

16.0 MATERIAL ASSETS

16.1 INTRODUCTION

The purpose of this chapter is to describe the methodology used to assess the potential impacts from the proposed power plant on the material assets in the study area, to describe baseline environment of the material assets in the study area, assess the likely impacts on these material assets and sets out mitigation measures to be put in place in order to reduce the likely impacts on the material assets. The Chapter considers the impacts on the material assets and not the people using the assets. People along with issues and impacts are discussed in Chapter 7 (Population and Human Health).

Material Assets are resources that are valued and that are intrinsic to specific places. These may be economic assets of human or natural origin. With regard to Material Assets, the August 2017 Draft Environmental Impact Assessment Report (EIAR) Guidelines published by the Environmental Protection Agency (EPA) state:

“The meaning of this factor is less clear than others. In Directive 2011/92/EU it included architectural and archaeological heritage. Directive 2014/52/EU included those heritage aspects as components of cultural heritage. Material Assets can now be taken to mean built services and infrastructure.”

Material Assets of a human origin include:

- Existing Properties;
- Road Network;
- Rail Network;
- Canal Network;
- Recreational facilities and amenities;
- Public Utilities;
- Pedestrian Ways; and
- Aviation.

Material assets of a natural origin include:

- Land resources;
- Geological Resource;
- Natural Amenities; and
- Raw Materials.

16.2 METHODOLOGY

16.2.1 RELEVANT GUIDELINES, POLICY AND LEGISLATION

The Material Assets Assessment was prepared in accordance with relevant European Union and Irish legislation and guidance, including the requirements of Annex IV of Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the



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environment (Environmental Impact Assessment (EIA) Directive) and in accordance with Schedule 6 of the Planning and Development Regulations 2001 as amended (S.I. No. 600 of 2001) and conforms to the relevant requirements as specified therein.

The following guidelines were referred to while preparing this appraisal:

- Guidelines on the Information to be Contained in Environmental Impact Statements (Environmental Protection Agency (EPA) (EPA 2002) (and revised and draft guidelines 2015/2017 (EPA 2015a; 2017));
- Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (EPA 2003) (and revised advice notes (EPA 2015b));
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of the Environment, Community and Local Government 2013); and
- Environmental Impact Assessment of Projects, Guidance on the preparation of the Environmental Impact Assessment Report (European Commission 2017).

16.2.2 DATA COLLECTION METHODS

As part of the compilation of this EIAR chapter, the previously discussed guidance, and advice documents were studied in order to fully understand the constraints in a study area around the proposed power plant in Profile Park. This study area was defined as relating to the closest materials assets as set out in in Section 16.1.

Material assets were identified through consultation and a review of available datasets and mapping.

16.2.3 CONSULTATION

Consultation was undertaken with the following organisations to determine what existing infrastructure is present within the proposed works area. Mapping, where provided by these organisations, was overlaid with the project mapping and assessed.

- Moffash Limited (Profile Park owners) who provided details of all relevant utilities in Profile Park including:
 - Telecommunications;
 - Water mains;
 - Foul sewers;
 - Electrical infrastructure;
- Gas Networks Ireland;
- Irish Water; and
- Department of Defence.



16.3 BASELINE ENVIRONMENT

16.3.1 BASELINE ENVIRONMENT – MATERIAL ASSETS OF HUMAN ORIGIN

16.3.1.1 Existing Properties

The site of the proposed power plant is located in Profile Park, Dublin 22. This is a 100 acre (40.5 Ha) fully enclosed, private business park. Existing tenants within Profile Park and the surrounding business and enterprise parks include Google, Microsoft, Digital Realty Trust, Telecity and others. Digital Realty Trust is located immediately adjacent to the proposed power plant.

There are no residential receptors within 350m of the proposed power plant site. The closest receptors are on the Baldonnel Road to the south of the site and the R134 to the north of the site.

16.3.1.2 Road Network

The proposed power plant is located within Profile Park Business Park which is to be accessed from the R134 New Nangor Road. The access to Profile Park situated within an 60km/h default urban speed zone. The R134 New Nangor Road has a carriageway width of approximately 7.3m in the vicinity of the access to Profile Park. The R134 also provides a fully segregated two-way cycle facility on the EB side along 2.25m width footpath. Tactile paving crossing points and street lighting are present at the junction along with roadside bus stops.

16.3.1.3 Rail Network

The national rail network is located approximately 2.3km to the north of the proposed power plant at its closest point.

16.3.1.4 Canals

Canals are artificial linear bodies of water that were originally constructed for the purpose of navigation. The Grand Canal is located approximately 1km to the north of the proposed power plant at its closest point.

16.3.1.5 Recreational Facilities and Amenities

As discussed in Section 7.3.1.6, some of the attractions within the vicinity of the proposed power plant are:

- Grange Castle Golf Course is the closest tourist attraction to the proposed development; Located approximately 221m south east of the site, the course is owned by South Dublin County Council;
- Corkagh Park is located 1.28km south east of the proposed site. The park is approximately 120 hectares in size and originally formed part of a manor house and estate;
- Clondalkin Round Tower is built on the site of a monastery and dates back to the 7th century. It is located approximately 3.23 km north east of the proposed development and is one of only four remaining round towers in Dublin;



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- The largest attraction to the proposed development is the Dublin Mountains Park, which is located approximately 5.24 km to the south, providing high quality recreation amenity and experience for both domestic and overseas visitors.

16.3.1.6 Public Utilities - Gas Network

Natural gas, supplied from the Gas Networks Ireland national grid, will be the primary fuel source for the plant. The proposed power plant is located approximately 1km from an existing Gas Network Ireland (GNI) compounds on the Bangor Road approximately 1km north of the site. Greener Ideas Limited has commenced discussions with GNI in relation to connecting to this compound.

16.3.1.7 Public Utilities - Power Infrastructure

There is existing ESB electrical ducting within the road system providing coverage throughout Profile Park.

The electrical generator associated with the gas engines will connect to the main transformers where the voltage will be increased to 110 kV. Electrical power will then be exported via an underground cable from the plants main transformers to an off site electrical substation. The final route of connection is yet to be confirmed. 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 EIAR.

16.3.1.8 Public Utilities - Communications Infrastructure

Telecoms infrastructure is present throughout Profile Park. Profile Park is connected directly onto the Dublin metropolitan fibre network called the T50. The T50 is a multi-duct fibre carrying system which extends over 44 km and provides connectivity to 24 business parks and from these into the global network.

16.3.1.9 Public Utilities - Water Supply Infrastructure

Water supply infrastructure comprises water mains, water network junctions, water hydrant etc. The closest infrastructure to the proposed power plant is a water mains which is located immediately adjacent the proposed power plant in the existing road system in Profile Park.

16.3.1.10 Public Utilities - Wastewater Collection Infrastructure

Wastewater infrastructure comprises sewer pump station, sewer manhole, sewer treatment plant, sewer stormwater network junctions etc. The closest infrastructure to the proposed power plant is a 220 mm foul sewer which is located immediately adjacent the proposed power plant in the existing road system in Profile Park.

16.3.1.11 Pedestrian Ways

Profile Park contains substantial pedestrian footpaths which provide access throughout the Park. It should be noted however Profile Park is a closed park with secure access.



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16.3.1.12 Aviation

The site of the proposed power plant has the following characteristics in relation to proximity to the Department of Defence Casement Aerodrome which is located to the south:

- The site lies under the “Inner Horizontal Surface” [as defined by the International Civil Aviation Organization] of Casement Aerodrome, which is at an elevation of 131.6m OD (i.e. at 56.8m above ground level on the site).
- The site also lies within Casement Aerodrome’s “Inner Zone” which is a circle of 2km radius centred at the centre point of Casement’s main runway: this is not an ICAO surface, but a Department of Defence restriction.
- The site lies at a lateral distance of 1.4km-1.55km approx. from the centreline of Casement’s main Runway 10/28, and at a lateral distance of 0.8km-1km approx. from the extended centreline of Casement’s subsidiary Runway 04/22;
- No part of the site, however, lies under any of Casement Aerodrome’s more significant Obstacle Limitation Surfaces: Approach Surface, Take-Off Climb Surface, or Transitional Surface; and no part of the site lies under any of Weston Airport’s or Dublin Airport’s Obstacle Limitation Surfaces;
- The site, with ground level at 74.8m OD, is low-lying in relation to Casement Aerodrome, i.e. at 11.8m below the aerodrome’s datum (of 86.6m OD), and at 22.4m below the aerodrome’s published ‘aerodrome elevation’ (319ft /97.2m OD).

16.3.2 BASELINE ENVIRONMENT - MATERIAL ASSETS OF NATURAL ORIGIN

16.3.2.1 Land Resources

The site of the proposed power plant is located in Profile Park which is a fully enclosed, private business park which has been developed to the highest of standards. The site has been identified by South Dublin County Council in its County Development Plan 2016-2022 as Zoning Objective ‘EE’ which is ‘*To provide for enterprise and employment related uses*’.

16.3.2.2 Geological Resources

There are no Geological Heritage Sites within 2km of the proposed power plant.

16.3.2.3 Natural Amenities (watercourses)

Natural amenities (watercourses) are considered and assessed in Chapter 12 (Biodiversity) and Chapter 9 (Hydrology and Hydrogeology).

16.3.2.4 Raw Materials

Raw materials (e.g. wood, steel, stone, sand etc.) required during the construction phase of the proposed power plant will be sourced from local suppliers, where possible. However, some of the equipment parts required for the plant may not be manufactured in Ireland and these will have to be imported.



16.4 ASSESSMENT OF SIGNIFICANT EFFECTS

16.4.1 DO NOTHING SCENARIO

Should construction of the proposed power plant not be developed, there will be no impact on any of the material assets detailed in Section 18.3, including existing properties, road network, rail network, canal network, recreational facilities and amenities, public utilities, pedestrian ways, aviation, land resources, geological resource, natural amenities (watercourses) and raw materials.

16.4.2 DO SOMETHING SCENARIO

Should the proposed power plant proceed as planned, it will impact upon material assets in the vicinity of the proposed works. The power plant has been designed to take account of the identified material assets and the implementation of the mitigation measures outlined in Section 16.5 will help reduce any negative impact on these material assets.

16.4.3 CONSTRUCTION PHASE EFFECTS

16.4.3.1 Existing Properties

No access will be required to third party properties to allow construction works to be completed for the project. Construction practices will ensure that any impacts regarding property accessibility will be minimised.

16.4.3.2 Road Network

Traffic on the road network generated by the construction phase of the proposed power plant will primarily consist of traffic related to either delivery of construction materials, or removal of excavated material from the site for disposal. Construction Phase staff will also generate trips to and from the construction sites. The traffic impact on the road network during the Construction Phase will have slight negative temporary effects.

Where roads are opened for the installation of electrical cables or gas pipelines, moderate negative temporary effects are likely to arise on these roads during construction.

16.4.3.3 Rail Network

There will be no interface and therefore no impact arising from the proposed power plant on the rail network.

16.4.3.4 Canal Network

There will be no interface and therefore no impact arising from the proposed power plant on the canal network.

16.4.3.5 Recreational Facilities and Amenities

It is not considered that the proposed power plant will have any direct or negative impact on tourist amenities. In addition, there are no anticipated negative effects arising from construction for local recreation facilities or amenities.



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16.4.3.6 Public Utilities

The laying of underground electrical cables and a gas pipeline as part of project works has the potential to directly impact the electrical and gas network service.

Water supply and wastewater collection infrastructure is present and has the potential to be directly impacted by construction digging works.

Communications infrastructure is present throughout the study area. There is potential for unidentified utilities to be damaged during the construction phase. Utilities will be further identified and mapped during the detailed design stage.

Potential slight negative temporary impacts on public utilities could arise during the construction of the proposed power plant.

16.4.3.7 Pedestrian Ways

No public pedestrian Ways will be impacted by the proposed power plant.

16.4.3.8 Aviation

A detailed aviation safety assessment is contained in Appendix 16.1. It should be noted that the main aviation receptor is Casement Aerodrome which is located approximately 400m to the south. As part of the project, Greener Ideas Limited consulted with the Department of Defence in relation to potential effects on Casement Aerodrome. The main issue to be addressed at this stage of the project is the use of cranes and to ensure details of same are advised to the Department at least 30 days in advance of usage on site. It should be noted that the Department of Defence has not highlighted any major concerns in relation to this project which cannot be mitigated as set out in Section 16.5.1. It is predicted that there will be a short term, negative and slight impact on aviation during construction.

16.4.3.9 Land Resources

Any existing material assets are either located overground or underground in a built up urban environment. There are no existing material assets on the site of the proposed power plant. There are material assets along the proposed routes associated with the electrical grid and gas connection. However, these assets are development in built up ‘made’ land. Therefore an imperceptible negative effect on land-take is predicted.

16.4.3.10 Geological Resources

There are no Geological Heritage Sites within 2km of the proposed power plant. There will be no direct or indirect effects on geological resources arising from the construction of the proposed plant.

16.4.3.11 Natural Amenities (e.g. watercourses)

There are potential surface water quality impacts associated with the proposed power plant which could indirectly impact watercourses, these would be common to most construction sites in the absence of control measures or mitigation (see Chapter 9 (Hydrology and Hydrogeology)).



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16.4.3.12 Raw Materials

Raw materials (e.g. wood, steel, stone, sand etc.) required during the construction phase of the proposed power plant will be sourced from local suppliers, where possible. However, some of the equipment parts may not be manufactured in Ireland and these will have to be imported. The plant may also require the use of some non-renewable materials. However, consideration will be given to the sustainable sourcing of all raw materials and materials will be reused where possible. Methodologies will be chosen at design stage to decrease the amount of imported material required. There will be an imperceptible, negative and permanent impact on raw materials as a result of the proposed power plant.

16.4.4 OPERATIONAL PHASE IMPACTS

16.4.4.1 Existing Properties

During its operations phase, the proposed power plant will operate in accordance with its Industrial Emissions Licence and an emissions or impacts on its nearest receptors will be regulated by the Environmental Protection Agency in accordance with same. There will be imperceptible, brief effects on the road network during the operational phase.

16.4.4.2 Road Network

During its operations phase, the traffic generated by the proposed power plant will be related to the planned and periodic maintenance works. There will be imperceptible, brief effects on the road network during the operational phase.

16.4.4.3 Rail Network

There will be no direct or indirect impacts on the rail network arising from the proposed power plant. The project will therefore have a neutral effect on the rail network.

16.4.4.4 Canal Network

There will be no direct or indirect impacts on the canal network arising from the proposed power plant. The project will therefore have a neutral effect on the canal network.

16.4.4.5 Recreational Facilities and Amenities

There will be no direct or indirect impacts on recreational facilities and amenities arising from the proposed power plant. The project will therefore have a neutral effect on recreational facilities and amenities.

16.4.4.6 Public Utilities

During operation the proposed power plant will generate electricity with an incoming gas supply and export electricity either to an adjacent substation within Profile Park or to Castlebaggot 110 / 220 kV electrical substation. Both the national gas network operated by GNI and the national distribution and transmission system operated by ESB Networks and EirGrid would facilitate these connections subject to commercial agreement. The proposed power plant will have the capacity to provide power both to the grid to support renewable energy integration and also to provide a direct power supply to data centres. Therefore the plant would have a positive and long term effect on public utilities.



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16.4.4.7 Pedestrian Ways

There will be no direct or indirect impacts on pedestrian ways arising from the proposed power plant. The project will therefore have a neutral effect on the pedestrian ways.

16.4.4.8 Aviation

A detailed aviation safety assessment is contained in Appendix 16.1. It should be noted that the main aviation receptor is Casement Aerodrome which is located 400m to the south. As part of the project, Greener Ideas Limited consulted with the Department of Defence in relation to potential effects on Casement Aerodrome. A summary is provided below of the main key potential effects during the power plant operations phase.

- The site at Profile Park lies well clear of all Approach Surfaces, Take-Off Climb Surfaces, and Transitional Surfaces at Casement Aerodrome, which are the more important Obstacle Limitation Surfaces [as defined by the International Civil Aviation Organization (ICAO) and by the European Aviation Safety Agency (EASA)]. The site is also clear of all Surfaces for Weston and Dublin Airports.
- The site lies under Casement’s Inner Horizontal Surface, but the site is low-lying (at 74.8m OD) so that the highest part of the proposed development (at 106.6m OD) is 25m below Casement’s Inner Horizontal Surface and is well clear of it.
- The site is in a location where the ‘Inner Zone’ (which is not an ICAO surface, but a local military zone) has a building height limit at 106.6m OD, and the highest part of the proposed development does not project above this height limit.
- A Study by AWN indicates that emissions from the power plant will not interfere with aviation, and specifically that any adverse oxygen levels, temperatures, or visual effect will be contained well below Casement Aerodrome’s Inner Horizontal Surface.

It is predicted that there will be a long term, negative and slight impact on aviation during construction. It should be noted that the Department of Defence has not highlighted any major concerns in relation to this project which cannot be mitigated as set out in Section 16.5.2.

16.4.4.9 Land resources

The proposed power plant will be sited on a greenfield site which is zoned for enterprise and employment infrastructure of this nature. There will be a long-term impact on land use and an moderate negative effect on the land resource.

16.4.4.10 Geological Resource

There will be no direct or indirect impacts on geological resources arising from the proposed power plant. The project will therefore have a neutral effect on geological resources.

16.4.4.11 Natural Amenities (e.g. watercourses)

There will be no significant direct or indirect impacts on natural amenities arising from the proposed power plant. The project will therefore have a neutral effect on natural amenities.



16.4.4.12 Raw Materials

There will be no direct or indirect impacts on raw materials arising from the proposed power plant. The project will therefore have a neutral effect on raw materials.

16.5 MITIGATION AND MONITORING MEASURES

Following an assessment of the potential impacts, the proposed power plant was methodically reviewed, and mitigation methods were developed that will avoid, prevent or reduce any negative effects on the environment.

16.5.1 CONSTRUCTION PHASE

16.5.1.1 Existing Properties

There are no mitigation measures relating to existing properties outside of Profile Park. Within Profile Park impacts on the neighbouring Digital Realty data centre will be mitigated in accordance with the CEMP which is included in Appendix 3.2. In summary, the application of general construction best practise will ensure limited nuisance is experienced at this location.

16.5.1.2 Road Network

The proposed works will require the crossing of road infrastructure and the opening of some roads to lay underground electrical cables and a gas pipeline. Chapter 15 (Traffic and Transport) details specific mitigation measures to be undertaken during the construction phase to eliminate and reduce any impacts on the road network.

16.5.1.3 Public Utilities

During the project detailed design stage, further consultation will be undertaken with all communication utility providers to confirm the current locations of their infrastructure. This information will be considered in the detailed design of the project and the infrastructure avoided where possible.

16.5.1.4 Aviation

While it is unlikely that any cranes used during construction will reach the aerodrome's Inner Horizontal Surface, it will be necessary [under S.I. 215 of 2005 – 'Irish Aviation Authority (Obstacles to Aircraft in Flight) Order'] for prior notification of the use of any crane/s to be submitted, at least 30 days in advance, to the Irish Aviation Authority and to Casement Aerodrome (through the Department of Defence)

16.5.1.5 Land Resources

All impacted will be mitigated in accordance with the CEMP which is included in Appendix 3.2. In summary, the application of general construction best practise will ensure limited nuisance is experienced at this location.

16.5.1.6 Geological Resource

No specific mitigation measures are required during the construction phase with regards to geological resources.



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16.5.1.7 Natural Amenities (e.g. watercourses)

Mitigation measures for the protection of watercourses are detailed in Chapter 9 (Hydrology & Hydrogeology) and will be adhered to throughout the construction phase.

16.5.1.8 Raw Materials

Consideration will be given to the sustainable sourcing of all materials. Materials will be reused where possible. The methodologies chosen at design stage, will result in a decrease in the amount of imported material, which in turn will reduce the impact of traffic on the surrounding roads and will result in less demand on non-renewable sources such as quarries.

Other mitigation measures which will be employed in relation to raw materials are as follows:

- Design will be optimised to minimise the requirements for raw materials;
- Materials will be reused where possible;
- Raw materials will be sourced locally where possible; and
- Raw materials will be managed in accordance with the CEMP for construction.

16.5.2 OPERATION PHASE

The only mitigation and monitoring measures required during operations relate to aviation.

The Department of Defence has advised on the following requirements:

- Due to the proximity to Casement Aerodrome and site location within EIR23 airspace, should negative impacts to Air Corps flight operations occur from flue emissions or otherwise, Greener Ideas Limited will take immediate actions to mitigate such impacts to an acceptable level.
- Due to the proximity to Casement Aerodrome, Greener Ideas Limited will implement adequate bird control measures during the construction phase to mitigate the effects of birds on Air Corps flight operations.

16.6 CUMULATIVE EFFECTS

Material assets will interact with other EIAR topics given the nature of the works. Project related traffic will also interact with the land resource in the area which is predominately agricultural. Mitigation measures have been proposed within this EIAR to eliminate and reduce any adverse effects from this interaction on the land. The raw materials needed for the project also interact with the project traffic. Materials will be reused where possible. The methodologies chosen at design stage will result in a decrease in the amount of imported material, which in turn will reduce the impact of traffic on the surrounding roads and will result in less demand on non-renewable sources such as quarries.

Where roads are opened for the installation of cables or pipelines, interaction will occur between material assets (namely the local road network and utility providers), traffic and population. Further consultation will be undertaken with utility providers in the project detailed design stage and mitigation measures put in place to minimise any adverse impacts.



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With regard to the cumulative impact of the interactions of impacts, it is unlikely that any of these interactions will result in significant additional impacts that are not already anticipated in this EIAR.

16.7 RESIDUAL IMPACTS

The material assets identified in the study area are considered to be typical infrastructure frequently encountered in civil engineering infrastructure projects, in both rural and urban environments. As such, it is considered that the resulting predicted impacts on material assets from the proposed power plant will be positive, slight and permanent.

16.8 REFERENCES

- European Union (1985). Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment [1985].
- European Union (2014). Directive 2014/52/EU of 16 April 2014 on the assessment of the effects of certain public and private projects on the environment [2014].
- Planning and Development Regulations 2001 – S.I. No. 600 of 2001
- Department of the Environment, Community and Local Government (2013). Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment.
- European Commission (2017). Environmental Impact Assessment of Projects, Guidance on the preparation of the Environmental Impact Assessment Report.
- Environmental Protection Agency (2002). Guidelines on the Information to be Contained in Environmental Impact Statements.
- Environmental Protection Agency (2003). Advice Notes on Current Practice in the Preparation of Environmental Impact Statements.
- Environmental Protection Agency (2015a). Advice Notes for Preparing Environmental Impact Statements.
- Environmental Protection Agency (2015b). Revised Guidelines on the Information to be Contained in Environmental Impact Statements.
- Environmental Protection Agency (2017). Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.

