



North-South 400kV Interconnection Development



Part Funded by the
EU-TEN-E Initiative

**Environmental
Impact Statement**

**Meath Study
Area (MSA)**

**3D
VOLUME**

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EXPLANATION OF TECHNICAL TERMS AND ABBREVIATIONS

Term	Explanation
AA	An appropriate assessment (AA) is an obligation placed on the competent authority under Article 6(3) of the EU Habitats Directive 92/43/EEC: “ <i>Any plan or project not directly connected with or necessary to the management of the site [a Natura 2000 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</i> ”.
AADT	Annual Average Daily Traffic
ABP (The Board)	An Bord Pleanála
AC	Alternating Current
ACA	Architectural Conservation Area: A place, area, group of structures or townscape that is of special architectural, historical, archaeological, technical, social, cultural, or scientific, interest, or that contributes to the appreciation of a Protected Structure.
ACGIH	American Conference of Governmental Industrial Hygienists
ACSR	Actual Cross Section of a Typical Conductor
AEOS	Agricultural Environmental Options Scheme
AHO	Archaeological Heritage Objectives
AIMD	Active Implantable Medical Device
AIS	Air Insulated Switchgear
ALS	Amyotrophic Lateral Sclerosis ALS
ANC	Areas of Natural Constraint Payment Scheme
An Foras Taluntais	The Agricultural Institute
AOD	Above Ordnance Datum
AOD	Angle of Deviation
APG	Austrian Power Grid Company
AR5	The Inter Governmental Panel on Climate Change (IPCC) <i>Climate Change 2013 - Physical Science Basis</i> .

Term	Explanation
ASI	Archaeological Survey of Ireland
ASSI	Areas of Special Scientific Interest
Bay	A bay is a connection point to a busbar, and comprises switchgear and measurement equipment.
BAP	Biodiversity Action Plan
BGL	Below Ground Level
BPS	Basic Payment Scheme
Biodiversity	Word commonly used for biological diversity and defined as assemblage of living organisms from all habitats including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part.
Birds Directive	Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.
The Board	An Bord Pleanála (unless otherwise clarified)
BOD	Biological Oxygen Demand
BPA	Bonneville Power Administration
BS	British Standard
CA	Competent Authority
CAFE	Clean Air for Europe
CBSA	Cross Border Study Area
CDHS	California Department of Health Services
CDP	County Development Plan
CEMP	Construction and Environmental Management Plan
CENELEC	European Committee for Electrotechnical Standardization
CER	Commission for Energy Regulation
CEU	Council of Europe
CGS	County Geological Sites
CH₄	Methane
CHS	Cultural Heritage Sites
Circuit	A line or cable, including associated switchgear, which carries electrical

Term	Explanation
	power.
CMSA	Cavan-Monaghan Study Area
CO	Carbon Monoxide
CO₂	Carbon Dioxide
Conductors	High capacity, high strength standard cable / wire
CIRIA	<i>Construction Industry Research and Information Association</i>
Constraint	A constraint can be described as any physical, environmental, topographical, socio-economic or other feature or condition that may affect the location, development or other aspect of a proposal.
Corine	Coordination of Information on the Environment: Dataset created from satellite imagery that represents different cover / land use classifications throughout Europe.
cSAC	candidate Special Area of Conservation
CRED	Carrickmacross Rural Electoral Division
CRED	Castleblayney Rural Electoral Division
CRFRAM	Catchment Flood Risk Assessment and Management Studies
CRTN	Calculation of Road Traffic Noise
CSO	Central Statistics Office
DAFM	Department of Agriculture, Food & the Marine
DAHG	Department of Arts Heritage and the Gaeltacht
dB	Decibel
DC	Direct Current
DCENR	Department of Communications, Energy and Natural Resources
DCMNR	Department of Communications, Marine and Natural Resources
DECC	UK Department of Energy and Climate Change
DED	District Electoral Division
Demand	Peak demand figures refer to the power that must be transported from grid connections generation substations to meet all customers' electricity requirements. These figures include transmission losses.
DETI	Northern Ireland Department of Enterprise, Trade and Investment

Term	Explanation
DMRB	Design Manual for Roads and Bridges
DoEHLG	Department of Environment, Heritage, & Local Government
DSO	Distribution System Operator
Earth / ground wire	Wire installed above the live conductors at the top of a tower to minimise the likelihood of direct lightning strikes to conductors.
EC	European Commission
EC	European Community
ECoW	Ecological Clerk of Works
EEC	European Economic Community
EFHRAN	European Health Risk Assessment Network on Electromagnetic Fields Exposure.
EHC	Environmental Health Criteria
EHS	Electromagnetic Hypersensitivity
EHV	Extra High Voltage, in this EIS means greater than 330 kV
EIA	Environmental Impact Assessment: An examination, analysis and evaluation carried out by the Board that shall identify, describe and assess in an appropriate manner, in accordance with Articles 4 to 11 of the Environmental Impact Assessment Directive, the direct and indirect effects of a proposed development.
EIA Directive	Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification).
EirGrid	The statutory electricity Transmission System Operator (TSO)
EirGrid Roadmap	EirGrid's development framework for projects under the Grid25 strategy
EIS	Environmental Impact Statement: A statement of the effects, if any, which the proposed development, if carried out, would have on the environment and shall include the information specified in Annex IV of the EIA Directive and schedule 6 to the Planning and Development Regulations 2001.
ELF	Extremely Low Frequency
EMF	Electric & Magnetic Fields

Term	Explanation
EMI	Electromagnetic Interference
ENTSO-E	European Network of Transmission System Operators for Electricity
EP	European Parliament
EPA	Environmental Protection Agency
EPRI	Electric Power Research Institute
EPUK	Environment Protection UK
ES	Environmental Statement (required pursuant to the laws of Northern Ireland)
ESB	Electricity Supply Board
ESBI	ESB International
ESBNG	ESB National Grid
ESBNL	ESB Networks Limited
ETS	Emission Trading Scheme
EU	European Union
European Site	European site: A candidate Site of Community Importance, a Site of Community Importance, a candidate Special Area of Conservation, a Special Area of Conservation, a Candidate Special Protection Area, and a Special Protection Area.
Fauna	All animal life occurring in the area
FDI	Foreign Direct Investment
Flora	All plant life occurring in the area
Franklin tip	Lightning rod
FRR	Final Re-evaluation Report
GAA	Gaelic Athletic Association
GDA	Greater Dublin Area (including County Meath)
GDSDS	<i>Greater Dublin Strategic Drainage Study</i>
Geo-directory Data	Dataset which provides spatial and attribute information of the location of all buildings in Ireland.
GHz	Gigahertz

Term	Explanation
GIL	Gas Insulated Transmission Lines
GIS	Gas Insulated Switchgear
GIS	Geographic Information System: A geographic information system which captures, stores, analyses, manages, and presents data that is linked to location.
GPS	Global Positioning System
Grid	A meshed network of high voltage lines, cables and substation nodes (400 kV, 220 kV and 110 kV) for the transmission of bulk electricity supplies around Ireland. The grid, electricity transmission network, and transmission system are used interchangeably in application documents.
GSI	Geological Survey of Ireland
Guarding Positions	Where a conductor is to be strung over roads, and possibly river locations, protection will be erected prior to the commencement of stringing locations. These 'guarding' positions and the protection will be in the form of guard poles, scaffolding or a telescopic handler.
GWDTE	Groundwater Dependent Terrestrial Ecosystem
ha	Hectares (100m x 100m)
Habitat	A habitat is an ecological or environmental area that is inhabited by a particular animal and plant species. It is the natural environment in which an organism lives, or the physical environment that surrounds (influences and it utilised by) a species.
Habitats Directive	Council Directive 92/43/EC of 21 May 1992 on the conservation of natural habitats and wild fauna and flora.
HCN	Health Council of the Netherlands
HGV	Heavy Goods Vehicle
HPA	Health Protection Agency
HSA	Health & Safety Authority
HV	High Voltage, in this EIS means greater than 110kV
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
Hz	Hertz, unit of frequency

Term	Explanation
IAA	Irish Aviation Authority
IARC	International Agency for Research on Cancer
ICD	Implantable Cardioverter Defibrillators
ICES	International Committee on Electromagnetic Safety
ICHEC	Irish Centre for High Engineering Computing
ICNIRP	International Commission on Non-Ionising Radiation Protection
IEC	International Expert Commission
IEEE	Institute of Electrical and Electronics Engineers
IEEM	Institute of Environmental & Ecological Management
IFA	Irish Farmers Association
IFC	Irish Folklore Commission
IFI	Inland Fisheries Ireland
IGH	Irish Geological Heritage
IGI	Institute of Geologists of Ireland
INP	Inertial Navigation System
IP	Implementation Programme
IPC	Infrastructure Planning Commission
IPCC	Irish Governmental Panel on Climate Change
ISLES	Irish-Scottish Links on Energy Study
ISO	International Organisation for Standardisation
I-WEBS	Irish Wetland Bird Survey
kHz	Kilohertz (one thousand hertz)
km	Kilometre (one thousand metres)
kV	Kilovolt (One thousand volts)
kV/m	Kilovolts Per Meter
LCA	Landscape Character Area
LCA	Landscape Character Assessment
LCC	Line Commutated Converters

Term	Explanation
LiDAR	Light Detection and Ranging: LiDAR is a remote sensing technology that uses laser scanning to collect height and elevation data.
Line Design	Location and design of transmission infrastructure (e.g. tower positions and types)
LV	Low Voltage, less than 1000 volts
L_{Aeq}	The A-weighted equivalent continuous steady sound level during the measurement period and effectively represents an average ambient noise value.
L_{Amax}	The maximum A-weighted sound level measured during the measurement period.
L_{Amin}	The minimum A-weighted sound level measured during the measurement period.
L_{A10}	The A-weighted sound level that is exceeded for 10% of the measurement period and is used to quantify road traffic noise.
L_{A50}	The A-weighted sound level that is exceeded for 50% of the measurement period and in this evaluation is used to quantify noise from overhead power lines.
L_{A90}	The A-weighted sound level that is exceeded for 90% of the measurement period and is used to quantify background noise level.
m	Metre
mbgl	Metres below ground level
mG	Milligauss, Gauss is the unit of measurement for magnetic field typically in use in North America. The corresponding unit of measurement used in Europe is tesla (T). One gauss is equal to 100 microtesla (μ T).
MHz	Megahertz (one million hertz)
MLCA	Meath Landscape Character Assessment
MLCA	Monaghan Landscape Character Assessment
MPE	Maximum Permissible Exposures
MSA	Meath Study Area
MVA	Megavolt-Amperes

Term	Explanation
MW	Megawatt (One million Watts)
Natura 2000	Natura 2000 sites are part of a coherent European ecological network of special areas of conservation designated under Article 3 of the Habitats Directive (92/43/EEC) and Birds Directive (2009/147/EC) and includes Special Areas of Conservation (SAC) and Special Protection Areas (SPA).
NBDC	National Biodiversity Data Centre
NEEAP	National Energy Efficiency Action Plan
NGR	National Grid Reference
NH₃	Ammonia
Natural Habitat	Natural Habitats are terrestrial or aquatic areas distinguished by geographic, abiotic (i.e. inanimate) and biotic features, whether entirely natural or semi-natural.
Nature Reserves	Nature reserves are chosen from among the very best examples of our wildlife, habitats and geology. They contain a wide range of species, communities and geology their recognition by Ministerial order designation is a public recognition by the State Government of their importance.
NEPP	North East Pylon Pressure
NESA	North East Study Area
NGR	National Grid Reference
NHA	Natural Heritage Area: Natural Heritage Areas are designated by Ministerial order and include sites that may be significant in biological terms for species, communities and habitats or of interest for landforms, geological or geomorphological features or for their diversity of natural attributes. In Ireland the basic designation for wildlife is the Natural Heritage Area (NHA). This is an area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection.
NI	Northern Ireland
NIAH	National Inventory of Architectural Heritage
NIAUR	Northern Ireland Authority for Utility Regulation
NIE	Northern Ireland Electricity
NIEA	Northern Ireland Environment Agency

Term	Explanation
NIS	Natura Impact Statement: Natura Impact Statement means a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites.
NISRA	Northern Ireland Statistics & Research Agency
NITB	Northern Ireland Tourism Board
NMI	National Museum of Ireland
NMA	National Monuments Act
NMI	National Museum of Ireland
NMS	National Monuments Service
NNA	National Normative Aspects
NOx	Nitrogen Oxides
NPWS	National Parks and Wildlife Service: The NPWS is part of the Department of Arts, Heritage and Gaeltacht and is charged with the conservation of a range of habitats and species in Ireland.
NRA	National Roads Authority
NREAP	National Renewable Energy Action Plan
NRPB	National Radiological Protection Board of Great Britain
NSL	Noise Survey Level
N-S Link	North-South Link
NTC	Net Transfer Capacity
NUI	National University of Ireland
NYPSC	New York Public Service Commission
OHL	Overhead Line
OPGW	Earth / ground wire or shield wire with embedded optical fibres
OPW	Office of Public Works
OSI	Ordnance Survey of Ireland

Term	Explanation
PAC	Planning Appeals Commission
PAH	Polycyclic Aromatic Hydrocarbons
PLS-CADD	Specialised computer aided design programme used for full 3-D design of overhead lines.
PM₅	Particulate Matter 5
PM₁₀	Particulate Matter 10
pNHA	Proposed Natural Heritage Area
Power Flow	The flow of 'active' power is measured in Megawatts (MW). When combined with the flow of 'reactive power', which is measured in Mvar, the resultant overall power flow is measured in MegaVolt-Amperes (MVA).
PPP	Public-Private Partnership
PRR	Preliminary Re-evaluation Report
PPSR	Preferred Project Solution Report
PPV	Peak Particle Velocity
Ramsar Convention/Site	The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The list of Ramsar sites in Ireland includes wetlands that are considered to be of international importance under the Ramsar Convention.
Raster	A data structure representing a generally rectangular grid of pixels, or points of colour, viewable via a monitor, paper, or other display medium.
RBD	River Basin District - Administrative area for coordinated water management, composed of multiple river basins (or catchments), designated pursuant to the requirements of the Water Framework Directive.
Receptor	Any element of the environment which is subject to impact.
RES	Renewable Energy Sources
RFC	Ration to Flow Capacity Value
RMP	Record of Monuments and Places
RPA	Registered Protected Areas
RPS	Record of Protected Structures

Term	Explanation
RSA	Road Safety Authority
SAC	Special Areas of Conservation: SACs are sites that have been designated by the Minister as a special area of conservation pursuant to Article 4, paragraph 4 of the European Habitats Directive (92/43/EEC). They have been designated because of a possible threat to the special habitats or species which they contain.
SCENIHR	Scientific Committee on Emerging and Newly Identified Health Risks
SEA	Strategic Environmental Assessment: Requirement for assessment of the effects of certain Plans and Programmes on the environment (pursuant to the EU SEA Directive 2001/42/EC).
SEAI	Sustainable Energy Authority of Ireland
SEM	Single Electricity Market
SEMO	Single Electricity Market Operator
Sensitivity	The potential of a receptor to be significantly changed
SIA	Strategic Infrastructure Act
SID	Strategic Infrastructure Development: Section 182A of the <i>Planning and Development Act 2000</i> (as amended) defines strategic infrastructure development to include development comprising, or for the purposes of electricity transmission, including the transport of electricity by means of a high voltage line where the voltage would be 110 kilovolts or more, or an interconnector, requiring direct application for statutory approval to An Bord Pleanála.
SMR	Sites and Monuments Record (predecessor of RMP)
SO₂	Sulphur Dioxide
SONI	System Operator of Northern Ireland
SPA	Special Protection Area
SSM	Swedish Radiation Protection Authority
Stringing	The term used to describe the installation of electricity conductors or wires on the overhead line support structures. The conductors are 'strung' from one structure to the next.
Substation	A substation is the location on the grid where equipment is placed in order to safely change the electricity from higher transmission voltages to lower

Term	Explanation
	voltages that are appropriate for use by end-customers. It does this by using equipment known as transformers. They 'transform' the electricity from one voltage to another and they represent the means through which electricity is drawn from the transmission system. A substation also acts as a point of common connection of a 'node' for several circuits. It is helpful to think of them like an intersection on a road network. Power comes in on one circuit (road) and can be redirected onto another circuit. This is achieved by using other equipment in the substation such as switches, circuit breakers and other apparatus.
SuDS	Sustainable Urban Drainage System
SUR	Standardised Unemployment Rate
SV	Scenic View
SVC	Static Var Compensator
Switchgear	A combination of electrical disconnects and / or circuit breakers used to isolate equipment in or near an electrical substation.
SWDTE	Surface Water Dependent Terrestrial Ecosystem
TAO	Transmission System Owner: The owner of the assets that form the transmission system.
TCD	Trinity College Dublin
TCS	Tourism Content System
TEPCO	Tokyo Electric Power Company of Japan
TOC	Table of Contents
Transformer	An item of equipment connecting other electrical equipment at two different nominal voltages.
Transposition	Describes the changing of the spatial arrangement of the conductors on a transmission line relative to each other for the purpose of improving the operating performance of the transmission line.
TRL	Transport Research Laboratory
TRM	Transmission Reliability Margin
TSO	Transmission System Operator
TTC	Total Transfer Capacity

Term	Explanation
TYNDP	Ten Year Network Development Plan
μT	Microtesla – where tesla (T) is the unit of measurement for magnetic field strength and 1T is equal to 1,000,000μT.
UAA	Utilisable Agricultural Areas
UCC	University College Cork
UCD	University College Dublin
UGC	Underground Cable
UK	United Kingdom
UNESCO	United Nations Educational Scientific and Cultural Organisation
VEM	Visual Envelope Map
VOM	Volatile Organic Map
V/m	Volt Per Meter
VSC	Voltage Sourced Converter
WFD	Water Framework Directive (2000/60/EEC): Water Framework Directive (WFD) is European legislation that promotes a new approach to water management through river basin planning. It covers inland surface waters, estuarine waters, coastal waters and groundwater.
WHO	World Health Organisation
Working Swathe	Working area required to install transmission lines particularly for underground construction methodologies.
WWTP	Waste Water Treatment Plant
XLPE	Cross Linked Polyethylene
ZTV	Zone of Theoretical Visibility
ZVI	Zone of Visual Influence