

CONTENTS

4.0	EXISTING SITE AND CONDITIONS.....	4-1
4.1	Introduction	4-1
4.2	Site Location	4-1
4.3	The Proposed Development Site.....	4-2
4.4	The Surrounding Area.....	4-2
4.5	Site History.....	4-3
4.6	Potential Environmental Sensitivities/ Receptors.....	4-4

TABLES

Table 4.1	Planning Applications within the vicinity of the Proposed Development
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FIGURES

(Refer to EIAR Volume III)

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

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4.0 EXISTING SITE AND CONDITIONS

4.1 Introduction

4.1.1 This chapter of the Environmental Impact Assessment Report (EIAR) describes the existing Site and the Site location and setting, details of the surrounding area, site history and environmental receptors for the purpose of complying with Article 5 of, and Annex IV to, the EIA Directive.

4.1.2 For the purposes of the EIAR, the following terms are used to describe the Proposed Development:

- **‘the Proposed Development’** – relates to the 1 no. Open Cycle Gas Turbine (OCGT) plant, acoustic barriers, secondary fuel storage and unloading facility, distillate fuel gantry, water storage tanks, surface water drainage system and all associated ancillary development, site works and services for which planning permission is being sought;
- **‘the Site’** – relates to the area where the Proposed Development is located (the red line/ planning application boundary);
- **‘the Overall Project Site’** – relates to the Proposed Development (i.e. the components for which planning permission is being sought) and, to ensure a robust environmental assessment, includes the wider power station context including the required Above Ground Installation (‘AGI’) to provide connection to the existing subsurface high pressure gas pipeline to the west, a new bay in the existing electricity substation and associated connections (assessed in this EIAR but not included in the planning application), the existing built infrastructure of Tynagh Power Station and the Submitted Development Ref 21/2192 (defined below);
- **‘the Power Station Site’** – relates to the built infrastructure of the existing Tynagh CCGT Power Station site (Planning Ref: 03/02943); and
- **‘Submitted Development Ref: 21/2192’** - relates to planning application Ref. 21/2192 (submitted as an application to Galway County Council in November 2021, and currently awaiting determination by ABP under Ref. PL07.313538) – that is a separate 299MW OCGT development and project to that of the Proposed Development which is for a 350MW facility. Submitted Development Ref: 21/2192 is to be located to the south of the Proposed Development, primarily to the west of the existing Tynagh Power Station. Subject to planning approval being obtained for the Submitted Development Ref: 21/2192, the Applicant intends to build out and operate both Submitted Development Ref: 21/2192 and the Tynagh North OCGT.

4.2 Site Location

4.2.1 The Site is situated in Derryfrench, Loughrea, Co. Galway, Ireland (Irish Grid Reference X: 174450; Y: 213165). The Site is bordered to the east by the former Tynagh Mine complex and to the immediate south by the existing Tynagh Power Station. Sperrin Galvanisers Ltd., an Integrated Pollution Prevention Control (IPPC) licensed facility, is located adjacent to the south-western boundary of the Site.

4.2.2 The Site is located within the administrative area of Galway County Council (GCC).

4.2.3 This Chapter is supported by Figures 4.1 to 4.4 in EIAR Volume III.

4.3 The Proposed Development Site

- 4.3.1 The Site on which the Proposed Development will be located is to the immediate north of the existing Tynagh Power Station. The Site comprises brownfield land (former mine site), an electricity pylon (and overhead power lines), a disused galvanised shed and woodland and grassland in the northern and north-eastern sections. Ground levels on the southern portion of the Site are relatively flat and slopes eastwards from approximately 66.5m Above Ordnance Datum (AOD) in the west to 62.5mAOD in the east close to the former Tailings Pond. The north western portion of the site comprises a large spoil mound at approximately 72mAOD which contains temporary building foundations for prefabricated buildings used during the construction of the existing power station. The north eastern portion of the site comprises woodland, scrub and grassland. The Site is bisected by an electricity pylon and 220kV overhead power lines running south-north from the power station substation site. The area available for the Proposed Development (the ‘red line’ planning application area) is 5.53ha.
- 4.3.2 The Site is accessed from the south through the existing Tynagh Power Station facility from the LP4310 Gurtymadden to Tynagh Road which joins with the N65 Loughrea to Portumna Road approximately 4km north of the Site at Gurtymadden crossroads. To the south of the Site the Gurtymadden to Tynagh Road junctions with the Loughrea to Tynagh Road at Lisheen.

4.4 The Surrounding Area

- 4.4.1 The location of the Site is shown in Figure 4.1 and the general surroundings on Figure 4.2 (refer to EIAR Volume III). The Site is surrounded by the following features:
- Within– Former mine brownfield, disused galvanised shed, electricity pylon and existing woodland;
 - North-west – Existing woodland (0m) and residential properties with outbuildings (440m);
 - North-east – Milchem Equestrian Centre (330m);
 - East – Mine tailing pond (40m);
 - West – LP4310 Gurtymadden (note - some public documents refer to this road as Gortymadden) to Tynagh Road (300m) and residential property west of LP4310 (330m);
 - South-west – Industrial buildings of Sperrin Galvanisers (100m) and residential properties at Derryfench (420m);and
 - South – Tynagh Power Station (0m), Submitted Development Ref: 21/2192 (0m), Mine lagoon (280m), residential property (700m), industrial buildings (1.4km), and village of Tynagh (1.8km).
- 4.4.2 Lands surrounding the Site are typically rural in nature, principally historic mining brownfield land, agricultural pastureland with hedgerows, stone walls, and undulating terrain. The existing Tynagh Power Station buildings, workshop and staff facilities, electrical substation, Gas Above Ground Installation (AGI), internal roads, car parking and fencing are located to the south of the Site. A tailing pond associated with the historic mine is located to the east and the flooded mine pit/ lagoon is positioned south-east of the Site. Sperrin Galvanisers Ltd. (IPPC) licensed facility is located to the south-west.

4.5 Site History

- 4.5.1 Tynagh mines opened in the 1960s and were an important source of lead and zinc concentrates. From 1965 to 1981 the mines were managed by the Northgate Group subsidiary Irish Base Metals Ltd. For almost twenty years Irish Base Metals Ltd was a major source of employment for east Galway and the mines were worked on an opencast and underground basis until closure in the early 1980s, after which a period of partial restoration and site rehabilitation was undertaken.
- 4.5.2 In 2003 planning consent (Ref: 03/2943) was granted (following submission of an Environmental Impact Statement – April 2003) for a 400MW Combined Cycle Gas Turbine (CCGT) to be located on the western portion of the former mine site (west of the tailing pond and north of the mine lagoon). A number of amendments and additions to the permitted development were approved in 2004, under planning Ref. 04/2511, including the construction of a gate house, a gas cylinder storage shed, feed pump building, emergency generator and liquid fuel unloading station. In addition to the CCGT generating plant, planning consent was also secured in 2004 for a natural gas pressure reducing station (Ref: 04/2193) and for a 220kV overhead line to connect the power station to the National Grid at Oldstreet, 8km to the south-east of the site (Ref: 04/1974).
- 4.5.3 In November 2021, a planning application and EIAR were submitted to GCC for an 299MW OCGT plant on the western portion of the existing Tynagh Power Station site. Submitted Development Ref: 21/2192 proposed to demolish the existing Tynagh Power Station site workshop, administration building and car park, relocate these items to the brownfield lands to the immediate north of the Tynagh Power Station facility and develop an OCGT plant to the west of the existing power station. Submitted Development Ref: 21/2192, a separate project from the Proposed Development, was submitted as an application to Galway County Council in November 2021, and currently awaiting determination by ABP under Ref. PL07.313538. Subject to planning approval being obtained for the Submitted Development Ref: 21/2192, the Applicant intends to build out and operate both Submitted Development Ref: 21/2192 and the Tynagh North OCGT.

Relevant Planning History

- 4.5.4 A review of planning applications within 1km of the Site was completed using the GCC Online Planning System, and An Bord Pleanála online records, for applications submitted within the last five years. The 1km search area was used due to the rural nature of the area and the existing sparse development. Only active and approved planning applications within the last five years were considered. Table 4.1 provides details of the planning applications identified by the review.

Table 4.1: Planning Applications within the vicinity of the Proposed Development

PLANNING APPLICATION REFERENCE	DATE SUBMITTED	DETAILS	ADDRESS / APPLICANT	STATUS
212192	24/11/2021	For the construction of an OCGT plant (299MW) and associated infrastructure and buildings, to the west of the existing Tynagh Power Station site.	EP Energy Developments Ltd.	Approved by GCC (April 2022). Currently under appeal to An Bord Pleanála (ABP-313538-22)
201972	18/12/2020	For the construction of a Dwelling House, Domestic garage, Treatment Unit, Percolation area and all associated site services. Gross floor space of proposed works: 270m ² .	S. Loughrey & N. Briscoe C/o OPC Design & Planning	Granted with conditions on 07/06/2021
19633	26/04/2019	To extend workshop and to complete all associated site works.	Sperrin Galvanisers (IRE) Ltd. Derryfrench	Granted (conditional) 29/07/2019
18221	26/02/2018	To extend workshop and to complete all associated site works.	Sperrin Galvanisers (IRE) Ltd. Derryfrench	Granted (conditional) 20/04/2018

Source: Galway County Council Online Planning System and An Bord Pleanála Online Planning System – dated 25 January 2023.

4.6 Potential Environmental Sensitivities/ Receptors

4.6.1 A number of environmental receptors relevant to the assessment have been identified within and outside the Site, as described below. All distances given are the shortest distance between the receptor and the Proposed Development Site (red line boundary).

4.6.2 Key receptors for each topic area have been identified as part of the assessment process and details are included in the relevant technical chapters (Chapters 7 – 18 of this EIAR). A summary is also provided below.

Residential and Human Health Receptors

4.6.3 A number of rural residential properties are located within 500m of the Site (refer to Figure 4.3 in EIAR Volume III). The measurements are taken from the closest section of the Site boundary to the perimeter of the receptor (i.e. fence/ hedgerow). These properties include:

- Dwelling located on LP4310 approximately 330m west of the Site boundary;

- Dwelling with outbuildings at Derryfench approximately 420m south-west of the Site boundary;
- Dwelling with outbuildings (note: only outbuildings within 500m buffer) located on LP4310 approximately 420m to the north-west of the Site boundary.

4.6.4 There are a number of small villages and hamlets located in the wider rural area of the Site:

- Barnaculla (approximately 260m to the north-east);
- Cré Na Cille (approximately 1.5km to the south);
- Tynagh village (approximately 1.8km to the south); and
- Derrywilliam (approximately 2.2km to the south-east).

4.6.5 There are no areas of community land zoned within 100m of the Site.

4.6.6 Potential effects on residential receptors are considered in Chapter 7 (Air and Climate), Chapter 10 (Landscape and Visual), Chapter 11 (Noise and Vibration) and Chapter 16 (Population and Human Health) of this EIAR.

Designated Nature Conservation Sites

4.6.7 There are 13 designations which are classified as European sites within the Natura 2000 network located within 15km of the Site:

- Slieve Aughty Mountains SPA (4168) 6.1km south-west;
- Ardgraique Bog SAC (2356) 8.3km east;
- Barroughter Bog SAC (0231) 10.1km south-east and downstream of Cloonprask/ Barnacullia Stream and Lisduff Stream;
- Pollnaknockaun Wood Nature Reserve SAC (0319) 11km south;
- Rosturra Wood SAC (1313) 11.1km south;
- Lough Derg, North-east Shore SAC (2241) 11.1km south-east and downstream of Cloonprask/ Barnacullia Stream and Lisduff Stream;
- Lough Derg (Shannon) SPA (4058) 11.1km south-east, and downstream of Cloonprask/ Barnacullia Stream and Lisduff Stream;
- Lough Rea SPA (4134) 11.5km west;
- Lough Rea SAC (0304) 11.5km west;
- Cloonmoylan Bog SAC (0248) 11.7km south;
- Derrycrag Wood Nature Reserve SAC (0261) 13.3km south;
- River Shannon Callows SAC (0216) 14.4km east; and
- Middle Shannon Callows SPA (4096) 14.4km east.

4.6.8 There are a further 15 Nationally designated sites (some underpinning the above European sites) occurring within 15km. These are:

- Eskerboy Bog NHA (1264) 4.6km north-east;
- Cloonoolish Bog NHA (0249) 7.3km north-east;
- Ardgraique Bog pNHA (1224) 8.3km east;

- Barroughter Bog pNHA (0231) 10.1km south east;
- Capira/Derrew Bog NHA (1240) 10.3km south-east;
- Moorfield Bog NHA (1303) 10.7km north-east;
- Pollnacknockaun Wood Nature Reserve pNHA (0319) 11km south;
- Slieve Aughty Bog NHA (1229) 11.1km south-west;
- Lough Derg pNHA (0011) 11.1km south-east;
- Rosturra Wood pNHA (1313) 11.2km south;
- Lough Rea pNHA (0304) 11.5km west;
- Cloonmoylan Bog pNHA (0248) 11.7km south;
- Derrycrag Wood Nature Reserve pNHA (0261) 13.3km south;
- Meeneen Bog NHA (0310) 14.3km east; and
- River Shannon Callows pNHA (0216) 14.5km south-east.

4.6.9 There are no sites with non-statutory designations for nature conservation located within 2km of the Site.

4.6.10 Potential effects on biodiversity are considered in Chapter 9: Biodiversity of this EIAR and potential effects on European sites are presented in Appendix 9D of EIAR Volume II.

Transport Receptors

4.6.11 The main roads that are surrounding the Site are as follows:

- LP4310 Gurty Madden to Tynagh Road, to the west;
- N65 Loughrea to Portumna Road, approximately 3km to the north; and
- Gurty Madden to Tynagh Road, which forms a junction with the Loughrea to Tynagh Road at Lisheen, to the south.

4.6.12 The Proposed Development is located to the north of the existing Tynagh Power Station and will be accessed through the operating power station facility from the Gurty Madden to Tynagh Road.

4.6.13 Potential effects on transport receptors are considered in Chapter 14: Traffic of this EIAR.

Air Quality Receptors

4.6.14 The study area for the assessment of construction dust has been applied within the air quality chapter of this EIAR. The IAQM guidance extends:

- Up to 35m beyond the Site boundary and 50m from the construction traffic route (up to 500m from the Site entrances) for human health receptors; and
- Up to 50m from the Site boundary and/ or construction traffic route (up to 500m from the Site entrances) for ecological receptors.
- The potentially dust generating activities would occur to the north of the Tynagh Power Station Site, approximately 330m from a residential property and in close proximity to a galvanising company, but well over 50m from any ecological receptors. The Site access road to the Power Station is 210m away from the LP4310 Gurty Madden to Tynagh Road, with only two residential receptors along this road and within 500m north of the Site entrance along the public road.

4.6.15 There is the potential for impacts and nuisance from construction traffic, site clearance, construction dust and mobile plant exhaust emissions generated during the construction phase of the Proposed Development.

4.6.16 Potential effects on air quality receptors are considered in Chapter 7: Air Quality and Climate of this EIAR.

Soils and Geology Receptors

4.6.17 There are no statutorily designated sites within 1km of the Site. The nearest Water Framework Directive (WFD) designated feature is the Kilcrow25_070 surface water course (IE_SH_25K010700), which begins 1.4km south-east of the Site and flows in a southern direction.

4.6.18 The Proposed Development is largely underlain by dark limestones and shales of the Lucan Formation with massive, unbedded lime-mudstones of the Waulsortian Limestone Formation in the south of the Site. A major east-west trending bedrock with red conglomerate, sandstone, and mudstone of the Old Red Sandstone Formation to the south of the fault zone is located approximately 430m south of the Site.

4.6.19 The Lucan and Waulsortian Limestone fractured bedrock units are assigned High to Extreme vulnerability to contamination, due to thin or absent subsoil cover. The Old Red Sandstone is assigned similar vulnerability to contamination.

4.6.20 Causeway Geotech Limited (Causeway) carried out intrusive works on behalf of the Applicant in August 2021 on the Tynagh Power Station site including the Proposed Development Site. The works included soil logging, soil sampling, photographed arisings from the boreholes and collected field readings. The intrusive investigation was designed and undertaken in general conformity with the principles set out in BS10175:2011+A1:2017 Investigation of Potentially Contaminated Land. Code of Practice.

4.6.21 Made ground at the Site potentially contains mine waste with elevated heavy metals contents (principally arsenic, cadmium, copper, nickel and zinc) associated with the Tynagh ore-body and other impacts due to the previous industrial use of the site and surrounding area.

4.6.22 Potential effects on geology and hydrogeology receptors are considered in Chapter 13 of this EIAR.

Water Environment Receptors

4.6.23 The Site falls within the Lower Shannon WFD surface water catchment (CATCH_ID 25C) and the Historic Mine (Tynagh) WFD Groundwater body (European Code IE_SH_G_237). The Site is in the Lisduff sub-basin and the following surface water bodies are recorded:

- Minor streams 515m to the south (Lisduff Stream) and 37m to the north-east (Barnacullia Stream) of the Site, both entering the Kilcrow River approximately 4.6km to the east of the Site. The Kilcrow River enters Lough Derg close to Stoneyisland, approximately 11.6km to the south of the Site;
- The former Tynagh Mine open pit mine has been allowed to re-flood and is an enclosed open water body (code 25_303) which is approximately 280m to the south-east of the Site at its closest point; and
- The former Tynagh Mine tailings ponds remain and include open water bodies (code 25_300) which are approximately 40m to the east of the Site at their closest point.

4.6.24 Other surface waterbodies in the study area (the Site and surface water features within a 1km radius; Downstream waterbodies and protected areas within 5km have also been considered) include:

- The eastern edge of the Cappagh (Galway)_20 WFD sub-basin (IE_SH_25C030500) which is located 870m to the south-west of the Site;
- The northern edge of the Kilcrow_070 WFD sub-basin (IE_SH_25K010700) which is located 1.7km to the south of the Site;
- Unnamed streams, drainage ditches and several ponds.

4.6.25 Potential effects on water environment are considered in Chapter 12: Water Environment of this EIAR.

Cultural Heritage

4.6.26 No known heritage assets are recorded within the boundaries of the Site. Although there may have been other heritage assets present in the form of previously unrecorded sub-surface archaeological deposits and features, but these will have been destroyed by ground disturbance associated with the construction of the existing Tynagh Power Station in 2004 and former historic mine workings prior to that.

4.6.27 Cultural heritage and archaeological assets within a 5km zone from the Site (the area within which assets could experience setting impacts from the Proposed Development) include:

- 1 asset recorded as a National Monument in State Care;
- 12 assets recorded on the Record of Monuments and Places;
- 20 assets recorded as Protected Structures;
- 14 assets recorded as buildings on the National Inventory of Architectural Heritage; and
- 2 assets recorded as Planned Landscapes on the National Inventory of Architectural Heritage.

4.6.28 Potential effects on cultural heritage and archaeology receptors are considered in Chapter 8 of this EIAR.

Landscape Receptors

4.6.29 The Galway County Council Landscape Character Assessment in Appendix 4 to the Galway County Development Plan 2022-2028 has proposed new Landscape Character Areas. It shows the Project would be situated within the Landscape Character Area of the Eastern Plains Region. The area of The Eastern Plains Region is then subdivided into landscape types, in which the development is located in the Central Galway Complex Landscape. Additionally, in the tiers set out in the hierarchy of towns, villages and settlements, Tynagh is categorised as 'Rural Settlements and Rural Countryside'. The Site sits in a predominately pastureland agricultural landscape with poorly developed hedgerows, stone walls, and undulating terrain. The area is undeveloped apart from the existing Tynagh CCGT Power Station, Sperrin Galvanisers Ltd., and a small number of residential properties in reasonable proximity to the Site.

4.6.30 Potential effects on landscape receptors are considered in Chapter 10: Landscape and Visual of this EIAR.

Noise and Vibration Receptors

4.6.31 The nearest noise sensitive receptors to the Site boundary are (as presented on Figure 4.3, refer to EIAR Volume III):

- Residential properties approximately 420m to the north-west;
- Residential property on LP4310 approximately 330m to the west;
- Residential properties at Derryfench approximately 420m to the south-west;
- Residential properties approximately 700m to the south; and
- Milchem Equestrian Centre approximately 330m to the north-east.

4.6.32 The noise climate at the dwellings to the west and south-west is currently dominated by road traffic noise and industrial noise. At other receptors the noise climate is predominantly traffic noise and agricultural noise, with the power station audible at times at some receptors. There are no other significant noise sources in the vicinity.

4.6.33 Potential effects on noise receptors, as well as cumulative impacts, are considered in Chapter 11: Noise and Vibration of this EIAR.