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Profile Park Power Plant

Appropriate Assessment Screening Report

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1.0 INTRODUCTION

Greener Ideas Limited is proposing to develop a gas fired power plant with capacity to generate up to 125MW of electricity at a site located in Profile Park, Dublin 22. This type of power plant will operate when electricity demand is higher than average, typically during morning and evening peak usage times. The plant will regularise energy provision in the electricity grid especially in the context of an increase in use of renewable energy technologies, such as wind and solar power. The plant technology allows the delivery of an efficient, safe and secure electricity system by helping to manage fluctuating electricity demands and compensate for shortages occurring from wind or solar power. This will accommodate and support Irelands transition to a low-carbon economy and mean that Ireland can continue to invest in renewable sources of power in order to meet future national and EU targets. The power plant may also have the capacity in the future to facilitate the electricity needs of data centre development in Profile Park and its surrounding areas. The design of the plant and its ultimate usage is therefore flexible such that it may provide power directly to the national electricity grid and/or to nearby data centre development.

This report forms an Appropriate Assessment (AA) Screening Report for the proposed development. The purpose of this report is to inform the AA process, which is carried out by the competent authority (in this case South Dublin County Council). Appropriate Assessment is an assessment of whether a plan or project, alone and/or in-combination with other plans or projects, may have likely significant effects on a European site, collectively known as the Natura 2000 network, in view of the site's conservation objectives.

The project design has sought to, in as far as possible, avoid impacts on European sites. This report considers the final design. It determines if direct, indirect or in-combination effects could arise, or if there is uncertainty regarding potential effects.

This report provides information to assist the competent authority in undertaking a Screening Assessment of the proposed development and was informed by a desktop study and ecological field surveys undertaken by TOBIN Consulting Engineers (TOBIN) Project Ecologist, Áine Sands (B.Sc.), and senior reviewed by TOBIN Senior Ecologist, Laura Kennedy (M.Sc.).

2.0 THE APPROPRIATE ASSESSMENT PROCESS

The AA process is an assessment of the potential for likely significant effects or negative effects of a plan or project, alone and/or in-combination with other plans or projects, on the conservation objectives of a European site(s). The Natura 2000 network is made up of European sites including Special Protection Areas (SPAs), established under the EU Birds Directive (2009/147/EC) (more generally referred to as the 'Birds Directive') and Special Areas of Conservation (SACs), established under the EU Habitats Directive (92/43/EEC) (more generally referred to as the 'Habitats Directive'). The Natura 2000 network helps provide for the protection and long-term survival of Europe's most valuable and threatened species and habitats.

The Screening Stage of the AA process identifies any likely significant effects upon European sites from the proposed development alone or in-combination with other projects or plans. A series of questions are asked during the Screening Stage of the AA process to determine:

- whether a plan or project can be excluded from AA requirements because it is directly connected with or necessary to the management of a European site; and

- whether the project or plan will have a potentially significant effect on a European site, either alone or in-combination with other projects or plans, in view of the site's conservation objectives or if residual uncertainty exists regarding potential impacts.

2.1 Legislative Context

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as the 'Habitats Directive', provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000 network.

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect European sites (Annex 1.1). Article 6(3) establishes the requirement for AA:

> '*Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.'*

Article 6(4) states:

> *'If, in spite of a negative assessment of the implications for the [Natura 2000] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.'*

The provision for an AA is transposed into Irish law by Part XAB of the Planning and Development Act 2010 (as amended). Section 177U (4) of the said Acts provides for screening for Appropriate Assessment as follows:

> *'The competent authority shall determine that an appropriate assessment of [...] a proposed development [...] is required if it cannot be excluded, on the basis of objective information, that the [...] proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.'*

Section 177U (5) provides as follows:

> *'The competent authority shall determine that an appropriate assessment of a [...] proposed development, [...], is not required if it can be excluded, on the basis of objective information, that the [...] proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.'*

An AA should be based on best scientific knowledge and the competent authority should ensure that expertise such as ecological, geological, and hydrological are utilised, where relevant.

The Court of Justice of the European Union (CJEU) has made a number of rulings in relation to AA, regarding when it is required, its purpose, and the standards it should meet. Consideration has been given to the evolution in interpretation and application of directives and national legislation arising from jurisprudence of the European and Irish courts, in respect of Article 6 of the Habitats Directive.

2.2 Stages Involved in the Appropriate Assessment Process

There are potentially four stages in the AA process; the result of each stage determines the requirement for assessment under the next.

Stage 1: Screening / Test of Significance

This process identifies the likely significant effects upon a European site from a proposed project or plan. Its purpose is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project which is not directly connected with or necessary to the management of the site as a European site, individually or in-combination with other plans or projects is likely to have a significant effect upon the European site, in view of its conservation objectives. A project may be 'screened-in' if there is a possibility or uncertainty of possible effects upon the European site, requiring a Stage Two AA. If there is no evidence to suggest significant effects due to the proposed plan or development the project is 'screened-out' from further assessment.

Stage 2: Appropriate Assessment

Consideration is given if potential impact(s) of a project or plan could cause likely significantly effects to the integrity of surrounding European sites, either alone or in-combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where likely significant effects have been identified, an assessment of the potential mitigation to avoid/reduce such impacts is required. A NIS is often produced at this stage to inform the AA which is undertaken by the competent authority. This stage is required where uncertainty of effect arises, or a potential effect has been defined which requires further procedures/mitigation to remove uncertainty of a defined impact.

Stage 3: Assessment of Alternatives

This stage of the potential process arises where adverse effects on the integrity of a European site cannot be excluded and examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European site. However, in circumstances where there will not be any adverse effects on any European site, the developer places no reliance upon this third stage of the process in the context of this application for planning permission for the proposed development.

Stage 4: Assessment Where Adverse Effects Remain

This is the derogation process of Article 6(4), which examines whether there are imperative reasons of overriding public interest [IROPI] for allowing a project to proceed where adverse effects on the integrity of a European site have been predicted. Compensatory measures must be proposed and assessed as part of this stage and the EU Commission must be informed of the compensatory measures. Again, the developer places no reliance upon this stage of the process in the context of the application for planning permission for the proposed development.

2.3 Legislation and Guidance

This report has been carried out using the following guidance:

- Communication from the Commission on the Precautionary Principle. Office for Official Publications of the European Communities, Luxembourg (European Commission [EC] 2000)[1].
- Nature and Biodiversity Cases: Ruling of the European Court of Justice. Office for Official Publications of the European Communities, Luxembourg (EC, 2006)[2].
- Circular L8/08 – Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments. Department of Environment, Heritage and Local Government (DoEHLG, 2008)[3].
- Managing Natura 2000 Sites – The provisions of Article 6 of the Habitats Directive 92/43/EEC. European Commission (EC, 2018)[4].
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission (EC, 2013)[5].
- Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government (DoEHLG, 2010)[6].
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. Office for Official Publications of the European Communities, Luxembourg (EC, 2007)[7].
- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg (EC, 2001)[8].
- Appropriate Assessment Screening for Development Management. Office of the Planning Regulator (OPR) Practice Note PN01 (OPR, 2021)[9].

This report has similarly been prepared with regard to relevant rulings by the Court of Justice of the European Union (CJEU), the High Court, and the Supreme Court.

Definitions of conservation status, integrity and significance used in this assessment are defined in accordance with '*Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*' (EC, 2018):

[1] Communication from the Commission on the Precautionary Principle: https://op.europa.eu/en/publication-detail/-/publication/21676661-a79f-4153-b984-aeb28f07c80a/language-en
[2] Nature and Biodiversity Cases: https://friendsoftheirishenvironment.org/images/EULaw/ecj_rulings_en.pdf
[3] Circular L8/08: https://www.npws.ie/sites/default/files/general/circular-L8-08.pdf
[4] European Commission (2018) https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/Provisions_Art_6_nov_2018_en.pdf
[5] Interpretation Manual: https://ec.europa.eu/environment/nature/legislation/habitatsdirective/docs/Int_Manual_EU28.pdf
[6] Appropriate Assessment of Plans and Projects: https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf
[7] Guidance Document on Article 6 (4): https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf
[8] Assessment of plans and projects significantly affecting Natura 2000 sites: https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf
[9] Appropriate Assessment Screening for Development Management: 9729-Office-of-the-Planning-Regulator-Appropriate-Assessment-Screening-booklet-15.pdf

- Favourable conservation status (FCS) can only be defined and achieved at the level of the natural range of a species or a habitat type. A broad conservation objective aiming at achieving FCS can therefore only be considered at an appropriate level, such as for example the national, biogeographical or European level. The conservation measures have to correspond to the ecological requirements of the natural habitat types in Annex I and of the species in Annex II present on the site. The ecological requirements of those natural habitat types and species involve all the ecological needs which are deemed necessary to ensure the conservation of the habitat types and species. They can only be defined on a case-by-case basis and using scientific knowledge.
- The integrity of a European site is defined as the coherent sum of the site's ecological structure, function, and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated.
- Significant effect should be determined in relation to the specific features and environmental conditions of the protected site concerned by the plan or project, taking particular account of the site's conservation objectives and ecological characteristics.

2.4 Desktop Study and Information Sources

A desktop study was undertaken to inform this screening assessment. The desktop study comprised a review of the following key datasets and information sources:

- Identification of European sites within the Zone of Influence (ZoI) of the proposed development area through the identification of potential pathways/links from the proposed development area and European sites and/or supporting habitats.
- Review of the National Parks and Wildlife Service (NPWS) site synopsis, Natura 2000 data forms and Conservation Objectives for European sites identified through potential pathways from the proposed development (https://www.npws.ie/protected-sites).
- NPWS datasets on Annex I habitats and Annex II species.
- Review of available literature and web data. This included a detailed review of the NPWS and National Biodiversity Data Centre (NBDC) websites including mapping and available reports for relevant sites and in particular Qualifying Interests and Special Conservation Interests described and their Conservation Objectives.
- Review of Inland Fisheries Ireland (IFI) research data. This included reviewing research studies carried out for the Habitats Directive and Red Data Book Fish species within the receiving environment.
- Water Framework Directive (WFD) website: (https://www.catchments.ie/guide-water-framework-directive/).
- GIS Online mapping: (http://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228).
- Environmental Protection Agency (EPA) Mapping database: (https://gis.epa.ie/EPAMaps/AAGeoTool).
- Review of previous ecological assessments undertaken within the area.

In addition, aerial photography (Google Maps, Bing Maps) and mapping (Ordnance Survey of Ireland, Geological Survey of Ireland) were used to identify non-designated habitats such as rivers, woodlands, and hedgerows of local ecological importance.

3.0 SCREENING ASSESSMENT

3.1 Site Location

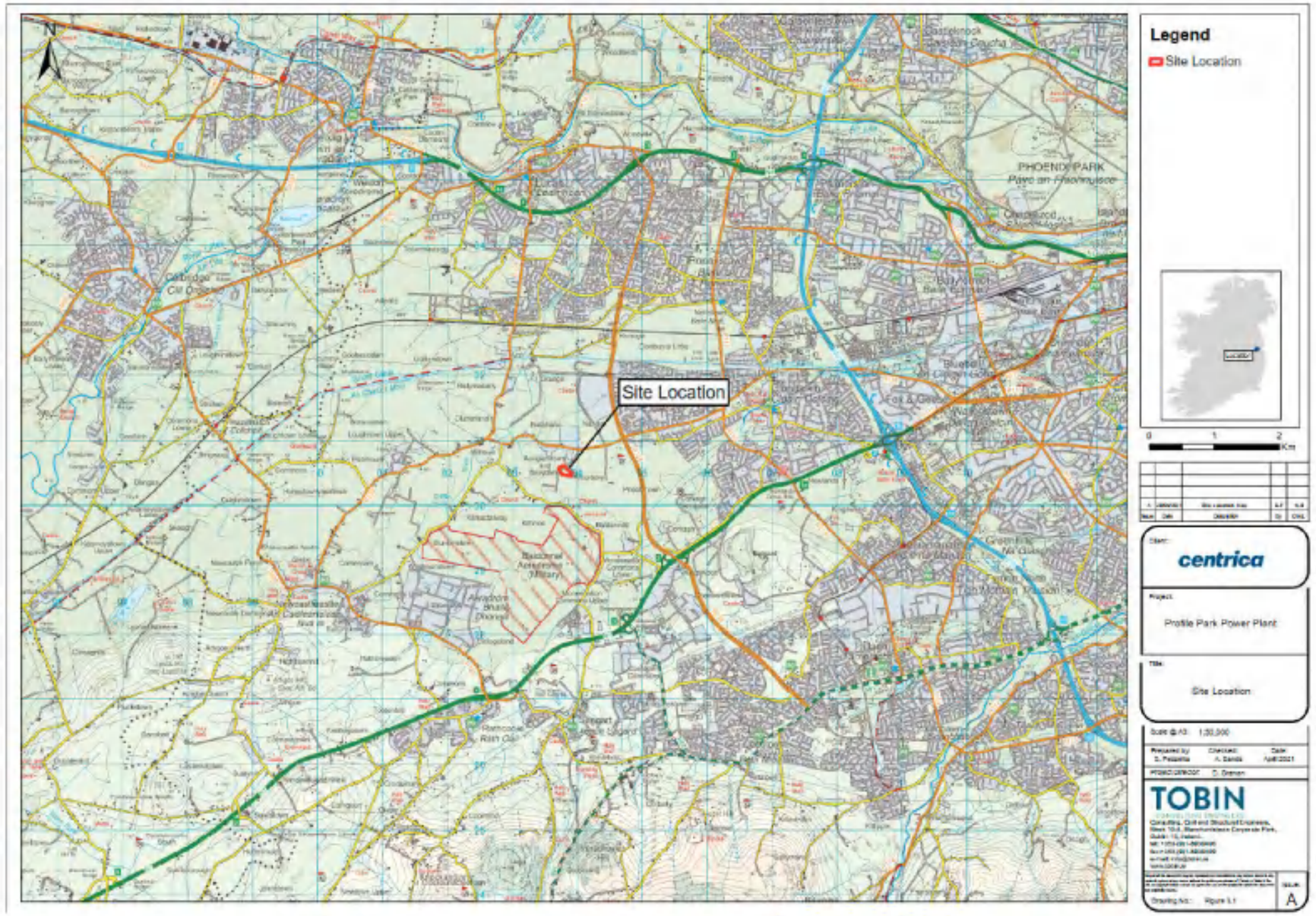
The proposed development site is located in Profile Park Industrial Estate in Grange Castle. Profile Park comprises a 100 acre (40.5 hectares [ha]) fully enclosed, private business park which has been developed to the highest of standards. The proposed development site, which is 1.84ha in size, is located approximately 12km south-west of Dublin City Centre and is immediately adjacent to the existing Digital Realty Data Centre.

The proposed development site is easily accessible from the major arterial roads in Dublin City including; the M50, M7 and M4, and the R135. Network Infrastructure associated with the proposed development will be located along Profile Park Road and the R135.

Baldonnell Stream (EPA_Code: 09B09), occurs along the northern and north-eastern boundary of the proposed development site.

The location of the proposed development site is indicated on Figure 3-1 below.

Figure 3-1: Proposed Site Location



3.2 Description of the Proposed Development

3.2.1 Operational Overview

The Profile Park Power Plant will operate when electricity demand is higher than average. The plant will regularise energy provision in the electricity grid, especially in the context of an increase in use of renewable energy technologies, such as solar and wind power. This will accommodate and support Irelands' transition to a low-carbon economy and will mean that Ireland can continue to invest in renewable sources of power in order to meet future national and EU targets. The power plant may also have the capacity in the future to facilitate the electricity needs of data centre development in Profile Park and its surrounding areas.

The power plant will be minimally manned with a dedicated team with responsibility for carrying out routine maintenance, attending meetings, accepting deliveries and security services.

Natural gas, supplied from the Gas Networks Ireland national grid, will be the primary fuel source for the plant. In order to comply with Commission for Regulation for Utilities (CRU) requirements to ensure security of energy supply[10], low sulphur diesel oil will be stored as a backup fuel. Up to 120 hours (5 days) maximum running capacity of diesel oil is required to be stored in two bunded tanks on site (each tank with a volume of 1,250m^3). It should be noted that normal operations on the backup fuel is anticipated to occur for up to 18 hours per annum for testing purposes in accordance with EirGrid's (the Transmission System Operator) Grid Code which establishes the rules governing the electricity transmission system and the procedures for governing the actions of all transmission system users. Outside of these hours, it is expected that operation on diesel oil would only occur in very rare circumstances such as an interruption to gas supplies or other electricity grid system emergencies.

The electrical generator will connect to the main transformers where the voltage will be increased to 110kV. Electrical power will then be exported from the plant's main transformer to either a new proposed 110kV substation on adjacent lands to the immediate west of the power plant or the existing Castlebaggot 220 / 110kV Substation which is operated by EirGrid.

3.3 Description of Key Plant Processes and Operating Procedures

3.3.1 General

The reciprocating gas engine is designed for continuous operation on gas, and has been selected due to the technology's:

- High operational efficiency,
- Operational flexibility,
- Fast start capability, unique to this technology,
- Dual fuel capability, in accordance with the grid code,
- Load following and cycling capabilities,
- Low fuel consumption,
- High Reliability,
- Ease of maintenance,

[10] Ensuring Security of Supply of the electricity system is a key legal function of the CRU. The Secondary Fuel Obligation is a policy designed to maintain security of electricity supply to consumers in the event of a gas shortage by requiring gas fired power generators to have the ability to generate electricity from a secondary fuel source should the supply of gas not be available. It should be noted that the CRU is currently reviewing these requirements.

- Long component lifetime, and
- Environmental performance: High efficiency means the plant will produce lower emissions (e.g. Nitrogen Oxides [NOx], Carbon Monoxide [CO], etc.) to atmosphere per unit of energy produced compared to similar engines available on the market.

3.3.2 Power Generation Process

A site layout plan showing the layout of the principal buildings and plant on site is shown in Figure 3-2 below.

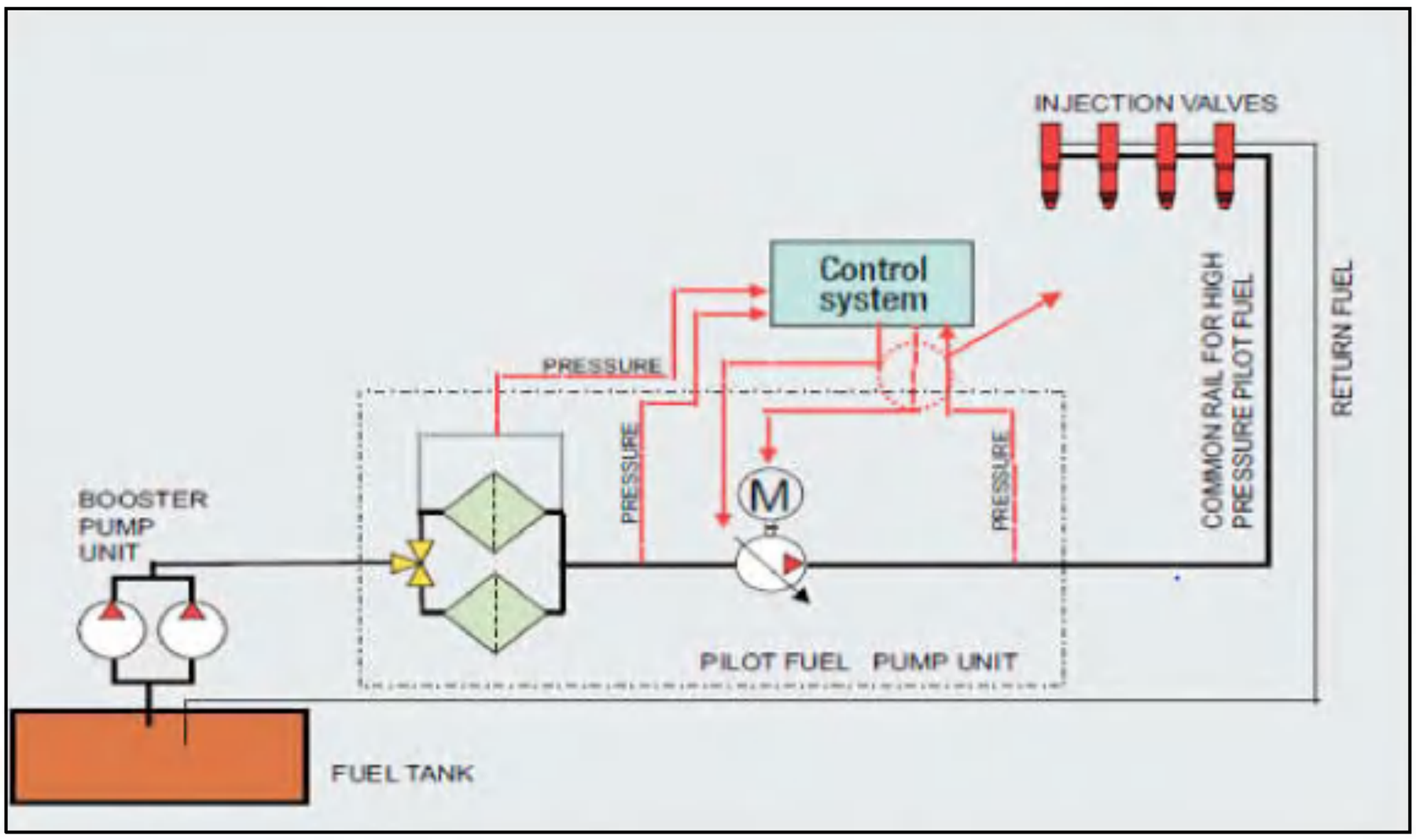
The overall power generation process can be summarised as follows:

Gas Operation Mode

In gas operation mode, the gas-air mixture is mixed with air during the air intake period prior to the inlet valves. The combustion is fast, and after the working phase, the exhaust gas valves open, and the cylinder is emptied of exhaust gases. The intake air is turbocharged and intercooled. An alternative approach is to start up on diesel oil.

A schematic showing the typical operation in gas mode is shown in Figure 3-2 below.

Figure 3-2: Operation in Gas Mode



Turbocharger and Air to Fuel Ratio Control System

Due to the high degree of integrated functions built into the design of these gas engines, only a minimum amount of support from external systems is needed. An embedded engine control system controls the combustion process, individually in each cylinder.

To maintain a correct air-fuel ratio, the engine is equipped with an exhaust gas wastegate. It keeps the air pressure in the receiver at an optimal level all over the power output range.

The exhaust gas wastegate valve by-passes the exhaust gases past the turbocharger. The wastegate valve acts as a regulator and adjusts the air-fuel ratio to the correct value, independent of variations in the site conditions such as ambient temperature and humidity.

The engine automation system monitors the average exhaust gas temperature after the cylinders. If the average exhaust gas temperature is higher than the set-point, the engine control system will close the wastegate gradually until the correct value is reached.

The wastegate valve is actuated by compressed air and controlled by the engine control system.

Emission Control System

The exhaust gases from the gas engines will be discharged to atmosphere through a 31.8m high stack. The single stack cluster will contain up to 6 no. exhaust flues, one for each of the gas engines.

The most commonly used secondary emission control method for NO_X is the Selective Catalytic Reduction (SCR) technique. In the SCR system the NO_X (NO and NO_2) are reduced with the help of a reducing agent, a water solution of urea or ammonia which will be stored in tank with a volume of approximately 26m^3. The SCR does not produce any liquid or solid by-products and is suitable for both liquid and gaseous fuels.

The SCR NO_X abatement system is combined with an oxidation catalyst and is named Combined NOx and CO control system.

The engine stacks will incorporate an in-situ proprietary Continuous Emission Monitoring System (CEMS). The selection, installation, calibration, ongoing quality assurance and annual surveillance testing of the CEMS will be undertaken in accordance with EN 14181 – Quality Assurance of Automated Measuring Systems and all relevant standards referred to therein. The requirements of EN 14181 will be incorporated into a Planned Preventive Maintenance Programme (PPMP) which will be submitted to and approved by the EPA as part of the Industrial Emissions Licence for this power plant.

3.4 Power Plant Infrastructure

The proposed development will comprise the following main components:

- Site Entrance;
- Engine Hall comprising up to 6 no. gas engines and 1 no. exhaust stack cluster;
- Electrical Annex Building;
- Workshop Building;
- Security Hut;
- Radiator Coolers;
- 110kV Electrical Transformer(s);
- Gas Above Ground Installation (AGI);
- Tank Farm comprising:
  - 2 x Fuel Oil Storage Tank;
  - SCR Reagent Tank;
  - Lube Oil Storage Tank;
  - Lube Oil Maintenance Tank;
  - Sludge Discharge Pump Module;
  - Pilot Oil Tank;
  - Fire Water Storage Tank;

- Cooling Water Run-Down Tank;
- Surface Water Attenuation Tank;
- Fencing;
- Car Park; and
- Landscape planting around perimeter of site.

3.4.1 Engine Hall and Electrical Annex Buildings

The engine hall building will include up to 6 no. dual fuel gas engines and supporting generating equipment.

The engine is rigidly mounted on a steel frame, acting as the lubricating oil service tank, which is resiliently seated on a simple concrete foundation by spring isolators. The alternator is connected to the engine by a flexible coupling, rigidly mounted and grouted onto a separate and elevated concrete foundation.

The engines will each have an exhaust flu which will connect into a single stack located directly adjacent to the engine hall. The stack will be a steel structure with high quality cladding and will have a height (flue tip height) of 31.8m.

The electrical annex building will be located adjacent to the main power house. The electrical annex will contain the compressor room, cable rooms, switch rooms, station transformers, control room and messing facilities.

The power plant will be self-sufficient in providing electricity to power the various facilities, equipment, and utilities on site. During plant downtime (e.g. plant maintenance), a feed will be taken from the existing ESB electricity network. It is expected that there will be adequate capacity in the grid to accommodate this demand during plant downtime.

Figure 3-3: Typical Gas Engine Configuration

3.4.2 Workshop Buildings

The engineering will include a water treatment room, fire equipment room, and fuel pump and pilot oil treatment room.

3.4.3 Radiator Coolers

The engines are cooled with a closed-loop, radiator cooling water system. The system consists of a high temperature circuit and a low temperature circuit. Air is drawn through the radiator coolers by fans driven with variable speed electrical motors.

3.4.4 110 kV Electrical Transformer(s)

Electrical power will be exported from the power plant's main transformers to the existing Castlebaggot 220 / 110 kV Substation which is operated by EirGrid or to a new proposed 110 kV substation in Profile Park. No confirmed details of this potential new substation were available for consideration as part of this AA Screening Report.

3.4.5 Above Ground Gas Installation

Natural gas will be delivered to the power plant via a new below ground pipeline from the existing gas network. It is envisaged following on from consultations with Gas Networks Ireland that this connection will be via a new spur from the existing national gas transmission network which has an existing AGI compound close to the Nangor Road approximately 1km to the north of the proposed development.

On site there will be a dedicated Above Ground Installation (AGI) gas compound where the incoming gas supply pressure will be reduced prior to its use in the gas engines. Gas Networks Ireland (GNI) will be responsible for the installation, operation, and maintenance of all equipment within the AGI gas compound. The AGI will be an asset owned wholly by GNI who own, operate, build, and maintain the natural gas network in Ireland and connect all customers through a 13,830km pipeline network. All operations within the AGI will comply with standard GNI operational procedures, risk assessments, and will be carried out by approved GNI contractors.

3.4.6 Tank Farm

Low Sulphur Diesel Oil Supply and Storage

In order to comply with CRU requirements, low sulphur diesel oil will be stored as a backup fuel. Up to 120 hours (5 days) maximum running capacity of diesel oil is required to be stored on site (1250m^3) in two bunded tanks. The tanks will be bunded in accordance with the requirements set out in the EPA publication, '*Storage and Transfer of Materials for Scheduled Activities*' (EPA 2004), which states bunds are to contain 110% of the volume of the tank in the event of a tank rupture. The height of the bund wall will be 1.8m.

Diesel oil will be delivered to site by road tankers. The maximum number of expected tankers travelling to and from the site in any one day will be in the region of 2 to 3 tankers, however this would be an extremely infrequent occurrence of once every 12 months when oil would start to degrade and would need to be replenished.

A standard operating procedure will be followed during tanker unloading and filling of the bulk tank. The bulk tank will be fitted with a high level alarm to prevent overfilling. There will be a dedicated tanker unloading area surrounded by a drainage channel which will drain to a petrol interceptor. This separator will provide for full retention of any material in the event of a rupture and spillage of a tanker compartment. A shut-off device incorporated into the separator will close the outlet in the event of its capacity being exceeded.

Urea Storage

The most commonly used secondary emission control method for NOX is the Selective Catalytic Reduction (SCR) technique. In the SCR system, the NOX (NO and NO_2) are reduced with the help of a reducing agent, a water solution of urea, which will be stored in a tank with a volume of $26m^3$. The SCR does not produce any liquid or solid by-products and is suitable for both liquid and gaseous fuels.

Lubricating Oil Storage

For two week's consumption, a tank of $26m^3$ is required which will also contain sufficient oil to refill an engine after an oil change.

Lubricating Oil Maintenance Tank

The lubricating oil run-down tank will be used to hold the engine oil while maintenance work on the engine is being carried out. A tank with a volume of $26m^3$ will be required. This tank will also be used to hold the used/dirty oil from an engine prior to disposal offsite by an appropriately licenced contractor.

Pilot Oil

For two week's consumption, a pilot oil tank of $26m^3$ is required.

3.4.7 Water Supply and Wastewater

The principal water usage requirements of the power plant can be summarised as follows:

- Potable water used for domestic purposes (drinking water, toilets etc.); and
- Water for fire-fighting purposes.

The water supply for the proposed power plant will be taken from the public water mains which is located immediately adjacent to the site. It should be noted that the volume water supply for this power plant is very small at approximately 0.11 l/sec. This volume is low due to the small operational workforce and lack of any process water requirement. Similarly, there is no process wastewater associated with this power plant. As such, any wastewater emissions are associated only with foul wastewater for the small operational workforce.

Irish Water has confirmed via its 'Pre-connections Enquiry' process that the above water supply volume can be facilitated.

Water for fire-fighting purposes will be stored in a tank with a volume of 1000m3.

3.4.8 Security Fencing

The perimeter of the power plant will be surrounded by a 2.4m palisade or paladin fence.

3.4.9 Construction Phase Activities

It is expected that construction will commence in 2023 with design, construction, and commissioning activities lasting for approximately 20 months. The plant is expected to be fully operational in 2024/25 subject to timely receipt of the necessary statutory consents.

The total number of construction staff on-site will vary during the construction phase of the works but are expected to peak at approximately 50 persons.

Normal working hours during the construction period are expected to be Monday to Friday 08.00 to 20.00 hours. During certain stages of the construction phase, it is expected that some work will have to be carried out outside of normal working hours however this will be kept to a minimum.

Construction activities will gradually phase out from pre-construction to predominantly civil activities followed by installation, commissioning and testing of the proposed power plant and equipment.

3.4.10 Operation Phase Activities

3.4.10.1 Hours of Operation

This proposed development can operate in more than one operational profile. For example, the plant may connect to the national electrical grid in which case its actual operating hours would be determined by EirGrid, who are the Transmission System Operator (TSO). Alternatively, the plant may connect in the future to a data centre and provide a direct power feed to that data centre. In this case the operating hours would be subject to agreement between Greener Ideas Limited and that data centre. However for this assessment a worst case operating scenario (i.e. operating 24 hours a day, 365 days per year unless otherwise stated) has been assessed.

3.4.10.2 Operational Staff

The proposed development will be minimally manned by a dedicated team with responsibility for carrying out routine maintenance, attending meetings, accepting deliveries and security services.

Site specific management systems and operating procedures will be developed in accordance with industry procedures and policies. The Plant Manager will be directly responsible for the implementation of the Health and Safety, Environmental and Quality systems, policies and procedures.

The Plant Manager will be assisted by an Operations Engineer and the Environmental, Health, and Safety (EHS) Manager who will have varying degrees of responsibility for health and safety implementation. Operations will be carried out in accordance with legislative requirements and any conditions of the Planning Permission.

Out of hours security services will be arranged to ensure the site is secure.

3.4.10.3 Utilities and Services

Surface Water Drainage

Surface water runoff will be generated from all surfaces within the facility that are exposed to rainwater or to which water is applied in order to clean. This includes all hardstanding surfaces, roofs, and other impermeable surfaces. All surface water will be discharged to the Baldonnel Steam, post treatment, which is located adjacent to the proposed development site.

In order to comply with the Arterial Drainage (Amendment) Act 1995 the surface water system proposed as part of the development will include down pipes and gullies, full retention petrol interceptors and attenuation tanks and swales.

The surface water system will also include flow control devices to limit the surface water runoff from the site to be similar to the Greenfield runoff as per the requirements of the Great Dublin Strategic Drainage Study[11]. It is proposed to install a Hydrobrake downstream of an attenuation tank to limit the flow from the site to 4.1l/s.

Foul Wastewater Drainage

Domestic type wastewater effluent will be generated on site. It is estimated that at any one time, there will be no more than 12 personnel on site, i.e. the maximum number of people on site at any given time for testing, maintenance, site meetings etc. An approximate volume of 0.1157 l/sec of domestic type wastewater was identified as the maximum domestic wastewater flow which may be generated on site. Wastewater will be pumped to the existing foul sewer in Profile Park which is directly adjacent to the site.

Process Wastewaters

There will be no process wastewater generated from the proposed development.

Exhaust Gases

The exhaust gases from the gas engines will be discharged to atmosphere through a 31.8m high stack. The single stack cluster will contain up to six exhaust flues, one for each of the gas engines.

Lighting

Emergency lighting will be provided throughout the building in accordance with BS 5266-1: Code of practice for the emergency lighting of premises.

The escape lighting will be sited to provide an appropriate luminance near each exit door, and where it is necessary to emphasise potential danger or safety equipment. The following bullet points indicate where:

- At each exit door intended to be used in an emergency;
- Near stairs so that each flight of stairs receives direct light;
- Near any other change in level;
- Mandatory emergency exits and safety signs;
- At each change of direction;

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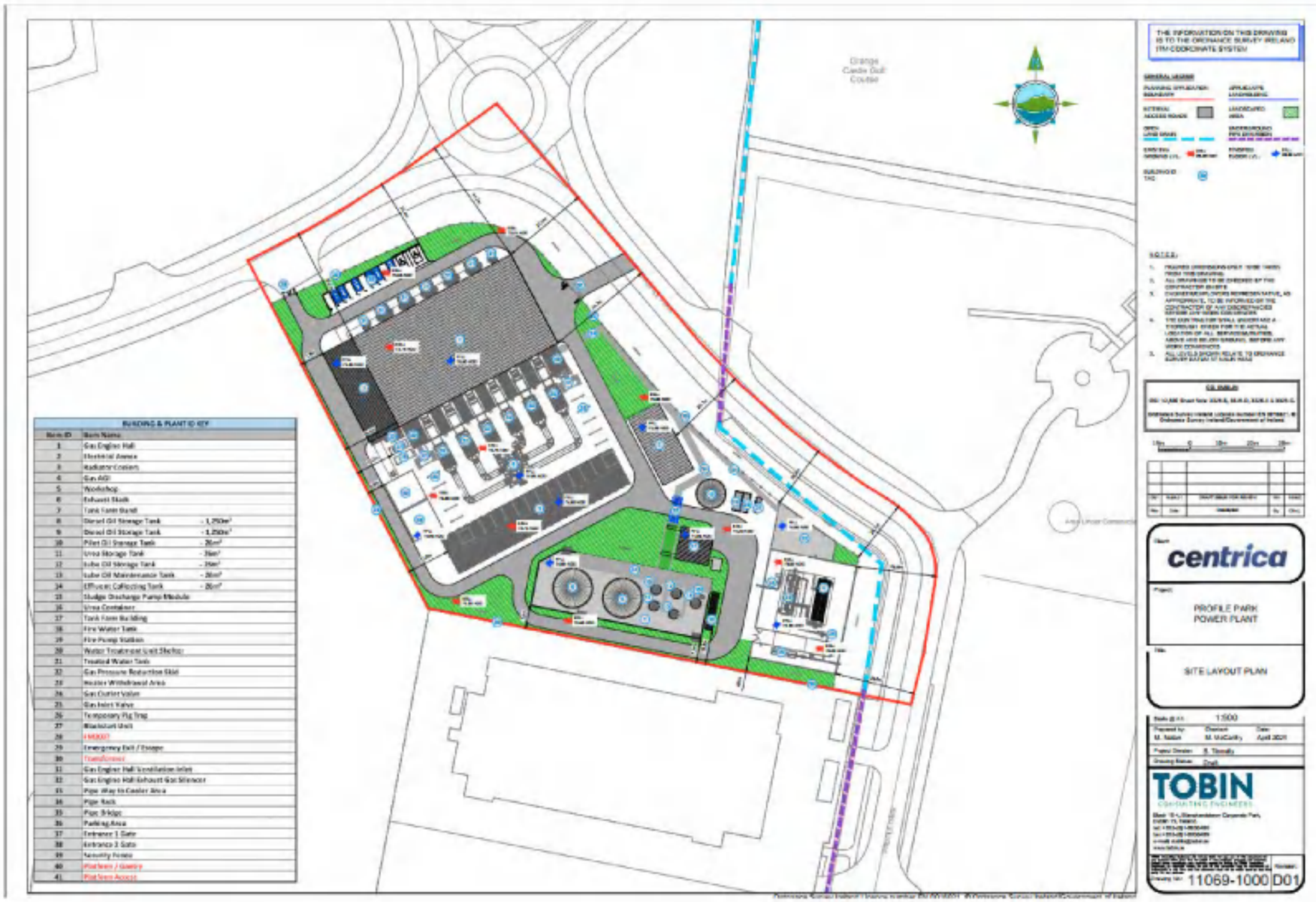
[11] http://www.greaterdublindrainage.com/wp-content/uploads/2011/11/GDSDS-Final-Strategy-Report-April-051.pdf

- At each intersection of corridors;
- Outside and near to each final exit;
- Near each first aid post;
- Near each piece of firefighting equipment and call point; and
- Within all stair cores.

The proposed Site Layout of the proposed development is shown in Figure 3-4 below.

Figure 3-4: Proposed Site Layout



3.5 Description of the Existing Environment

3.5.1 Field Survey

Ecological field surveys were undertaken at the proposed development site on 25th January 2021 and 13th April 2021, following best practice guidance methodologies (National Road Authority [NRA], 2009)[12]. The site was searched for evidence of Annex I habitats and Annex II species listed on the EU Habitats Directive (92/43/EEC) and Annex I species listed in the EU Birds Directive (79/409/EEC). The site was also searched for the presence of invasive plant species listed in Part 1 of the Third Schedule of S.I No. 477 of 2011, European Communities (Birds and Natural Habitats) Regulations (2011). Findings of the surveys were used to inform this AA Screening Report.

The survey area included lands within the zone of influence (ZoI) of the propose development. The current guidance on ecological assessments (CIEEM, 2018) states that:

"*The 'zone of influence' for a project is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries*" and that "*The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change.*"

The ZoI was therefore defined through desk-based assessment with regard to the sensitivity of habitats and species likely to be present / previously recorded in the locality of the proposed development site, areas with connectivity (physical, hydrological or ecological) to the proposed development site boundary, potential impacts which may arise and reference to existing guidelines. The ZoI was therefore established as the proposed development site plus 150m buffer.

3.5.2 Existing Environment

As noted, the proposed development site is located in Profile Park Industrial Estate in Grange Castle. The proposed development site is approximately 1.9ha in size. The majority of the site comprises wet grassland and neutral grassland (refer to Photo 3-1 below).

Baldonnell Stream, occurs along the northern and north-eastern boundary of the proposed development site. The stream flows in a north-westerly direction before discharging into the Grifeen River (EPA_Code: 09G01) approximately 2km downstream. The Grifeen River is a tributary of the River Liffey (EPA_Code: 09L01) which flows into Dublin Bay.

During the ecological surveys, no Annex I habitats or protected flora were identified within the footprint of the proposed development site. In addition, no invasive plant species listed under Part 1 of the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2015) were recorded within the proposed development site.

No evidence of Annex II species protected under the Habitat Directive were recorded during the surveys.

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[12] National Roads Authority (NRA; now known as Transport Infrastructure Ireland) (2009). Guidelines for Assessment of Ecological Impacts of National Road Schemes.

A pair of lapwing *(Vanellus vanellus)* and their nest was recorded during the survey approximately 80m west of the proposed development site boundary. Lapwing are an Annex II species listed on the EU Birds Directive. Its noted that there are no SPA's which are designated for lapwing located within 15km of the proposed development site. The nearest SPA for which lapwing are designated is the Boyne Estuary SPA (001959) which located an excess of 50km north of the proposed development site. The pair of lapwing do not form part of a population designated within a SPA.

Photo 3-1: Proposed Development Site

3.6 Overview of Potential Impacts

The proposed development site is not located within or directly adjacent to any designated European site. Therefore, there will be no direct impact on any European sites as a result of the proposed development.

There are several elements associated with the proposed development however that may give rise to indirect impacts that have the potential to result in likely significant effects during both the Construction and Operation Phases. The significance of these impacts depends on the scale of the impact as well as the ecological condition and the sensitivities of the qualifying interests/special conservation interests. Elements of the proposed development that may give rise to impacts which have been considered with regards to potential effects on European sites are discussed hereunder.

3.6.1 Construction Phase

Potential construction phase impacts associated with the proposed development are discussed hereunder.

3.6.1.1 Loss of Habitat

The proposed development will result in the total habitat loss of approximately 1.9ha. Habitat within the proposed development site, which will be lost, include wet and neutral grassland. Both habitats were identified as being of local importance. No Annex I habitats were identified within the footprint of the proposed development site.

3.6.1.2 Runoff of Sediment and/or Construction Pollution

Site clearance, excavation activities, and the stockpiling of material have the potential to result in sediment laden runoff if not appropriately managed. Such runoff could result in the sedimentation of nearby watercourses. Increased silt loading in watercourses can stunt aquatic plant growth, limit dissolved oxygen capacity and overall reduce the ecological quality of watercourses, with the most critical period associated with low flow conditions.

The pouring of concrete will be required to facilitate the foundation works associated with the development. Surface water runoff can be contaminated by leaks and spills of fuel, oil or other construction material from construction vehicles/machinery if not properly managed. The runoff of contaminated surface water can result in the degradation of water quality and impacts to aquatic fauna and flora, particularly if concrete is present.

The Baldonnell Stream is located along the northern boundary of the proposed development site. Due to the close proximity of the stream, there is potential for sediment laden runoff and/or construction pollution into the watercourse which may result in localised water quality impacts.

3.6.1.3 Dust

Excavation activities may also result in the temporary generation of dust in the locality of the works area. The Institute of Air Quality Management provide guidelines; *'Guidance on the Assessment of Dust from Demolition and Construction'* (Holman *et al.*, 2014)[13], which prescribes potential dust emission risk classes to ecological receptors. Following the guidelines and considering the size of the proposed development, the scale of the earthworks were considered Large (total site area >10,000m^2). The guidelines specify that receptor sensitivity is 'High' up to 20m from the source and reduces to 'Medium' at 50m. Dust may also be generated from trackout due to heavy duty vehicle (HDV) movements from the site entrance. It is anticipated that HDV movement will range between 5 to 10 outward movements a day which equates to 'Small' trackout movement. The guidelines indicate that Small trackout equates to dust occurring up to 50m from the site. Dust deposition on vegetation can inhibit growth.

3.6.1.4 Noise and Disturbance

The proposed construction works will result in an increase in noise levels during the works due to the presence of construction vehicles and machinery. The construction works will also result in an increase in personnel and traffic movement to and from the site. There is potential that rock breaking will be required during the construction works. However no blasting will be undertaken. A temporary increase in noise levels within the site may result in disturbance to wildlife within the immediate vicinity of the site.

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[13] Holman, C., Barrowcliffe, R., Birkenshaw, D., Dalton, H., Gray, G., Harker, G., ... & Vining, L. (2014). IAQM Guidanceon the Assessment of Dust from Demolition and Construction. *Institute of Air Quality Management, London (accessed 11.03. 14). www. iaqm/wpcontent/uploads/guidance/dust_assessment. pdf.* http://iaqm.co.uk/wpontent/uploads/guidance/iaqm_guidance_report_draft1.4.pdf.

It is likely that construction lighting will be required during the construction works. Fugitive lighting could deter movement of species in the area.

3.6.1.5 Invasive Species

No invasive plant species were recorded within the proposed development site during the ecological surveys. There is potential however that the movement of construction vehicles and material to and from the site may result in the introduction of invasive species if not appropriately managed. The establishment of invasive species can inhibit growth and crowd out native plant species.

3.6.2 Operational Phase

Potential operational phase impacts associated with the proposed development are discussed hereunder.

3.6.2.1 Air Emissions

During the operation of the proposed development, exhaust gases will be discharged to the atmosphere through a 31.8m high stack. The single stack cluster will contain up to six exhaust flues, one for each of the gas engines.

AWN Consulting Ltd. were commissioned by TOBIN to carry out an air dispersion modelling study of emissions from the proposed power plant. The air dispersion modelling study is included in the Air Quality and Climate Chapter within the Environmental Impact Assessment Report (EIAR) which accompanies this report within the planning application. A summary of the findings in relation to European sites is provided hereunder.

The purpose of the air dispersion modelling study was to determine the air quality impact, in line with the Industrial Emissions Directive (2010/75/EU) and Best Available Techniques (BAT) Reference Document for Large Combustion Plants (European Commission, 2017), from the proposed plant in isolation and cumulatively with the existing licensed facilities at Profile Park which included Pfizer, Takeda and the Grange Castle Power Facility.

Emissions from the Profile Park Power Plant were modelled using the AERMOD dispersion model (Version 19191) which has been developed by the U.S. Environmental Protection Agency (USEPA) (USEPA, 2019) and following guidance issued by the EPA (EPA, 2020). The primary gases released includes oxides of nitrogen (NOx).

The dispersion modelled considered the potential for air emission impacts on the closest sensitive ecosystems which included European sites within the ZoI. The impact of emissions of NO_X from the proposed plant and existing emission points on ambient ground level concentrations within the Glenasmole Valley SAC (001209), Rye Water Valley/Carton SAC (001398), Wicklow Mountains SAC (002122) and Wicklow Mountains SPA (004040) was assessed using AERMOD. An annual limit value of 30 µg/m^3 for NO_X is specified within EU Directive 2008/50/EC for the protection of ecosystems. The NO_X limit value is applicable only in highly rural areas away from major sources of NO_X such as large conurbations, factories and high road vehicle activity such as a dual carriageway or motorway. Annex III of EU Directive 2008/50/EC identifies that monitoring to demonstrate compliance with the NO_X limit value for the protection of vegetation should be carried out distances greater than:

- 5 km from the nearest motorway or dual carriageway;
- 5 km from the nearest major industrial installation;

- 20 km from a major urban conurbation.

As the sections of the European sites which are within the ZoI of the proposed development are within an urban setting and, more specifically, an industrial area, the limit value for NO_X for the protection of ecosystems is not technically applicable. Regardless, the annual average concentrations for NO_X from all emission points from the power plant were predicted at receptors within the European sites for all five years of meteorological data modelled (2016 – 2020). The receptor spacing ranged from 25m to 100m with 8,360 discrete receptors modelled in total within the European Sites.

The Profile Park Power Station NO_X modelling results are detailed in Table 3-2 below. Emissions from the facility lead to an ambient NO_X concentration (excluding background) which ranges from 2 – 3% of the annual limit value at the worst-case location within the European sites over the five years of meteorological data modelled. No background value has been added to the results as the background concentration of NO_X exceeds the limit value for the protection of ecosystems at most urban and suburban locations in Dublin based on a review of the EPA NO_X monitoring data (EPA, 2019; 2020). As previously discussed, the NO_X limit value is applicable only in highly rural areas away from major sources of NO_X such as large conurbations, factories and high road vehicle activity such as a dual carriageway or motorway. Therefore, the NO_X limit value is not applicable at Profile Park due to the urban and industrial nature of the environs of the proposed site. In addition, modelling results based on conservative assumptions indicate that the proposed power plant in isolation will have an imperceptible impact on NO_X concentrations on European sites within the ZoI, contributing at most 3% of the limit value at the worst-case location in the worst-case year modelled.

Table 3-1: Modelled NOx Concentrations (µg/m³) Excluding Background within the Glenasmole Valley SAC, Rye Water Valley/Carton SAC and Wicklow Mountains SPA/SAC for all Emission Points at Profile Park Power Station

Pollutant/ Year	Averaging Period	Process Contribution (µg/m³)	Limit Value (µg/Nm³) Note A	Process Contribution as a % of Limit Value
NO_x/2016	Annual Mean	0.71	30	2%
NO_x/2017	Annual Mean	0.79	30	3%
NO_x/2018	Annual Mean	0.66	30	2%
NO_x/2019	Annual Mean	0.71	30	2%
NO_x/2020	Annual Mean	0.94	30	3%

Note A: Air Quality Standards 2011 (from EU Directive 2008/50/EC and S.I. 180 of 2011).

The NO_X modelling results for the cumulative assessment are detailed in Table 3-2. Emissions from the facility lead to an ambient NO_X concentration (excluding background) which ranges from 15 – 18% of the annual limit value at the worst-case location within the European sites over the five years of meteorological data modelled. In addition, modelling results based on conservative assumptions indicate that the proposed development in isolation will have a small impact on NO_X concentrations within the European sites contributing at most 18% of the limit value at the worst-case location in the worst-case year modelled.

Table 3-2: Modelled NO_X Concentrations ($\mu g/m^3$) Excluding Background within the Glenasmole Valley SAC, Rye Water Valley/Carton SAC and Wicklow Mountains SPA/SAC for the Cumulative Assessment

Pollutant/ Year	Averaging Period	Process Contribution ($\mu g/m^3$)	Limit Value ($\mu g/Nm^3$) Note A	Process Contribution as a % of Limit Value
NO_x/2016	Annual Mean	4.65	30	15%
NO_x/2017	Annual Mean	5.45	30	18%
NO_x/2018	Annual Mean	4.74	30	16%
NO_x/2019	Annual Mean	5.02	30	17%
NO_x/2020	Annual Mean	5.54	30	18%

Note A: Air Quality Standards 2011 (from EU Directive 2008/50/EC and S.I. 180 of 2011).

With regard to NO_2, emissions from the facility will result in ambient NO_2 concentrations (including background) which are in compliance with the relevant limit values, reaching at most 74% of the 1-hour limit value (measured as a 99.8th percentile) and 70% of the annual limit value at the worst-case off-site location. NO_X concentrations at the worst-case ecological receptor in the worst-case year modelled were at most 3% of the limit value.

The cumulative assessment with Pfizer, Takeda and the Grange Castle Power Facility also found results to be in compliance with the relevant ambient air quality limit values. Emissions from both facilities lead to an ambient NO_2 concentration (including background) which is 74% of the maximum ambient 1-hour limit value (measured as a 99.8th percentile) and 71% of the annual mean limit value at the worst-case off-site receptor. NO_X concentrations at the worst-case ecological receptor in the worst-case year modelled were at most 18% of the limit value.

In conclusion, ambient levels of nitrogen oxides (as NO_2, including background) from the proposed power plant as well as the cumulative emissions from Pfizer, Takeda and the Grange Castle Power Facilities are in compliance with the air quality limit values for the protection of human health and it is predicted that air emissions from the installation will not result in any impacts on European sites.

3.6.2.2 Noise and Disturbance

During operation, the proposed power plant will be predominantly unmanned; however, personnel will be on site carrying out routine maintenance, attending meetings, and dealing with, deliveries etc. The power plant will be monitored and dispatched remotely, where a dedicated management team will be based. Disturbance during the operational phase will be limited and will not result in significant effects on the receiving environment.

Emergency external lighting will be provided throughout the building in accordance with BS 5266-1 Emergency Lighting. The permanent lighting will result in an increase in artificial lighting during the operational phase.

3.6.2.3 Pollution

During the operation of the proposed power plant, chemicals such as urea, lubricating oil and low sulphur oil will be stored on site. All material will be stored in tanks within designated, bunded areas. The tanks will be bunded in accordance with the requirements set out in the EPA publication, '*Storage and Transfer of Materials for Scheduled Activities*' (EPA, 2004), which states bunds are to contain 110% of the volume of the tank in the event of a tank rupture.

Considering the bunded storage areas and the lack of hydrological connectivity between the application site and nearby watercourses, there is no potential for leaks or spills of material to negatively impact nearby watercourse during the operational phase.

Surface water runoff will be generated from all surfaces within the facility that are exposed to rainwater or to which water is applied in order to clean. In order to comply with the Arterial Drainage (Amendment) Act 1995 the surface water system proposed as part of the development will include down pipes and gullies, full retention petrol interceptors and attenuation tanks and swales. The surface water system will also include flow control devices to limit the surface water runoff from the site to be similar to the Greenfield runoff as per the requirements of the Great Dublin Strategic Drainage Study[11]. All surface water will discharge to the Baldonnel Stream, post treatment, which is located adjacent to the proposed development site. There is no potential for water quality impacts on Baldonnel Stream during the operation of the development.

3.6.2.4 Lighting

The proposed development will result in an increase in artificial lighting in the immediate vicinity of the proposed development site.

3.7 Determining the Likely Zone of Influence

Guidance in AA of plans and projects in Ireland notes that a distance of 15km is recommended for the identification of relevant European sites[14]. For some projects the distance could be much less than 15km, and in some cases less than 100m, but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in-combination effects.

Using the source-pathway-receptor model[15, 16] an examination of the potential effects of the proposed development was undertaken (alone and / or in-combination) to identify what European sites, and which of their qualifying interests or special conservation interest species were potentially at risk. This was required to determine the ZoI for the proposed development. This conceptual model is a standard tool in environmental assessment. In order for an effect to occur, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism means there is no likelihood for the effect to occur. In the context of the proposed development, the model comprises:

- Source (s) – potential impacts from the proposed development, e.g. the runoff of sediment/construction pollution;
- Pathway (s) – hydrological, physical or ecological connectivity between the proposed development and the European site; and
- Receptor (s) – qualifying interests and/or special conservation interests of the European sites.

The Chartered Institute of Ecology and Environmental Management (CIEEM) defines the ZoI of a project as the area(s) over which ecological features may affected by the biophysical changes caused by the proposed project and associated activities.

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[14] Department of the Environment, Heritage and Local Government DEHLG (2010). Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities.
[15] Cooper, L. M. (2004). Guidelines for Cumulative Effects Assessment in SEA of plans. EPMG Occasional Paper 04/LMC/CEA, Imperial College London.
[16] OPW (2012), Arterial Drainage Maintenance categories, Source » Pathway » Receptor Chains for Appropriate Assessment. OPW, Galway

In order to establish the ZoI of the proposed development works, the likely key biophysical changes associated with the works were determined having regard to the project characteristics set out in Section 3.2 of this report. The ZoI of the proposed development is described hereunder.

Impacts associated with the loss of habitats will be confined to within the proposed development site boundary. The ZoI was therefore defined as all lands within the Planning Application Boundary. Consideration was also made to the proposed grid connection and gas line which are both proposed along existing roads. Both developments will be contained wholly within the road carriages.

With regards potential habitat degradation effects associated with the release of sediment and other pollutants to surface water, the ZoI of the proposed development is considered to include receiving waterbodies adjacent to or downstream of the proposed development site during the construction phase. The distance downstream is associated with the current biological condition of the accepting waterbody and its capacity to accept and assimilate sediment and other pollutants.

The spatial limit of dust impacts was established as 50m from the site entrance. The ZoI for dust impacts was therefore established as 50m from the proposed development site boundary.

Noise from the construction activity has the potential to cause disturbance to resting, foraging and commuting qualifying and special conservation interest species. Individual species will elicit differing behavioural responses to disturbance at different distances from the source of disturbance. Below is a summary of the documented zones of influence for varying species.

- Transport Infrastructure Ireland (formally the National Roads Authority) has produced a series of best practice planning and construction guidelines[17] for the treatment of certain protected mammal species (i.e. otter), which indicate that disturbance to terrestrial mammals would not extend beyond 150m.
- Cutts *et al.* (2013)[18] notes that different types of disturbance stimuli are characterised by different avifaunal reactions, however as a general rule of thumb, a distance of 300m can be used to represent the maximum likely disturbance distance for waterfowl.

The ZoI for noise/disturbance was therefore established as the proposed development site plus a 300m buffer.

3.8 Identification of Relevant European Sites

As mentioned above, the source-pathway-receptor conceptual model was used to identify a list of 'relevant' European sites (i.e. those which could be potentially affected). Nine European sites (six SAC's and three SPA's) which were identified within the 15km buffer, or had hydrological connectivity to the proposed development, are listed in

Table 3-3 below and illustrated in Figure 3.5. In addition, the nine European sites and the potential for source-pathway-receptor links for effect are outlined in Table 3-4.

[17] Ref: http://www.tii.ie/technical-services/environment/

[18] Cutts, N., Hemingway, K., Spencer, J., (2013). Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning and Construction Projects.

Table 3-3: European Sites within the 15km Buffer or with Hydrological Connectivity

[illegible]	Approximately [illegible] from Proposed Development
Rye Water Valley/Carton SAC (001398)	Ca. 6.1km north-west of the proposed development site
Glenasmole Valley SAC (001209)	Ca. 7.8km south-east of the proposed development site
Wicklow Mountain SAC (002122)	Ca. 9.5km south-east of the proposed development site
Wicklow Mountain SPA (004040)	Ca. 12.8km south-east of the proposed development site
Red Bog, Kildare SAC (000397)	Ca. 15km south-west of the proposed development site
South Dublin Bay SAC (000206)	Ca. 15.5km east of the proposed development site and hydrologically connected via the Baldonnell Stream and River Liffey (hydrological route ca. 25km)
South Dublin Bay and River Tolka Estuary SPA (004024)	Ca. 15km east of the proposed development site and hydrologically connected via the Baldonnell Stream and River Liffey (hydrological route ca. 25km)
North Dublin Bay SAC (000206)	Ca. 15km east of the proposed development site and is hydrologically connected via the Baldonnell Stream and River Liffey (hydrological route ca. 25km)
North Bull Island SPA (004006)	Ca. 18km north-east of the proposed development site and is and hydrologically connected via the Baldonnell Stream and River Liffey (hydrological route ca. 25km)

Figure 3-5: European Sites Within a 15km Radius of the Proposed Development Site

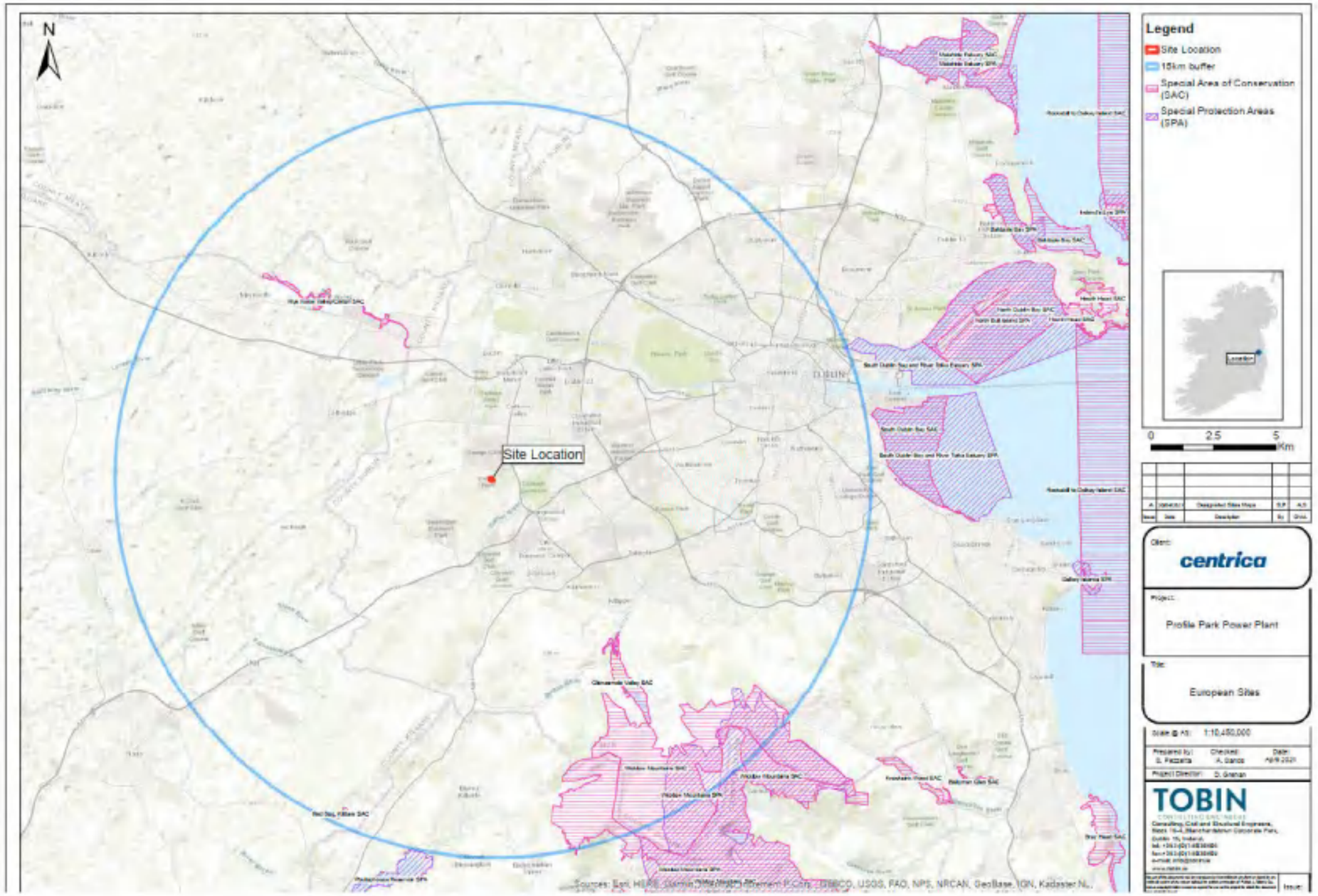

Table 3-4: European Sites within 15 km and Assessment of Likely Significant Effects

European Site	Qualifying Interests/ Special Conservation Interests	Source-Pathway-Receptor Link	Possibility of Likely Significant Effects
Rye Water Valley/Carton SAC (001398)	• Petrifying springs with tufa formation (Cratoneurion) [7220] • *Vertigo angustior* (Narrow-mouthed Whorl Snail) [1014] • *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1016]	The SAC is located approximately 6.1km from the proposed development site and thus occurs outside the ZoI of direct habitat impacts and dusts effects. Similarly, due to the distance there is no potential for the introduction of invasive plant species within the SAC. There is no surface water hydrological connectivity between the proposed development site and the SAC. The SAC is designated for groundwater dependant species. Both the SAC and the proposed development site are located within the *Dublin* groundwater body (European Code: IE_EA_G_008). However a review of the GSI website[19] indicates that the groundwater flow is towards the coast. The proposed development therefore occurs downstream of the SAC. There is no hydrogeological connectivity between the SAC and the proposed development.	No potential for likely significant effects

[19] https://www.gsi.ie/en-ie/data-and-maps/Pages/default.aspx

European Site	Qualifying Interests/ Special Conservation Interests	Source-Pathway-Receptor Link	Possibility of Likely Significant Effects
		No source-pathway-receptor link exists between the proposed development site and the SAC.	
Glenasmole Valley SAC (001209)	• Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210] • Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410] • Petrifying springs with tufa formation (Cratoneurion) [7220]	The SAC is located approximately 7.8km from the proposed development site and thus occurs outside the ZoI of direct habitat impacts and dusts effects. Similarly, due to the distance there is no potential for the introduction of invasive plant species within the SAC. There is no hydrological connectivity between the proposed development and the SAC. The SAC is designated for groundwater dependant species. The SAC is situated within the *Kilcullen* groundwater body (European Code: IE_EA_G_003) while the proposed development site is situated within the *Dublin* groundwater body (European Code: IE_EA_G_008). There is therefore no hydrogeological connectivity between the SAC and the proposed development. No source-pathway-receptor link exists between the proposed development site and the SAC.	No potential for likely significant effects

European Site	Qualifying Interests/ Special Conservation Interests	Source-Pathway-Receptor Link	Possibility of Likely Significant Effects
Wicklow Mountain SAC (002122)	• Oligotrophic waters containing very few minerals of sandy plains *(Littorelletalia uniflorae)* [3110] • Natural dystrophic lakes and ponds [3160] • Northern Atlantic wet heaths with *Erica tetralix* [4010] • European dry heaths [4030] • Alpine and Boreal heaths [4060] • Calaminarian grasslands of the *Violetalia calaminariae* [6130] • Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230] • Blanket bogs (* if active bog) [7130] • Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) [8110] • Calcareous rocky slopes with chasmophytic vegetation [8210] • Siliceous rocky slopes with chasmophytic vegetation [8220] • Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] • *Lutra lutra* (Otter) [1355]	The SAC is located approximately 9.5km from the proposed development site and thus occurs outside the ZoI of direct habitat impacts and dusts effects. Similarly, due to the distance there is no potential for the introduction of invasive plant species within the SAC. There is no hydrological connectivity between the proposed development site and the SAC. The SAC is designated for otter. Considering the distance between the proposed development site and the SAC (ca. 9.5km) there is no potential for disturbance impacts. No source-pathway-receptor link exists between the proposed development site and the SAC.	No potential for likely significant effects
Wicklow Mountain SPA (004040)	• Merlin (*Falco columbarius*) [A098] • Peregrine (*Falco peregrinus*) [A103]	The SPA is located approximately 12.8km from the proposed development site and thus occurs outside the ZoI of direct habitat impacts and dusts effects.	No potential for likely significant effects

European Site	Qualifying Interests/ Special Conservation Interests	Source-Pathway-Receptor Link	Possibility of Likely Significant Effects
		Similarly, due to the distance there is no potential for the introduction of invasive plant species within the SPA. There is no hydrological connectivity between the proposed development site and the SPA. Considering the distance between the proposed development site and the SPA (ca. 12.8km) there is no potential for the disturbance of the SCI species. In addition, there is no suitable habitat within the proposed development site to support the SCI species. No source-pathway-receptor link exists between the proposed development site and the SAC.	
Red Bog, Kildare SAC (000397)	• Transition mires and quaking bogs [7140]	The SAC is located approximately 15km from the proposed development site and thus occurs outside the ZoI of direct habitat impacts and dusts effects. Similarly, due to the distance there is no potential for the introduction of invasive plant species within the SAC. There is no hydrological connectivity between the proposed development site and the SAC.	No potential for likely significant effects

European Site	Qualifying Interests/ Special Conservation Interests	Source-Pathway-Receptor Link	Possibility of Likely Significant Effects
		The SAC is located within the groundwater body '*Red Bog of Kildare*' (European Code: IE_EA_G_085), while the proposed development site is located the *Dublin* groundwater body (European Code: IE_EA_G_008). There is therefore no hydrogeological connectivity between the SAC and the proposed development. No source-pathway-receptor link exists between the proposed development site and the SAC.	
South Dublin Bay SAC (000206)	• Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Salicornia and other annuals colonising mud and sand [1310] • Embryonic shifting dunes [2110]	The SAC is located approximately 15.5km from the proposed development site and thus occurs outside the ZoI of direct habitat impacts and dusts effects. Similarly, due to the distance, and lack of instream works, there is no potential for the introduction of invasive plant species within the SAC. The SAC is hydrologically connected to the proposed development via the Baldonnell Stream and the Liffey River (hydrological route ca. 25km). A pathway via hydrological connectivity therefore occurs between the proposed development site and the SAC.	A potential pathway link (hydrological connectivity) was identified between the SAC and the proposed development site. However it is evaluated, that no significant effects on the qualifying interests of the SAC are likely to occur as a result of the proposed works considering the following: • Lack of instream works within the Baldonnell Stream. • The downstream hydrological distance between the SAC and the proposed development site (ca. 25km). • The small scale and short-term nature of the proposed works (only small volumes of surface

European Site	Qualifying Interests/ Special Conservation Interests	Source-Pathway-Receptor Link	Possibility of Likely Significant Effects
			water runoff are anticipated) coupled with the volume of water and level of mixing anticipated within the receiving watercourses. • Any runoff will dissipate naturally or remain within the local area. There is therefore no potential for likely significant effects.
South Dublin and River Tolka Estuary SPA (004024)	• Light-bellied Brent Goose *(Branta bernicla hrota)*[A046] • Oystercatcher *(Haematopus ostralegus) [*A130] • Ringed Plover *(Charadrius hiaticula)* [A137] • Grey Plover *(Pluvialis squatarola)* [A141] • Knot *(Calidris canutus)*[A143] • Sanderling *(Calidris alba)*[A144] • Dunlin *(Calidris alpina)* [A149] • Bar-tailed Godwit *(Limosa lapponica)* [A157] • Redshank *(Tringa totanus)*[A162] • Black-headed Gull *(Chroicocephalus ridibundus)*[A179] • Roseate Tern *(Sterna dougallii)*[A192] • Common Tern *(Sterna hirundo*) [A193] • Arctic Tern *(Sterna paradisaea)*[A194] • Wetland and Waterbirds [A999]	The SPA is located approximately 15km from the proposed development site and thus occurs outside the ZoI of direct habitat impacts and dusts effects. Considering the distance between the SPA and the proposed development site there is no potential for the disturbance of the designated SCIs. In addition, there is no suitable habitat within the proposed development site to support the designated species. Similarly, due to the distance, and lack of instream works, there is no potential for the introduction of invasive plant species within the SPA. The SPA is hydrologically connected to the proposed development via the Baldonnell Stream and the Liffey River (hydrological route ca. 25km).	A potential pathway link (hydrological connectivity) was identified between the SPA and the proposed development site. However it is evaluated, that no significant effects on the qualifying interests of the SPA are likely to occur as a result of the proposed works considering the following: • Lack of instream works within the Baldonnell Stream. • The downstream hydrological distance between the SPA and the proposed development site (ca. 25km). • The small scale and short-term nature of the proposed works (only small volumes of surface water runoff are anticipated) coupled with the volume of water and level of mixing anticipated within the receiving watercourses.

European Site	Qualifying Interests / Special Conservation Interests	Source-Pathway-Receptor Link	Possibility of Likely Significant Effects
		A pathway via hydrological connectivity therefore occurs between the proposed development site and the SPA.	• Any runoff will dissipate naturally or remain within the local area. There is therefore no potential for likely significant effects.
North Dublin Bay SAC (000206)	• Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Salicornia and other annuals colonizing mud and sand [1310] • Atlantic salt meadows (*Glauco-Puccinellietalis maritimae)* [1330] • Mediterranean salt meadows (*Juncetalia maritimi)* [1410] • Embryonic shifting dunes [2110] • Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] • Humid dune slacks [2190] Petalwort (*Petalophyllum ralfii)* [1395]	The SAC is located approximately 15km from the proposed development site and thus occurs outside the ZoI of direct habitat impacts and dusts effects. Similarly, due to the distance and lack of instream works there is no potential for the introduction of invasive plant species within the SAC The SAC is hydrologically connected to the proposed development via the Baldonnell Stream and the Liffey River (hydrological route ca. 25km). A pathway via hydrological connectivity therefore occurs between the proposed development site and the SAC.	A potential pathway link (hydrological connectivity) was identified between the SAC and the proposed development site. However it is evaluated, that no significant effects on the qualifying interests of the SAC are likely to occur as a result of the proposed works considering the following: • Lack of instream works within the Baldonnell Stream. • The downstream hydrological distance between the SAC and the proposed development site (ca. 25km). • The small scale and short-term nature of the proposed works (only small volumes of surface water runoff are anticipated) coupled with the volume of water and level of mixing anticipated within the receiving watercourses. • Any runoff will dissipate naturally or remain within the local area.

European Site	Qualifying Interests / Special Conservation Interests	Source-Pathway-Receptor Link	Possibility of Likely Significant Effects
			There is therefore no potential for likely significant effects.
North Bull Island SPA [004006]	• Curlew *(Numenius arquata)* [A160] • Dunlin (*Calidris alpina)* [A149] • Bar-tailed Godwit (*Limosa lapponica)* [A157] • Redshank (*Tringa tetanus)* [AA162] • Black-headed Gull *(Chroicocephalus ridibundus)* [A179] • Sanderling *(Calidris alba)* [A144] • Black-tailed Godwit (*Limosa limosa)* [A156] • Knot (*Calidris canutus)* [A143] • Turnstone *(Arenaria interpres)* [A169 • Pintail *(Anas acutal)* [A054] • Light-bellied Brent Goose (*Branta bernicla hrota)* [A046] • Shelduck (*Tadorna tadorna)* [A048] • Teal *(Anas crecca)* [A052] • Grey Plover (*Pluvialis squatarola)* [A141] • Shoveler *(Anas clypeata)* [A056] • Oystercatcher (*Haematopis ostralegus)* [A130] • Golden Plover *(Pluvialis apricaria)* [A140] • Wetland and Waterbirds [A999]	The SPA is located approximately 15km from the proposed development site and thus occurs outside the ZoI of direct habitat impacts and dusts effects. Similarly, due to the distance, and lack of instream works, there is no potential for the introduction of invasive plant species within the SPA. Considering the distance between the SPA and the proposed development site there is no potential for the disturbance of the designated SCIs. In addition, there is no suitable habitat within the proposed development site to support the designated species. The SPA is hydrologically connected to the proposed development via the Baldonnell Stream and the Liffey River (hydrological route ca. 25km). A pathway via hydrological connectivity therefore occurs between the proposed development site and the SPA.	A potential pathway link (hydrological connectivity) was identified between the SPA and the proposed development site. However it is evaluated, that no significant effects on the qualifying interests of the SPA are likely to occur as a result of the proposed works considering the following: • Lack of instream works within the Baldonnell Stream. • The downstream hydrological distance between the SPA and the proposed development site (ca. 25km). • The small scale and short-term nature of the proposed works (only small volumes of surface water runoff are anticipated) coupled with the volume of water and level of mixing anticipated within the receiving watercourses. • Any runoff will dissipate naturally or remain within the local area. There is therefore no potential for likely significant effects.

4.0 IDENTIFICATION OF LIKELY SIGNIFICANT EFFECTS

4.1 Potential for Likely Significant Effects

Table 3-4 lists the European sites within 15km of the proposed development or which are hydrologically connected to the proposed development site. A source-pathway-receptor link was identified between the proposed development site and four European sites; South Dublin Bay SAC, South Dublin and River Tolka Estuary SPA, North Dublin Bay SAC and North Bull Island SPA due to hydrological connectivity. However it was considered that there is no potential for likely significant on the European Sites located within Dublin Bay due to the downstream distance of the European sites couples with the small-scale and short-term nature of the proposed works and the volume and mixing capacity of the receiving waters. There is no potential for significant effects on the conservation objectives of the qualifying interests/special conservation interests of the European sites, as a result of the proposed development.

4.2 Potential for In-Combination Effects

Article 6(3) of the Habitats Directive requires that:

"Any plan or project not directly connected with or necessary to the management of the 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."

It is therefore required that the potential impacts of the proposed development are considered in-combination with any other relevant plans or projects.

4.2.1 Projects

A search of the South Dublin planning portal[20] was undertaken.

<u>Distribution Centre (Planning Ref: SD20A/0124)</u>

Doherty Finnegan Kelly are proposing the development of a Distribution Centre in Profile Park, located immediately north-west of the proposed Power Plant site. An AA Screening of the proposed Distribution Centre was undertaken by Scott Cawley Ltd in 2020 (Scott Cawley, 2020a)[21]. The AA screening report concluded that there is no potential for the development of the proposed Distribution Centre to result in impacts on the receiving environment and consequently do not have the potential to affect the conservation objectives supporting the qualifying interests/special conservation interests of any European sites. There is therefore no potential for the in-combination of effects with the proposed development.

<u>Data Centre Development (Planning Ref: SD20A/0121)</u>

Digital Reality Trust are proposing the development of a data centre located in Profile Park Industrial Estate in Grange Castle Dublin 22, located ca. 320m north-west of the proposed Power Plant site. An AA Screening for of the proposed Distribution Centre was undertaken by

[20] https://www.sdcc.ie/en/services/planning/planning-applications/search-and-view/
[21] Scott Cawley (2020a) Appropriate Assessment Screening Report for a Proposed Distribution Centre. Profile Park, Nangor Road, Dublin 22. (Unpublished Report).

Scott Cawley Ltd in 2020 (Scott Cawley, 2020b)[22]. The report stated that potential impacts associated with the development do not have the potential to affect the receiving environment and consequently, do not have the potential to affect the conservation objectives supporting the qualifying interests/special conservation interests of any European sites and concluded that the proposed data centre has no potential in likely significant effects on any European site. Thus, there is no potential for the in-combination of effects with the proposed development.

<u>Other Smaller Developments</u>

There is potential that a Third Party Developer may develop a 110kV Substation located immediately south-east of the proposed Power Plant. On a precautionary basis, the proposed 110kV Substation has been considered for in-combination effects with the proposed development in the event that it is developed. The proposed 110kV Substation is likely to have similar environmental impacts to the proposed development, but at smaller scale. There are no hydrological links between the 110kV Substation site to any watercourse. Due to the location of the proposed 110kV Substation site and lack of connectivity to any European site, there is no potential for the development of the 110kV Substation, if it is undertaken, to result in-combination impacts with the proposed development that could result in significant effects on European sites.

4.2.2 Plans

The South Dublin Development Plan 2016-2022[23] indicates that the proposed development site is located within Enterprise and Employment zoned lands. The development plan indicates that Enterprise and Employment zoned lands will accommodate low to medium intensity enterprise employment uses.

The County Development Plan also indicates policies and objectives associated with the protection of biodiversity and European sites (Objectives: HCL12, HCL15, IE2 etc.). All new plans and projects proposed within the local administrative area must adhere to the above-mentioned objectives. Adherence to the Council's policies and objectives will therefore ensure that all plans and projects proposed within the area are subjected to the tests of Appropriate Assessment which will assess the potential for likely significant effects to European Sites, and where deemed necessary, the potential for an adverse effect on European Site integrity, either alone or in-combination with other plans and projects.

5.0 SCREENING ASSESSMENT CONCLUSION

It was determined, using best scientific knowledge, that potential impacts associated with the proposed development will not result in likely significant effects on the qualifying interests/special conservation interests of any European sites within the ZoI of the proposed development, in view of their conservation objectives. A Stage 2 Appropriate Assessment is therefore not required.

[22] Scott Cawley (2020b) Appropriate Assessment Screening Report for a Proposed Data Centre, Grange Castle South Business Park, Clondalkin, Dublin 22. (Unpublished Report).
[23] https://sdcc.ie/en/download-it/publications/south-dublin-county-council-development-plan-2016-2022-written-statement.pdf

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