide a moderate scale local development of robust transmission infrastructure.

4.3.8 Cultural, Architectural and Archaeological Heritage

Cultural heritage, including archaeological heritage and architectural heritage, are places and objects of beauty, cultural, historic, scientific, social or spiritual value. They include archaeological monuments, world heritage sites, protected structures, designed landscapes, place names, language and inherited traditions. Northern Ireland is rich in cultural, archaeological and architectural heritage, with many important archaeological sites, monuments and heritage buildings.

It is considered that the key issues associated with implementation of the draft TDPNI and Cultural, Architectural and Archaeological Heritage comprise:

- Potential for effects on archaeological features or their settings.
- Potential for effects on architectural features or their settings.
- Potential for effects on wrecks or other marine heritage features.
- Potential for the discovery of new cultural heritage features during construction.

4.3.8.1 Heritage Assets

There are 51,820 recorded heritage assets within Northern Ireland that have been included in the Historic Environment Record of Northern Ireland (HERoNI). This includes:

- 17,855 entries on the Sites and Monuments Record.
- 15,383 recorded historic buildings.
- 15,704 Industrial Heritage Record sites.
- 738 Defence Heritage Record sites.
- 738 Battlefield sites.
- 663 Historic Parks and Gardens Record sites.
- 340 Historic Wrecks.
- 399 Historic Nucleated Urban Settlements (including those with identified areas of archaeological potential).

There are also over 12,000 designated heritage assets in Northern Ireland. This includes:

- 190 Monuments in State Care.
- 2,014 Scheduled Historic Monuments.
- 2 Protected Wrecks.
- 8,976 Listed Buildings (Listed Buildings are those designated through listing as being of 'special architectural or historic interest' under Section 80 of the Planning Act (NI) 2011).
- 300 Historic Parks and Gardens of Special Historic Interest (A Register of Parks, Gardens and Demesnes of Special Historic Interest was established in the late 1990s to identify those sites that can be considered of exceptional importance within Northern Ireland).
- 58 Conservation Areas.

Historic Parks, Gardens and Demesnes form part of the HERoNI, and are identified on the basis of these records for protection in the Local Development Plan (LDP) process. Local Landscape Policy Areas (547 no.), Areas of Significant Archaeological Interest (10 no., representing distinctive areas of the historic landscape in Northern Ireland), and Areas of Townscape / Village Character (177 no.) are LDP designations which may include assets recorded by HERoNI.

There is also one UNESCO world heritage site in Northern Ireland; being the Giant's Causeway, designated for its unique geological heritage.

It is important to note that The HERoNI archive is still growing, with new assets added as new information is provided.

An evidence-based study has been completed to determine the actual effects of the construction, presence and operation of high voltage transmission projects including overhead lines, underground cables, and substations, on archaeological, architectural and cultural heritage, in the Republic of Ireland[80]. A

[80] RPS Group 2016. EirGrid Evidence Based Environmental Studies Study 2: Cultural Heritage. Literature review and evidence based field study on the effects of high voltage electricity infrastructure on archaeological, architectural and cultural heritage in Ireland.

comprehensive review of available monitoring and excavation reports for transmission projects (overhead lines and infrastructure) from the previous 40 years was undertaken as part of this study. This review indicated that identified impacts on cultural heritage from the construction of overhead lines is generally small in scale, owing to the limited excavation required for the construction of poles or pylons, and that these heritage sites should therefore be easily avoidable. Greater potential was found for projects involving underground cabling to interact with cultural heritage features, particularly archaeological sites, owing to the requirement for excavation of a long, linear trench. Records from projects involving substation development indicated that these did not reveal large-scale archaeological sites; although this could be expected to occur due to the relatively large scale of these sites, these projects involved initial site studies that would enable the avoidance of sensitive areas. Field studies were undertaken of sections or sites of existing power lines, cables and substations. At approximately one third of these sites, no threat was found to any cultural heritage features, while at the remaining sites minor to moderate threats were found to the wider site setting. In a few instances, projects were found to have had a significant impact on existing archaeology.

4.3.8.2 Summary of Existing Pressures and Issues for Cultural Heritage in Northern Ireland

Built heritage in Northern Ireland has been adversely affected by population growth and expansion of the agricultural sector since the 18th century, with major landscape changes such as marginal land reclamation and removal of peatland occurring since the UK joined the EU in the 1970s[81]. According to the most recent State of the Environment report for Northern Ireland (2013), the archaeological resource is at risk from agricultural land use practices, and from urban development. While archaeology and built heritage in urban areas tends to be most susceptible to impacts associated with development, resources in rural areas are susceptible to impacts associated with agriculture, particularly through cultivation, but also through stock density and machinery use. At present, 527 heritage assets, including 5.4% of listed buildings, are on the Heritage at Risk register, while 3% of Scheduled Historic Monuments are considered to be in poor condition[82]. Environmental protection policies since the 1980s have brought protection to known archaeological sites and have incentivised good management practices, however protected and unprotected sites are considered to remain at risk from arable practices and urban development.

The construction of proposed transmission infrastructure projects such as overhead lines, has some potential for direct impacts on cultural heritage features e.g., through excavation for the construction of poles or pylons, however known heritage sites should be avoidable during route planning. Factors such as good routing practices, well designed EIA processes, greater statutory protection and better engagement with regulatory authorities should enable the avoidance of significant impacts on heritage features that have resulted from past transmission infrastructure developments[83]. However, the potential for indirect effects on these sites remains, such as effects on the setting of features, and the impact of crossing sensitive cultural landscapes, and should be minimised through the application of best practice. Certain cultural heritage features have the potential to be transboundary in nature, such as earthworks and canals; there may be potential for direct effects on these features within the Republic of Ireland, as well as indirect effects on the setting of features This should be taken into account for any projects that are planned in proximity to the border with the Republic of Ireland.

4.3.8.3 SEA Monitoring Update for Cultural Heritage

For the Cultural Heritage topic, the monitoring proposed for the first iteration of the TDPNI is shown in **Table 4.27**.

[81] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/corporate-report-from-evidence-to-opportunity-second-assessment-of-state-of-ni-environment-2013.pdf

[82] NI Heritage Statistics (communities-ni.gov.uk)

[83] EirGrid Evidence Based Environmental Studies Study 2 Cultural Heritage. (November 2015).

Table 4-27 Monitoring of Cultural Heritage proposed in the TDPNI 2018-2027

Objective	Sub-Objective	Indicators	Possible Data / Responsible Authority
Protect the historic environment and cultural heritage.	Protect the historic environment and cultural heritage.	Potential for impacts on, or the setting of, known archaeological heritage features. Potential for impacts on, or the setting of, known architectural heritage features.	NIEA, DfC Historic Environment Division, DAERA and UNESCO data

A status update and description of projects that were assessed as part of the SEA for the TDPNI 2018-2027 is shown in **Table 1-2** of this Scoping Report. This indicates that three projects included in the TDPNI 2018-2027 are now complete; the Agivey (Garvagh) Cluster project and the Castlereagh – Knock cable uprate project that were assessed within the SEA for the 2018-2027 Plan, and the Curraghmulkin (Drumquin) Cluster project that was not assessed in the SEA as planning permission had already been approved at that time. **Table 4.28** outlines these schemes and the Cultural Heritage indicators associated with these project areas.

Table 4-28 Projects completed from the TDPNI 2018 and associated Cultural Heritage data

Project Name	Interaction with archaeological heritage	Interaction with architectural heritage
Agivey (Name subsequently changed to Garvagh) 110/33 kV Cluster	Three SMR sites.	One listed building.
Castlereagh – Knock 110 kV Cables Uprate	Con O'Neill's Castle SMR site.	Three listed buildings Four industrial heritage sites One defence heritage site.
Curraghmulkin (Drumquin) 110/33 kV Cluster	*From project EIA:* No known features likely to be affected.	*From project EIA:* No known features likely to be affected.

For the Agivey (Garvagh) Cluster project, the SEA Environmental Report for the TDPNI 2018-2027 identified the potential for direct impacts on, or the setting of, three SMR sites, and one listed building in the potential vicinity of the new substation and transmission line, and that a sufficient buffer should be kept from these sites. The associated project-level EIA indicated no potential for direct impact on known cultural heritage, and outlined mitigation to ensure no damage to unknown archaeological features if discovered, and tree screening to avoid any potential for impacts on the setting of a known feature.

For the Castlereagh – Knock 110 kV Cables Uprate project, the SEA Environmental Report for the TDPNI 2018-2027 identified the potential for indirect construction phase disturbance to one SMR site (Con O'Neill's Castle), three listed buildings, four industrial heritage sites and one defence heritage site crossed by, or in close proximity to the existing line. There are no reported adverse effects from interaction with heritage features.

The Curraghmulkin (Drumquin) Cluster project was not assessed as part of the SEA for the TDPNI 2018-2027. The associated project-level EIA found there to be no known or potential cultural heritage sites along the proposed alignment of the overhead line, no known cultural heritage sites that could be directly impacted by the development and only low potential to discover unknown archaeological features, with mitigation in place to ensure no damage to features if discovered.

4.3.9 Landscape and Visual Amenity

'Landscape' is defined by the European Landscape Convention as ''an area as perceived by people whose character is the result of the action and interaction of natural and/or human factors' and 'it concerns landscapes that might be considered outstanding as well as everyday or degraded landscapes'. It aims to promote

landscape protection, management and planning, and to organise European co-operation on landscape issues. The UK ratified the Convention in 2006, and it came into effect in 2007. Signatories to the Convention are required to draw up specific and/or sectoral landscape strategies, linked by landscape quality objectives.

The current landscape of Northern Ireland is a product of land use changes and human interventions that have taken place in the *c*.9, 000 years since the area was first settled. Although population growth in the late 20th and early 21st centuries expanded the extent of built-up areas, the Northern Ireland landscape remains predominantly rural, with agriculture the most prevailing land use[84].

It is considered that the key issues associated with implementation of the draft TDPNI and Landscape and Visual Amenity comprise:

- Potential for effects on areas of designated landscape quality and scenic views (i.e., in Local Area Plans).
- Potential for effects on the general landscape (including riverscapes, lakescapes and seascapes) and its sensitivity to development.

4.3.9.1 Designated Landscapes

The value of the landscape present in Northern Ireland is recognised through the designation of eight Areas of Outstanding Natural Beauty (AONB), designated for their distinctive landscape character and high scenic value, as follows:

- Strangford and Lecale AONB
- Antrim Coast and Glens AONB
- Causeway Coast AONB
- Ring of Gullion AONB
- Lagan Valley AONB
- Mourne AONB
- Binevenagh AONB
- Sperrin AONB

These areas cover approximately 325,000 hectares, or *c*.20% of the total land area of Northern Ireland.

There are also eight NIEA Country Parks, as well as 56 National Trust Sites within Northern Ireland, the latter of which include Rathlin Island Slieve Donard and Castle Coole. In addition, the Northern Ireland Landscape Character Assessment 2000, described below, identified special landscapes that it termed Areas of Scenic Quality; some of these areas have been included in Local Area Plans, where they may be designated as Areas of High Scenic Value (AoHSV).

4.3.9.2 Landscape Character Assessment

Landscape character assessments are used as a tool to identify the landscape features that give a locality its 'sense of place'. The use of landscape character assessments for this purpose arose in response to the European Landscape Convention of 2000. The Nature Conservation and Amenity Lands Order (NI) 1985 (NALCO) is the current legislative basis for the protection of landscapes. A Landscape Character Assessment of the whole territory of Northern Ireland was carried out in 1999, before the European Landscape Convention was published and became binding. The Northern Ireland Landscape Character Assessment 2000[85] (NILCA) subdivided the countryside into 130 Landscape Character Areas (LCAs), each based upon local patterns of geology, landform, landuse, cultural and ecological features. For each LCA, the key characteristics were

[84] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/corporate-report-from-evidence-to-opportunity-second-assessment-of-state-of-ni-environment-2013.pdf

[85] https://www.daera-ni.gov.uk/articles/landscape-character-northern-ireland

described and an analysis of landscape condition and its sensitivity to change was made. The land use planning system will generally refer to the NILCA where development might affect the landscape character[86].

The Northern Ireland Regional Landscape Character Assessment (NIRLCA), developed in 2016, aimed to complement the NILCA by providing a regional framework upon which more detailed local studies could be based. This subdivided the countryside into 26 Regional Character Areas (RCAs), based upon information relating to people and place and the combinations of nature, culture and perception that contribute to local uniqueness. These aim to provide information on which to base plans at a more local level that might affect landscape character. In addition, the Northern Ireland Regional Seascape Character Assessment[87] identified 24 Seascape Character Areas along the Northern Ireland coast, describing the key features and characteristics of each area, and relating these to neighbouring terrestrial LCAs.

The NIEA also published Northern Ireland's Landscape Charter in 2014 in response to the European Landscape Convention, with the following affirmations and guiding principles for decision making: landscape is essential; landscape contributes to wellbeing; landscape is part of identity; landscape reflects culture; landscapes matter and each of us has a right to landscape benefit; landscapes are shared and each of us is responsible; landscape is a networked asset whose whole is more than the sum of its parts; landscape change is inevitable but can be managed to enhance value; and transparency engenders awareness and confidence. Those interested in the value of Northern Ireland's landscape can sign the charter, thereby committing to these affirmations and guiding principles through their actions.

The NIEA has undertaken an assessment of the sensitivity of Northern Ireland's LCAs to windfarm development (NIEA, 2010[88]), which is expected to be largely comparable to its sensitivity to transmission infrastructure development. This describes the sensitivity of LCAs to wind energy development, taking into account the different landscape components and attributes that influence sensitivity to wind energy developments. Landscape sensitivity to wind energy development was considered as the extent to which the inherent character and visual amenity of a landscape are vulnerable to change due to this development, primarily a function of landscape character sensitivity (i.e., the degree to which a LCA is vulnerable to change which will affect its character); and visual sensitivity (i.e., the degree to which a particular view or visual landscape experience is vulnerable to change). Landscape value, through designation or local recognition of importance was also considered.

An evidence-based study was undertaken on the actual visual and landscape effect of the presence of high voltage transmission infrastructure over a range of typical landscapes in Ireland[89]. A literature review found no studies which confirmed that existing features and conditions (e.g., low elevation, clear sky, vegetation, etc.) influence the landscape and visual impact of transmission infrastructure. As part of this study, a field study aimed to determine how landscape character affects the impact of transmission infrastructure, and how this impact changes over distance. Significant impacts were found upon a wide range of landscapes throughout Northern Ireland; including rural lowland and upland areas, particularly within 400m of both tower and substation developments, while the distance for potentially significant effects was found to be higher for upland areas than for rural lowland areas. The study found that visual perception is determined by design, distance from the viewer, setting (i.e., hills, skyline), and visibility, as well as by the opinion of the viewer. Screening, such as from trees and hedgerows, was found to help reduce the impact of 110kV towers, while 'backclothing' (routing the towers against a background such as higher land) was found to help reduce the impact of 220kV and 400kV towers.

[86] http://www.niassembly.gov.uk/globalassets/documents/raise/knowledge_exchange/briefing_papers/series4/kess_es_policybriefing_landscape-planning-for-sustainable-development-.pdf

[87] https://www.daera-ni.gov.uk/publications/northern-ireland-regional-seascape-character-assessment

[88] Northern Ireland Environment Agency (2010), Wind Energy Development in Northern Ireland's Landscapes: Supplementary Planning Guidance to accompany Planning Policy Statement 18 'Renewable Energy'. NIEA Research and Development Series No 10/01, Belfast.

[89] RPS Group 2014. EirGrid Evidence Based Environmental Studies Study 10: Landscape and Visual. Literature review and evidence based study on the landscape and visual effects of high voltage electricity infrastructure in Ireland.

4.3.9.3 Summary of Existing Pressures and Issues for Landscape and Visual Amenity in Northern Ireland

The main pressures on Landscape in Northern Ireland, according to the most recent State of the Environment report (2013), are development (including housing, industrial and recreational), infrastructure, extraction industries, agriculture and forestry, and tourism. Land cover and habitats have changed in the past few decades as a result of population increases, changes in household structure and employment patterns and agricultural restructuring. While the economic recession slowed the rate of developments for a period post-2008, actions to stimulate economic growth put continued pressure on urban and rural landscapes[90].

Implementation of the draft TDPNI and proposed transmission infrastructure projects therein, has potential to lead to negative effects on local landscape character or visual quality alone, or in combination with, existing pressures. There is potential for direct or indirect effects on the general landscape, as well as on areas designated for landscape quality and scenic views. Effects on the landscape have the potential to be transboundary in nature where projects are developed in proximity to the border with the Republic of Ireland; the potential for direct or indirect effects on designated landscape areas as well as on the general landscape should be taken into account, where relevant.

4.3.9.4 SEA Monitoring Update for Landscape and Visual Amenity

For the Landscape and Visual Amenity topic, the monitoring proposed for the first iteration of the TDPNI is shown in **Table 4.29**.

Table 4-29 Monitoring of Landscape and Visual Amenity proposed in the TDPNI 2018-2027

Objective	Sub-Objective	Indicators	Possible Data / Responsible Authority
Minimise the potential for negative impacts on landscape and visual amenity.	Minimise the potential for negative impacts on landscape and visual amenity.	Landscape sensitivity to infrastructure development. Potential for impacts on visually sensitive areas, such as AONBs and country parks.	Local Authority / NIEA – Landscape / Seascape Character Assessments Local Area Plans National Trust data EEA – CORINE Landcover

A status update and description of projects that were assessed as part of the SEA for the TDPNI 2018-2027 is shown in **Table 1-2** of this Scoping Report. This indicates that three projects included in the TDPNI 2018-2027 are now complete; the Agivey (Garvagh) Cluster project and the Castlereagh – Knock cable uprate project that were assessed within the SEA for the 2018-2027 Plan, and the Curraghmulkin (Drumquin) Cluster project that was not assessed in the SEA as planning permission had already been approved at that time. **Table 4.30** outlines these schemes and the Landscape and Visual Amenity indicators associated with these project areas.

Table 4-30 Projects completed from the TDPNI 2018 and associated Landscape and Visual Amenity data

Project Name	Landscape sensitivity	Interaction with visually sensitive areas
Agivey (Name subsequently changed to Garvagh) 110/33 kV Cluster	Glenshane Slopes LCA, designated as Highly Sensitive to Development.	Sperrins AONB.

[90] https://www.daera-ni.gov.uk/sites/default/files/publications/doe/corporate-report-from-evidence-to-opportunity-second-assessment-of-state-of-ni-environment-2013.pdf

	East Binevenagh Slopes LCA, designated as High-Medium Sensitive to Development.	
Castlereagh – Knock 110 kV Cables Uprate	Craigantlet Escarpment LCA, designated as Highly Sensitive to development.	None identified in the SEA.
Curraghmulkin (Drumquin) 110/33 kV Cluster	*From project EIA:* Within Drumlin and Hills Agricultural LCA. Adjacent to Fairy Water River Valley LCA and Rounded Upland Hills and Mountains LCA.	None identified in the project EIA.

For the Agivey (Garvagh) Cluster project, the SEA Environmental Report for the TDPNI 2018-2027 identified the potential for short to long term negative effects on two landscape character areas, Glenshane Slopes, designated as Highly Sensitive to Development, and East Binevenagh Slopes, designated as High-Medium Sensitive to Development, as well as the potential for short to long term effects on the Sperrins AONB. According to the associated project-level EIA, the project was located within the Glenshane Slopes LCA and that there would be no significant effects owing to the limited extent and scale of the project and the characteristics of this landscape. It also concluded that there would be no significant impact on the Sperrins AONB owing to the limited interaction.

For the Castlereagh – Knock 110 kV Cables Uprate project, the SEA Environmental Report for the TDPNI 2018-2027 identified the potential for construction phase effects on the Craigantlet Escarpment LCA, which is Highly Sensitive to development and is crossed by the existing line. There are no reported adverse effects on the landscape from this project.

The Curraghmulkin (Drumquin) Cluster project was not assessed as part of the SEA for the TDPNI 2018-2027. According to the associated project-level EIA, the project was located within the Drumlin and Hills Agricultural LCA and adjacent to the adjacent Fairy Water River Valley LCA and Rounded Upland Hills and Mountains LCA, and no significant landscape effects were predicted for these. This project was not located near a designated landscape or protected view.

Scoping Questions:

6. Are we proposing the most appropriate data and scale of data to be used?
7. Can you propose any other data to be used in the SEA, and why it would be beneficial?

5 FRAMEWORK FOR ASSESSING ENVIRONMENTAL EFFECTS

5.1 SEA Approach

Assessment of the draft TDPNI 2023-2032 should be relatively strategic, with the aim of reporting likely impacts at the regional level to reflect the scale at which the options are being planned. Where appropriate, a regional perspective of the potential main issues and impacts of each option will be detailed by environmental topic area. Where possible this assessment will be quantitative, with a graphical output to aid public appreciation and understanding of the implications of each proposed option in the TDPNI.

The TDPNI 2023-2032 will be assessed via a baseline led assessment. This method will involve an assessment of each option available in the enactment of the TDPNI against the following SEA topics:

- Biodiversity, Flora & Fauna (BFF)
- Population & Human Health (PHH)
- Geology, Soils and Land Use (GSL)
- Water (W)
- Air (A)
- Climatic Factors (CF)
- Material Assets & Infrastructure (MA)
- Cultural, Architectural & Archaeological Heritage (CH)
- Landscape & Visual Amenity (L)

The purpose of this is to predict and evaluate, as far as possible, the environmental effects of the TDPNI 2023-2032, highlighting any significant environmental problems and / or benefits that are likely to arise from its implementation.

To simplify the assessment process and avoid repetition during assessment of each potential option, it is proposed that potential project types (e.g., overhead transmission lines, underground cables, substations) will first be assessed generically for their potential effects against SEA environmental topics.

Following this high-level assessment of generic project types, each potential option / project in the TDPNI will be assessed in the short, medium and long term for likely effects, the significance of these effects, and whether they are positive or negative effects. Other impacts that will be assessed for significance are secondary effects, cumulative effects, synergistic effects, temporary and permanent effects, and the inter-relationship of effects. The scenario of “The Evolution of the Environment without the Plan” will also be assessed in the same format. This will be considered the Do-Nothing Scenario.

All potential positive and negative impacts will be presented individually, with a text description, and then a summary graphic as shown in **Figure 5-1**. In addition, a summary of the overall balanced potential effect will be presented for each environmental issue area. Scores will be assigned to impacts, which will range from +3 to -3 as demonstrated in **Table 5.1**. The purpose of adding numerical scores is to assist in the ranking of options and for potential incorporation of the environmental and social criteria into future decision making by the TDPNI team, as this can easily be tied into a multi-criteria analysis of alternatives, if desired. Like the assessment, the scores will demonstrate both the positives and the negatives and will not be conveyed in terms of net benefit or net loss, which can sometimes be misleading.

Table 5-1 Description of SEA Environmental Impact Scores

Score	Description
+3	Significant positive environmental effects
+2	Moderate positive environmental effects
+1	Slight positive environmental effects
0	No environmental effects
-1	Slight negative environmental effects
-2	Moderate negative environmental effects
-3	Significant negative environmental effects

The environmental assessment of each potential option included within the TDPNI 2023-2032 will initially focus within an appropriate geographical study area. The intention in setting a study area for each potential option is to enable a focus on the potential environmental issues and sensitivities that could be affected by the project. This study area will be of sufficient size to include all potential areas within which the proposed infrastructure comprising that option could be developed. The study area set for an option comprising a new transmission line would therefore be much larger than that for an option comprising a new substation. Potential options that comprise upgrading works and asset replacement would have a more focussed study area again, as these would be geographically limited to the location of existing infrastructure. The study areas for each option will be set based on evidence and best practice for transmission infrastructure, having significant regard to the findings of the EirGrid Evidence Based Studies from 2016, which were literature reviews and evidence-based field studies on the effects of development and operation of high voltage transmission lines on various environmental topics in Ireland. While these studies were undertaken for EirGrid, the results are equally applicable to SONI projects in Northern Ireland. The EirGrid Guidelines for Electricity Transmission Projects (listed in **Appendix A**) will also be used to assist with this.

The HRA for the draft TDPNI will investigate the potential for adverse effects on European sites (National Site Network Sites) and may cover a much wider study area and zones of influence to include the potential for ex situ impacts to designated habitats and species.

5.2 Draft SEA Objectives

The options available to the TDPNI 2023-2032 will be assessed in terms of their potential effects, and the significance of these effects, on the environment against a set of strategic environmental objectives (SEOs). These SEOs have been developed in the context of broader environmental protection objectives set at both international and national level (outlined in **Section 2.4** and detailed in **Appendix B**), and also take into account the context of potential for impacts associated with the TDPNI. Each of the environmental topics described in **Section 4** has been assigned at least one high-level SEO, specifying a desired outcome, against which the potential projects set out in the draft TDPNI can be assessed. Each high-level SEO has been paired with a specific target(s), as well as indicator(s) that can be used to measure the progress towards achievement of these targets. The draft SEOs, Sub-Objectives, Indicators and Targets proposed to be used are given in **Table 5.2** for discussion. The assessment will examine the likely significant impacts of the proposed options comprising the draft TDPNI, and how their implementation will contribute to achieving these SEOs.

Table 5-2 Draft Strategic Environmental Objectives, Indicators and Targets.

SEA Topic		Objective		Sub-Objective	Indicators	Targets
Biodiversity, Flora & Fauna	**1**	Avoid damage to, and where possible enhance, biodiversity, flora and fauna.	**A**	Preserve, protect, maintain and, where possible, enhance internationally protected species and habitats.	• Conservation condition of designated habitats and species within European sites (SACs, SPAs, Ramsar sites).	• Potential to maintain or enhance the conservation condition of designated habitats and species within European Sites.
			B	Preserve, protect, maintain and, where possible, enhance national and local nature conservation sites, protected habitats and species and other known species of conservation concern.	• Status of designated habitats and species within national and local sites. • Status of protected and priority habitats and species.	• Potential to maintain or enhance the status of designated habitats and species within national and local conservation sites. • Potential to maintain or enhance the status of protected and priority species outside of designated sites.
Population & Human Health	**2**	Minimise the risk to, and provide benefit for, the community and human health.	**A**	Minimise disruption and displacement to the local population, while providing robust transmission infrastructure.	• Population density within proximity to potential transmission system developments.	• Minimal potential disruption to the local population in development and operation of infrastructure.
			B	Minimise risks to human health and social deprivation, while providing robust transmission infrastructure.	• Perceived health of the local population within proximity to potential transmission system developments. • Socially sensitive areas within proximity to potential transmission system developments.	• Minimal potential to negatively affect the perceived health of the population within proximity to potential transmission developments. • Minimal potential disruption to sensitive and deprived communities in development and operation of infrastructure.
Geology, Soils and Land use	**3**	Minimise damage to the function and quality of the soil resource in the	**A**	Minimise damage to the function and quality of the soil resource in the study area in construction and	• Loss or damage to sensitive soils and land uses, e.g., peatlands, ancient woodland,	• Minimal potential for disruption to, or loss of,

		study area in construction and operation of transmission infrastructure.		operation of transmission infrastructure.	commercial forestry, cultivated lands. • Interactions with potentially hazardous soils and activities, e.g., PPC sites, mines, quarries, historically contaminated sites. • Interactions with topographically difficult sites, e.g., steep slopes and uplands.	sensitive soil and land resources. • Potential for avoidance of hazardous sites and topographically unsuitable areas.
Water	**4**	Avoid impacts on the status or quality of water bodies and avoid interaction with areas of flood risk.	**A**	Support the objectives of the WFD and Marine Strategy by avoiding damage to or deterioration of water status, quality and resource.	• WFD status of surface, coastal, transitional and groundwater bodies within proximity to potential transmission system developments. • Status of sensitive waterbodies, e.g., drinking and bathing waters within proximity to potential transmission system developments.	• Limited potential for deterioration of water status or quality, upstream or downstream, in development and operation of infrastructure.
			B	Support the objectives of the Floods Directive by avoiding interactions with coastal, pluvial or fluvial flood extents.	• Medium probability flood extents - Pluvial and fluvial 100-year and coastal 200-year flood extents.	• Minimal potential for development within medium probability flood extents, unless resilient to flooding.
Air	**5**	Minimise risk to local air quality and contribute to improving regional emissions.	**A**	Minimise risk to local air quality.	• Development in air quality sensitive areas.	• Minimal potential development within air quality sensitive areas.
			B	Contribute to improving regional pollutant emissions.	• Enable increased renewable energy connection to reduce requirements for fossil fuel burning.	• Potential to reduce requirement for fossil fuel power station activity and emissions.

Climatic Factors	**6**	Adaption of infrastructure to potential climatic change and reduction of GHG emissions from the energy supply sector in line with national commitments.	**A**	Adaption of infrastructure to potential climatic change.	• Medium probability climate change (cc) influenced flood extents - Pluvial and fluvial 100 year + cc and coastal 200 year +cc flood extents.	• Minimal potential development within medium probability climate change flood extents, unless resilient to flooding.
			B	Contribute to a reduction in GHG emissions from the energy supply sector in line with national commitments.	• Enable increased renewable energy connection to reduce requirements for fossil fuel burning.	• Potential to reduce regional and national GHG emissions.
Material Assets & Infrastructure	**7**	Provide new, robust electrical transmission infrastructure with minimal disruption to other assets and infrastructure.	**A**	Provide new, robust electrical transmission infrastructure with minimal disruption to other assets and infrastructure.	• Transmission infrastructure developed or upgraded. • Potential for impacts on transport (road, rail, air) and energy infrastructure (gas). • Potential for loss of or impacts to agricultural land assets.	• New and reinforced electricity grid infrastructure, with minimal potential disruption to other assets and infrastructure.
Cultural, Architectural & Archaeological Heritage	**8**	Protect the historic environment and cultural heritage.	**A**	Protect International, National and Local Heritage Designations, and areas of heritage potential, and their settings.	• Potential for impacts on archaeological heritage features or their setting. • Potential for impacts on architectural heritage features or their setting.	• Minimal potential impacts on archaeological and architectural heritage features, or their setting, in development and operation of infrastructure.
Landscape & Visual Amenity	**9**	Minimise the potential for negative impacts on the character and quality of landscapes or visual amenity.	**A**	Minimise the potential for negative impacts on the character and quality of landscapes or visual amenity.	• Landscape sensitivity to infrastructure development. • Potential for impacts on visually sensitive areas, such as AONBs and country parks.	• Minimal potential impacts on sensitive landscapes and visual amenity, in development and operation of infrastructure.

5.3 Environmental Constraints Modelling

To demonstrate the areas of higher or lower constraint to electricity transmission development in Northern Ireland, it is proposed to produce a combined sensitivity baseline. This is known as constraint modelling; it uses Geographical Information Systems (GIS) to add many layers of environmental sensitivities together to produce combined sensitivity or constraint maps. An avoidance of areas of higher sensitivity and higher constraint will help towards more sustainable planning by SONI in development of the transmission system. The constraint modelling for the TDPNI will be developed bespoke for this study, however this practice of GIS modelling and sensitivity / constraint mapping is recommended in publications such as the GISEA Manual (EPA, 2016)[91]. The environmental indicators (sensitivities and constraints) proposed to be used in this modelling, along with a brief description and their relative scoring are provided in **Table 5.3**. The relative constraint scores were developed between the environmental and transmission development professionals undertaking the study. The higher the relative constraints score the more important or sensitive the constraint to electricity transmission development. This modelling will be undertaken using ArcGIS Spatial Analyst. For each potential project the output constraints map will demonstrate the overall sensitivity in that potential area for development of transmission infrastructure. The constraint map is often called a “heat map”, demonstrating areas of higher and lower sensitivity / constraint to electrical transmission development, relative to one another. This map also sets the sensitivity basis for least cost environmental corridor modelling, which will demonstrate the least environmentally sensitive corridor between two substations. Geographical buffers will be applied to the proposed data, based on the findings of the EirGrid Evidence Based Studies, to minimise risks to sensitive receptors.

Table 5-3 Constraints Model Proposed Data and Relative Scores

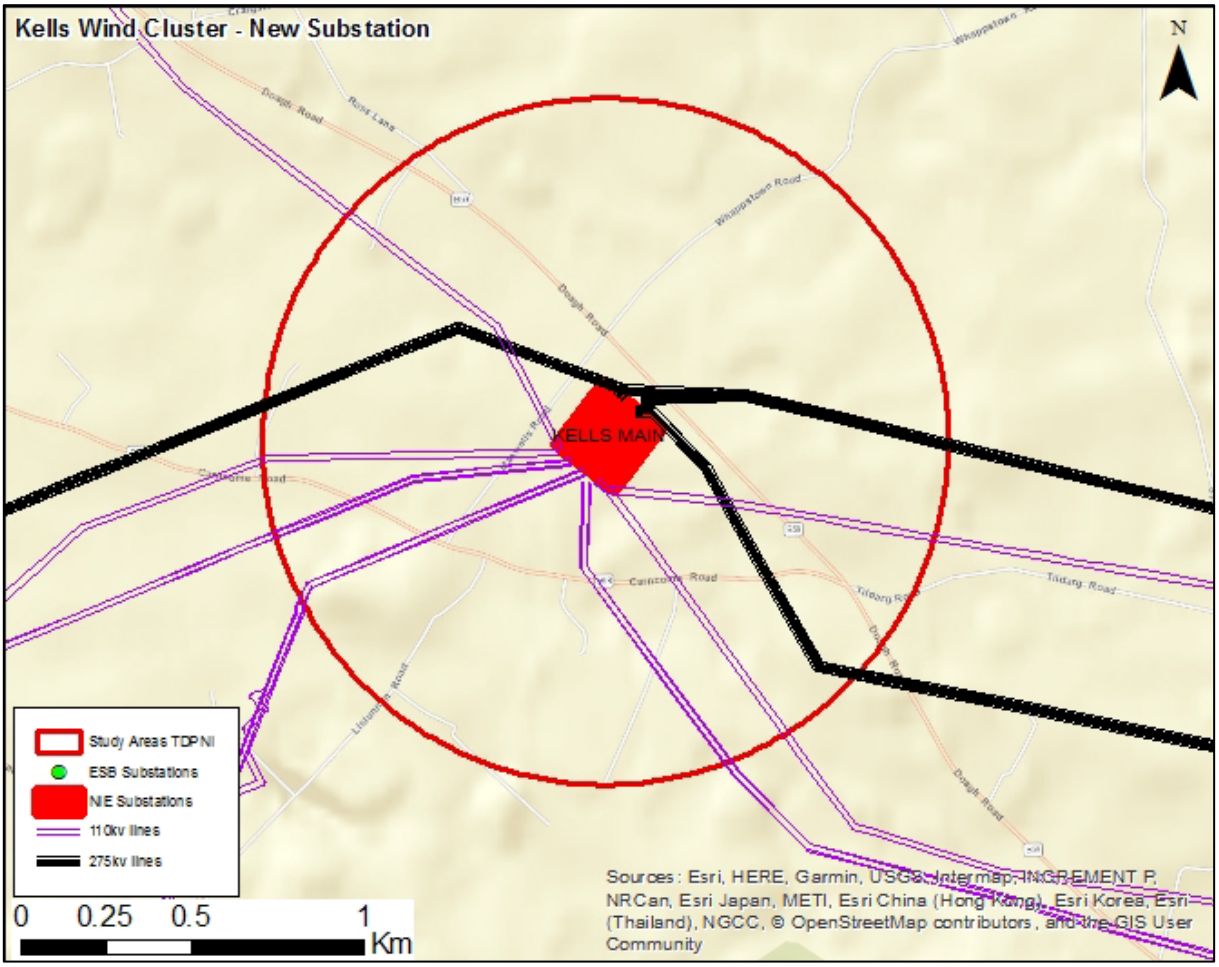
Data / Indicators	Description	Relative Constraints Score
Special Areas of Conservation	Areas designated in accordance with the Habitats Directive (92/43/EEC), including those in RoI (transboundary).	10
Special Protection Areas	Areas designated in accordance with the Birds Directive (EC/79/409), including those in RoI (transboundary).	10
Ramsar Sites	Areas designated under the Ramsar convention, including those in RoI (transboundary).	10
Areas of Special Scientific Interest	Areas designated under the Environment (Northern Ireland) Order 2002.	5
Natural Heritage Areas and pNHAs (RoI)	Areas designated under the Wildlife Act 1976 in Ireland (transboundary).	5
Sites of Local Nature Conservation Interest	Local planning designations.	5
Nature Reserves / National Nature Reserves	Managed nature reserves.	5
Marine Conservation Zones	Areas designated under the Marine Act (Northern Ireland) 2013	5
Shellfish and aquaculture areas	Areas licenced for shellfish and aquaculture activity.	3
RSPB Reserves	Reserves managed by the Royal Society for the Protection of Birds	3
Salmon rivers / lakes	Rivers and lakes known to be important for salmonids.	10

[91] https://www.opr.ie/wp-content/uploads/2019/11/EPA-GISEA-Manual.pdf

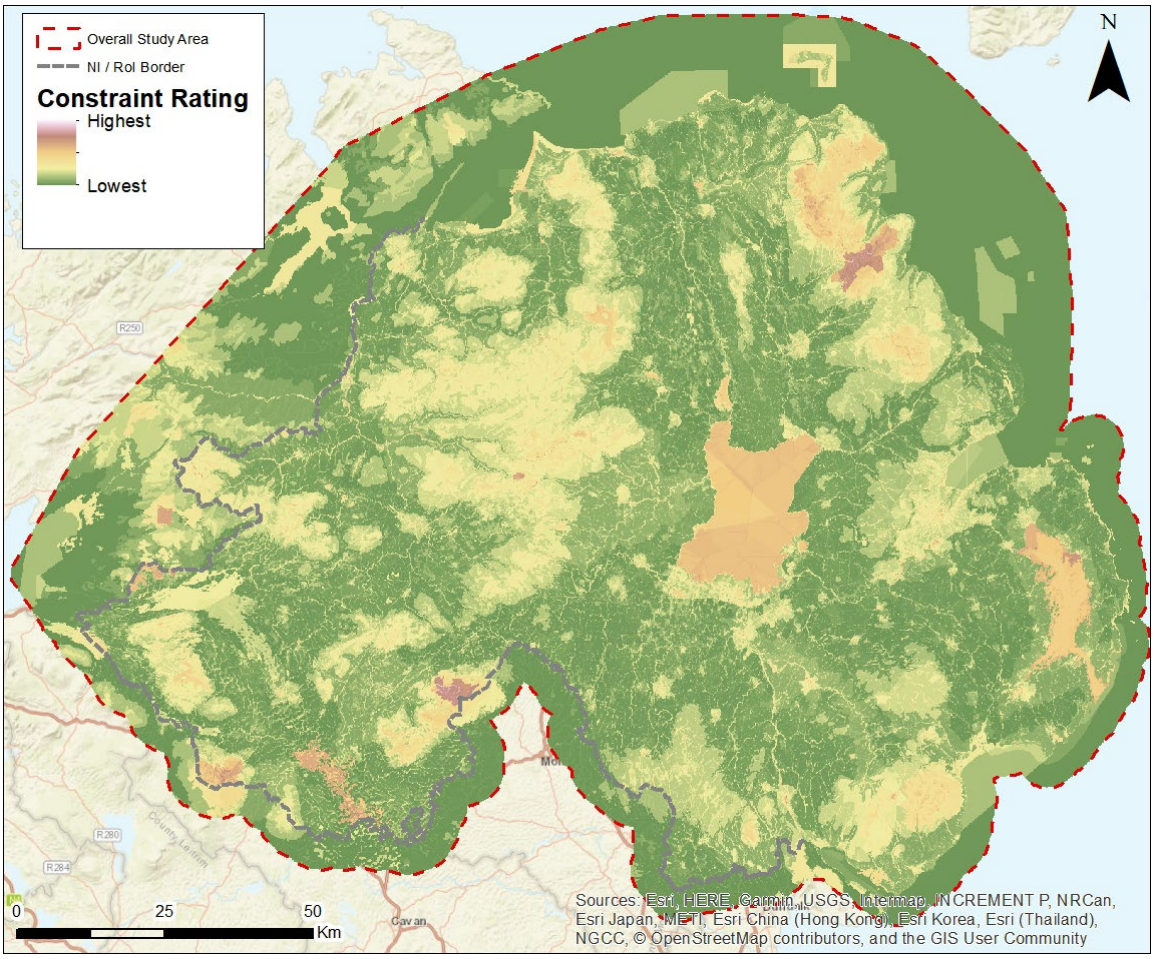
Freshwater pearl mussel catchments	Catchments known to be inhabited by freshwater pearl mussels (*Margaritifera margaritifera*).	5
Population density	Number of people per km^2, distributed across Northern Ireland. Quantile distribution. Calculated within NISRA small area outputs. Low score is low relative population density, high score is high relative population density.	1 - 5
Settlements	Settlement areas – cities, towns, villages, hamlets.	10
Population health	Perceived health of the population. Areas of lower perceived health are high score; areas of better perceived health are low score.	1 - 5
Neighbourhood Renewal Areas	Neighbourhoods in Northern Ireland identified as experiencing the most severe multiple deprivation and have been chosen to receive support under the Department of Social Development People and Place strategy for Neighbourhood Renewal.	3
Peace lines	Northern Ireland Office (NIO) peace lines, as of October 2006.	3
Peat / bogs	Areas of peat and bog.	5
Quarries / Mines / Unstable land / Landslides	Quarries and mines, known mines, unstable ground, and landslides.	5
Cultivated lands	Cultivated lands – orchards (LPSNI).	5
Forest Service lands	Forest Service lands.	3
Ancient woodland	Ancient woodland.	5
Historic land use	Potential historically contaminated land.	5
PPC sites	Pollution Prevention and Control (PPC) sites.	5
Upland areas	Lands greater than 150m elevation – Upland.	10
Steep slopes	Slopes greater than 30 degrees.	10
WFD Rivers	WFD Rivers	3
WFD Lakes	WFD Lakes	3
Drinking water rivers / lakes	Rivers and lakes used for drinking water abstraction.	5
Bathing waters	Designated bathing waters.	5
Flood extents 100 year	Fluvial, Pluvial and Coastal flood extents for the current day scenario 100 or 200-year event.	5
Flood extents 100 year+ climate change	Fluvial, Pluvial and Coastal flood extents for the climate change scenario 100 or 200-year event.	3
Gas pipelines	Gas transmission lines.	5
Electricity Transmission Network	Electricity Transmission Network	5
Roads	Major roads (dual, A-Roads and motorways).	3
Railways	Railway lines.	3
Airports	Airport lands.	10
Sites and Monuments (SMR)	Archaeological monuments recorded in the Northern Ireland Sites and Monuments Record.	5

Scheduled Zones	Zones scheduled for protection under Article 3 of The Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995.	5
Listed Buildings	Listed Buildings within Northern Ireland.	5
Industrial Heritage Sites	Industrial Heritage Sites.	5
Defence Heritage Sites	Defence Heritage Sites.	5
Areas of Significant Archaeological Interest	Non-statutory designations that seek to identify distinctive areas of the historic landscape in Northern Ireland.	5
Areas of Archaeological Potential	Areas within the historic cores of towns and villages, where, on the basis of current knowledge, it is likely that archaeological remains will be encountered in the course of continuing development and change.	5
Historic Parks and Gardens	Boundaries of protected historic parks, gardens and demesnes in Northern Ireland. Northern Ireland Heritage Gardens Archive.	5
World Heritage Site	UNESCO designated world heritage site – Giants Causeway.	10
Areas of Outstanding Natural Beauty	Areas designated under the Amenity Lands Act (Northern Ireland) 1965 and the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985.	5
Sensitivity of landscape to wind farm development	NIEA guidance based on landscape character assessment. Four categories.	1 - 5
Country Parks	NIEA Country Parks.	3
National Trust lands	National Trust Lands.	3

Kells Wind 110/33 kV Cluster (Example)
It is planned to establish a 110/33 kV cluster substation near to Kells, connected to the existing Kells station via an overhead line. *Brief description of Construction / Operation phases.*
Environmental Baseline and Key Issues (Example)
Sets out the key environmental issues of relevance to this area that have the potential to be impacted upon by development, replacement or upgrading of infrastructure. Ordered by SEA Environmental Topic: • Biodiversity, Flora & Fauna – Key Issues • Population & Human Health – Key Issues • Geology, Soils and Land Use – Key Issues • Water – Key Issues • Air – Key Issues • Climatic Factors – Key Issues • Material Assets & Infrastructure – Key Issues • Cultural, Architectural & Archaeological Heritage – Key Issues • Landscape & Visual Amenity – Key Issues
Study Area (Example)



Constraints Model (Example)



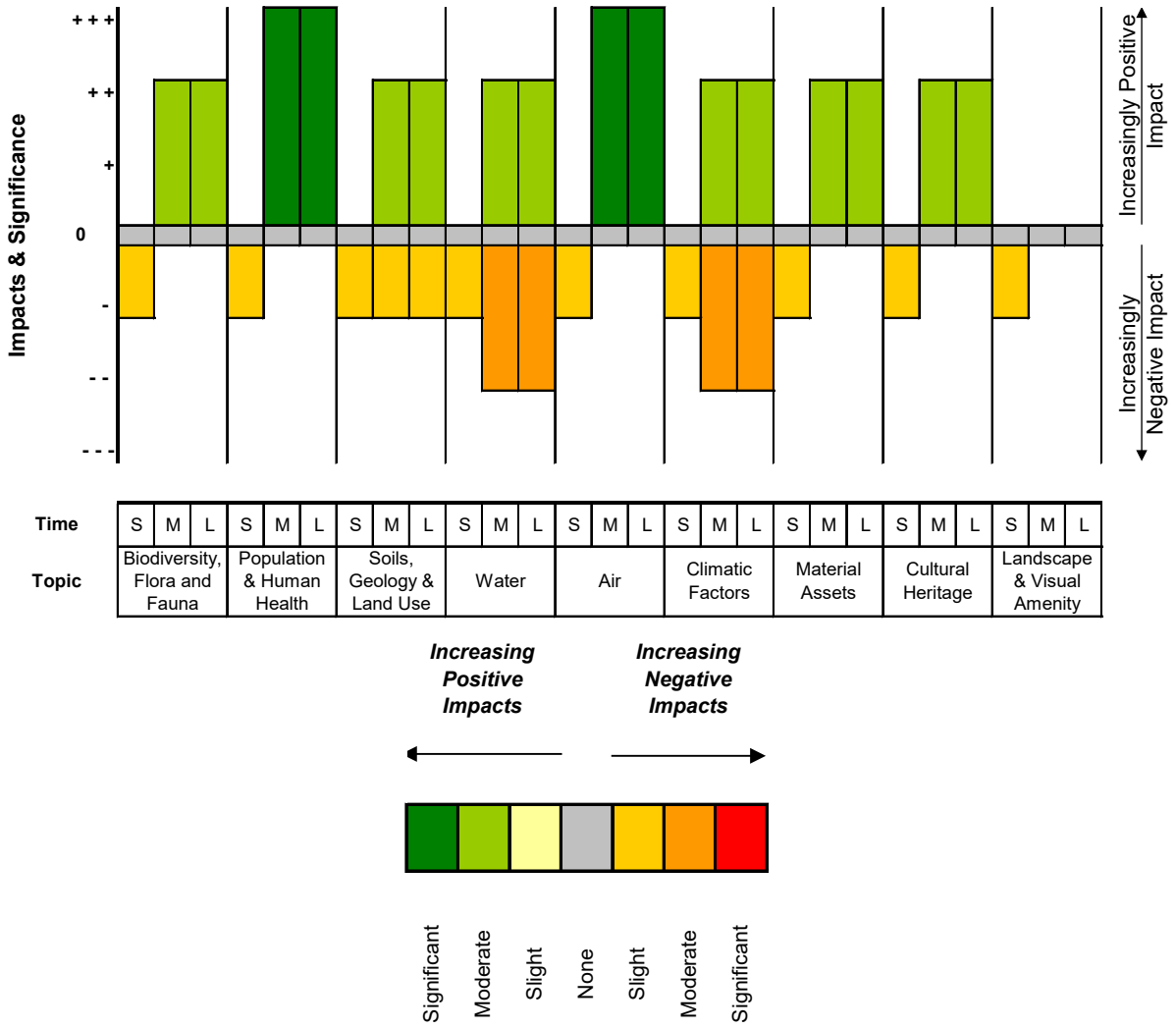
Note - Example shown is picture of Constraints Model Overview from previous TDPNI, not update development focused output

Environmental Assessment (Example)			
Environmental Topic	**Short-Term Impacts**	**Medium Term Impacts**	**Long Term Impacts**
Biodiversity, Flora & Fauna (BFF)			
Population & Human Health (PHH)			
Geology, Soils and Land Use (GSL)			
Water (W)			
Air (A)			
Climatic Factors (CF)			
Material Assets & Infrastructure (MA)			
Cultural, Architectural & Archaeological Heritage (CH)			
Landscape & Visual Amenity (L)			

Positive and Negative scores by topic area, in the short, medium, and long-term.

Scores as per Table 5.1, judged by expert opinion against the SEA Objectives, Targets and Indicators.

Summary Chart of Potential Impacts (Example)



Discussion of Potential Impacts (Example)

Biodiversity, Flora & Fauna

Description of short, medium and long-term impacts (including reference to secondary, cumulative, synergistic, permanent and temporary, positive or negative effects) of *transmission infrastructure* on this environmental topic.

Including incorporation of Appropriate Assessment findings.

Population & Human Health

Description of short, medium and long-term impacts (including reference to secondary, cumulative, synergistic, permanent and temporary, positive or negative effects) of *transmission infrastructure* on this environmental topic.

Soils, Geology & Land Use Description of short, medium and long-term impacts (including reference to secondary, cumulative, synergistic, permanent and temporary, positive or negative effects) of *transmission infrastructure* on this environmental topic.
Water Description of short, medium and long-term impacts (including reference to secondary, cumulative, synergistic, permanent and temporary, positive or negative effects) of *transmission infrastructure* on this environmental topic.
Air Description of short, medium and long-term impacts (including reference to secondary, cumulative, synergistic, permanent and temporary, positive or negative effects) of *transmission infrastructure* on this environmental topic.
Climatic Factors Description of short, medium and long-term impacts (including reference to secondary, cumulative, synergistic, permanent and temporary, positive or negative effects) of *transmission infrastructure* on this environmental topic.
Material Assets & Infrastructure Description of short, medium and long-term impacts (including reference to secondary, cumulative, synergistic, permanent and temporary, positive or negative effects) of *transmission infrastructure* on this environmental topic.
Cultural, Architectural & Archaeological Heritage Description of short, medium and long-term impacts (including reference to secondary, cumulative, synergistic, permanent and temporary, positive or negative effects) of *transmission infrastructure* on this environmental topic.
Landscape & Visual Amenity Description of short, medium and long-term impacts (including reference to secondary, cumulative, synergistic, permanent and temporary, positive or negative effects) of *transmission infrastructure* on this environmental topic.
Additional Impacts Additional secondary, cumulative, synergistic, permanent and temporary, positive or negative effects.
Key Conclusions:
Conclusions text, including incorporation of Appropriate Assessment.

Figure 5-1 Example Output of Environment Assessment of Projects comprising the TDPNI

5.4 Consideration of Alternatives

The SEA process must include an evaluation of the likely environmental consequences of a range of 'reasonable alternative' scenarios. It is proposed that the following strategic-level alternatives will be considered in the assessment, with a summary comparison of assessment against the SEOs established for the key aspects of the environment likely to be significantly affected:

- Alternative 1 – No Plan option: strategic development occurs in an ad hoc manner (essentially a 'Do-Nothing' scenario from a plan making and SEA perspective).
- Alternative 2 – Strategy option: no new Plan for the period 2023-2032 but reference to provisions of the existing TDPNI 2018-2027. Note that while this can be considered by the SEA process as a potential strategic alternative, in practice it would be complicated by the commencement of projects since the existing plan was published in addition to changes in likely project costs, etc.
- Alternative 3 – Preparation and adherence to the specific policies and objectives for development as set out in the TDPNI 2023-2032.
    - In addition to consideration of the TDPNI 2023-2032 as a strategic-level alternative, each potential project is considered as an alternative option available to the TDPNI 2023-2032 to reinforce the electrical transmission grid and meet the needs of generation and capacity for Northern Ireland. The various options / projects available to the TDPNI will be assessed in terms of their potential effects, and the significance of these effects, on the environment against the SEOs. This will allow for a comparison between the relative merits and drawbacks of the projects proposed by the TDPNI 2023-2032.

5.5 Monitoring

The SEA Directive requires that the significant environmental effects of the implementation of a Plan/Programme are monitored to identify, at an early stage, unforeseen adverse effects, and to undertake appropriate remedial action. The proposed monitoring programme for the TDPNI 2023-2032 will be based on the Indicators and Targets established in the SEA Objectives. This programme will aim to be realistic and achievable, with existing monitoring arrangements being used where possible, as well as bespoke monitoring should any negative effects be identified. Examples of likely monitoring to be proposed are:

- Reported conservation status and condition of designated sites that new transmission infrastructure encroaches on, or is within the vicinity of, to gauge impacts on Biodiversity, Flora and Fauna.
- Numbers of listed heritage features, including their setting and heritage value, at risk from development of transmission infrastructure to gauge impacts on cultural, architectural and archaeological heritage.

Scoping Questions:

8. Do you agree with the approach to the assessment?
9. Do you agree with the draft SEA objectives?
10. Do you agree with the data and scores proposed for the constraints modelling?

6 CONSULTATION AND NEXT STEPS

6.1 Consultation

Under Regulation 4 of the SEA Regulations (NI), the competent authority (in this case SONI) preparing the plan or programme is required to consult with specific "environmental authorities" (statutory consultees) throughout the SEA process.

The statutory consultee established within the national legislation in Northern Ireland is:

- The Department of Agriculture, Environment and Rural Affairs (DAERA)

The statutory transboundary consultees established within the Republic of Ireland's national legislation are:

- Environmental Protection Agency (EPA)
- Department of Housing, Local Government and Heritage (DHLGH)
- Department of Agriculture, Food and the Marine (DAFM)
- Department of Environment, Climate and Communications (DECC)

These statutory consultees will be formally consulted upon as part of the scoping of the SEA for the draft TDPNI 2023-2032.

SONI also commit to engaging with EirGrid on the draft Grid Implementation Plan 2023-2028 for the electricity transmission system in Ireland (due for publication in Q3-Q4 2023).

Non-statutory consultees that may have an interest in the development of the TDPNI will also be contacted with this scoping information, and will include:

- Utility Regulator (NI)
- Department for the Economy (NI)
- NIE Networks
- EirGrid
- ESB Networks

This Scoping Report, including contact details, will also be published on the SONI website so that all interested parties, including the general public, can submit comments and feedback on the report. Comments and submissions received on the report will be logged, reviewed and, where considered to be relevant or appropriate, applied to the TDPNI and SEA processes.

The SEA Environmental Report, once completed, will also be sent to the statutory consultee for Northern Ireland, and to the statutory transboundary consultees within the Republic of Ireland, and will be issued for public consultation along with the HRA and the draft TDPNI 2023-2032. The public and stakeholders will have the opportunity to comment on the draft TDPNI 2023-2032 and associated environmental reports. Comments and submissions received on the reports will be logged, reviewed, and applied where relevant in finalizing the TDPNI 2023-2032.

6.2 Next Steps

Table 6-1 demonstrates the proposed upcoming time stages for the draft TDPNI 2023-2032, SEA and HRA.

Table 6-1 Draft Anticipated Milestones

TDPNI 2023-2032	Dates	SEA / HRA
Development of draft TDPNI	May - September 2023	Strategic Environmental Assessment and Appropriate Assessment. Writing of SEA Environmental Report and HRA.

Public and statutory consultation on draft TDPNI	September – November 2023	Statutory, Non-Statutory and Public Consultation on SEA Environmental Report and HRA.
Release of Final TDPNI	December 2023	SEA Environmental Statement

The proposed timescale to complete the SEA process is given in **Table 6-2**.

Table 6-2 Proposed Timescale for SEA of the TDPNI 2023-2032

Actions	Timescales
SEA Scoping	May - June 2023
SEA Scoping Consultation	June - July 2023
SEA Environmental Assessment	July - September 2023
Public Consultation	September - November 2023
SEA Environmental Statement	December 2023

The contact for any information regarding the SEA of the draft TDPNI is as follows:

By post	Richard Bingham RPS 74 Boucher Road Belfast BT12 6RZ Northern Ireland Tel: +44 (0)28 90667914
By email	Richard.bingham@rpsgroup.com

Scoping Question:

11. Do you agree with the proposed project timescales, and proposed consultees in the SEA process?

Appendix A – SEA Guidance

Northern Ireland

A Practical Guide to the Strategic Environmental Assessment Directive. September 2005. Office of the Deputy Prime Minister. https://www.gov.uk/government/publications/strategic-environmental-assessment-directive-guidance

Guidance on Sustainability Appraisal and Strategic Environmental Assessment for the Historic Environment. June 2018. Department for Communities – Historic Environment Division

Strategic Environmental Assessment. Services and Standards for Responsible Authorities. Environment and Heritage Service. https://www.daera-ni.gov.uk/publications/strategic-environmental-assessment

Other

Article 8 (Decision Making) of EU Directive 2001/42/EC on Strategic Environmental Assessment (SEA) as amended. DoECLG Circular (PL 9/2013).

Developing and Assessing Alternatives in Strategic Environmental Assessment. 2015. Environmental Protection Agency. http://www.epa.ie/pubs/advice/ea/SEA-Alternatives-157-Published_web.pdf

Development of Strategic Environmental Assessment (SEA) Methodologies for Plans and Programmes in Ireland. Synthesis Report. 2001. Environmental Protection Agency. https://www.epa.ie/pubs/advice/ea/EPA_development_methodology_SEA_synthesis_report.pdf

Further Transposition of EU Directive 2001/42/EC on Strategic Environmental Assessment (SEA). DoECLG Circular (PSSP 6/2011).

GISEA Manual, Improving the Evidence Base in SEA, 2016. Environmental Protection Agency.

http://www.epa.ie/pubs/advice/ea/EPA%20GISEA_web.pdf

Implementation of SEA Directive (2001/42/EC). Assessment of Certain Plans and Programmes on the Environment. Guidelines for Regional Planning Authorities. November 2004. Department of Environment, Heritage and Local Government. http://www.environ.ie/en/Publications/DevelopmentandHousing/Planning/FileDownLoad,1616,en.pdf

SEA Scoping Guidance Document. 2016. Environmental Protection Agency. http://www.epa.ie/pubs/advice/ea/seascopingguidance.html

Strategic Environmental Assessment (SEA) Checklist - Consultation Draft. January 2008. Environmental Protection Agency. http://www.epa.ie/downloads/consultation/strategic_environmental_assessment_jan086.pdf

Guidance on Strategic Environmental Assessment (SEA) Statements and Monitoring. EPA 2023. https://www.epa.ie/publications/monitoring--assessment/assessment/strategic-environmental-assessment/guidance-on-sea-statements-and-monitoring.php

Guidance on Consideration of Air in Strategic Environmental Assessment. April 2017. Scottish Environment Protection Agency.

Guidance on Consideration of Climatic Factors within Strategic Environmental Assessment. March 2010. Scottish Environment Protection Agency.

Guidance on Consideration of Material Assets in Strategic Environmental Assessment. August 2016. Scottish Environment Protection Agency.

Guidance on Consideration of Soil in Strategic Environmental Assessment. April 2017. Scottish Environment Protection Agency.

EirGrid

Cultural Heritage Guidelines for Electricity Transmission Projects. October 2015. Eirgrid.

Ecology Guidelines for Electricity Transmission Projects. 2020. Eirgrid. https://www.eirgridgroup.com/site-files/library/EirGrid/Ecology-Guidelines-for-Electricity-Transmission-Projects.pdf

EirGrid Evidence Based Environmental Studies Study 1: EMF. July 2014. Eirgrid.

EirGrid Evidence Based Environmental Studies Study 2: Cultural Heritage. November 2015. Eirgrid.

EirGrid Evidence Based Environmental Studies Study 3: Bats. December 2015. Eirgrid.

EirGrid Evidence Based Environmental Studies Study 4: Habitats. May 2016. Eirgrid.

EirGrid Evidence Based Environmental Studies Study 5: Birds. May 2016. Eirgrid.

EirGrid Evidence Based Environmental Studies Study 6: Water Quality & Aquatic Ecology. May 2016. Eirgrid.

EirGrid Evidence Based Environmental Studies Study 7: Soils & Geology. May 2016. Eirgrid.

EirGrid Evidence Based Environmental Studies Study 8: Noise. May 2016. Eirgrid.

EirGrid Evidence Based Environmental Studies Study 9: Settlement and land use. May 2016. Eirgrid.

EirGrid Evidence Based Environmental Studies Study 10: Landscape & Visual. June 2016. Eirgrid.

EMF & You: Information about Electric & Magnetic Fields and the electricity transmission system in Ireland. July 2014. Eirgrid

Appendix B – Plans and Programmes

PRELIMINARY REVIEW OF PLANS AND PROGRAMMES

This table will be updated accordingly following the receipt of scoping responses and will be presented in the SEA Environmental Report later in the process.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft TDPNI
International / European			
Biodiversity			
UN Convention on Biological Diversity (1992)	Maintenance and enhancement of Biodiversity, and strategies to ensure a fair and equitable sharing of the benefits from the use of genetic resources.	• Conservation of biological diversity (or biodiversity); • Sustainable use of its components; and • Fair and equitable sharing of benefits rising from genetic resources. • Development of national strategies for the conservation and sustainable use of biological diversity.	The TDPNI should have regard for this Convention and look for opportunities to conserve, and, where possible, restore or enhance biodiversity. Environmental protection objectives of the Convention are reflected in the SEOs for Biodiversity, Flora and Fauna.
Ramsar Convention on Wetlands of International Importance (1971 and amendments)	Protection and conservation of wetlands.	• Objectives include protection and conservation of wetlands, particularly those of importance to waterfowl as Waterfowl Habitat.	The draft TDPNI should ensure that European Sites, including a consideration of Ramsar sites, are suitably protected from loss or damage. Appropriate Assessment is being undertaken for the draft TDPNI, to ensure that its implementation will not adversely affect European Sites. Environmental protection objectives of the Convention are reflected in the SEOs for Biodiversity, Flora and Fauna.
Bern Convention (Convention on European Wildlife and Natural Habitats) (1982)	The Bern Convention is a binding international legal instrument in the field of nature conservation, covering most of the natural heritage of the European continent and extending to some States of Africa.	• Objectives are to conserve wild flora and fauna and their natural habitats, as well as to promote European co-operation in this field. • The treaty also takes account of the impact that other policies may have on natural heritage.	The TDPNI should have regard for this Convention and look for opportunities to conserve, and, where possible, restore or enhance biodiversity. Environmental protection objectives of the Convention are reflected in the

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft TDPNI
			SEOs for Biodiversity, Flora and Fauna.
The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) (1992)	The current instrument guiding international cooperation on the protection of the marine environment of the North-East Atlantic. Objectives include the protection of the marine environment.	• Prevention and elimination of pollution, and protection of the maritime area against the adverse effects of human activities, to safeguard human health and to conserve marine ecosystems.	The draft TDPNI should have regard for the Convention and ensure that it does not compromise its objectives, and that it contributes to achieving its aims. Environmental protection objectives of the Convention are reflected in the SEOs for Water.
Bonn Convention on the Conservation of Migratory Species of Wild Animals [L210, 19/07/1982 (1983)]	The Bonn Convention focuses on preserving the habitats used by migratory species and aims to enhance the conservation of terrestrial, marine and avian species on a global scale throughout their range.	• Establishes a legal foundation for internationally coordinated conservation measures throughout a migratory range. • Migratory species threatened with extinction are listed on Appendix I of the Convention. Parties strive towards strictly protecting these animals, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them. • In Europe, legislation to ensure that the provisions of the Bonn convention are applied includes the Birds Directive and the Habitats Directive.	The TDPNI should have regard for any implications on migratory species. Environmental protection objectives of the Convention are reflected in the SEOs for Biodiversity, Flora and Fauna.
EU Biodiversity Strategy to 2030 [COM(2020)380]	Aims to put Europe's biodiversity on the path to recovery by 2030 for the benefit of people, climate and the planet. The Strategy aims to build societies' resilience to future threats such as: the impacts of climate change, forest fires, food insecurity and disease outbreaks.	The strategy contains specific commitments and actions to be delivered by 2030: • Establishing a larger EU-wide network of protected areas on land and at sea. Enlarging of existing Natura 2000 areas with strict protection for areas of very high biodiversity and climate value. • Launching an EU nature restoration plan. Including concrete commitments and actions (and proposed binding nature restoration targets) to restore degraded ecosystems by	The TDPNI should have regard for this strategy and look for opportunities to conserve, and, where possible, restore or enhance biodiversity. Environmental protection objectives of the strategy are reflected in the SEOs for Biodiversity, Flora and Fauna.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft TDPNI
		2030 and manage them sustainably, addressing the key drivers of biodiversity loss. • Introducing measures to enable the necessary transformative change. Unlocking funding for biodiversity, and setting in motion a new, strengthened governance framework. • Introducing measures to tackle the global biodiversity challenge. In particular, working towards adoption of an ambitious global biodiversity framework under the Convention on Biological Diversity.	
EU Directive on the conservation of wild birds (Birds Directive) [2009/147/EC]	Protects all wild birds, their nests, eggs and habitats within the European Community. It gives EU member states the power and responsibility to classify Special Protection Areas (SPAs) to protect birds which are rare or vulnerable in Europe, as well as all migratory birds which are regular visitors.	• Preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds referred to in Annex I. • Preserve, maintain and establish biotopes and habitats to include the creation of protected areas (Special Protection Areas); ensure the upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones, re-establish destroyed biotopes and creation of biotopes • Measures for regularly occurring migratory species not listed in Annex I are required as regards their breeding, moulting and wintering areas and staging posts along their migration routes. The protection of wetlands, and particularly wetlands of international importance.	The draft TDPNI should ensure that European Sites are suitably protected from loss or damage. Appropriate Assessment is being undertaken for the draft TDPNI, to ensure that its implementation will not adversely affect European Sites. Environmental protection objectives of the Directive are reflected in the SEOs for Biodiversity, Flora and Fauna.
EU Directive on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) [92/43/EEC]	Builds on the Birds Directive (see above) by protecting natural habitats and other species of wild plants and animals. Together with the Birds Directive, it underpins a European network of protected areas known as Natura 2000: Special Protection Areas (SPAs, classified under the Birds Directive) and Special Areas of Conservation (SACs, classified under the Habitats Directive).	• Propose and protect sites of importance to habitats, plant and animal species. • Establish a network of Natura 2000 sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II, to enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored	The draft TDPNI should ensure that European Sites are suitably protected from loss or damage. Appropriate Assessment is being undertaken for the draft TDPNI, to ensure that its implementation will not adversely affect European Sites.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft TDPNI
		at a favourable conservation status in their natural range. • Carry out comprehensive assessment of habitat types and species present. • Establish a system of strict protection for the animal species and plant species listed in Annex IV.	Environmental protection objectives of the Directive are reflected in the SEOs for Biodiversity, Flora and Fauna.
Convention for the Conservation of Salmon in the North Atlantic	This Convention recognises that salmon originating in the rivers of different states intermingle in certain parts of the North Atlantic Ocean.	• The key objectives of the Convention are the desire to promote the acquisition, analysis and dissemination of scientific information pertaining to salmon stocks in the North Atlantic Ocean and the desire to promote the conservation, restoration, enhancement and rational management of salmon stocks in the North Atlantic Ocean through international cooperation.	The draft TDPNI should contribute towards the achievement of the desires of the Convention and the Articles therein.
Population / Human Health			
Seveso Directive III [2012/18/EU]	Prevention of harmful effects on humans and the environment through major accidents involving dangerous substances.	Objectives seek to prevent major accidents involving dangerous substances and limit their consequences for man and the environment, with a view to ensuring high levels of protection throughout the Community.	The draft TDPNI has an indirect link to this Directive, owing to the inclusion of certain power stations as COMAH establishments in NI.
Climate Change			
Paris Agreement (UNFCCC, 2016)	A legally binding international treaty on climate change, adopted by 196 parties at the UN Climate Change Conference (COP21) in December 2015. It aims to strengthen the global response to the threats of climate change by keeping this century's global temperature rise below 2 degrees Celsius above pre-industrial levels.	The Paris Agreement and the outcomes of the UN climate conference (COP21) cover all the crucial areas identified as essential for a landmark conclusion: • Mitigation – reducing emissions fast enough to achieve the temperature goal; • A transparency system and global stock-take – accounting for climate action;	The draft TDPNI should aim to contribute towards climate change mitigation. The TDPNI may contribute to reducing GHG emissions by connecting renewable energy generators to the system. Environmental protection objectives of the Agreement are reflected in the SEOs for Climatic Factors.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft TDPNI
		• Adaptation – strengthening ability of countries to deal with climate impacts; • Loss and damage – strengthening ability to recover from climate impacts; and • Support – including finance, for nations to build clean, resilient futures.	
UN Kyoto Protocol, the Doha Amendment, The United Nations Framework Convention on Climate Change (UNFCC, 1997)	The Framework Convention on Climate Change seeks to alleviate the impacts of climate change and reduce global emissions of GHGs. The Protocol operationalises this Convention. It was adopted in December 1997 and entered into force in February 2005.	• Commits industrialised countries and economies in transition to limit and reduce GHG emissions in accordance with agreed individual targets. • Places a heavier burden on developed countries under the principle of "common but differentiated responsibility and respective capabilities". • Annex B sets binding emission reduction targets for 37 industrialised countries and economies in transition and the EU. Overall, the targets for the first period (2008-2012) added up to an average 5% emission reduction compared to 1990 levels. • The Doha Amendment was adopted in December 2012 and entered into force in December 2020. This set a second period (2013-2020) with new commitments and a revised list of GHG to be reported.	The draft TDPNI can contribute to achieving emission reduction targets through connection of renewable energy generators to the system. Environmental protection objectives of the Protocol are reflected in the SEOs for Climatic Factors.
EU 20-20-20 Climate and Energy Package Agreement (2007)	Objectives seek to alleviate the impacts of climate change and reduce global emissions of GHGs.	To meet the EU's obligation under international law and in line with European ambition. Member States are required to: • 20% cut in GHG emissions collectively (from 1990 levels) • 20% of EU energy produced from renewables • 20% improvement in energy efficiency The collective EU target of reducing emissions by 20% by 2020 is to be achieved by: The EU Emissions Trading System, the backbone of the EU mitigation effort, which sets a cap on emissions from the most polluting sectors,	As an EU Member State when the Agreement was produced, the UK was subject to its obligations. The more recent Energy Strategy for Northern Ireland sets out more stringent targets relating to GHG emissions and the energy sector. The TDPNI can contribute to achieving emission reduction targets through connection of renewable energy generators to the system.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft TDPNI
		including over 11 000 factories, power plants and other installations, including airlines. By 2020, the cap should result in a 21 % reduction relative to 2005 levels. The EU ETS covers about 40 % of all EU emissions. The 'effort sharing decision', which operates outside the EU ETS and establishes annual binding GHG emission targets for individual Member States for the 2013-2020 period. These concern emissions from sectors such as waste, agriculture, buildings, etc. The '20-20-20' targets are supported by the long-term target of 85-90 % reduction in GHG emissions against 1990 levels by 2050.	Environmental protection objectives of the Agreement are reflected in the SEOs for Climatic Factors.
The European Green Deal 2019	The European Green Deal is a plan to make the EU's economy sustainable.	The growth strategy outlines transformation of the EU to a resource-efficient and competitive economy where: • There are no net emissions of GHGs by 2050; • Economic growth is decoupled from resource use; and • No person and no place is left behind. The Deal provides an Action Plan to: • Boost the efficient use of resources by moving to a clean circular economy; and • Restore biodiversity and cut pollution.	As an EU Member State when the strategy was produced, the UK was subject to its obligations. The Climate Change Act (Northern Ireland (2022) has subsequently been introduced, setting a legal framework for a net zero target of GHG emissions by 2050 from baseline levels. The TDPNI can contribute to achieving emission reduction targets through connection of renewable energy generators to the system. Environmental protection objectives of the strategy are reflected in the SEOs for Climatic Factors.
Renewable Energy Directive (2009/28/EC)	This Directive establishes a common framework for the use of energy from renewable sources in order to limit greenhouse gas emissions and to promote cleaner transport. The Member States are to establish national action plans which set the share of energy from renewable sources consumed in transport, as well as in the production of electricity and heating, for 2020.	It requires the EU to fulfil at least 20% of its total energy needs with renewable by 2020 – to be achieved through the attainment of individual national targets. All EU countries must also ensure that at least 10% of their transport fuels come from renewable sources by 2020.	The TDPNI can contribute to achieving renewable energy targets through connection of renewable energy generators to the system. Environmental protection objectives of the Directive are reflected in the SEOs for Climatic Factors and Material Assets.

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EU Strategy on Adaptation to Climate Change	The Adaptation Strategy recognise how important impact assessment is for climate proofing, identifies the key priorities for action and how EU policies can encourage effective adaptation action.	The strategy was adopted by the EC in April 2013. It outlines the measures for taking climate change preparedness to a new level. The strategy has three main objectives: • Promote climate action in Member States through encouraging the adoption of adaptation strategies; • The promotion of informed decision-making through addressing knowledge gaps and the development of the European Climate Adaptation Platform for better knowledge dissemination; and • Promoting adaptation in key vulnerable sectors.	As an EU Member State when the strategy was produced, the UK was subject to its obligations. The NICCAP2 outlines the risks and opportunities relevant to Northern Ireland, as identified in the UK Climate Change Risk Assessment 2017. The TDPNI should aim to contribute towards climate change mitigation and infrastructure to be planned for and resilient to climatic change.
Forging a climate-resilient Europe – the new EU Strategy on Adaptation to Climate Change 2021[COM(2021)82]	The Strategy outlines a long-term vision for the EU to become a climate-resilient society, fully adapted to the unavoidable impacts of climate change by 2050 and complements the EU's goal of becoming climate neutral by this date. Deepens and expands upon adaptation actions in the 2013 EU Adaptation Strategy.	This strategy aims to reinforce the adaptive capacity of the EU and the world, and minimise vulnerability to the impacts of climate change, in line with the Paris Agreement and the proposal for European Climate Law. It seeks to step up action across the economy and society in synergy with other Green Deal policies such as biodiversity protection and sustainable agriculture. The Strategy has three objectives, and proposes a range of actions in order to meet them: • To make adaptation smarter - improving knowledge and availability of data, while managing the inherent uncertainty brought upon us by climate change; securing more and better data on climate-related risk and losses; and making Climate-ADAPT the authoritative European platform for adaptation knowledge. • To make adaptation more systemic - supporting policy development at all levels of governance, society and the economy and in	As an EU Member State when the strategy was produced, the UK was subject to its obligations. The NICCAP2 outlines the risks and opportunities relevant to Northern Ireland, as identified in the UK Climate Change Risk Assessment 2017. The TDPNI should aim to contribute towards climate change mitigation and infrastructure to be planned for and resilient to climatic change.

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		all sectors by improving adaptation strategies and plans; integrating climate resilience in macro-fiscal policy, and promoting nature-based solutions for adaptation. • To speed up adaptation across the board – by accelerating development and rollout of adaptation solutions; reducing climate-related risk; closing the climate protection gap; and ensuring the availability and sustainability of fresh water.	
Second European Climate Change Programme (ECCP II) 2005.	Objectives seek to develop the necessary elements of a strategy to implement the Kyoto protocol.	Develop a framework for a low carbon economy which will be achieved through a National Mitigation Plan (to lower GHG emissions) and a National Adaptation Framework (to provide for responses to changes caused by climate change). This includes: • Reform of the EU Emissions Trading System (EU ETS) to include a cap on emission allowances in addition to existing system of national caps • Agreement of national targets for non-EU ETS emissions from countries outside the EU • Commitment to meet the national renewable energy targets of 16% for Ireland by 2020 • Preparation of a legal framework for technologies in carbon capture and storage	The draft TDPNI will need to have regard for this programme in the planning of transmission infrastructure. The TDPNI can contribute towards climate change mitigation though connection of renewable energy generators to the system.
EU Green Infrastructure Strategy (COM(2013) 249 final).	Aims to develop preserve and enhance healthy green infrastructure to help stop the loss of biodiversity and enable ecosystems to deliver their many services to people and nature. The greater the scale, coherence and connectivity of the green infrastructure network, the greater its benefits. The EU Strategy on green infrastructure aims to outline how to deploy such a network and encourages action at all levels.	The Green Infrastructure strategy is a key step towards the success of the EU Biodiversity Strategy. It is made up of four main elements: • Promoting Green Infrastructure in the main EU policy areas • Supporting EU-level GI projects • Improving access to finance for GI projects • Improving information and promoting innovation.	The draft TDPNI will need to have regard for this strategy in regard to the development of green infrastructure as part of transmission infrastructure developments.

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Air Quality			
Stockholm Convention (2004)	The Stockholm Convention is an international treaty with the aim of eliminating or restricting the production and use of persistent organic pollutants (POPs).	The main objective of the treaty is in seeking to protect human health and the environment from POPs.	The draft TDPNI will need to have regard for this Convention with regard to the potential for cumulative emission effects.
WHO Air Quality Guidelines – global update (2005).	Objectives seek the elimination or minimisation of certain airborne pollutants for the protection of human health.	• Air Quality Guidelines (AQGs) were published by the WHO in 1987 and revised in 1997 and most recently in 2005. • These offer guidance on threshold limits for key air pollutants that pose health risks and provide a reference for setting air pollution targets at regional and national levels to improve air quality. • The 2005 guidelines offer recommended exposure levels for particulate matter (PM10 and PM2.5), ozone, nitrogen dioxide and sulphur dioxide, as well as a set of interim targets to encourage a progressive improvement in air quality.	The draft TDPNI should have regard for the environmental protection objectives of these guidelines, in terms of cumulative emissions affecting air quality from the energy supply sector and other sources. The TDPNI may be able to contribute to reducing air emissions by connecting renewable energy generators to the system.
The Gothenburg Protocol (1999), as amended in 2012.	The 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol) is a multi-pollutant protocol designed to reduce acidification, eutrophication and ground-level ozone by setting emissions ceilings for sulphur dioxide, nitrogen oxides, volatile organic compounds and ammonia to be met by 2010. The protocol was updated and amended in 2012.	• The 1999 Protocol set national emission ceilings for 2010 for four pollutants: sulphur dioxide (SO_2), nitrogen oxides (NO_x), volatile organic compounds (VOCs) and ammonia (NH_3). • As amended in 2012, the Protocol includes national emission reduction commitments to be achieved by 2020 and beyond • Parties must report on their emissions annually and are required to provide projections of their future emissions.	The draft TDPNI should have regard for the environmental protection objectives of the Protocol, relating to the control of emissions from construction. The TDPNI may be able to contribute to reducing air emissions by connecting renewable energy generators to the system. These environmental protection objectives are reflected in the SEOs for Air Quality.
Ambient Air Quality and Cleaner Air for Europe	Set air quality standards for protection of human health and the environment. Addresses air	• The Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive (2008/50/EC) was	The draft TDPNI should have regard for the environmental protection

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(CAFE) Directive [2008/50/EC] & 4th Daughter Directive of the Air Quality Framework Directive [2004/107/EC]	pollution at the level of zones, while the complementary NEC Directive addresses total emissions.	published in May 2008. It replaced the Framework Directive and the first, second and third Daughter Directives. • Sets limit and target values for certain pollutants. Covers in particular nitrogen dioxide (NO2) and particulate matter or fine dust (PM10), which is emitted by traffic and combustion engines. • Lays down limit values to be respected by Member States in their zones. • The 4th Daughter Directive relates to arsenic cadmium, mercury, nickel and polycyclic aromatic hydrocarbons.	objectives of these Directives, relating to the control of emissions from construction. The TDPNI will be obliged to comply with air quality standards set out in these Directives and may be able to contribute to reducing air emissions by connecting renewable energy generators to the system. These environmental protection objectives are reflected in the SEOs for Air Quality.
Industrial Emissions Directive [2010/75/EU]	• Aims to achieve a high level of protection of human health and the environment taken as a whole by reducing harmful industrial emissions across the EU, in particular through better application of Best Available Techniques (BAT) • Around 50,000 installations undertaking the industrial activities listed in Annex I of the Industrial Emissions Directive (IED) are required to operate in accordance with a permit (granted by the authorities in Member States).	The IED is based on several pillars, in particular (1) an integrated approach, (2) use of best available techniques, (3) flexibility, (4) inspections and (5) public participation: • The integrated approach means that the permits must take into account the whole environmental performance of the plant. • The permit conditions including emission limit values must be based on the Best Available Techniques (BAT). • The IED allows competent authorities some flexibility to set less strict emission limit values. • The IED contains mandatory requirements on environmental inspections. Member States shall set up a system of environmental inspection and draw up inspection plans accordingly. • The IED ensures that the public has a right to participate in the decision-making process, and be informed of its consequences, by having access to permit applications, permits and the results of the monitoring releases.	The draft TDPNI should have regard for the environmental protection objectives of the Directive, which includes protection from emissions from certain power plants, in terms of cumulative emissions affecting air quality.

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National Emissions reduction Commitments (NEC) Directive [2016/2284/EU]	This Directive seeks to limit the national emissions of certain airborne pollutants for the protection of human health and the environment. Implements at the EU level obligations under the Geneva Convention and Gothenburg Protocol. It replaced the earlier National Emission Ceilings for Certain Atmospheric Pollutants Directive (2001/81/EC).	It sets the limits on total national emissions from four pollutants - sulphur dioxide, nitrogen oxides, volatile organic compounds and ammonia. These can cause acidification (e.g., the chemical composition of the sea acidifies), water and soil pollution (eutrophication) and ground-level ozone (ozone resulting from the reaction of the four pollutants with heat and sunlight).	The draft TDPNI should have regard for the environmental protection objectives of the Directive, relating to the control of emissions from construction. The TDPNI should, where possible, contribute to the protection of air quality. Connection of renewable energy infrastructure could contribute to reducing national emissions. These environmental protection objectives are reflected in the SEOs for Air Quality and Climatic Factors.
Geneva Convention (1979) on Long-range Transboundary Air Pollution (LRTAP)	International agreement with the aim of limiting problems of air pollution on a broad regional basis.	• First international legally binding instrument dealing with problems of air pollution on a broad regional basis. It was signed in 1979 and entered into force in 1983. It has since been extended by eight specific protocols. • Under the Convention, the parties commit to working together to limit, to gradually prevent, and to reduce their discharges of air pollutants in order to combat the resulting transboundary pollution. • The Convention has substantially contributed to the development of international environmental law and has created the essential framework for controlling and reducing the damage to human health and the environment caused by transboundary air pollution.	The draft TDPNI should have regard for the environmental protection objectives of the Directive, relating to the control of emissions from construction. Environmental protection objectives of the Convention are reflected in the SEOs for Air Quality and Climatic Factors.
Sustainable Development			
Seventh Environmental Action Programme to 2020 of the European Community	The Programme guides European environment policy until 2020, and sets out a vision beyond that, of where it wants the EU to be by 2050.	Objectives seek to make the future development of the EU more sustainable. It identifies three key objectives:	Environmental protection objectives of the Programme are reflected in the SEOs for Biodiversity, Flora and Fauna; Population and Human

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		• To protect, conserve and enhance the Union's natural capital; • To turn the Union into a resource-efficient, green, and competitive low-carbon economy; and • To safeguard the Union's citizens from environment-related pressures and risks to health and wellbeing. Two additional horizontal priority objectives complete the programme: • To make the Union's cities more sustainable; and To help the Union address international environmental and climate challenges more effectively.	Health; Geology, Soils and Landuse; Water; Air Quality; and Climatic Factors.
EUROPE 2020 A strategy for smart, sustainable and inclusive growth (COM/2010/2020)	Europe 2020 is a 10-year growth strategy proposed by the European Commission in 2010 for advancement of the EU economy. It aims at "smart, sustainable, inclusive growth", with greater coordination of national and European policy. It follows the Lisbon Strategy for the period 2000–2010.	The Strategy set five overarching objectives to be reached by 2020: • Employment: 75% of population aged 20-64 should be employed; • Innovation: 3% EU's GDP should be invested in R&D; • Climate Change: 20/20/20 climate/energy targets should be met (including an increase to 30% of emissions reduction if conditions are right); • Education: Share of early school leavers should be under 10% and at least over 40% of the younger generation should have a tertiary degree; and • Poverty: At least 20m fewer people in at-risk-of-poverty and social exclusion.	Environmental protection objectives of the Strategy, with regard to climate change objectives, are reflected in the SEO for Climatic Factors.
Roadmap to a Resource Efficient Europe (COM(2011) 571)	Outlines how to transform the EU economy to a sustainable one by 2050. It proposes ways to increase resource productivity and decouple economic growth from resource use and its environmental impact.	• Areas where policy action can make a real difference are a particular focus, and specific bottlenecks like inconsistencies in policy and market failures are tackled to ensure that policies are all going in the same direction.	The draft TDPNI should have regard for the environmental protection objectives of this roadmap in planning for transmission infrastructure and

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	It sets out a vision for the structural and technological change needed up to 2050, with milestones to be reached by 2020. These milestones illustrate what will be needed to put Europe on a path to resource efficient and sustainable growth.	• Cross-cutting themes such as addressing prices that do not reflect the real costs of resource use and the need for more long-term innovative thinking are also in the spotlight. • Key resources are analysed from a life-cycle and value-chain perspective. Nutrition, housing and mobility are the sectors responsible for most environmental impacts; actions in these areas are being proposed to complement existing measures.	could potentially have implications on achieving renewable energy targets.
SEA Directive [2001/42/EC]	To provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.	• Requires that Plans & Programmes take into account protection of the environment and integration of the Plan into the sustainable planning of the country as a whole. • Eleven sectors are specified in the Directive and Competent Authorities (Plan/ Programme makers) must subject specific Plans and Programmes for these sectors to an environmental assessment where they are likely to have significant effects on the environment.	The draft TDPNI will be subject to the SEA process. This is being undertaken through this SEA Scoping Report and subsequent Environmental Report.
EIA Directive [85/337/EEC] [2014/52/EU]	The objective of this Directive is to require Environmental Impact Assessment of the environmental effects of those public and private projects, which are likely to have significant effects on the environment. Aims to assess and implement avoidance or mitigation measures to eliminate environmental effects, before consent is given of projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location. Projects of this type are subject to a requirement for development consent and an assessment with regard to their effects.	• All projects listed in Annex I are considered as having significant effects on the environment and compulsorily require an EIA. • For projects listed in Annex II, a "screening procedure" is required to determine the effects of projects on the basis of thresholds/criteria or a case-by-case examination. The competent authority may give a decision on whether a project requires EIA. • Requirement for identification, description and assessment in an appropriate manner, in the light of each individual case, on the direct and indirect effects of a project on the following factors: human beings, fauna and	The TDPNI will have regard to the EIA Directive in the development of any infrastructure. Development and operation of certain transmission development projects included in the TDPNI may be subject to EIA.

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		flora, soil, water, air, climate and the landscape, material assets, cultural heritage, and the interactions between these factors. • Requirement for consultation with relevant authorities, stakeholders and the public, allowing sufficient time for these to make a submission before a decision is made. • Establishment of a recognised structure and content for the Environmental Impact Statement, which is the document submitted as a written account of the EIA. • Inclusion of proposed flood risk management schemes in EIA screening process	
Energy Efficiency Directive [2012/27/EU]	European Union directive which mandates energy efficiency improvements within the European Union.	The aim of the EU Energy Efficiency Directive was to save energy and to reach the EU's energy savings targets: • By 2020, a 20% cut in energy consumption, or in absolute terms -calculated in million tons of oil equivalent (Mtoe) - 1483 Mtoe in 2020 compared to projected consumption in that year of 1842 Mtoe for the EU as a whole. • The Directive included a legal obligation to establish energy saving schemes in all Member States: energy distributors or retail energy sales companies were obliged to save 1.5 % of their energy sales annually, by volume, through the implementation of energy efficiency measures such as improving the efficiency of heating systems, installing double glazed windows or insulating roofs, among final energy customers.	The TDPNI will be obliged to comply with the requirements of this Directive, particularly in regard to metering and monitoring. Development and operation of new electricity transmission infrastructure should contribute to improved energy efficiency.
EU Thematic Strategy for Soil Protection [COM/2006/231] and Report on its implementation [COM/2012/046]	Strategy for the protection of soils across the EU.	The Strategy consists of: • A communication from the commission, explaining why further action is needed to ensure a high level of soil protection, sets	Environmental protection objectives of the Strategy are reflected in the SEO for Geology, Soils and Landuse.

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		the overall objective of the strategy and explains the kinds of measures that must be taken. It establishes a 10-year work programme for the Commission; • A proposal for a framework Directive, setting out common principles for protecting soils across the EU. Within this common framework, Member States can decide how best to protect soil and how to use it in a sustainable way; and • An impact assessment, analysing the economic, social and environmental impacts of the different options considered in preparation of the Strategy and the measures retained. The 2012 report outlines implementation of the Strategy and ongoing activities, the blocking of progress on the proposed framework Directive, current soil degradation trends and future challenges.	
Integrated Pollution Prevention Control Directive [96/61/EC], as amended by Directive 2008/1/EC	To achieve a high level of protection of the environment through measures to prevent or, where that is not practicable, to reduce emissions to air, water and land from industrial sources.	The Directive provides an integrated approach to establish pollution prevention from stationary "installations". This codified act includes all the previous amendments to the Directive 96/61/EC and introduces some linguistic changes and adaptations.	The draft TDPNI should have regard for the environmental protection objectives of the Strategy. The plan should aim to not cause any negative impacts on air, water or land quality, and may be able to contribute to reducing air emissions by connecting renewable energy generators to the system. These environmental protection objectives are reflected in the SEOs for Air Quality and Climatic Factors.
UN 2030 Agenda for Sustainable Development	The UN 2030 Agenda envisages "a world of universal respect for human rights and human dignity, the rule of law, justice, equality and non-discrimination". It is grounded in the Universal Declaration on Human Rights and international	The Agenda's 17 Sustainable Development Goals (SDG), and their 169 targets, aim to: Eradicate poverty in all forms and "seek to realize the human rights of all and achieve gender equality".	The draft TDPNI should have regard for the environmental protection objectives of the Agenda in the planning of transmission infrastructure. It should promote

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	human rights treaties and emphasises the responsibilities of all states to respect, protect and promote human rights.		sustainable planning and management in the development and operation of transmission infrastructure.
Water			
Water Framework Directive (2000/60/EC), (as amended by Decision 2455/2001/EC and Directives 2008/32/EC, 2008/105/EC and 2009/31/EC.	Aims to improve water quality and quantity within rivers, estuaries, coasts and aquifers. Aims to prevent the deterioration of aquatic ecosystems and associated wetland by setting out a timetable until 2027 to achieve good ecological status or potential. Member States are required to manage the effects on the ecological quality of water which result from changes to the physical characteristics of water bodies. Action is required in those cases where these "hydro-morphological" pressures are having an ecological impact which will interfere with the ability to achieve WFD objectives. The following Directives have been subsumed into the Water Framework Directive: • The Drinking Water Abstraction Directive • Sampling Drinking Water Directive • Exchange of Information on Quality of Surface Freshwater Directive • Shellfish Directive • Freshwater Fish Directive • Groundwater (Dangerous Substances) Directive • Dangerous substances Directive	• Identification and establishment of individual river basin districts. • Preparation of individual river basin management plans for each of the catchments. These contain the main issues for the water environment and the actions needed to deal with them. • Establishment of a programme of monitoring water quality in each RBD. • Establishment of a Register of Protected Areas (includes areas previously designated under the Freshwater Fish and Shellfish Directives which have become sites designated for the protection of economically significant aquatic species under WFD and placed on the Protected Areas register). • Promotion of sustainable management of the water environment by carefully considering current land use and future climate scenarios, minimising the effects of flooding and drought events and facilitating long term improvements in water quality, including the protection of groundwater near landfill sites, as well as minimising agricultural runoff.	The draft TDPNI should have regard for the environmental protection objectives of the WFD in the planning of transmission infrastructure. It will need to consider the requirements of the WFD and ensure that it does not compromise its objectives, and that it contributes to achieving its aims. Environmental protection objectives of the Directive are reflected in the SEOs for Water and Biodiversity, Flora and Fauna.
Marine Strategy Framework Directive (2008/56/EC)	• Establishes a framework whereby the necessary measures are undertaken to achieve or maintain good environmental status in the marine environment by the year 2020.	• Preparation of an assessment of the current environmental status of the waters concerned and the environmental impact of human activities.	The draft TDPNI should have regard for the environmental protection objectives of the MSFD in the

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	• Requires the development and implementation of marine strategies in order to protect and preserve the marine environment, prevent its deterioration or, where practicable, restore marine ecosystems in areas where they have been adversely affected. • It aims to prevent and reduce inputs in the marine environment, with a view to phasing out pollution as defined in Article 3(8), so as to ensure that there are no significant impacts on or risks to marine biodiversity, marine ecosystems, human health or legitimate uses of the sea.	• Establishment of a series of environmental targets and associated indicators. • Development of a programme of measures designed to achieve or maintain good environmental status, by 2020. • Establishment of a monitoring programme for ongoing assessment and regular updating of targets. • Cooperation with transboundary Member States to implement these measures.	planning of transmission infrastructure. The TDPNI could have implications on the environmental status of marine waters. Development and operation of transmission infrastructure should aim to avoid impacts on the marine environment. Environmental protection objectives of the Directive are reflected in the SEOs for Water.
Floods Directive (2007/60/EC)	This Directive provides a framework for the assessment and management of flood risks, aiming to reduce the adverse consequences associated with flooding for human health, the environment, cultural heritage and economic activity.	Member States must: • Assess the risk of flooding of all water courses and coast lines, • Map the flood extent and assets and humans at risk in these areas at River Basin level and in areas covered by Article 5(1) and 13(1); and • Implement flood risk management plans and take adequate and coordinated measures to reduce this flood risk. Member States are required to first carry out a preliminary assessment by 2011 to identify the river basins and associated coastal areas at risk of flooding. For such zones they would then need to draw up flood risk maps by 2013 and establish flood risk management plans focused on prevention, protection and preparedness by the end of 2015. The public must be informed and allowed to participate in the planning process.	The draft TDPNI should have regard for the environmental protection objectives of the Floods Directive in the planning of transmission infrastructure. The TDPNI should consider the implications of the flood risk arising from development options, particularly those located along the coast or in the vicinity of rivers. Environmental protection objectives of the Directive are reflected in the SEOs for Water.
Bathing Water Directive (2006/7/EC)	The overall objective of the revised Bathing Water Directive remains the protection of public health whilst bathing. It:	• Updates the way in which water quality is measured, focusing on fewer microbiological indicators, and setting different standards for inland and coastal bathing sites.	The draft TDPNI should have regard for the environmental protection objectives of this Directive in the planning of transmission infrastructure, relating to the potential

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	• Imposes stricter standards for water quality and the implementation of new method of assessment. • Establishes a more pro-active approach to the assessment of possible pollution risks, and to the management of bathing waters; and • Places considerable emphasis on promoting increased public involvement, and for improved dissemination of information on bathing water quality to the general public.	• Reduces the health risks linked to bathing by setting scientifically based minimum water quality standards. • Makes changes to monitoring and sampling frequency. • Allows a limited number of water samples to be disregarded during short term pollution incidents, if the event is predicted and the public warned beforehand. • Provides better information to the public, allowing more informed choices to be made about the risk of bathing. • Improves the overall management of bathing water quality by requiring an assessment of potential sources of pollution. • Is compatible with other EU water related legislation, in particular the Water Framework Directive.	for cumulative effects on waters used for recreation. Development and operation of electrical transmission infrastructure should not negatively impact on designated bathing waters.
Groundwater Directive [80/68/EEC] and Daughter Directive [2006/118/EC]	• Aims to protect groundwater from pollution by controlling discharges and disposals of certain dangerous substances to groundwater. • Made under the Water Framework Directive, the Daughter Directive aims to prevent and limit inputs of pollutants to groundwater.	• Establishment of criteria for assessing good groundwater status and for the identification of significant and sustained upwards trends and the starting points for trend reversal. • Threshold values adopted for the pollutants, groups of pollutants and indicators of pollution which have been identified as contributing to the characterisation of bodies or groups of bodies of groundwater as being at risk.	The draft TDPNI should have regard for the environmental protection objectives of this Directive in the planning of transmission infrastructure. The TDPNI should, where possible, contribute to the protection of groundwater from point source and diffuse pollution that could be caused or exacerbated by development options. Environmental protection objectives of the Directive are reflected in the SEOs for Water.
Drinking Water Directive (98/83/EC)	• Aimed at the improvement and maintenance of the quality of water intended for human consumption. • Aims to protect human health from the adverse effects of any contamination of water intended	• Sets values applicable to water intended for human consumption for a defined range of parameters. • Requires implementation of all measures necessary to ensure that regular monitoring	The TDPNI may have implications for waters used as a drinking water supply. The draft TDPNI should have regard for the environmental protection

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	for human consumption by ensuring that it is wholesome and clean.	of the quality of water intended for human consumption is carried out, in order to check that the water available to consumers meets the requirements set out in the legislation. • Any failure to meet the required standards is immediately investigated in order to identify the cause. • Any necessary remedial action is taken as soon as possible to restore its quality and gives priority to their enforcement action. • Undertake remedial action to restore the quality of the water where necessary to protect human health. • Notification of consumers when remedial action is being undertaken, except where the competent authorities consider the non-compliance with the required standards value to be trivial.	objectives of this Directive in the planning of transmission infrastructure. Development and operation of electrical transmission infrastructure should not negatively impact on designated drinking waters.
Environmental Quality Standards Directive (Directive 2008/105/EC) (also known as the Priority Substances Directive), as amended by Directive 2013/39/EU.	Establishes environmental quality standards (EQS) for priority substances and certain other pollutants as provided for in Article 16 of the Water Framework Directive and aims to achieve good surface water chemical status in accordance with the provisions and objectives of Article 4 of the Water Framework Directive.	• Apply the EQS laid down in Part A of Annex I to this Directive for bodies of surface water. • Determine the frequency of monitoring in biota and/or sediment of substances. • Monitoring shall take place at least once every year, unless technical knowledge and expert judgment justify another interval. • Notify the European Commission if the substances for which EQS have been established if a deviation of the monitoring is planned along with the rationale and approach. • Establish an inventory, including maps, if available, of emissions, discharges and losses of all priority substances and pollutants listed in Part A of Annex I to this Directive for each river basin district.	Impacts on water quality are of relevance to the TDPNI, as infrastructure development options have potential to be associated with water pollution. Development and operation of electrical transmission infrastructure should aim to not negatively impact on any environmental quality standards.

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Environmental Liability Directive [2004/35/EC]	• Establishes a framework for environmental liability based on the 'polluter-pays' principle, to prevent and remedy environmental damage. • Relates to environmental damage caused by occupational activities (listed in Annex III), and to any imminent threat of such damage occurring by reason of any of those activities; damage to protected species and natural habitats caused by any occupational activities other than those listed in Annex III, and to any imminent threat of such damage occurring by reason of any of those activities, whenever the operator has been at fault or negligent.	• Describes procedures for circumstances where environmental damage has occurred. Requires the polluter to take all practicable steps to immediately control, contain, remove or otherwise manage the relevant contaminants and/or any other damage factors in order to limit or to prevent further environmental damage and adverse effects on human health or further impairment of services and the necessary remedial measures. • Establishes measures for cases where environmental damage has not yet occurred, but there is an imminent threat of such damage occurring. • The regulations make the polluter financially liable and allow the competent authority to initiate cost recovery proceedings where appropriate.	The draft TDPNI will be obliged to comply with the requirements of the Directive and to prevent environmental damage. Development and operation of electrical transmission infrastructure should aim to cause no damage to the wider environment.
A Blueprint to Safeguard Europe's Water Resource [COM(2012/673]	The Blueprint aims to improve implementation of existing water policy, to integrate water considerations into other policy areas and indicate where further measures may be necessary for water efficiency and adaptation to climate change.	• Outlines actions that relate to better implementation of current water legislation, integration of water policy objectives into other policies and filling gaps particularly in relation to water quantity and efficiency. • These actions are to ensure that water of sufficient quantity and good quality is available to service the needs of people as well as the environment and the EU's economy. • The Blueprint's time horizon is closely related to the EU 2020 Strategy particularly the Resource Efficiency Roadmap, of which the Blueprint is the water milestone. However, the Blueprint covers a longer time span, up to 2050, and is expected to be the driver of long-term EU water policy rural development programme.	The draft TDPNI should have regard for this Blueprint. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft TDPNI
Waste			
Waste Electrical and Electronic Equipment Directive [2002/96/EC], as recast by [201219/EU]	EU rules on waste electrical and electronic equipment (widely known as WEEE or e-waste) aim to contribute to sustainable production and consumption. They address environmental and other issues caused by the growing number of discarded electronics in the EU.	The WEEE Directive aims to contribute to sustainable production and consumption by: • preventing the creation of WEEE as a first priority • contributing to the efficient use of resources and the retrieval of secondary raw materials through re-use, recycling and other forms of recovery • improving the environmental performance of everyone involved in the life cycle of EEE In order to achieve these objectives, the Directive: • requires the separate collection and proper treatment of WEEE and sets targets for their collection as well as for their recovery and recycling • helps European countries fight illegal waste exports more effectively by making it harder for exporters to disguise illegal shipments of WEEE • reduces the administrative burden by calling for the harmonisation of national EEE registers and of the reporting format	The draft TDPNI should consider the implications of this Directive for developmental infrastructure options within the Plan that are likely to result in waste electrical equipment being generated.
Waste Framework Directive [2008/98/EC], as amended in 2018 [2018/51/EU]	• Sets the basic concepts and definitions related to waste management, such as definitions of waste, recycling, recovery. • Explains when waste ceases to be waste and becomes a secondary raw material (so called end-of-waste criteria), and how to distinguish between waste and by-products.	The Directive requires that: • Waste is managed without endangering human health • Waste is managed without harming the environment. • Waste is managed without harming water, air, soil, plants or animals. • Waste does not cause a nuisance a nuisance through noise or odours, or to countryside or places of special interest.	The draft TDPNI should consider the implications of this Directive for developmental infrastructure options within the Plan that are likely to result in waste electrical equipment being generated.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft TDPNI
Cultural Heritage			
Valletta Convention (1992)	Convention for the Protection of the Archaeological Heritage of Europe (revised) (Valletta, 1992). The Valletta Treaty aims to protect the European archaeological heritage "as a source of European collective memory and as an instrument for historical and scientific study	Sets guidelines for the funding of excavation and research work and publication of research findings. Deals with public access, in particular to archaeological sites, and educational actions to be undertaken to develop public awareness of the value of the archaeological heritage. The Convention constitutes an institutional framework for pan-European co-operation on the archaeological heritage, entailing a systematic exchange of experience and experts among the various States. The Committee responsible for monitoring the application of the Convention assumes the role of strengthening and co-ordinating archaeological heritage policies in Europe.	The draft TDPNI should consider sites of archaeological heritage and ensure that they are protected from loss or damage resulting from the development of infrastructure. Environmental protection objectives of the Treaty are reflected in the SEO for Cultural, Architectural and Archaeological Heritage.
Granada Treaty (1985)	Convention for the Protection of the Architectural Heritage of Europe (Granada, 1985). The main purpose of the Convention is to reinforce and promote policies for the conservation and enhancement of Europe's heritage. It also affirms the need for European solidarity with regard to heritage conservation and is designed to foster practical co-operation among the Parties.	• Conservation of European architectural heritage.	The draft TDPNI should consider sites of architectural heritage and ensure that they are protected from loss or damage resulting from the development of infrastructure. Environmental protection objectives of the Treaty are reflected in the SEO for Cultural, Architectural and Archaeological Heritage.
World Heritage Convention [WHC-2005/WS/02]	Objectives seek to ensure the identification, protection, conservation, presentation and transmission to future generations of cultural and natural heritage and ensure that effective and active measures are taken for these. The Convention recognises the way in which people interact with nature and encourages signatories to integrate the protection of cultural and natural heritage into regional planning programmes, set up staff and services at their sites, undertake scientific and technical conservation research and adopt measures which	• Establishment of measures for the protection of monuments of national importance by virtue of the historical, architectural, traditional, artistic or archaeological interest attaching to them. Includes the site of the monument, the means of access to it and any land required to preserve the monument from injury or to preserve its amenities. • World Heritage Sites in Ireland are specific locations that have been included in the UNESCO World Heritage Programme list of sites of outstanding cultural or natural	The draft TDPNI should consider sites of archaeological, architectural, cultural and natural heritage and ensure they are protected from loss or damage resulting from the development of infrastructure. Environmental protection objectives of the Treaty are reflected in the SEO for Cultural, Architectural and Archaeological Heritage.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft TDPNI
	give this heritage a function in the day-to-day life of the community.	importance to the common heritage of humankind. Two such sites in Ireland have been designated	
Landscape			
European Landscape Convention [ETS No. 176]	• Promotion of the protection, management and planning of European landscapes and organising European co-operation on landscape issues. • Applies to the entire territory of the Parties and covers natural, rural, urban and peri-urban areas. • Inclusion of landscapes that might be considered outstanding as well as everyday or degraded landscapes. • Aimed at the protection, management and planning of all landscapes and raising awareness of the value of a living landscape. • Complements the Council of Europe's and UNESCO's heritage conventions.	• Respond to the public's wish to enjoy high-quality landscapes and to play an active part in the development of landscapes. • Each administrative level (national, regional and local) should draw up specific and/or sectoral landscape strategies within the limits of its competences. These are based on the resources and institutions which, when co-ordinated in terms of space and time, allow policy implementation to be programmed. The various strategies should be linked by landscape quality objectives.	The draft TDPNI could potentially have implications on landscapes and visual amenity. Infrastructure should be planned to avoid sensitive landscapes. Environmental protection objectives of the Treaty are reflected in the SEO for Landscape and Visual Amenity.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
National			
Biodiversity			
Biodiversity Strategy for Northern Ireland to 2020	A strategy for Northern Ireland to meet its international obligations and local targets to protect biodiversity	The strategy sets out the proposals for action to help halt the loss of biodiversity and the degradation of ecosystems up to 2020. 1. Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society 2. Reduce the direst pressures on biodiversity and promote sustainable development 3. To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity 4. Enhance the benefits to all from biodiversity and ecosystem services 5. Enhance implementation through participatory planning, knowledge management and capacity building.	The draft TDPNI should look for opportunities to conserve, and where possible, restore biodiversity. Environmental protection objectives of the strategy are reflected in the SEOs for Biodiversity, Flora and Fauna.
UK Post-2020 Biodiversity Framework	Succeeds the UK Biodiversity Action Plan and 'conserving Biodiversity – the UK Approach'. Sets out the UK's response to the CBD's 'Strategic Plan for Biodiversity 2011-2020' and its 20 'Aichi Targets' (2010), and the EU Biodiversity Strategy (2011).	The Framework demonstrates how the work of the four countries and the UK contributes to achieving the Aichi Targets, and identifies the activities required to complement the country biodiversity strategies in achieving the Targets. The following are the Strategic Goals of the Framework: • Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society; • Reduce the direct pressures on biodiversity and promote sustainable use; • To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity;	The draft TDPNI should look for opportunities to conserve, and where possible, restore biodiversity. Environmental protection objectives of the framework are reflected in the SEOs for Biodiversity, Flora and Fauna.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
		• Enhance the benefits to all from biodiversity and ecosystems; and • Enhance implementation through participatory planning, knowledge management and capacity building	
Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995, and amendment Regulations	These Regulations give effect to Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) and the Minister to designate special areas of conservation (endangered species and habitats of endangered species) as a contribution to an EU Community network to be known as NATURA 2000. See EU Habitats Directive.	Protects certain birds, plants, animals, marine life and their habitats, including Natura 2000 sites, through creating criminal offences and changing planning requirements.	The draft TDPNI should ensure that European Sites are suitably protected from loss or damage. Appropriate Assessment is being undertaken for the draft TDPNI, to ensure that its implementation will not adversely affect European Sites. Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna.
Wildlife and Natural Environment Act (Northern Ireland) 2011	Amended the Wildlife (Northern Ireland) Order 1985 by giving protection to a wider range of plants, animals and birds, and providing additional enforcement powers and increased penalties for wildlife related offences. The Act also introduced a statutory duty on all public bodies to further the conservation of biodiversity.		The draft TDPNI should have regard for the environmental protection objectives of the Act in the planning of transmission infrastructure. The draft TDPNI will have a 'Duty of Care' to conserve biodiversity. Environmental protection objectives of the Act are reflected in the SEOs for Biodiversity, Flora and Fauna.
The Environment (Northern Ireland) Order 2002	Covers several environmental issues, including pollution prevention control, assessment and management of air quality, and designation of areas of special scientific interest (ASSIs).		The draft TDPNI should have regard for the environmental protection objectives of this legislation in the planning of transmission infrastructure. The draft TDPNI should look for opportunities to conserve, and where possible, restore biodiversity, should aim to not cause any negative impacts on air quality, and may be able to contribute to reducing air emissions by connecting renewable energy generators to the system.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
			Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna, and for Air Quality.
DAERA Conservation Management Plans for SACs (in prep.)	Series of Management Plans for SACs in Northern Ireland, determining the pressures and threats to habitats and species at the sites, and identifying the management actions required to address these pressures.	In line with obligations under The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended), measures must be put in place to maintain and, where needed, improve the ecological health of NI SACs (58 no.) In 2017, NIEA began a 4-year work programme to develop a series of Management Plans.	The draft TDPNI should ensure that European Sites are suitably protected from loss or damage, with regard to the information provided in these Conservation Management Plans. Environmental protection objectives to protect European designated sites are reflected in the SEOs for Biodiversity, Flora and Fauna.
UK National Ecosystem Assessment (2011)	Provides a comprehensive overview of the state of the natural environment in the UK and a new way of estimating our national wealth. Northern Ireland is covered in Chapter 18. The four key components are: 1. environmental spaces; 2. cultural practices; 3. cultural values; and 4. benefits need to be considered if CES are to be fully addressed in the ecosystem service framework		The draft TDPNI should ensure that the natural environment is suitably protected from loss or damage in its implementation.
Northern Ireland Species and Habitat Action Plans	Northern Ireland Species and Habitat Action Plans are published to assist delivery of the Northern Ireland Biodiversity Strategy, for the protection and enhancement of Northern Ireland Priority Species populations and areas of Priority Habitats which in turn supports Nature Recovery Networks and Green Growth Strategies.	A wide range of actions for these habitats and species continues to be undertaken, e.g., through the management of designated sites, planning regulation, agri-environment schemes and grant-aided projects, but have not been specifically designed to fully implement these action plans or any overarching Habitat and Species Action Plan.	The draft TDPNI should look for opportunities to conserve, and where possible, restore biodiversity. Environmental protection objectives to protect European designated sites and species are reflected in the SEOs for Biodiversity, Flora and Fauna.
Northern Ireland Peatland Strategy 2021-2040	The strategy outlines a range of strategic objections and actions considered necessary to ensure that semi-natural peatlands are	The objectives of the Northern Ireland Peatland Strategy 2021-2040 include:	The draft TDPNI should have regard for the environmental protection objectives

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
	conserved and restored to functioning ecosystems.	• By 2040, all peatlands supporting semi-natural vegetation being managed for their peatland biodiversity and ecosystem function; • By 2030, degraded peatland habitats prioritised for restoration to favourable conservation status; • By 2040, all high priority degraded peatlands under restoration management; and also by 2040, that high priority degraded peatlands in Northern Ireland are under sustainable management.	of the Strategy in the planning of transmission infrastructure
(ROI) National Biodiversity Action Plan 2017-2022	ROI National strategy for the maintenance and enhancement of biological diversity, which should be integrated across other policy sectors.	The key targets include: • Mainstream biodiversity in the decision-making process across all sectors. • Substantially strengthen the knowledge base for conservation management and sustainable use of biodiversity. • Increase awareness and appreciation of biodiversity and ecosystems services. • Conserve and restore biodiversity and ecosystem services in the wider countryside. • Conserve and restore biodiversity and ecosystem services in the marine environment. • Expand and improve on the management of protected areas and legally protected species. • Strengthen international governance for biodiversity and ecosystem services.	The TDPNI should have regard for this action plan and look for opportunities to conserve, and, where possible, restore or enhance biodiversity, from potential transboundary impacts.
Population / Human Health			
Control of Major Accident Hazards (COMAH) Regulations (Northern Ireland) 2015	Implements the majority of the Seveso III Directive in Northern Ireland. This controls major accident hazards involving dangerous substances.	• Certain establishments in Northern Ireland are subject to the COMAH Regulations. • Objectives seek to prevent major accidents involving dangerous substances and limit	The draft TDPNI has an indirect link to the COMAH Regulations, owing to the inclusion of certain power stations as COMAH establishments in NI.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
		their consequences for man and the environment, with a view to ensuring high levels of protection throughout the Community.	
Climate Change / Air Quality			
Northern Ireland's second Climate Change Adaptation Programme (NICCAP2) 2019 – 2024	The NICCAP2 contains the NICS Departments response to the risks and opportunities relevant to Northern Ireland, as identified in the UK Climate Change Risk Assessment 2017 (CCRA 2017). It sets out preparation for climate change impacts that are already happening and puts in place plans for future impacts.	• NICCAP2 focusses on priority areas identified in the NI Evidence Report as requiring urgent adaptation action over the next 5 years: • Sets the strategies, policies and actions by which government departments will deliver on the agreed outcome objectives	The TDPNI should aim to contribute towards climate change mitigation and infrastructure to be planned for and resilient to climatic change. Environmental Protection Objectives are reflected in SEOs for Climatic Factors and Water.
UK Climate Change Act 2008	The Climate Change Act, the first of its kind in any country, set out a framework for moving the UK to a low-carbon economy.	The key component of the legislation requires a mandatory 60% cut in the UK's carbon emissions by 2050. Two key aims underpinning the Act: 1. Improve carbon management and help the transition towards a low carbon economy in the UK 2. Demonstrate strong UK leadership internationally, signalling that we are committed to taking our share of responsibility for reducing global emissions in the context of developing negotiations on a post-2012 global agreement at Copenhagen in 2009.	The TDPNI should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving renewable energy targets through connection of renewable generators to the electricity system. Environmental Protection Objectives of the Act are reflected in the SEO for Climatic Factors.
The Climate Change Act 2008 (2050 Target Amendment) Order 2019	Sets a legal requirement to reduce the UK's emissions of GHGs by 100% relative to 1990 levels by 2050.	Legislative basis for achieving the 'net zero' target by 2050, increasing the previous target committed to within UK legislation.	The TDPNI should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving renewable energy targets through connection of renewable generators to the electricity system. Environmental Protection Objectives of the Act are reflected in the SEO for Climatic Factors.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
Climate Change (Northern Ireland) Act 2022	Sets a legal requirement to reduce NI's emissions of GHGs by 100% relative to 1990 levels by 2050.	• Target of an at least 100% reduction in net zero greenhouse gas (GHG) emissions by 2050 (i.e., net zero emissions by 2050) for Northern Ireland compared to baseline; • Target of at least 48% reduction in net emissions by 2030. • Raised the commitment for renewable electricity consumption from 70% as established in the NI Energy Strategy to 80% by 2030.	The TDPNI should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving renewable energy targets through connection of renewable generators to the electricity system. Environmental Protection Objectives of the Act are reflected in the SEO for Climatic Factors.
UK Climate Change Risk Assessment (CCRA) Programme 2022	The UK Government is required, under the Climate Change Act, to publish a CCRA every 5 years, setting out the risks and opportunities facing the UK from climate change.	The first CCRA was published by the Department for Environment, Food and Rural Affairs (Defra) in 2012, second in 2017 and third in 2022. These assessments identify the risk and opportunities posed by climate change over the next 5 years. Evidence Reports feed into the UK National Adaptation Programme, and national adaptation programmes of devolved administrations (i.e., the NICCAP2).	The TDPNI should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving renewable energy targets through connection of renewable generators to the electricity system. Environmental Protection Objectives are reflected in SEOs for Climatic Factors.
(RoI) National Adaptation Framework 2018	The National Adaption Framework (NAF) was developed under the Climate Action and Low Carbon Development Act 2015 and sets out the national strategy to reduce the vulnerability of the Republic of Ireland to the negative effects of climate change and to avail of any positive impacts.	Key actions under the NAF include: • 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 adaption and resilience. • Integrating climate adaption into key national plans and policies.	The draft TDPNI should aim to contribute towards climate change mitigation and infrastructure to be planned for and resilient to climatic change.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
(RoI) Climate Action Plan 2019	The Plan sets out the actions required to meet EU 2030 targets and put Ireland on the right trajectory towards net zero emissions by 2050.	• Identifies the nature and scale of the challenge, outlining the current situation across key sectors such as Electricity, Transport, Built Environment, Industry and Agriculture. • Contains 183 actions, broken down into 619 individual measures. • Adopts significant governance arrangements, including the establishment of a Climate Action Delivery Board within the Department of the Taoiseach.	The draft TDPNI should aim to contribute towards climate change mitigation and infrastructure to be planned for and resilient to climatic change.
The National Emissions Ceiling Regulations 2018	Implement in the UK Directive 2016/2284/EU relating to national emission ceilings for certain atmospheric pollutants.	The Regulations require: • Preparation of an annual inventory of emissions of certain pollutants occurring in the UK, and projections of such emissions. • Ensure from 2010-2019 that anthropogenic emissions of sulphur dioxide, nitrogen oxides, VOCs and ammonia occurring within the UK do not exceed specified amounts. • Ensure from 2020-2029 that anthropogenic emissions of sulphur dioxide, nitrogen oxides, VOCs, ammonia and fine particulate matter occurring within the UK do not exceed specified amounts, and from 2030 that they do not exceed additional specified amounts. • Ensure emissions in 2025 are following a linear reduction trajectory between 2020 and 2030 targets. • Preparation of a national air pollution control programme, to which public authorities must have regard. • Locate sites representative of specified ecosystems and habitats in order to monitor the negative impacts of air pollution.	The draft TDPNI should have regard for the environmental protection objectives of the Regulations. The plan should aim to not cause any negative impacts on air quality that could breach standards and objectives and may be able to contribute to reducing air emissions by connecting renewable energy generators to the system. These environmental protection objectives are reflected in the SEOs for Air Quality and Climatic Factors.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
UK National Air Pollution Control Programme (NAPCP) 2023	Programme required under The National Emission Ceilings Regulations 2018. The NAPCP sets out how the UK can meet the legally binding 2020 and 2030 emission reduction commitments.	• Emission reduction commitments apply for 5 pollutants: nitrogen oxides, ammonia, non-methane VOCs, particulate matter and sulphur dioxide.	The draft TDPNI should have regard for the environmental protection objectives of the Programme. The plan should aim to not cause any negative impacts on air quality and may be able to contribute to reducing air emissions by connecting renewable energy generators to the system. Environmental Protection Objectives are reflected in the SEOs for Air Quality and Climatic factors.
The Environment Act 2021 and The Environment (2021 Act) (Commencement and Saving Provision) Order (Northern Ireland) 2022	This legislation acts as the UK's new framework of environmental protection. It provides the Government with powers to set new binding targets, including for air quality, water, biodiversity, and waste reduction.	• Establishes the Office for Environmental Protection as a new environmental watchdog. • Sets the priority areas as air quality, water, biodiversity, and resource efficiency and waste reduction. • Established a legally binding duty on Government to bring forward at least two new air quality targets in secondary legislation.	The draft TDPNI should have regard for the environmental protection objectives of this legislation. The plan should aim to not cause any negative impacts on air quality, water, biodiversity and waste, and may be able to contribute to reducing air emissions by connecting renewable energy generators to the system.
Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 (due to be amended / updated in May 2023)	The Air Quality Strategy sets out air quality objectives and policy options to improve air quality in the UK from current to long term. As well as direct benefits to human health, these options are intended to provide important benefits to quality of life and to help protect the environment.	The Strategy sets out the UK Government and devolved administrations' air quality objective and the measures selected to achieve desired improvements in air quality. The overall aim is a steady decrease in ambient levels of pollutants towards the objectives over the period of implementation. These objectives are a statement of policy intentions or targets and are not legally binding in themselves. The main sources, hazards and strategy's objectives are provided for the following pollutants: particulate matter, oxides of nitrogen, ozone, sulphur dioxide, polycyclic aromatic hydrocarbons, benzene, 1,3-	The draft TDPNI should have regard for the environmental protection objectives of the Strategy. The plan should aim to not cause any negative impacts on air quality and may be able to contribute to reducing air emissions by connecting renewable energy generators to the system. These environmental protection objectives are reflected in the SEOs for Air Quality and Climatic Factors.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
		butadiene, carbon monoxide, lead and ammonia.	
Air Quality Standards Regulations (Northern Ireland) 2010, and amendments (2017)	Transpose the EU Air Quality Directives and place a duty on the NI government departments to monitor levels of air pollutants specified in the Air Quality Directives and ensure compliance with limit values for these pollutants.	Designate zones in which ambient air will be protected by limiting the concentration of pollutants within them.	The draft TDPNI should have regard for the environmental protection objectives of the Strategy. The plan should aim to not cause any negative impacts on air quality and may be able to contribute to reducing air emissions by connecting renewable energy generators to the system. These environmental protection objectives are reflected in the SEOs for Air Quality.
The Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013, and amendments up to 2018	Transpose Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control).	The Regulations revoked 18 sets of previous regulations relating to industrial emissions and consolidated all the provisions of the Industrial Emissions Directive into a single set of regulations. They control the operation of any installation or mobile plant that carries out activities listed in Part 1 of Schedule 1 to the Regulations.	The draft TDPNI should have regard for the environmental protection objectives of the Regulations. The plan should aim to not cause any negative impacts on air quality and may be able to contribute to reducing air emissions by connecting renewable energy generators to the system. These environmental protection objectives are reflected in the SEOs for Air Quality and Climatic Factors.
Clean Air Strategy for Northern Ireland – A Public Discussion Document, 2020	Discussion document in advance of developing the first Clean Air Strategy for Northern Ireland.	Presents evidence and research on a range of ambient air pollutants and outline policy and legislation currently in place to control air pollution.	The draft TDPNI should have regard for Environmental Protection Objectives of this Strategy. The plan should aim to not cause any negative impacts on air quality and may be able to contribute to reducing air emissions by connecting renewable energy generators to the system.
Sustainable Development			

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
Northern Ireland Energy Strategy – the Path to Net Zero (2021)	Energy accounts for almost 60% of Northern Ireland's GHG emissions. The Strategy sets out a pathway for energy to 2030 that aims to mobilise the skills, technologies and behaviours needed to take Northern Ireland towards the vision of net zero carbon and affordable energy by 2050.	The Strategy set the following targets to drive the desired changes: • Energy Efficiency – Deliver energy savings of 25% from buildings and industry by 2030. • Renewables – Meet at least 70% of electricity consumption from a diverse mix of renewable sources by 2030. • Green Economy – Double the size of our low carbon and renewable energy economy to a turnover of more than £2 billion by 2030.	The TDPNI has a key role to play in furthering the ambitions set out in the Energy Strategy.
Energy Strategy for Northern Ireland – the Path to Net Zero Energy. Action Plan (2022)	The Action Plan sets out the actions that are considered necessary to achieve the targets of the Energy Strategy.		The TDPNI has a key role to play in furthering the ambitions set out in the Energy Strategy.
Draft Offshore Renewable Energy Action Plan (OREAP) 2022	The draft plan is the first step towards delivering on the ambition of deploying 1 Gigawatt (GW) of offshore wind from 2030 in Northern Ireland's waters. The Energy Strategy included Action 14 to "Develop an action plan to deliver 1GW of offshore wind from 2030". It is designed to accelerate the Energy Strategy ambition, setting the pathway to achieving the deployment of offshore wind in advance of 2030, if feasibly possible.	Developed with three key principles: • Sustainable development in the marine environment. • Adaptive approach. • Collaboration and partnership. Developed around five themes: • Sustainability and co-existence. • Enabling frameworks. • Electricity network. • Economic growth. • Legislation and regulation. Sets out 12 key objectives within the five strategic priority themes. Within these key objectives, sets out 22 actions – initial delivery steps towards ensuring policy direction is established and any necessary legislation is brought forward.	The draft TDPNI should have consideration for this plan, as it identifies the offshore renewable energy for which SONI may be required to provide transmission infrastructure.
(RoI) Offshore Renewable Energy Development Plan	The OREDP is a plan that identifies the opportunity for the sustainable development of	The OREDP was based on the following:	The TDPNI should have consideration for this plan, as it identifies the

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
(OREDP) 2014, and draft OREDP II	Ireland's abundant offshore renewable energy resources for increasing indigenous production of renewable electricity, thereby contributing to reductions in greenhouse gas emissions. The draft OREDP II provides an updated assessment of this resource.	• Ireland is obliged to reach a target of 16% of all energy consumed in the State coming from renewable sources by 2020. • This obligation is to be met by 10% in transport, 12% from heat and 40% from electricity. The OREDP II considers advances in technology to assess the offshore renewable energy potential in Irish waters and seek to map areas most suitable for offshore renewable energy, and assist in delivering the PfG commitment to develop a long-term plan to take advantage of a potential of at least 30GW of floating wind off the Atlantic coast.	opportunity for offshore renewable energy for which may have transboundary impacts on SONI strategic planning.
A Green Future: Our 25 Year Plan to Improve the Environment 2018	This is a 25-year plan to improve the Environment. This environment plan sets out our goals for improving the environment within a generation and leaving it in a better state than we found it. It details how we in government will work with communities and businesses to do this.	The targets of the plan are: • Clean air • Clean and plentiful water • Thriving plants and wildlife • Reducing the risks of harm from environmental hazards • Using resources from nature more sustainably and efficiently • Enhancing beauty, heritage and engagement with the natural environment • Mitigating and adapting to climate change • Minimising waste • Managing exposure to chemicals • Enhancing biosecurity	The TDPNI should promote sustainable management of the environment by carefully considering current land use and future climate scenarios, to facilitate long term improvements in the environment.
Draft Environment Strategy for Northern Ireland 2022	The draft Environment Strategy sets out Northern Ireland's environmental priorities for the coming decades and forms part of the Executive's Green Growth Delivery Framework. It will be used to form the basis for a coherent and effective set of interventions that can deliver real improvements in the quality of the environment.	Aims to reduce water pollution and become the overarching strategy which supports Northern Ireland's environment. There are our possible environmental themes set out: Engagement; Prosperity; Efficiency; and Quality/ Covers the following areas: • Climate change	The draft TDPNI should have regard for Environmental Protection Objectives of this Strategy in the development and operation of transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
		• Natural environment and landscapes • Resource efficiency • Marine environment • Environmental Quality (Air, Water and Neighbourhood) • Fisheries and Aquaculture • Built environment	
Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004	Implements the SEA Directive (2001/42/EC) in Northern Ireland. To provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.	See SEA Directive.	The draft TDPNI will be subject to the SEA process. This is being undertaken through this Scoping Report and subsequent Environmental Report.
The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017	Implement the EIA Directive in Northern Ireland in respect of the planning system.	• Contain procedures to facilitate the preparation of environmental statements and the provision of information relevant to their preparation and sets out the minimum content and requirements when preparing an environmental statement. • Ensure that environmental impact assessment (EIA) development cannot be permitted without the consideration of environmental information, describe the EIA process and set out the matters that confirm that development is EIA development.	The draft TDPNI will have regard to these EIA Regulations in the development of any infrastructure. Development and operation of certain transmission development projects included in the TDPNI may be subject to EIA.
Northern Ireland Executive Programme for Government 2016-2021	The Programme for Government identifies the actions the Executive stated purpose – Improve wellbeing for all – by tackling disadvantage and driving economic growth.	List of Programme for Government Outcomes • We prosper through a strong, competitive, regionally balanced economy. • We live and work sustainably - protecting the environment. • We have a more equal society. • We enjoy long, healthy, active lives. • We are an innovative, creative society where people can fulfil their potential.	The draft TDPNI will have regard to this programme and will (in combination with other users and bodies) aim to cumulatively contribute towards the achievement of the objectives of this programme.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
		• We have more people working in better jobs. • We have a safe community where we respect the law and each other. • We care for others and we help those in need. • We are a shared, welcoming and confident society that respects diversity. • We have created a place where people want to live and work, to visit and invest. • We connect people and opportunities through our infrastructure. • We give our children and young people the best start in life.	
Programme for Government Draft Outcomes Framework 2021	The Northern Ireland Executive is currently developing a new strategic, outcomes-based Programme for Government. Two of the key outcomes in the draft PfG that are most relevant to the draft TDPNI are: 'an economy that is globally competitive, regionally balanced and carbon neutral'; and 'that we live and work sustainably – protecting the environment'.		The draft TDPNI will have regard to this programme and will (in combination with other users and bodies) aim to cumulatively contribute towards the achievement of the objectives of this programme.
Strategic Planning Policy Statement for Northern Ireland 2015	This planning policy 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 provisions of the SPPS must be taken into account in the preparation of Local Development Plans and are also material to all decisions on individual planning applications and appeals.	There are two new Core Planning Principles included in the SPPS: • Supporting Sustainable Economic Growth, and • 'Preserving and Improving the Built and Natural Environment	The draft TDPNI will have consideration for these planning policies in the development and operation of transmission infrastructure.
Planning Policy Statements 1 – 23	Policies on land-use and other planning matters that apply to the whole of Northern Ireland.	PPS1: General Principles- Sets out the general principles that the DoENI observes in carrying out its planning functions. PPS2: Natural Heritage- Sets out the Department's planning policies for the	The draft TDPNI should have consideration for these planning policies in strategic and detailed planning for transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
		conservation, protection and enhancement of our natural heritage, PPS4: Planning and Economic Development- Sets out the Department's revised planning policies for economic development uses and indicates how growth associated with such uses can be accommodated and promoted in development plans. PPS6: Planning, Archaeology and the Built Heritage- Provides the main criteria in assessing proposals which affect the archaeological or built heritage. PPS15: Planning and Flood Risk- The main objectives are to: Adopt a precautionary approach to decision-making taking account of climate change so that risk is avoided where possible; PPS18: Renewable Energy- Sets out the planning policy for development that generates energy from renewable resources. PPS21: Sustainable Development in the Countryside- sets out planning policies for development in the countryside.	
The Regional Development Strategy 2035 – Shaping Our Future Updates the Regional Development Strategy for Northern Ireland 2025	The 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.	The over-arching vision of the Regional Development Strategy is: "An outward-looking, dynamic and liveable Region with a strong sense of its place in the wider world; a Region of opportunity where people enjoy living and working in a healthy environment which embraces the quality of their lives and where diversity is a source of strength rather than division. " The aims of the RDS 2025 remain valid: • Support strong, sustainable growth for the benefit of all parts of Northern Ireland • Strengthen Belfast as the regional economic driver and Londonderry as the principal city of the North West	The draft TDPNI will consider land use changes and spatial planning impacts in the development and operation of transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
		• Support our towns, villages and rural communities to maximise their potential • Promote development which improves the health and well-being of communities • Improve connectivity to enhance the movement of people, goods, energy and information between places • Protect and enhance the environment • Take actions to reduce our carbon footprint and facilitate adaptation to climate change • Strengthen links between north and south, east and west, with Europe and the rest of the world	
(RoI) National Planning Framework (Project Ireland 2040)	A national document that will guide, at a high-level, strategic planning and development for Ireland over the next 20+ years, so that as the population grows, that growth is sustainable.	The ultimate objectives of the National Planning Framework (NPF) are to: • Guide the future development of Ireland, taking into account a projected 1 million increase in population, the need to create 660,000 additional jobs to achieve full employment and a need for 550,000 more homes by 2040; • Of the 1 million extra people: - 25% is planned for Dublin, recognised as a key international and global city of scale and principal economic driver, - 25% across the other four cities combined (Cork, Limerick, Galway and Waterford), enabling all four to grow their population and jobs by 50-60% and become cities of greater scale, i.e., growing by twice as much as they did over the previous 25 years to 2016, and - With the remaining 50% of growth to occur in key regional centres, towns, villages and rural areas, to be	The draft TDPNI should have regard for this Framework by considering the potential transboundary impacts from the development of transmission infrastructure and promoting sustainable development.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
		determined in the forthcoming regional plans. • Enable people to live closer to where they work, moving away from the current unsustainable trends of increased commuting; • Regenerate rural Ireland by promoting environmentally sustainable growth patterns; • Plan for and implement a better distribution of regional growth, in terms of jobs and prosperity; • Transform settlements of all sizes, through imaginative urban regeneration and bring life / jobs back into cities, towns and villages; • Co-ordinate delivery of infrastructure and services in tandem with growth, through joined up NPF/National Investment Plan and consistent sectoral plans, which will help to manage this growth and tackle congestion and quality of life issues in Dublin and elsewhere.	
UK Sustainable Development Strategy, Agenda 21	The 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.	The over-arching vision of the Regional Development Strategy is: "An outward-looking, dynamic and liveable Region with a strong sense of its place in the wider world; a Region of opportunity where people enjoy living and working in a healthy environment which embraces the quality of their lives and where diversity is a source of strength rather than division. " The aims of the RDS 2025 remain valid: • Support strong, sustainable growth for the benefit of all parts of Northern Ireland • Strengthen Belfast as the regional economic driver and Londonderry as the principal city of the North West	The draft TDPNI should have regard for the environmental protection objectives of the Strategy in the development and operation of transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
		• Support our towns, villages and rural communities to maximise their potential • Promote development which improves the health and well-being of communities • Improve connectivity to enhance the movement of people, goods, energy and information between places • Protect and enhance the environment • Take actions to reduce our carbon footprint and facilitate adaptation to climate change • Strengthen links between north and south, east and west, with Europe and the rest of the world.	
10X Economy – An Economic Vision	In May 2021, the Department for the Economy launched its economic vision for the next 10 years, called 10x Economy - an economic vision for a decade of innovation.	The concept embraces innovation to deliver a ten times (10X) better economy with benefits for all the people of Northern Ireland. Ten guiding principles have been identified to underpin this vision and a number of these are relevant to the energy sector, such as delivering positive economic, environmental and societal outcomes; supporting a greener, sustainable economy; position Northern Ireland amongst the most competitive small, advanced economies in the world; and focussing on increasing innovation in high value-added areas and priority clusters.	The draft TDPNI should have regard for the environmental protection objectives of the vision in the development and operation of transmission infrastructure.
Draft Green Growth Strategy for Northern Ireland– Balancing our Climate, Environment and Economy 2021	Green Growth is an over-arching multi-decade Strategy, led by DAERA, which sets out the long-term vision and a solid framework for tackling the climate crisis by balancing climate action with the need for a clean, resilient environment and economy. It has been developed by all Ministers and Government departments working together, in collaboration with external stakeholders from local government, the private sector, voluntary and community sectors and others.	The cross-cutting strategy will be delivered through a series of Climate Action Plans, which will set out the actions to meet sector-specific greenhouse gas emission targets to deliver a cleaner environment rich in biodiversity; delivering a more efficient use of resources within a circular economy; and green jobs.	The draft TDPNI should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving GHG emission reduction targets through connection of renewable generators to the electricity system.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
Draft Rural Policy Framework for Northern Ireland 2021	The overall aim of the policy framework is to create a sustainable rural community where people want to live, work and be active.	The framework comprises five key thematic pillars, and nineteen associated priority interventions. The thematic pillars are: • Innovation and entrepreneurship; • Sustainable tourism; • Health and wellbeing; • Employment; and • Connectivity	The draft TDPNI will look to support the framework through provision of robust and reliable transmission infrastructure to meet the electrical supply and demand requirements in Northern Ireland.
(ROI) Grid Implementation Plan 2017-2022 for the Electricity Transmission System in Ireland	Identifies those parts of the transmission system that are likely to need development over the five-year period (2017 – 2022). The plan also sets out EirGrid's approach to the planning and development of the grid that will be undertaken in implementing the Grid Development Strategy.	Several policies and objectives have been developed for the Grid Implementation Plan to provide sustainable transmission grid development, under the headings: • Environmental • Technical • Project development • Consenting • Consultation and engagement, and • Human beings and society	The draft TDPNI will have regard to this plan and will (in combination with other users and bodies) cumulatively contribute towards the achievement of its objectives. This Plan will have transboundary implications with the TDPNI. The TDPNI and EirGrid Transmission Plans should work together for the all-island electricity system. The SONI TDPNI policies and objectives align well with the draft Grid IP policies and objectives.
(ROI) Draft Grid Implementation Plan 2023-2028 for the Electricity Transmission System in Ireland	Identifies those parts of the transmission system that are likely to need development over the five-year period (2023 – 2028). The plan also sets out EirGrid's approach to the planning and development of the grid that will be undertaken in implementing the Grid Development Strategy.	As for Grid Implementation Plan 2017-2022.	As for Grid Implementation Plan 2017-2022.
Water			
Water Environment (Floods Directive) Regulations (Northern Ireland) 2009, and amendment Regulations 2018	Implement EU Floods Directive 2007/60/EC on the risk and management of flood risk in Northern Ireland.	Main purpose is to establish a framework for the assessment of adverse consequences of flooding on human health, the environment, cultural heritage and economic activity.	The draft TDPNI should have regard for the environmental protection objectives of the Floods Regulations in the planning of transmission infrastructure. The TDPNI should consider the implications of the flood risk arising from development options, particularly those

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
			located along the coast or in the vicinity of rivers. Environmental protection objectives of the Directive are reflected in the SEOs for Water.
The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017	Transpose the Water Framework Directive (2000/60/EC) into NI legislation.	• Place a responsibility on NI to try to ensure that all inland and coastal waters reach at least "good status" (or good ecological potential for artificial or heavily modified water bodies); • Implementation of management planning at river basin level, to achieve this target, linking with other key policy areas such as agriculture, land use, biodiversity, tourism and flood protection through a river basin management plan (RBMP). This sets out a programme of measures to be implemented over 6-year cycles aimed at improving water body status.	The draft TDPNI should have regard for the environmental protection objectives of the WFD in the planning of transmission infrastructure. It will need to consider the requirements of the WFD and ensure that it does not compromise its objectives, and that it contributes to achieving its aims. Environmental protection objectives of the Directive are reflected in the SEOs for Water.
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'.	The draft TDPNI should have regard for the environmental protection objectives of the Marine Strategy in the planning of transmission infrastructure. It will need to consider the requirements of the Strategy and ensure that it does not compromise its objectives, and that it contributes to achieving its aims. Environmental protection objectives of the Strategy are reflected in the SEOs for Water.
Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015	Transpose Directive 2013/39/EU which revised environmental standards for some priority substances and added a further twelve additional substances to the list of priority substances introduced by the original Priority Substances Directive (2008/105/EC). Consolidate all the	• Consolidate all the current legislation which set out the Water Framework Classification Schemes. • Sets environmental quality standards for priority substances.	The draft TDPNI should have regard for the environmental protection objectives of the WFD in the planning of transmission infrastructure. It will need to consider the requirements of the WFD and ensure that it does not compromise

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
	current legislation which set out the Water Framework Classification Schemes.	• Outlines standards required for Shellfish waters.	its objectives, and that it contributes to achieving its aims. Environmental protection objectives of the Directive are reflected in the SEOs for Water.
The Quality of Bathing Water Regulations (Northern Ireland) 2008	These Regulations set quality standards for bathing water.	• Require regular testing of bathing waters, to ensure that they are of high enough quality for the general public to bathe in; • Require a Profile to be prepared for each designated bathing water site, giving detailed information on the physical characteristics and assessing the pollution risk to each site • Set quality standards for a number of issues, the most important of which relate to coliform and streptococcal groups of bacteria, which can indicate the mount of sewage or other faecal contaminants present.	The draft TDPNI should have regard for the environmental protection objectives of these Regulations in the planning of transmission infrastructure, relating to the potential for cumulative effects on waters used for recreation. Development and operation of electrical transmission infrastructure should not negatively impact on designated bathing waters
Private Water Supplies Regulations (Northern Ireland) 2017	Protection from contamination of water used for human consumption.	Aim to protect human health from the adverse effects of any contamination of water intended for human consumption from private supplies by ensuring that the water meets water quality standards and revoke and replace the 2009 Regulations (as amended).	The draft TDPNI may have implications for waters used as a drinking water supply. The draft TDPNI should have regard for the environmental protection objectives of these Regulation in the planning of transmission infrastructure. Development and operation of electrical transmission infrastructure should not negatively impact on designated drinking waters
Water Supply (Water Quality) Regulations (Northern Ireland) 2017	Protection from contamination of water used for human consumption.	Aim to protect human health from the adverse effects of any contamination of water intended for human consumption by ensuring that the water meets water quality standards within the public water supply and revoke and replace the 2007 regulations (as amended).	The draft TDPNI may have implications for waters used as a drinking water supply. The draft TDPNI should have regard for the environmental protection objectives of these Regulations in the planning of transmission infrastructure. Development

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
			and operation of electrical transmission infrastructure should not negatively impact on designated drinking waters
Environmental Liability (Prevention and Remediation) Regulations 2009 and amendment	Implement the Environmental Liability Directive (2004/35/EC) in Northern Ireland.	• Brings into force rules to force polluters to prevent and repair damage to water systems, land quality, species and their habitats and protected sites. • The polluter does not have to be prosecuted first, so remedying the damage should be faster.	The draft TDPNI will be obliged to comply with the requirements of the Regulations and to prevent environmental damage. Development and operation of electrical transmission infrastructure should aim to cause no damage to the wider environment.
Groundwater Regulations (Northern Ireland) 2009 and amendments	Protection of groundwater from pollution.	Introduces classification systems in line with EU developments, makes it an offence to discharge listed substances without an authorisation, controls issuing and reviewing authorisations and consents. Covers enforcement, codes of practice and penalties.	The draft TDPNI should have regard for the environmental protection objectives of these Regulations in the planning of transmission infrastructure. The TDPNI should, where possible, contribute to the protection of groundwater from point source and diffuse pollution that could be caused or exacerbated by development options
Pollution Control and Local Government (Northern Ireland) Order 1978		Regulates waste on land, abandoned vehicles, noise nuisance, noise abatement zones, sulphur content of oil fuel used in furnaces and engines, cable burning, and pollution of the atmosphere and water. Other aspects have been revoked.	The draft TDPNI should have regard for the environmental protection objectives of this Order. Development and operation of electrical transmission infrastructure should aim to cause no damage to the wider environment.
Water Abstraction and Impoundment (Licensing) Regulations (Northern Ireland) 2006 and amendment Regulations 2007	Sets out a control regime for regulating the abstraction of water from underground strata and waterways and for constructing, altering or operating impounding works.		The draft TDPNI should have regard for the environmental protection objectives of these Regulations in the development and operation of transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
Water (Northern Ireland) Order 1999 (including amendments up to 2004)	Revokes and replaces the Water Act (Northern Ireland) 1972 and makes provision for discharge consents. Enables the DoE to set water quality objectives and prevent pollution from anti-pollution works.		The draft TDPNI should have regard for the environmental protection objectives of the Order, in terms of cumulative effects on surface water bodies.
NI Flood Risk Management Plan, 2021-2027	The NI Flood Risk Management Plan (FRMP) is a key requirement of the Floods Directive (Directive 2007/60/EC on the assessment and management of flood risks) and is aimed at reducing the potential adverse consequences of significant floods on human health, economic activity, cultural heritage and the environment.	The objectives set, in relation to each area of impact are: Economic Activity • To reduce the cost of potential future flood damages to properties and infrastructure; • To reduce the economic costs caused by disruption to essential infrastructure and services; and, • To optimise the economic return on flood risk management investment. Human Health and Social • To reduce the risk to life, health and wellbeing. • To increase awareness and understanding of flooding and its adverse consequences and improve community resilience. • To reduce the impact on people caused by the disruption to essential infrastructure and services. • To improve recreation and public amenities. Environmental • To consider the impact of Climate Change across all areas of impact; • To support the objectives of the Water Framework Directive and contribute to the achievement of good ecological potential/status for water bodies; • To protect and enhance the natural environment.	The draft TDPNI should have regard for the environmental protection objectives of the FRMP in the planning of transmission infrastructure. The TDPNI should consider the implications of the flood risk arising from development options, particularly those located along the coast or in the vicinity of rivers. Environmental protection objectives of the FRMP are reflected in the SEOs for Water.

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
Marine Act (NI) 2013	The Marine Act sets out a new framework for Northern Ireland's seas based on: a system of marine planning that will balance conservation, energy and resource needs; improved management for marine nature conservation and the streamlining of marine licensing for some electricity projects.	The Marine Act enables DAERA to prepare a marine plan for the inshore region and to designate areas as Marine Conservation Zones (MCZ).	The draft TDPNI should consider the implications of this Act with developmental infrastructure options within the plan that may impact on coastal and marine areas.
Marine and Coastal Access Act 2009	New Marine Licensing legislation came into operation in Northern Ireland on the 6th April 2011. It replaced licensing under the Food and Environment Protection Act 1985 (FEPA). The purpose of this licensing system is to aid industry and encourage investment by enabling more strategic decisions to be made about what activities are permissible in the marine environment. The overall objective of marine licensing is to regulate sustainable development in a cohesive and fair manner.	The key features of the new system include • The definition of marine licensable activities; • exempt activities; • fees and charges; • implementation of measures for sanctioning and enforcement; and] • making appeals against licensing decisions, statutory notices and monetary penalties.	The draft TDPNI should consider the implications of this Act with developmental infrastructure options within the plan that may impact on coastal and marine areas.
UK Marine Policy Statement 2011	The Marine Policy Statement (MPS) is the framework for preparing Marine Plans and taking decisions affecting the marine environment.	• Achieve integration between different objectives; • Recognise that the demand for use of our seas and the resulting pressures on them will continue to increase; • Manage competing demands on the marine area, taking an ecosystem-based approach; • Enable the co-existence of compatible activities wherever possible; and • Integrate with terrestrial planning.	The draft TDPNI will have to consider the policies of the MPS in the strategic planning for infrastructure options within the plan that may impact on marine areas. The MPS includes a number of high-level principles for decision making that should be taken into account, particularly in relation to those impacts associated with Section 2.6.7 Climate change adaptation and mitigation and Section 2.6.8 Coastal change and flooding.
Draft Marine Plan for Northern Ireland 2018	The Marine Plan for Northern Ireland will inform and guide the regulation, management, use and protection of our marine area. It is a single document made up of two plans, one for the inshore region and one for the offshore region. All public authorities are responsible for	The Marine Plan will be used by Public Authorities in taking decisions which affect or might affect the marine area, including: • Authorisation or enforcement decisions	The draft TDPNI will have to consider the policies of the Marine Plan in the strategic planning for infrastructure options within the plan that may impact on marine areas. Proposals should conform with all relevant policies, taking

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	implementing the Plan through existing regulatory and decision-making processes. As well as public authorities, all applicants, third parties and advisors should also consider the Plan.	• Decisions that relate to the exercise of any function capable of affecting the marine area.	account of economic, environmental and social considerations.
Integrated Coastal Zone Management Strategy for Northern Ireland 2006-2026	The Integrated Coastal Zone Management Strategy for Northern Ireland 2006-2026 is based around 4 broad themes, consistent with the principles of sustainable development.	The Integrated Coastal Zone Management Strategy for Northern Ireland 2006-2026 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 draft TDPNI will have to consider this strategy in the strategic planning for infrastructure options within the plan that may impact on coastal areas, with particular relevant to priority 2: safeguarding and improving the environment within the coastal zone and priority 4: integration of planning effort.
Draft 3rd cycle River Basin Management Plan (RBMP) for Northern Ireland 2021-2027	Describes existing condition of waters in the River Basin Districts, the objectives for improving their condition and the measures to be used to deliver these improvements. • Establish a framework for the protection of water bodies at River Basin District (RBD) level • Preserve, prevent the deterioration of water status and where necessary improve and maintain “good status” of water bodies in that RBD • Promote sustainable water usage	• Aims to improve water quality and quantity within inland surface waters (rivers and lakes), transitional waters coastal waters and groundwater and meet the environmental objectives outlined in Article 4 of the Water Framework Directive • Identifies and manages water bodies in the RBD; • Establishes a programme of measures for monitoring and improving water quality in the RBD; • Involves the public through consultations; • RBMPs are prepared and reviewed every six years. The most recent is the draft 3rd cycle RBMP, which runs from 2021-2027.	The draft TDPNI should have regard for the environmental protection objectives of the RBMP in the planning of transmission infrastructure. It will need to consider the requirements of the WFD and ensure that it does not compromise its objectives, and that it contributes to achieving its aims. Environmental Protection Objectives of the Plan are reflected in the SEO for Water.
Waste			
Northern Ireland Waste Management Strategy, 2012 (new Strategy under development 2023)	The Waste Management Strategy sets out in detail those proposed policies, including specific actions to be taken. Strategy development is a continuous process and the Waste Management Strategy for Northern Ireland is considered as a living document, requiring regular review and	The proposals of this Strategy are as follows: • The development of a Waste Prevention Programme;	The draft TDPNI should consider the implications of this Management Strategy with developmental infrastructure options within the Plan which are likely to result in waste being generated.

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	revision to ensure that it remains relevant and the policies and actions therein remain appropriate.	• A new 60% recycling target for local authority collected municipal waste (LACMW); • The introduction of a statutory requirement on waste operators to provide specified data on commercial and industrial waste; • New and more challenging collection and recycling targets for packaging and WEEE; • The introduction of a landfill restriction on food waste; • The potential for the devolution of landfill tax; • The implementation of legislation on carrier bags; • The development of detailed proposals for an Environmental Better Regulation Bill.	
Draft Waste Management Plan for Northern Ireland 2019	The draft Waste Management Plan for Northern Ireland 2019 outlines how it will efficiently manage waste for the Councils it represents with the overall goal of creating a system that 'meets the region's needs and contributes towards economic and sustainable development'. Subject to review every five years the Plan details how NI will fulfil its statutory obligations under the EU Waste Framework Directive and The Waste and Contaminated Land (Northern Ireland) Order 1997.	• Updates the previous WMP (2013-2020) • Provides an overview of waste management in Northern Ireland and fulfils the requirements of Article 2 (mandatory requirements) of the Waste Framework Directive and other required content as set out in Schedule 3 to the Waste and Contaminated Land (NI) Order 1997.	The draft TDPNI should consider the implications of this plan with developmental infrastructure options within the Plan which are likely to result in waste being generated.
Waste and Contaminated Land (Northern Ireland) Order 1997 (including updates)	Sets out the waste management regime covering waste carrier registration and identifying and remedying contaminated land.		The draft TDPNI should have regard for the environmental protection objectives of this Order, in the planning and operation of transmission infrastructure.
Cultural Heritage			

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Archaeology 2030 – A Strategic Approach for Northern Ireland	A review of the current position of archaeology in Northern Ireland, to develop a sector-wide, strategic approach, with recommendations for the future.	The overall vision of this strategy is: • By 2030, we want archaeology to be accessed and valued by as many people as possible, led by a sector which is healthy, resilient and connected. It sets the following priorities, with associated recommendations for their successful delivery: • Aim 1 – Archaeology on the ground. • Aim 2 – Understanding the past. • Aim 3 – Sustaining the historic environment. • Aim 4 – Engaging and enriching people's lives. • Aim 5 – Innovation, understanding and skills.	The draft TDPNI should have regard for the environmental protection objectives of this Strategy, in the planning and operation of transmission infrastructure. Environmental Protection Objectives of the Strategy are reflected in the SEO for Cultural Heritage.
Historic Monuments and Archaeological Objects (NI) Order 1995	The Order allows for Monuments to be protected by taking them into State Care, or by Scheduling, and also places restrictions on searching for archaeological material	The purpose of designation is to ensure that policies are created and action taken to: • Conserve or enhance the natural beauty or amenities of that area; • Conserve wildlife, historic objects or natural phenomena within it; • Promote its enjoyment by the public; and • Provide or maintain public access to it.	The draft TDPNI should have regard for the environmental protection objectives of this Order, in the planning and operation of transmission infrastructure. Environmental Protection Objectives of the Order are reflected in the SEO for Cultural Heritage.
Planning Act (NI) 2011	The principal piece of planning legislation in Northern Ireland. Underpinned the reform of the planning system. Transferred the majority of planning functions and decision-making responsibilities for local development plans, development management plus planning enforcement to councils.	• Defines functions of Department of the Environment with respect to development of land • Grant powers to the Department to make provision, by Regulations, for environmental effects consideration in relation to development planning permission • Provide with respect to the grant of mineral planning permission and aftercare conditions regarding land subject to mineral development • Provide for hazardous substances consent • Define powers of Councils or Department to issue Tree Preservation Orders and	Certain potential transmission development proposals in the draft TDPNI will need to comply with the provisions of this legislation.

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		provides for preservation of trees or woodlands in general; and • Make provision for appeals.	
The Regional Development Strategy 2035 – RG11	A description of the RDS is provided above.	RG11 of the RDS is to "Conserve, protect and where possible enhance, our built heritage and our natural environment".	The draft TDPNI will consider land use changes and spatial planning impacts in the development and operation of transmission infrastructure, including consideration of strategic policies of the RDS.
Landscape			
Nature conservation and Amenity Lands Order (NI 1985	Provides for designation of the finest landscape areas as either Areas of Outstanding Natural Beauty (AONB) or National Parks land and takes steps to manage them for both conservation and recreation.		The draft TDPNI should have regard for the environmental protection objectives of this Order, in the planning and operation of transmission infrastructure. Environmental Protection Objectives of the Order are reflected in the SEOs for Biodiversity, Flora and Fauna; and Landscape and Visual Amenity.
(ROI) National Landscape Strategy for Ireland 2015-2025	Strategy for the provision of a framework for the protection of the many cultural, social, economic and environmental values embedded in the landscape.	• To be implemented by the State, working in co - operation with public authorities, stakeholders, communities and individuals. • Objectives include to establish and to implement, through a series of actions, policies aimed at understanding, managing, protecting and planning the landscape. • Sets out specific measures to integrate and embed landscape considerations in all sectors which influence the landscape and improve and enhance the quality of decision-making by those who have an impact on it.	The draft TDPNI should consider the potential transboundary impacts on landscape and visual amenity within Ireland, particularly in sensitive areas, from the development of transmission infrastructure.
Regional			

Plan / Programme	High Level Description	Key Objectives, Actions etc.	Relevance to the draft APP
Local Biodiversity Action Plans (LBAPs)	Local Biodiversity Action Plans are a way of encouraging people to work together and deliver a programme of continuing action for biodiversity at a local level. They set out practical steps that aim to help protect biodiversity, enhance and improve biodiversity where possible, and promote biodiversity at a local level.		The TDPNI should have regard for these plans and look for opportunities to conserve, and, where possible, restore or enhance biodiversity. SEOs for Biodiversity, Flora and Fauna should contribute towards the Environmental Protection Objectives of LBAPs.
Local Development Plans / Draft Plan Strategies	Development Plans set out how an area should look in the future by deciding the type and scale of development and where building should be allowed. Each Council must prepare a development plan for their area in consultation with the local community.	When preparing a development plan the council should consider • The council's Community Plan, a long-term vision for the social, environmental and economic well-being of the area and its citizens; • The council's Statement of Community Involvement (SCI) which sets out who, how, where and when consultation and policy making is to take place; • The RDS 2035, as the spatial strategy for NI; • Planning Policy and guidance; and • A sustainability appraisal prepared by the council so that economic and social factors are considered alongside environmental factors when developing the plan.	The draft TDPNI should have regard to these plans / strategies in order to take into consideration the local community in transmission infrastructure development.