

Tynagh North OCGT

Volume I – Environmental Impact Assessment Report



Applicant: EP Energy Developments Limited

Date: August 2023

Prepared for: EP Energy Developments Limited

Prepared by: AECOM

AECOM Limited
9th Floor, The Clarence West Building
2 Clarence Street West
Belfast
BT2 7GP

T: +44 28 9060 7200

aecom.com

© 2023 AECOM Limited. All Rights Reserved.

This document has been prepared by AECOM Limited (“AECOM”) for sole use of our client (the “Client”) in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

DOCUMENT HISTORY

Document Ref	Tynagh North OCGT Environmental Impact Assessment Report (August 2023) Volume I – Environmental Impact Assessment Report		
Revision	Rev0		
Author	AECOM, August 2023		
Signed	Peter O'Connor Associate Director [SIGNATURE REDACTED]	Date	August 2023
Approved By	Gareth Coughlin Technical Director [SIGNATURE REDACTED]	Date	August 2023
Document Owner	AECOM		

REVISION HISTORY

Revision	Revision date	Details	Authorised	Name	Position
0	August 2023	Final	POC	Peter O'Connor	Associate Director

DISTRIBUTION LIST

# Hard Copies	PDF Required	Association / Company Name
Yes	Yes	Submission Documents



[THIS PAGE INTENTIONALLY LEFT BLANK].

CONTENTS

Chapter 1	Introduction
Chapter 2	Planning Policy
Chapter 3	Need and Alternatives
Chapter 4	Existing Site and Conditions
Chapter 5	The Proposed Development
Chapter 6	Consultations
Chapter 7	Air Quality and Climate
Chapter 8	Cultural Heritage and Archaeology
Chapter 9	Biodiversity
Chapter 10	Landscape and Visual
Chapter 11	Noise and Vibration
Chapter 12	Water Environment
Chapter 13	Soils and Geology
Chapter 14	Traffic
Chapter 15	Land Use
Chapter 16	Population and Human Health
Chapter 17	Material Assets
Chapter 18	Major Accidents and Disasters
Chapter 19	Cumulative Effects and Interactions
Chapter 20	Conclusions

APPENDICES**(Refer to EIAR Volume II)**

Appendix 1A	Scoping Review Table
Appendix 1B	EIAR Technical Team Details
Appendix 5A	Outline Construction Environmental Management Plan (oCEMP)
Appendix 6A	An Bord Pleanála Pre- Application Submission
Appendix 6B	An Bord Pleanála Pre-Application Response
Appendix 7A	Air Quality Assessment
Appendix 7B	Greenhouse Gas (GHG) Emissions
Appendix 8A	Gazetteer of Cultural Heritage Assets and Site Visit Photographs
Appendix 9A	Zones of Influence (Zol) informing the Assessment
Appendix 9B	Ecology Personnel Experience
Appendix 9C	NBDC Database Results
Appendix 9D	Habitats Regulations Assessment: Screening for Appropriate Assessment
Appendix 9E	Wintering Birds Report
Appendix 10A	Photomontage Booklet
Appendix 11A	Noise Survey Data
Appendix 11B	Sound Modelling Procedure
Appendix 12A	Flood Risk and Drainage Assessment
Appendix 12B	Surface Water Analytical Results
Appendix 13A	Ground Investigation Report
Appendix 13B	Generic Quantitative Risk Assessment (GQRA)
Appendix 14A	Pavement Survey
Appendix 14B	Survey Data
Appendix 14C	Forecast Traffic Flow Diagrams
Appendix 14D	Auto Tracking/ Access Arrangements
Appendix 14E	Construction Traffic Management Plan
Appendix 14F	Falling Weight Deflectometer (FWD) Assessment Survey Report
Appendix 14G	Bridge Condition Survey
Appendix 14H	Project Overlap
Appendix 18A	Technical Land Use Plan

FIGURES**(Refer to EIAR Volume III)**

Figure 1.1	Site Location
Figure 4.1	Site Setting
Figure 4.2	Site Aerial
Figure 4.3	Residential Receptors
Figure 4.4	Overall Constraint Plan

TYN-TOD-ZZ-ZZ-DR-A-1004 Proposed Site Plan

S3577-8310-0004	OCGT Plan
S3577-8330-0001	OCGT East & West Elevations
S3577-8330-0002	OCGT North & South Elevations
S3577-8340-0003	OCGT Sections
S3577-8310-0005	Fuel Storage, Treatment & Unloading Area Plan
S3577-8330-0004	Fuel Storage, Treatment & Unloading Area Elevations
S3577-8340-0004	Fuel Storage, Treatment & Unloading Area Section
S3577-8340-0002	Distillate Pipe Gantry Typical Section
S3577-8310-0006	Demineralised Water Storage Tank and Pumphouse Plan
S3577-8330-0005	Demineralised Water Storage Tank and Pumphouse Elevations
S3577-8340-0005	Demineralised Water Storage Tank and Pumphouse Section
S3577-8310-0007	Firewater Tank and Pumphouse Plan
S3577-8330-0003	Firewater Tank and Pumphouse Elevations
S3577-8340-0006	Firewater Tank and Pumphouse Section
S3577-8310-0009	Diesel Generator Plan
S3577-8330-0006	Diesel Generator Elevation
S3577-8340-0007	Diesel Generator Section
S3577-8310-0010	Lubrication Oil and Chemical Stores Plan
S3577-8330-0007	Lubrication Oil and Chemical Stores Elevation
S3577-8340-0008	Lubrication Oil and Chemical Stores Section
S3577-8310-0011	AGI Plan
S3577-8330-0008	AGI Elevations
S3577-8340-0009	AGI Section
S3577-8310-0012	Substation Plan
S3577-8330-0009	Substation Elevations
S3577-8340-0010	Substation Section

TYN-NTH-AEC-DRAIN-01 Proposed Drainage Plan
TYN-TOD-ZZ-ZZ-DR-A-8004 Proposed Fencing Details

TYN-TOD-ZZ-ZZ-DR-A-3001 Existing & Proposed Site Elevations (West & North)
TYN-TOD-ZZ-ZZ-DR-A-3002 Existing & Proposed Site Elevations (East & South)

TYN-TOD-ZZ-ZZ-DR-A-4001 Proposed Site Sections
TYN-TOD-ZZ-ZZ-DR-A-4002 Proposed Site Sections

- Figure 7.1 Air Quality Study Area: Human Receptors and Baseline Monitoring Locations
Figure 7.2 Ecological Receptors
- Figure 8.1 Heritage Assets brought forward for assessment
Figure 8.2 1st Edition OS map (1840)
Figure 8.3 2nd Edition OS map (1894)
Figure 8.4 3rd Edition OS map (1917)
- Figure 9.1 Proposed Development Site, Additional EPUKI Lands, and Survey Area
Figure 9.2 Statutory Sites
Figure 9.3 Habitats
Figure 9.4 Breeding Bird Results
- Figure 10.1 Landscape Designations
Figure 10.2 Landscape ZTV
Figure 10.3 Viewpoint Location Plan
- Figure 11.1 Monitoring Locations and Sensitive Receptor Locations
Figure 11.2 Construction Phase Noise Levels
Figure 11.3 Operation Phase Noise Levels – Unmitigated
Figure 11.4 Operation Phase Noise Levels – Mitigated
- Figure 12.1 Surface Water Features
Figure 12.2 Aquifer Designations
Figure 12.3 Groundwater Vulnerability
- Figure 13.1 Teagasc Soil Map
Figure 13.2 Quaternary Sediments Map
Figure 13.3 Bedrock Geology Map
Figure 13.4 Locations of Shafts and Tunnels
- Figure 14.1 Assessed Roads and Junctions
Figure 14.2 Traffic Survey locations
Figure 14.3 TII counter locations

Figure 15.1 Land Use Constraints

GLOSSARY OF ABBREVIATIONS AND DEFINITIONS

AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
AAWT	Annual Average Weekday Traffic
ABP	An Bord Pleanála
AC	Alternating Current
ACA	Architectural Conservation Area
AGI	Above Ground Installation
AIRO	All-Island Research Observatory
AOD	Above Ordnance Datum
APIS	Air Pollution Information System
AQLV	Air Quality Limit Values
AQS	Air Quality Strategy
ASI	Archaeological Survey of Ireland
ASSI	Areas of Special Scientific Interest
ATC	Automatic Traffic Count
A-weighting	The human ear system does not respond uniformly to sound across the detectable frequency range and consequently instrumentation used to measure noise is weighted to represent the performance of the ear. This is known as the 'A weighting'
BAT	Best available techniques
BCT	Bat Conservation Trust
BGL	Below Ground Level
BNL	Basic Noise Level
BREF	Best Available Technique Reference
BS	British Standard
BSI	British Standard Institute
BTEX	Benzene, Toluene, Ethylbenzene and Xylene Compounds
BTO	British Trust for Ornithology
Building Standards Institute (BSI)	A non-profit organisation established for the purpose of providing consumer education in the field of residential construction.
C&D	Construction and Demolition
CAFE	Clean Air For Europe Programme
CBD	Convention on Biological Diversity
CCGT	Combined Cycle Gas Turbine
CCTV	Close Circuit Television
CDP	County Development Plan
CEMP	Construction Environmental Management Plan
CEMS	Continuous Emission Monitoring Systems
CERC	Cambridge Environmental Research Consultants
CFRAM	Catchment Flood Risk Assessment and Management
CGS	County Geological Site
CIBSE	Chartered Institution Building Services Engineers
CIEEM	Chartered Institute of Ecology and Environmental Management
CIRIA	Construction Industry Research and Information Association

CL	Critical Load
CLP	Classification, Labelling and Packaging
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COMAH	Control of Major Accident Hazards
COSHH	Control of Substances Hazardous to Health
CRAMP	Closure, Restoration and Management Plan
CRTN	Calculation of Road Traffic Noise
CRU	Commission for the Regulation of Utilities
CSE	Cable Sealing Ends
CSM	Conceptual Site Model
CT	Current Transformers
CTMP	Construction Traffic Management Plan
CUR	Connacht – Ulster Region
CWG	Criteria Working Group
DAHG	Department of Arts, Heritage and the Gaeltacht's
DECC	Department of the Environment, Climate and Communications
DHLGH	Department of Housing, Local Government & Heritage
Disc	Disconnectors
DMRB	Design Manual for Roads and Bridges
DRO	Diesel Range Organics
E&C Contractor	Engineering and Construction Contractor
EclA	Ecological Impact Assessment
ECoW	Ecological Clerk of Works
ELRA	Environmental Liabilities Risk Assessment
ELV	Emissions Limit Value
EMS	Environment Management System
Environmental Impact Assessment (EIA)	The assessment of the environmental consequences of a plan, policy, program, or actual projects prior to the decision to move forward with the proposed action.
Environmental Impact Assessment Report (EIAR)	A publicly available document. It sets out the developer's own assessment of the likely environmental effects of his/her proposed development. It is prepared by the developer and submitted with his planning application.
EIS	Environmental Impact Statement
EMS	Environmental Management System
EPA	Environmental Protection Agency
EPH	Energetický A Prumyslový Holding
EPUKI	EP UK Investments
EQS	Environmental Quality Standards
ERP	Emergency Response Plan
ESB	Electricity Supply Board
European Union (EU)	A political and economic union of Member States that are located primarily in Europe.
Facade	The noise level at a location 1 m from the façade of a building. Façade noise levels are higher than in an open area (free-field conditions) due to reflection effects
FRDA	Flood Risk and Drainage Assessment

Free-field	These are conditions in which the radiation from sound sources is unaffected by the presence of any reflecting surfaces (generally 3.5 m or more) other than the ground or the source itself
FWD	Falling Weight Deflectometer
Galway County Council (GCC)	A council body in Ireland
GCDP	Galway County Development Plan
GHG	Greenhouse gases
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GNI	Gas Network Ireland
GPP	Guidance for Pollution Prevention
GQRA	Generic Quantitative Risk Assessment
GSI	Geological Survey Ireland
GSU	Grid step-up
GTS	Galway Transport Strategy
GWDTEs	Groundwater Dependent Terrestrial Ecosystems
HAZID	Hazard Identification
HAZOP	Hazard and Operability
HC	Hydrocarbons
HE	Historic England
Hectare	A unit measurement of area (100m x 100m).
HGV	Heavy goods vehicle
HRA	Habitats Regulations Assessment
HSA	Health and Safety Authority
HVO	Hydrotreated Vegetable Oil
IAQM	Institute of Air Quality Management
IED	Industrial Emissions Directive
IE License	Industrial Emissions License
IEMA	Institute of Environmental Management and Assessment
IGI	Institute of Geologists of Ireland
IPPC	Integrated Pollution Prevention and Control
ISO	International Standards Organisation
JTC	Junction Turning Count
$L_{Aeq,T}$	The equivalent continuous sound level. It is a type of average and is used to describe a fluctuating noise in terms of a single noise level over the sample period (T)
$L_{Ar,T}$	The Rated Noise Level, equal to the L_{Aeq} during a specified time interval (T), plus specified adjustments for tonal character and/or impulsiveness of the sound
L_{AF10}	The A-weighted noise levels in the top 10 percentile of the sampling interval; it is the level which is exceeded for 10% of the measurement period. It is used to determine the intermittent high noise level features of locally generated noise and usually gives an indicator of the level of road traffic. Measured using the “Fast” time weighting
L_{AF90}	The A-weighted noise levels in the lower 90 percentile of the sampling interval; it is the level which is exceeded for 90% of the measurement period. It will therefore exclude the intermittent features of traffic and is used to describe

	a background level. Measured using the “Fast” time weighting
L _{AMax,slow}	The maximum A-weighted sound pressure level occurring within a specified time period. Measured using the “Slow” time weighting
LARES	Local Authority Renewable Energy Strategy
LCTs	Landscape Character Types
LGV	Light Goods Vehicle
LOPA	Layers of Protection Analysis
LPG	Liquefied Petroleum Gas
LVIA	Landscape and Visual Impact Assessment
L _{WA}	Sound power level, the total acoustic power radiated by a noise source
mAOD	Metres Above Ordnance Datum
MDL	Method Detection Limit
MtCO ₂ eq	Million tons of CO ₂ equivalent
MW	Mega Watt
NAC	Noise Advisory Council
NBDC	National Biodiversity Data Centre
NDP	National Development Plan
Nitrogen Dioxide (NO ₂)	A chemical compound released through the combustion of fuel, often used as a proxy for air pollution.
NIAH	National Inventory of Architectural Heritage
NHA	National Heritage Areas
NLS	National Landscape Strategy
NMP	National Mitigation Plan
NMS	National Monuments Service
NO	Nitric Oxides
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides
NPF	National Planning Framework
NPWS	National Parks and Wildlife Service
NRA	National Roads Authority
NRMM	Non Road Mobile Machinery
NTS	Non – Technical Summary
OCGT	Open Cycle Gas Turbine
oCEMP	Outline Construction Environmental Management Plan
OSi	Ordnance Survey Ireland
PAH	Polyaromatic Hydrocarbons
Particulate Matter (PM ₁₀)	Atmospheric aerosol particles with a diameter of 10 micrometres or less.
Particulate Matter (PM _{2.5})	Atmospheric aerosol particles with a diameter of 2.5 micrometres or less.
PC	Process Contribution
PCB	Polychlorinated biphenyls
PEA	Preliminary Ecological Appraisal
PEC	Predicted Environmental Concentration
pNHA	Proposed National Heritage Areas
PPE	Personal Protective Equipment
PRA	Preliminary Roost Assessment

PRF	Potential Roost Features
PS	Planning Statement
RFI	Request for Further Information
RHM	Register of Historic Monuments
RMP	Record of Monuments and Places
RPS	Record of Protected Structures
RSA	Road Safety Authority
RSES	Regional Spatial and Economic Strategy
SAC	Special Area of Conservation
SFRA	Strategic Flood Risk Assessment
SID	Strategic Infrastructure Development
SLNCI	Sites of Local Nature Conservation Importance. Designations used by local authorities in the United Kingdom for sites of substantive local nature conservation.
SO ₂	Sulphur Dioxide
SPA	Special Protection Area
Square Metre (m ²)	A unit measurement of area.
SuDS	Sustainable Urban Drainage Systems
SVOC	Semi-volatile organic compounds
tCO ₂ e	Stands for tonnes (t) of carbon dioxide (CO ₂) equivalent (e)
TII	Transport Infrastructure Ireland
TLUP	Technical Land Use Planning
TPH	Total Petroleum Hydrocarbons
UK	United Kingdom
VOC	Volatile Organic Compounds
VT	Voltage Transformer
Water Framework Directive (WFD)	European Union directive which commits member states to achieve good qualitative and quantitative status of all water bodies.
WeBS	Wetland Bird Survey
WMA	Waste Management Act
WRAP	Waste & Resources Action Programme
ZoI	Zone of influence
ZTV	Zone of Theoretical Visibility