



Quod

Environmental Statement

Non-Technical
Summary

Barry Biomass Facility

JULY 2022

Q220002

Contents

1.	Introduction	2
2.	Site and Setting	5
3.	EIA Methodology	8
4.	Alternatives	10
5.	Description of the Development	14
6.	Construction and Decommissioning	20
7.	Climate Change & Greenhouse Gas Emissions	21
8.	Noise and Vibration	23
9.	Air Quality	26
10.	Population and Human Health	29
11.	Landscape and Visual Impacts	31
12.	Effect Interactions	36
13.	Summary of Mitigation, Monitoring and Residual Effects	37

1. Introduction

- 1.1 This document comprises the Non-Technical Summary (NTS) of an Environmental Impact Assessment (EIA) process relating to a renewable energy generation facility ('Facility') which will use waste wood as fuel. The facility and associated infrastructure ('Development') is located off Woodham Road, Barry Docks, Vale of Glamorgan, South Wales, CF63 4JE (the 'Site').
- 1.2 This document forms part of an Environmental Statement (ES) that has been submitted to Planning and Environment Decisions Wales (PEDW) in relation to a planning appeal ('Appeal') which has been made by Biomass UK No.2 Limited ('Appellant'). The Appeal has been made against an Enforcement Notice which was issued by the Vale of Glamorgan VoGC ('VoGC') on 17 September 2021. The Enforcement Notice relates to two alleged issues, broadly (1) development of the Facility without planning permission, and (2) the use of land to the north of the site for storage without planning permission.
- 1.3 The Facility on the Site was granted planning permission by the VoGC on 31st July 2015 ('2015 Permission') (with landscaping being the only reserved matter and approved in 2016). The Facility was substantially constructed by early 2018. An Environmental Permit was granted by Natural Resources Wales (NRW) on 7th February 2018 (and varied in March 2019), although the Development had not begun to operate at the time that the ES was prepared (July 2022).
- 1.4 A photograph of the Development as it has been built is shown in Figure 1. The location of the Site is shown in Figure 2.

Figure 1: Photograph of the Development (February 2021) (taken from Dock View Road, looking south)



Figure 2: Site Location Plan



What are an EIA and ES?

- 1.5 EIA is a tool which is used to assess the significant effects of a development project on the environment and is required by legislation in Wales for certain development projects which are likely to have significant impacts on the environment. The purpose of the EIA is to inform decision making by identifying the likely significant effects that the Development (as-built) may have on the environment and to identify measures to prevent, reduce or offset any significant adverse effects identified, together with any monitoring that may be necessary. The findings of the EIA process are reported in an ES.
- 1.6 After considering the Appellant's appeal submission against the Enforcement Notice, PEDW issued a screening direction to the Appellant on 28 January 2022 stating that they considered that the Development to be 'EIA development' (Schedule 1 development) and an ES was required. The ES will be taken into consideration in determining the ground (a) appeal which forms part of the Appeal. This ES has been prepared by Quod and a team of competent experts in line with the current legislative framework relating to EIA which is in force in Walesⁱ.
- 1.7 The ES and all material relating to the Appeal are available online at [PEDW's website](#) and at the VoGC's Planning Offices (Planning Appeal Reference: CAS-01341-N2Q5B8).
- 1.8 Copies of the ES can also be obtained from Quod by emailing reception@quod.com or calling 020 3597 1000. Additional copies of this NTS are available free of charge.
- 1.9 Key members of the EIA project team included:
- EIA Co-ordinator - Quod
 - Climate Change and Greenhouse Gas Emissions - Ecolyse
 - Noise and Vibration - Sol Acoustics
 - Air Quality - Entran
 - Population and Human Health - Savills
 - Landscape and Visual Impacts - Leyton Place

ⁱ The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (as amended)

2. Site and Setting

Where is the Site?

- 2.1 The Site is located in Barry, South Wales (See Figure 2) within the administrative area of the Vale of Glamorgan VoGC at National Grid Reference ST 12595 67700. The Site covers an area of approximately 1.07 hectares (ha).
- 2.2 The Site is located within the docks area of Barry and was built on previously developed (brownfield) land immediately adjacent to industrial units on Woodham Road. The Site is rectangular in shape and is oriented roughly north-west/south-east.
- 2.3 Access to the Site is gained via David Davies Road to the south and Ffordd-Y-Mileniwm is located to the north east. The eastern extent of the Barry Waterfront residential development is located to the south and south west of the Site and Dow Corning Chemical Works complex is located approximately 1km to the north east.
- 2.4 Typical businesses in Barry Docks and the Port of Barry include a mixture of manufacturing, storage, open storage, light industrial and commercial operations, along with aggregates and waste processing, energy generation and other related activities.

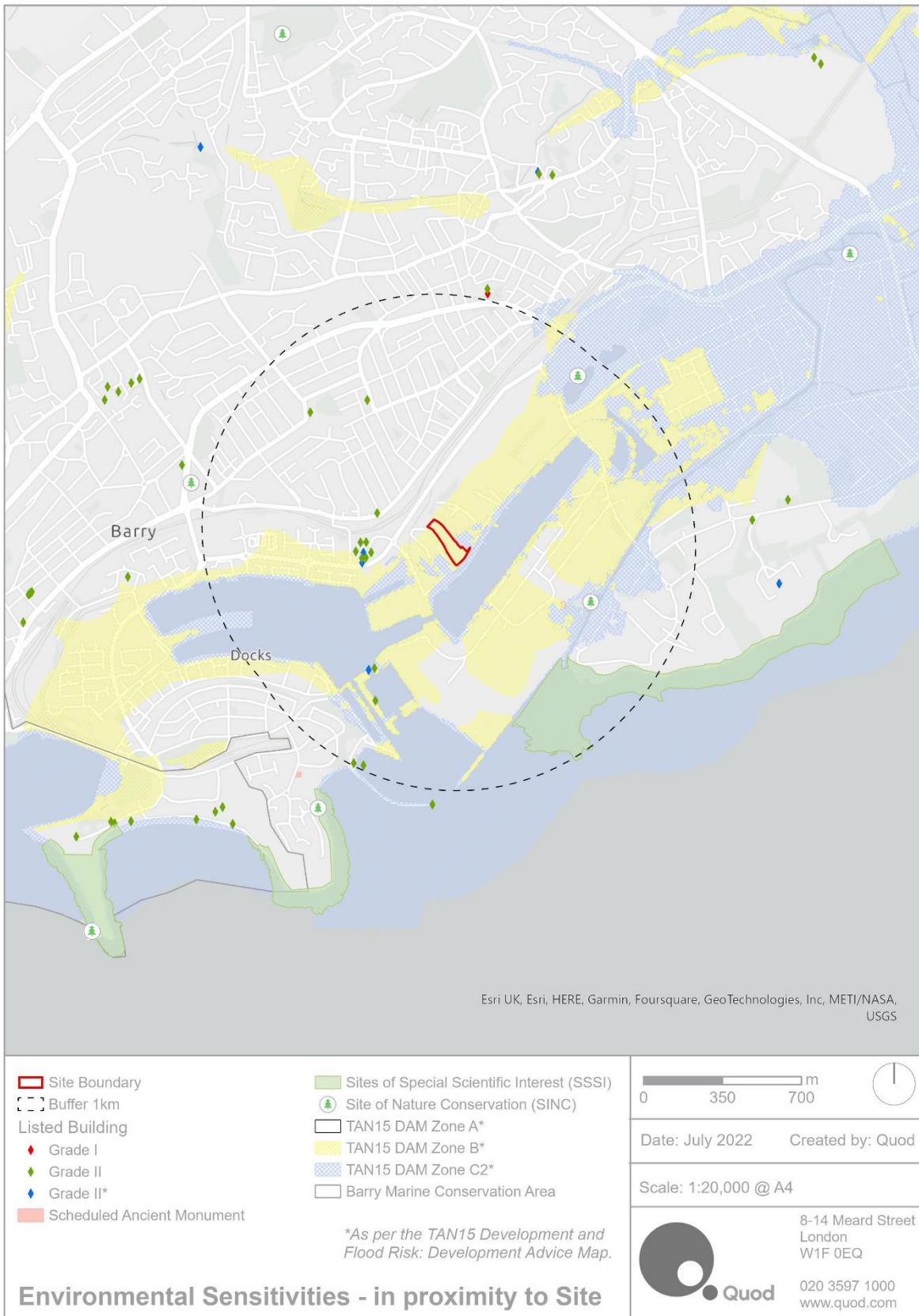
What does the Site currently include?

- 2.5 Construction of the Development was largely completed in January 2018. The outward appearance of the Development is that of a modern industrial development comprising three main buildings and a single freestanding stack as shown in Figure 1. The Site is surrounded by security fencing and has a gated entrance. The buildings range in height from 11m to 23m, with the flue stack reaching 43m above ground level. The majority of the northern and eastern parts of the Site is hardstanding.
- 2.6 Section 5 describes the Development in more detail. Figure 6 shows the boundary of the Site and the layout and key components of the Development as it has been built (based on a detailed survey of the Site undertaken in March 2022).

What are the main environmental sensitivities?

- 2.7 Figure 3 shows some of the key environmental sensitivities in proximity to the Site.
- 2.8 The nearest existing residential properties are on Dock View Road and new residential properties are currently being built to the south of the Site as part of the Barry Waterfront development.
- 2.9 The closest listed buildings are within 300m of the Site boundary and include the Grade II* Pedestal and Statue of David Davies, Grade II* Former Barry Docks Offices, Grade II listed Lampstands and the Grade II listed Former Customs House and Mercantile Marine Office. The closest Scheduled Monument (Round Barrow 612m N of Bendrick Rock) is located approximately 500m south east of the Site, beyond No.2 Dock. The Site is not located within an Area of High Archaeological Potential, Conservation Area, or area of value for landscape character. No effects on heritage have been identified and this issue isn't considered further in the EIA.
- 2.10 The Severn Estuary Ramsar and Special Protection Area (SPA) is located approximately 3.9km east of the Site. The Severn Estuary Special Area for Conservation (SAC) designation is located 6km from the Site boundary.
- 2.11 There are two Sites of Special Scientific Interest (SSSIs) located within 2km of the Site, although both are designated for their geological rather than ecological importance. The closest non-statutory nature conservation sites include Fields at Merthyr Dyfan (1.8km), Cadoxton Wetlands (0.8km), Cadoxton River (0.8km), North of North Road (2km), Nells Point East (1.1km), Friar's Point (1.93km) and Gladstone Road Pond (1.1km).
- 2.12 Air Quality Management Areas (AQMAs) are defined as areas where levels of certain pollutants are above those required by legislation for health reasons. The Site is not located within, or in proximity to an AQMA.
- 2.13 The Site is located adjacent to Barry Docks, specifically No. 2 Dock. The closest watercourse is Cadoxton River, located approximately 630m south east of the Site which drains into the Bristol Channel.
- 2.14 The Site lies within a zone which has been identified as an '*Areas known to have been flooded in the past evidenced by sedimentary deposits*'. Recent analysis by flood engineers in July 2022 concludes there is a relatively low risk of flooding at the Site over the lifetime of the Development. As such, risks would not be significant. Therefore, this issue has not been considered further. The Appellant has already signed up to the NRW Flood Warning Service and also has a Flood Emergency Plan in place.

Figure 3: Environmental Sensitivitiesⁱⁱ



ⁱⁱ Listed Building dataset source: *Designated Historic Asset GIS Data, The Welsh Historic Environment Service (Cadw), June 2022, licensed under the Open Government.*

3. EIA Methodology

What is the EIA Development?

- 3.1 The 'EIA development', for the purposes of this ES, is the alleged unauthorised development to which the Enforcement Notice relates. This principally includes the Development as it has been built. Information about the Development has been obtained through up-to-date photographs, a topographic survey, 3-dimensional survey and information from the Appellant.
- 3.2 The ES assesses the environmental effects of the Development at all stages of its lifetime, including construction, operation and decommissioning. As the Development has already been built, the assessment of effects that could have occurred during the construction stage is retrospective.

How was the scope of the ES defined?

- 3.3 Scoping is the process which helps to define the extent and content (scope) of the EIA that takes place and the information that will be included in the ES. Applicants can request a 'scoping opinion' under the EIA Regulations from the decision maker, although requesting a scoping opinion is not mandatory.
- 3.4 The scope of the EIA was informed by a thorough scoping exercise undertaken by competent experts. The scoping exercise was informed by correspondence with PEDW, scoping undertaken for previous voluntary ESs, independent reviews of previous voluntary ESs and consultation responses.
- 3.5 The following environmental topics were scoped out of the ES as no significant effects were identified:
- Heritage (built heritage archaeology);
 - Major accidents and disasters;
 - Ground conditions and contaminated land;
 - Flood risk, water resources and drainage;
 - Transport and highway impacts;
 - Ecology;
 - Waste and materials; and
 - Socio-economics.
- 3.6 Information to justify the above topics being scoped out of the EIA is appended to the ES.
- 3.7 The following topics were scoped into the EIA:
- Climate Change and Greenhouse Gases;
 - Noise and Vibration;

- Air Quality;
- Population and Human Health; and
- Landscape and Visual.

3.8 An ES chapter is provided for each of the topics scoped into the EIA and the overall findings for each are presented in this NTS.

How were environmental effects identified?

- 3.9 For each topic, environmental baseline conditions and the significance of environmental effects before and, where necessary, after mitigation were identified. The ES provides a description of the environmental conditions before construction of the Development (the 'Pre-Construction baseline'), the existing conditions (the 'Current Baseline') and describes how the environment may change in the future without the Development (the 'Future Baseline').
- 3.10 Each assessment identifies receptors which the specialist team consider could be sensitive to impacts of the Development such as residents and designated sites. The environmental effects of each stage of the Development are identified and assessed using a variety of methods using the most up-to-date information and guidance, for example computer modelling and calculations. Effects were then assessed as being significant or not significant. Each assessment attaches a level of 'significance' to the effects that were identified as significant, i.e. either major, moderate, minor or negligible. The significance of effects was determined using best practice and published standards and typically reflect the relationship between the scale of change taking place compared to the baseline (magnitude of the impact) and the sensitivity or value of the resource or receptor being affected. The nature of effects is expressed as being either adverse (negative), negligible or beneficial (positive).
- 3.11 Where necessary, additional mitigation measures are identified to reduce or offset potential adverse effects. 'Residual effects' are those that remain after mitigation measures have been implemented.
- 3.12 The assessments also consider 'cumulative' effects which are those that can arise from individual effects of the Development interacting, such as Noise and Air Quality on the same receptor (known as 'effect interactions'). In addition, the ES considers whether cumulative effects could arise from the Development in combination with other development schemes either existing or planned. The cumulative schemes considered in the assessments included the adjacent Barry Waterfront development which was under construction at the time of writing (July 2022).

4. Alternatives

Introduction

- 4.1 The ES provides a description of the reasonable alternatives to the Development that were considered by the Appellant on the advice of its specialist team, including alternative sites, technology, layout and design.

Were any alternative sites considered?

- 4.2 Sunrise Renewables Ltd, the original applicant for the planning application that led to planning permission being granted at the Site in 2010 (the '2020 Permission' Appeal Ref: APP/Z6950/A/2114605) for a very similar development, identified the Site as being suitable for a renewable energy facility primarily due to its industrial location and good highway access. The granting of the 2010 Permission and the 2015 Permission established and re-established the principle of renewable energy development (in the form of waste wood combustion) on the Site and as such, it continues to fulfil the requirements the Appellant. As the 2015 Permission was lawfully commenced and the construction of the Development has been completed, the Appellant has not given any further consideration to alternative sites.

Is there an alternative to the Facility becoming operational?

- 4.3 At the time of writing, the Facility had been constructed but had not been, and was not operational. The Facility is therefore not currently accepting any waste-wood fuel. Alternatives to the Development becoming operational in the near future, such as the Facility being demolished, or it remaining as non-operational, were not considered to be reasonable alternatives by the Appellant. This is because the Development has already been constructed under planning permission which was granted lawfully in 2015.

Were alternative site layouts and building designs considered?

- 4.4 Figure 4 shows the layout of the 2010 Permission which was a single building for the renewable energy plant. Figure 5 shows the approved layout of the 2015 Permission which includes three, functionally interconnected buildings, with ancillary external structures and a chimney stack (or flue). The 2015 Permission comprises two buildings that are lower than the building height approved under the 2010 Permission and one that is higher.
- 4.5 The 2015 Permission allowed for separate structures to accommodate the functions of the selected plant technology and a reduced building footprint compared to that of the 2010 Permission. The finish of the buildings and structures was the same as the 2010 Permission.

Figure 4: 2010 Permission Approved Layout

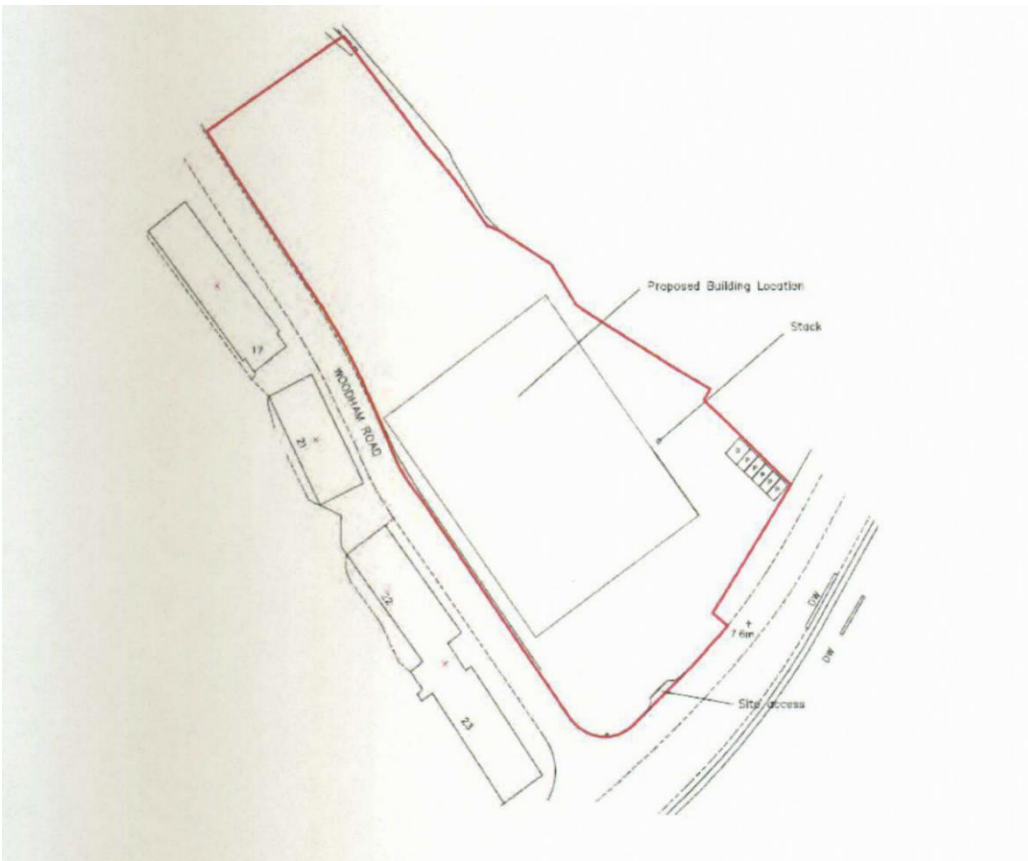
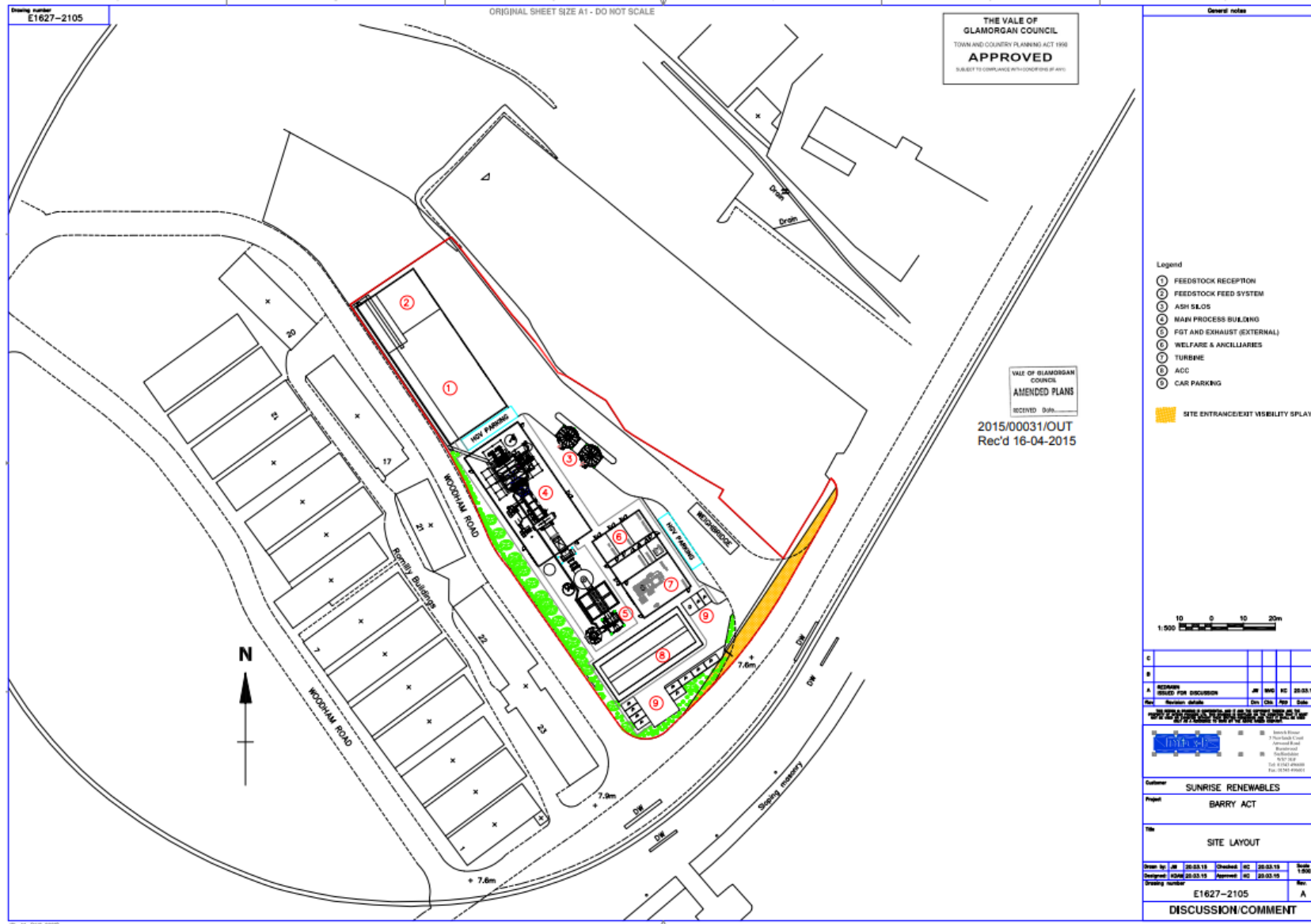


Figure 5: 2015 Permission Approved Layout



Were alternative stack heights considered?

- 4.6 As part of the 2010 Permission, the flue stack was 20m high and 1.0m in diameter. Detailed air quality modelling undertaken to inform the 2015 Permission determined that an increase in the stack height (to 43m) and diameter (to 1.6m) was required to meet the relevant air quality standards for all pollutants.

Were any alternative technologies considered?

- 4.7 Prior to construction, a number of alternative technology solutions were considered. The proposed technology was subject to scrutiny by NRW as part of the Permit application process to confirm they were the Best Available Techniques.
- 4.8 In seeking to optimise the efficiency and output potential of the Facility, the pyrolysis system detailed in the 2010 Permission was changed to an alternative system manufactured by Outotec (gasification technology) as it was considered to better suit the specific requirements of the Facility.
- 4.9 Gasification (Advanced Thermal Treatment (ATT) technology) combined with a heat recovery boiler and associated steam turbine generation was selected for the following reasons:
- It has numerous environmental advantages over incineration and other technologies in terms of lower mass flow of air pollutants, lower water usage and smaller footprint.
 - It has lower operating costs than conventional incineration.
 - It is reliable technology with numerous established sites worldwide.
 - It is recognised by the UK government as being a preferred technology as opposed to traditional 'Mass Burn' moving grate combustion processes.

Were alternative access arrangements considered?

- 4.10 The Site is accessed via a single access/egress point on David Davies Road via Cory Way. No other vehicular access points or routes have been considered for the Development. The Site is adjacent to the dockside, although bringing in biomass fuel by sea is not being taken forward by the Appellant due to technical, environmental and commercial reasons.

5. Description of the Development

- 5.1 Government policy, legislation and guidance from the Committee on Climate Change all emphasise the need to rapidly decarbonise the energy sector through renewable and low carbon sources. Renewable energy developments are fundamental in the delivery of the underlying policies relating to decarbonisation and the transition to a circular low carbon economy. The Facility utilises 100% waste wood fuels that are considered to meet the definition of renewable as defined by Ofgem.
- 5.2 The Development has been designed and constructed utilising highly proven and regulated gasification technology which will efficiently process waste wood into renewable energy. The gasification facility uses an technology process (ATT) that produces a combustible synthesis gas, which is then used to raise steam and generate electricity, through steam cycle turbine generation. Once operational, the Development will supply the Local Distribution Network with an annual average of 10 Megawatt (Mwe) of electricity. This supply of renewable electricity is equivalent to the annual energy usage of approximately 25,100 homesⁱⁱⁱ.
- 5.3 The Development comprises three main industrial style warehouse buildings: Fuel Storage and Feedstock Building, the Main Process Building and a Turbine and Welfare Building. The Development also includes other external plant and structures, hardstanding, staff and visitor car parking gatehouse, a weighbridge, substation and grid connection and a single freestanding chimney or flue.
- 5.4 The Facility is permitted by NRW in accordance with the Environmental Permitting (England and Wales) Regulations 2016 and the Industrial Emissions Directive (as amended). An Environmental Permit for the Facility was granted by NRW in 2018.
- 5.5 Table 1 provides a summary of the main components of the Development, with reference to their location as shown on Figure 6. Figure 7 shows an image of the layout of the Development and its main structures.

ⁱⁱⁱ Based on an average UK household consumption of 3,100 kilowatt hour (kWh)/year.

Figure 6: Site Boundary and Development Layout



5.6 The structures which comprise the Development are mostly constructed using steel and have been treated with similar grey tones.

Table 1: Main Components of the Development

	Component	Description
1	Reception Building / Fuel Storage and Feedstock Building	Most northerly building on Site built to store all waste wood and provide an enclosed transfer system. This includes a single storey lean-to structure. All waste wood is delivered directly into the fuel storage building via electrically operated roller shutter doors. When required, the fuel is discharged onto the feedstock feed conveyor system and then delivered into the Main Process Building via an external enclosed conveyor. All fuel feedstock is supplied to the Site via an approved third-party fuel provider who is contracted to provide material in accordance with the Site's waste acceptance procedures and waste supply specifications. The Facility can accept up to 72,000 (dry) tonnes of mixed waste wood per year.
2	Main Process Building	This is the largest structure on-Site, built to fully enclose the fluidised bed house. The Main Process Building contains the gasification system, combustion, heat recovery boiler systems and associated water pumping systems. The gasification plant partially combusts the fuel to produce a synthetic gas (syngas), which is subsequently combusted to produce a high temperature flue-gas. A steam boiler then recovers the heat from the combustion gases through the conversion into superheated steam. The building also contains the water treatment plant, other systems and a lean-to compressor house.
3	Turbine and Welfare Building	This building is sub-divided to include welfare facilities for employees, offices, the main control room and a turbine room which houses the steam turbine. Superheated steam from the Main Process Building passes to a Steam Turbine and Generator, which generates electricity, which will then export an annual average of 10MWe (net) of renewable electricity to the Local Distribution Network.
4	Air Cooled Condenser Structure	The Air Cooled Condenser Structure (or unit) is located adjacent to the Turbine, Welfare and Ancillaries building. The unit immediately condenses the steam turbine exhaust flow and return condensate to the boiler without water loss.
5	Flue Gas Treatment (FGT), including chimney stack and FGT equipment	Flue gas treatment plant, comprising external enclosed fan plant and pollution control consists of urea injection for the reduction of nitrous oxides (NOx), lime injection for acid gas neutralisation and activated carbon powder injection for absorption and removal of heavy metals, dioxins, VOCs and other substances. The flue gas cleaning system also incorporates a baghouse system, which is designed to remove submicron dust particles within anticipated emission limit values referenced by the Industrial Emissions Directive. Exhaust flue, comprising a single free standing 43m flue,

		with external platforming and associated continuous emissions monitoring equipment.
6	Ash Silos	Sealed ash silos for the containment of ash residues from the process.
7	Fire Water Tank and Fire Pump House	Emergency water fire tank mounted above ground and associated pumphouse.
8	Emergency Diesel Generator and Diesel Storage Tank	Emergency generator required for the safe operation and shut down of the Development and diesel tank to store auxiliary fuel required to fuel equipment.
9	Weighbridge	Located at the Site entrance.
10	Auxiliary Coolers	Auxiliary coolers are adjoined to the Main Process Building and provide an air driven, mechanical heat exchange function.
11	Export Transformers	The transformer units were installed by Western Power and connect the Development to the National Grid.
12	Vehicle Turning Area	Area of hardstanding used for manoeuvring of Heavy Goods Vehicles in the northern part of the Site.

Figure 7: Image of the Development (as constructed)



Operational Process

- 5.7 The generation of renewable electricity from the Development happens in four stages:
1. **Delivery of waste wood** (material arrives by HGV, is fed into Main Process Building. Deliveries to the Site are only allowed between 07:00 and 19:00 Monday to Saturday and 08:00 and 16:00 Sundays);
 2. **Gasification** (to produce the syngas and subsequently the superheated steam);
 3. **Electricity generation** (superheated steam passes to a steam turbine and generator); and
 4. **Flue gas cleaning** (all emissions from the Development are cleaned before they are released).
- 5.8 The Development will operate 24 hours a day, seven days a week, with the exception of four weeks of the year when planned maintenance will take place. However, as noted above, no delivery of waste will occur outside of the hours 07:00 and 19:00 Monday to Saturday and 08:00 and 16:00 Sundays.

How will the operational Development be managed?

- 5.9 As part of the Environmental Permit, the Site is subject to a number of management plans and monitoring which ensure that operation of the Development is undertaken in a sound and safe manner which does not give rise to unacceptable environmental impacts.
- 5.10 These include a Dust and Particulate Emission Management Plan, Emergency Plan, Accident Management Plan, Noise Management Plan and Fire Prevention and Mitigation Plan (including monitoring systems). An environmental management system is also in place which accords with international standards (ISO14001). Regular monitoring and reporting to NRW is required for environmental emissions, waste and a range of other operational aspects to evidence that the Facility is being operated in accordance with the Environmental Permit.

What materials will be used?

- 5.11 The 2015 Permission allows the Facility to accept up to 72,000 (dry) tonnes of mixed waste wood per annum (86,400 tonnes of wet waste wood). Under the Environmental Permit, the Development can only accept non-hazardous waste wood material which is accepted in accordance with a strict specification. In addition, the Development will use some other materials for the process including urea, hydrated lime, activated carbon, limestone, and diesel, although not in significant quantities.

What waste will be produced?

- 5.12 Wastes produced by the process include ash residues, extracted metal and oversize from processing of incoming waste streams and separated bed materials, domestic/office general wastes and specialist oils/chemicals from plant maintenance.

- 5.13 Ash residues include fly ash and Air Pollution Control Residues. Fly ash is material that is generated from combustion of the waste wood. Air Pollution Control Residues are residues from the system that cleans up gases before they are emitted via the flue or chimney stack.
- 5.14 All ash residues are collected, stored and handled in such a manner as to minimise potential emissions from the Site. All potential dust emissions are managed and regulated in accordance with a Dust and Particulate Emission Management Plan approved by the NRW as part of the Environmental Permit.
- 5.15 All ash will be transported by road for recovery or disposal dependent on its composition and testing. The disposal of the ash will be made in accordance with regulatory requirements.

What are the arrangements for access, security and lighting?

- 5.16 The Site is accessed via a gated entrance from David Davies Road. Access on to the surrounding road network is gained via Cory Way onto Ffordd-Y-Mileniwm. The Development provides 12 car parking spaces plus one accessible space. An electric vehicle (EV) charger and cycle spaces are also available. The Development operates in accordance with a Green Travel Plan which includes measures to minimise car journeys to the Site and includes HGVs to and from the Site. As a worst-case scenario, 38 two-way HGV movements per day are predicted.
- 5.17 The Site is surrounded by secure 2.4m high fencing and is subject to 24-hour security with CCTV and staffed gates. Operational lighting at the Site has been redesigned recently to ensure it complies with the latest guidance and standards and to avoid disturbance to local residents.

How will drainage be managed on the Site?

- 5.18 The Development has been designed to operate safely and without significantly increasing flood risk elsewhere. There will be no direct process emissions from the Development to surface water or groundwater. The process areas have a sealed system and there will be no release of effluents from the operational processes to controlled waters. All chemicals will be stored appropriately to ensure appropriate containment. NRW and the VoGC were satisfied that the pollution risk associated with the Facility is low based on the drainage design, satisfactory containment, regular inspection measures and operating procedure that will be in place as part of the environmental management system.

6. Construction and Decommissioning

How long did construction of the Development take?

- 6.1 Following the granting of planning permission in 2015, construction works commenced in 2016 and were substantially complete by early 2018.

What works were conducted during construction?

- 6.2 The construction process was divided into three main stages:
- Stage 1: Site preparation and enabling works;
 - Stage 2: Construction of the Development; and
 - Stage 3: Installation and commissioning of the Facility.

What management measures were in place during construction?

- 6.3 A Construction Phase Plan (CPP) and Project Environmental Plan (PEP) were submitted to the VoGC for approval before works commenced. The CPP set out the plant, equipment and methods to be used during construction and how the works would be managed. The PEP set out measures that would be in place to manage environmental risks associated with the construction stage of the Development. The PEP identified targets for environmental protection including protecting watercourses, minimising waste to landfill, controlling dust and site traffic. The PEP also included measures relating to the storage of hazardous materials, refuelling, storage of raw materials, the import of recycled aggregates, crushing of aggregates and management of soils.
- 6.4 The contractor put in place a Traffic Management Plan during construction, and the traffic management measures to be adopted during the works were defined in the PEP.

Would management measures be in place during decommissioning?

- 6.5 There are no planning conditions that require decommissioning of the Development after a certain period of time. However, any future decommissioning is likely to be phased and could take place over up to two years in a controlled dismantling exercise. Under the Environmental Permit, a Site Closure Plan must be agreed with NRW beforehand that would detail the measures that would be conducted to ensure that the site is closed and decommissioned in a controlled manner and without adverse impact to the environment.

7. Climate Change & Greenhouse Gas Emissions

- 7.1 An assessment of the likely significant effects of the Development on Climate Change and Greenhouse Gases has been undertaken by Ecolyse Ltd. The assessment has been completed in two parts and presents:
- The likely significant effects as a result of greenhouse gas (GHG) emissions from construction and operation of the Development; and
 - The resilience of the Development to future changes in climate.
- 7.2 The assessment of GHG emissions followed the latest industry guidance published by the Institute of Environmental Management and Assessment (IEMA) in February 2022. This guidance informed the approach to assessing the significance of the Development's GHGs which considers their context, compliance with policy and mitigation measures.
- 7.3 The assessment of the Development's resilience to future changes in climate followed recommendations in the IEMA 'EIA guide to Climate Change Resilience and Adaptation'.

Greenhouse Gas Emissions

- 7.4 The assessment considered the GHG emissions from the Development, including emissions associated with the construction (embedded in materials and from construction vehicles) and operation (from the carbon content of the biomass waste, plant such as generators, mobile loading shovels and emissions from operational vehicles, including staff movements and imports/exports of biomass waste and by-products).
- 7.5 The Development has incorporated measures to minimise the release of GHGs. For example, construction works were conducted in accordance with management plans as described in paragraph 6.3. A Traffic Management Plan was also implemented to control construction traffic flows. The Development includes an EV charging point and a Green Travel Plan is in place to encourage employees to use sustainable modes of travel. The energy efficiency of the technology to be used at the Facility was also assessed by NRW as part of the Permit application process.
- 7.6 Overall, the assessment identified that the Development would generate approximately 158,000 tonnes of GHGs (CO₂e) over an assumed operating period of 25 years. However, this would be offset (by -205,300 tonnes CO₂e) due to the fact that the Facility would generate electricity for the Local Distribution Network using waste wood fuel, which is classified as a renewable energy source, rather than using fossil based natural gas. The net total GHG emissions or overall saving would be approximately -48,100 tonnes CO₂e over a 25 year period. This saving would likely increase if the Facility were operational for longer than 25 years.
- 7.7 The net reductions in GHG emissions would occur on a national scale. It was also concluded that the Development was compliant with national and Welsh policies aimed at achieving

net zero by 2050, and also consistent with the requirements of the Vale of Glamorgan's Local Development Plan, in that it minimised GHG emissions as far as reasonably practicable.

- 7.8 Opportunities to use the heat generated by the Facility are being explored by the Appellant at present and which would provide additional net carbon savings. The Appellant is an active member of the Clean Growth Hub in the region and is receptive to developing clean offtakes when the supply chain emerges.
- 7.9 The Appellant is also committed to exploring opportunities to recycle waste bottom ash and the potential use of Carbon Capture and Storage technology at the Facility in the future. These were not accounted for in the assessment, although could offer benefits by further increasing the net benefit of the Development over the course of its lifetime.
- 7.10 Significant Effects from climate change relate to cumulative global effects, rather than relating directly to a single development in isolation. To this end, the assessment itself is intrinsically cumulative and there is no separate cumulative assessment.
- 7.11 Overall, the assessment has adopted a number of conservative assumptions, and finds that the overall net impact of the Development, with respect to GHG emissions, is beneficial due to the net saving in CO₂e over the Development's lifetime, although applying IEMA's guidance this is assessed as negligible (insignificant).

Resilience to Climate Change

- 7.12 The assessment focused on the risks associated with operating the Development in the future if the current climate changes, and what measures are embedded in the design of the Development to ensure it can adapt.
- 7.13 The assessment identified the main climate risks to the Development as tidal flooding, drought and extreme weather events (such as heatwaves, storms and snow).
- 7.14 With respect to cumulative developments, it was acknowledged that the changes in climate variables would be experienced by all nearby developments, but the potential impact could change as a result of cumulative developments (such as reducing permeability for flooding and increasing the urban heat island effect).
- 7.15 Overall, the assessment concluded that the Development was resilient to likely climatic changes within its assessed lifetime, and that there would be no significant effect in isolation, or cumulatively with other development.

8. Noise and Vibration

Introduction

- 8.1 The Noise and Vibration Chapter of the ES has been prepared by Sol Acoustics Ltd. It assesses the noise and vibration impact of the Development at all nearby sensitive receptors. Figure 8 shows an output from the noise model. Receptors include housing (including gardens and other outside amenity spaces), as well as offices and industrial premises. The assessment considers the various stages of the lifetime of the Development including the construction phase (i.e. retrospective), operational phase and any eventual decommissioning phase.
- 8.2 The assessment was partly based on the results of an environmental noise survey undertaken in February / March 2022 at various locations around the Site to determine the appropriate 'Background Sound Level'. At the time of the noise survey and at the time of writing (July 2022), the Facility was not operational. The survey determined the prevailing noise levels during the daytime, evening and night time periods. This information was used to compare the noise emissions of the Development with the Background Sound Level around the Site.

Construction

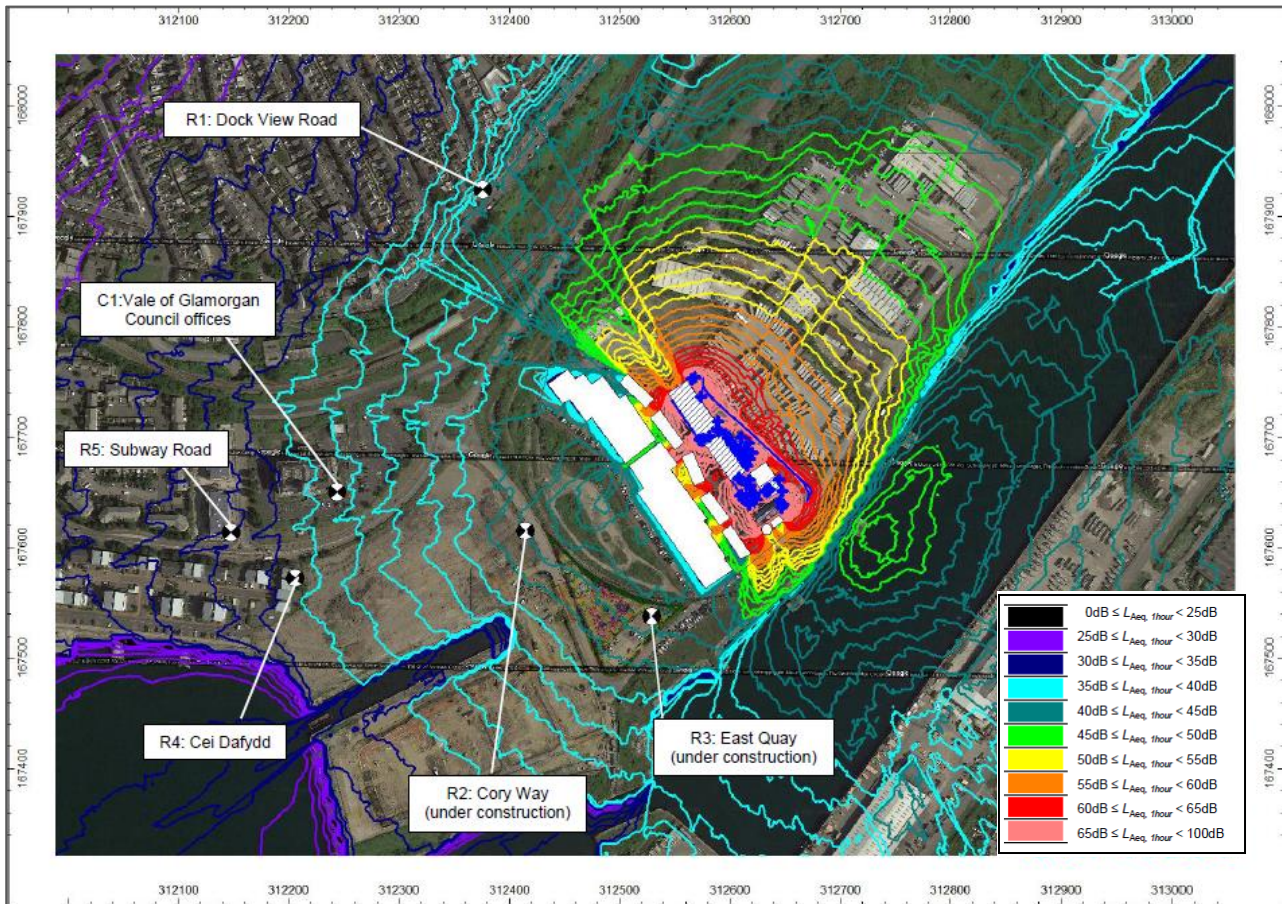
- 8.3 A retrospective assessment of the potential noise impacts associated with the construction of the Development has been undertaken in accordance with the industry standard methods (British Standard 5228-1: 2009+A1:2014). This assessment was based on the best available information about the construction methods and equipment that was used. The assessment has shown a negligible noise impact was expected at the worst affected housing that existed during the construction phase.
- 8.4 A retrospective assessment of the potential vibration impacts associated with construction of the Development has been undertaken in accordance with industry standard methods (British Standard 5228-2: 2009+A1:2014xv). This assessment has shown that a negligible to minor vibration impact was expected at the worst affected housing that existed during the construction phase.
- 8.5 A retrospective assessment of the noise levels on key transport routes due to construction traffic has been undertaken in accordance with industry standard assessment methodology (Design Manual for Roads and Bridges, LA 111, Noise and Vibration, Revision 2). The outcome of this assessment has shown that a negligible increase in road traffic noise was expected.

Operation

- 8.6 The Facility has been designed with noise control measures and mitigation measures incorporated into the basic design of the Facility. The Facility will also be operated in accordance with a Noise Management Plan, approved by NRW.

- 8.7 Noise modelling using computer software (Cadna-A) has been undertaken to determine calculated rating levels of the Facility and associated noise levels. The assessment has been based on the computer noise model and been informed and validated using environmental noise measurements from surveys and data provided for the plant items.
- 8.8 The assessment of the noise impacts expected from the operation of the Facility has been undertaken in accordance with industry standard methods (including British Standard 4142:2014+A1:2019). Noise levels above background sound levels are predicted at sensitive receptors that could potentially be affected by the operational Facility. These include existing residential properties on Dock View Road, Cei Dafydd and Subway Road and future residential properties on Cory Way and East Quay (part of the approved Barry Waterfront development).
- 8.9 This assessment shows that further noise mitigation measures are required at the Facility to reduce noise levels at the two closest residential receptors (Cory Way and East Quay). These measures are set out in the ES and the Appellant has committed to installing them before commercial operations commence. With these additional noise mitigation measures in place, the noise impact at the worst affected residential receptors on Dock View Road, Cory Way and East Quay would be minor. At all other receptors the effects would be negligible.
- 8.10 Noise effects from traffic associated with the Development, including HGVs, has been assessed as negligible.
- 8.11 Continuous 24-hour environmental noise monitoring will be undertaken at the boundary of the Site during the operation of the Facility. This monitoring will include automated noise limit “trigger levels” to immediately alert the operator of any noise issues so that appropriate action can be taken in line with the requirements of the Environmental Permit.
- 8.12 An assessment of the potential noise impact expected at surrounding commercial, industrial and external amenity spaces has also been undertaken in accordance with industry standards (British Standard 8233:2014). The assessment has shown that a negligible noise impact is expected.
- 8.13 No effects on ecological receptors (i.e. areas of scientific interest or other designated sites) have been identified due to their distance from the Site.
- 8.14 There are no significant sources of vibration that will be operating within the Development Site and therefore no likely significant effects.

Figure 8: Output of the noise model showing predicted operational phase sound at ground floor level from the Development.



Decommissioning

- 8.15 An assessment of the potential noise impact associated with decommissioning of the Development has been undertaken. This assessment shows that noise effects are likely to be negligible at the worst affected receptors. There are unlikely to be significant sources of vibration expected to operate on the Site during any decommissioning. Similarly, road traffic noise during any decommissioning would be negligible.

Cumulative Effects

- 8.16 An assessment of the cumulative noise and vibration impacts that are expected to occur during construction, operational and any decommissioning has been conducted. No significant cumulative impacts are expected.

9. Air Quality

Introduction

- 9.1 Effects on human health are considered in more detail under 'Population and Human Health'.
- 9.2 The ES includes a retrospective assessment of the construction phase of the Development, detailed modelling of emissions from the Facility and assessment of any potential effects during decommissioning.
- 9.3 The Site is located within the Barry Docks area. It is located within an established business and industrial area. The closest existing residential areas are located to the north and west of the Site and new residential areas are being built to the south west as part of the Barry Waterfront development. The sensitive ecological habitats were also considered in the assessment within 10km of the Site.
- 9.4 Based on the latest available air quality monitoring and mapping data, existing concentrations of key air pollutants are all currently below relevant national standards. The Site is not located within or adjacent to an AQMA.

Construction

- 9.5 A retrospective assessment of the potential effects during the construction phase has been carried out. This has shown that during this phase of the Development, releases of dust and particulates (PM₁₀) are likely to have occurred during site activities. However, there were no receptors in close proximity to the Site at the time. With good site practice and the implementation of suitable mitigation measures, through the PEP, the impact of dust and PM₁₀ releases are considered to have been effectively mitigated. The resultant impacts are therefore considered to have been negligible.

Operation

- 9.6 Air emissions from the operational Facility relate to combustion products, acid gases and halides^{iv}. The operational Facility is highly regulated by NRW via the Environmental Permit which will ensure all emissions are in line with limit values set by the Industrial Emissions Directive (Chapter IV). The Appellant is also required to prevent, minimise and control emissions using Best Available Techniques. This includes exhaust gases from the Facility being treated (cleaned) through the flue gas abatement plant before being discharged via the exhaust stack. Emissions from the Facility are subject to continuous monitoring through electronic sensors in the stack. In addition to emission limits, the Facility is required to operate in accordance with an approved Dust and Particulate Emission

^{iv} Chemical compounds that contain halogens.

Management Plan and specific waste control measures which are designed to avoid dust emissions from operational activities.

- 9.7 Detailed air quality modelling using a computer software model (Breeze AERMOD) has been undertaken to predict the impacts at human and ecological receptors associated with stack emissions from the Facility during normal and abnormal operating conditions.
- 9.8 As a worst-case, emissions from the Facility have been assumed to be at the limits imposed by the Environmental Permit. Actual emissions from the Site are likely to be significantly lower due to the flue gas treatment.
- 9.9 The assessment found that the impact of the operation of the Facility on local air quality at human sensitive receptors is considered to be negligible. Concentrations of the majority of the pollutants likely to be emitted from the Development would be below the relevant air quality standards set for human health at all modelled receptors. A Human Health Risk Assessment has also been undertaken as part of the EIA which confirms that exposure of individuals to pollutants, even in a very worst-case scenario, would not be significant during normal or abnormal operating conditions. NRW were also satisfied that the impact of emissions on local sensitive receptors would not be significant before granting the Environmental Permit.
- 9.10 An assessment has also been undertaken to determine the impacts of the operation of the Facility on nearby sensitive ecological habitats such as designated sites. An assessment of the impacts on airborne concentrations, nitrogen deposition rates and acid deposition rates was undertaken. The assessment concluded that the impacts on airborne pollutant concentrations, nitrogen deposition rates and acid deposition rates at the nearby sensitive ecological habitats are insignificant.
- 9.11 Monitoring of pollutant concentrations from exhaust stack emissions will be undertaken using continuous electronic monitors and periodic sampling will also be undertaken in accordance with the requirements of the Environmental Permit. The Environmental Permit also requires that monitoring reports are submitted regularly to NRW for inspection.
- 9.12 Waste wood that will be accepted at the Site will arrive in covered HGVs or containers and will not be inherently odorous. All waste wood will be delivered directly into the enclosed Fuel Storage Building and there will be no material stored outside. As such, no odour effects are predicted from the operational Development.
- 9.13 Emissions from HGVs and other vehicles arriving and leaving the Site has been considered and would not be significant due to the low levels of traffic.
- 9.14 The only visible plume that may arise from the Development would be a steam emission that may be visible under certain weather conditions, such as cold winter mornings. It is considered unlikely that a plume would be visible for any significant amount of time.
- 9.15 The operations at the Site that may potentially result in emissions of dust and particulate matter are the delivery and unloading of waste wood, processing of waste wood and the transfer of material via mechanical loading shovels. A Dust and Particulate Emission Management Plan is in place at the Site which is regulated through the Environmental

Permit and details the dust control measures that will be implemented. With these measures in place there is a very low risk of nuisance or exposure of the receptors to dust and particulate matter arising from the operations.

Decommissioning

- 9.16 Any potential future decommissioning of the Site may lead to releases of dust and particulates in the vicinity of the Site. However, through good site practice and the implementation of suitable mitigation measures, the impact of dust and particulates can be effectively mitigated, and the resultant impacts are considered likely to be negligible.

Cumulative Effects

- 9.17 There are no cumulative effects on air quality from the Development and nearby committed / proposed developments.

10. Population and Human Health

Introduction

- 10.1 The Population and Human Health chapter constitutes a robust assessment of all credible health pathways attributable to the construction, operation and any decommissioning of the Development on the local population. The assessment was conducted by determining the baseline health conditions before the construction of the project, and the current baseline (post-construction) conditions. Health pathways (air, noise, transport etc) with the potential to influence the health of the community (both adverse and beneficial) were then investigated and assessed through a source-pathway-receptor model, drawing from the supporting ES technical disciplines.
- 10.2 A consistently precautionary approach was applied, including applying the highest burden of poor health, and associated sensitivity to environmental change as a constant during the individual assessment protocols, and again when defining impact significance. This ensures that any material impact on public health is clearly reported.

Construction

- 10.3 During the construction phase of the Development, mitigation measures in the form of the Construction Environmental Management Plan were sufficient to prevent any material risk to public health. Neither localised changes in air quality nor noise exposure were of a concentration or exposure sufficient to quantify any adverse health outcome. Changes in local transport movements were equally insignificant and did not trigger the threshold requirement for detailed assessment (i.e. less than a 30% change in transport).
- 10.4 Overall, the residual construction impacts of the Development are not considered to be significant for any of the health determinants assessed.

Operation

- 10.5 The potential health hazards from biomass energy generation and transmission are well known, understood and inherently addressed through embedded mitigation, design and abatement technology, to remove and manage any risk to public health.
- 10.6 The assessment considers potential health hazards from the Development including changes in local air quality and noise exposure, traffic and the perception of risk. The assessment was accompanied by a Health Impact Assessment which is provided as part of the ES.
- 10.7 Health effects from changes in noise during the operational phase would not lead to any measurable change in health outcome. A change of 3 decibels (dB) is typically considered to be the threshold of a perceptible change in noise. For the majority of the residential receptors the change is less than 3dB, with the exception of one location (East Quay). While this would border on a perceptible change in noise, the nature and magnitude of change would remain below a quantifiable impact to health.

- 10.8 When analysing traffic associated with the operational Development, the changes that would be experienced on any road link would be minimal and as such would not present any material risk to public health.
- 10.9 The Development meets all regulatory planning requirements protective of the environment and health; relative changes in environmental and socio-economic conditions are not sufficient to quantify any measurable risk to public health; and the Facility has obtained an Environmental Permit to operate from NRW as they were satisfied that it meets all of the regulatory authority's requirements.

Decommissioning

- 10.10 Any future decommissioning activities are likely to be similar in type, scale and duration to those that took place during construction and as such human health effects during this phase would be as per the retrospective construction phase, i.e. not significant.

Cumulative Effects

- 10.11 Based on the cumulative developments within 1km of the Development, there would be no measurable change to population health outcomes reported and the cumulative developments identified are not anticipated to change the results or conclusions of the assessment.

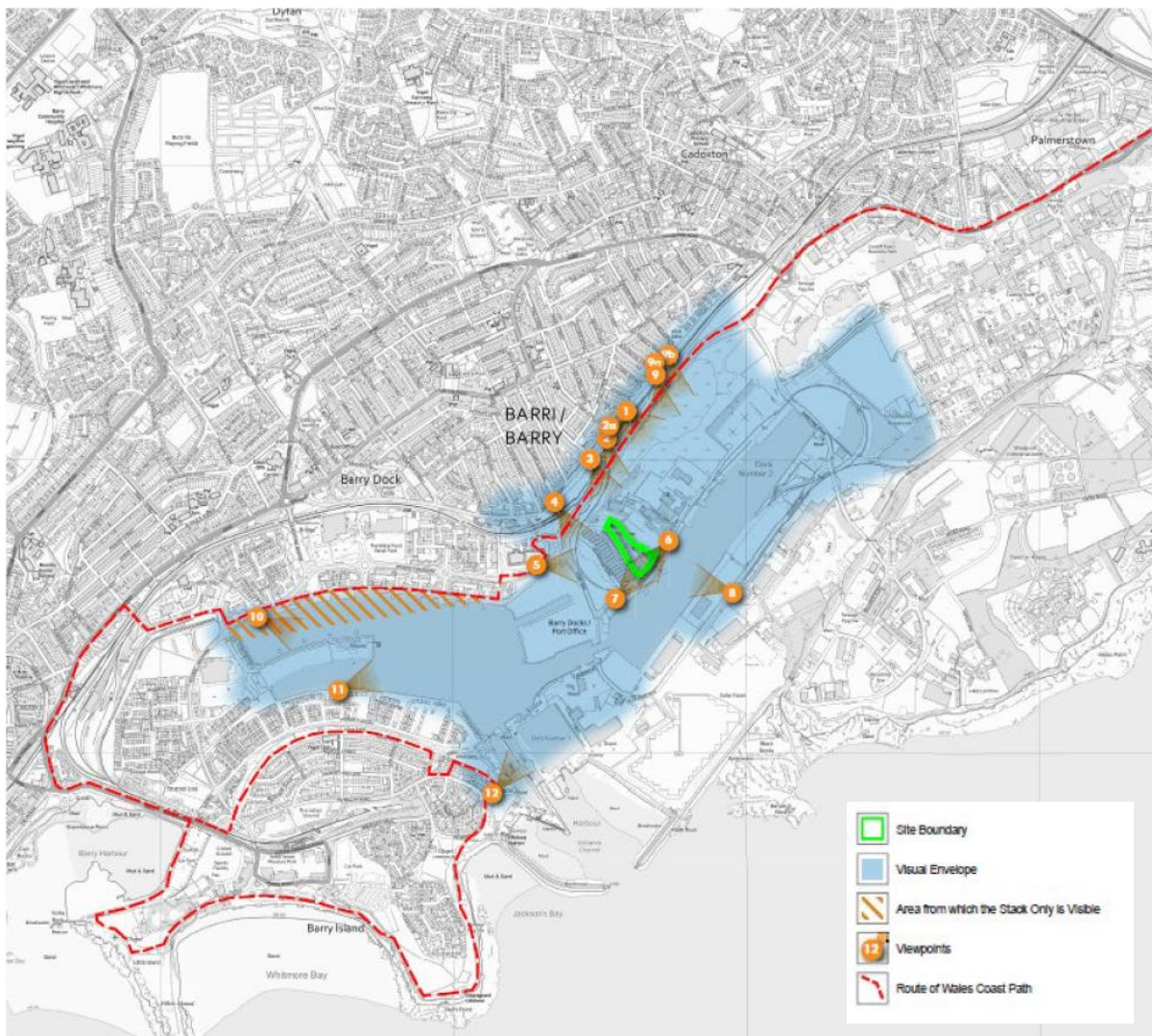
11. Landscape and Visual Impacts

- 11.1 The landscape and visual issues associated with development of the Site has been subject to consideration and professional scrutiny over a number of years. This has included the scrutiny at during the planning processes that led to the 2010 and 2015 Permissions and independent review of previous landscape and visual assessment work.

Introduction

- 11.2 A Landscape and Visual Impact Assessment (LVIA) has been prepared by an experienced landscape practitioner in accordance with the Landscape Institute's published guidance.
- 11.3 Throughout the assessment process, judgement, underpinned by informed professional experience, is made on where the value, susceptibility, sensitivity, magnitude, and significance lie on a spectrum ranging from low to high.
- 11.4 The starting point of the process is to understand the relevant baseline situation in respect of the landscape and visual environment against which any changes are assessed. The urban context the Site sits within contains industrial land uses and development and large areas of built form as acknowledged in the published characterisation.
- 11.5 The viewpoints which form the basis of the visual analysis in the assessment have been determined by reference to a computer-generated Zone of Theoretical Visibility and checked by field visits. These are shown on Figure 9.

Figure 9: Viewpoint locations assessed in the LVIA.



Construction

11.6 During the construction phase, the following measures were implemented which sought to reduce adverse effects:

- Construction using modular, simple form buildings which reduce the duration of the construction phase and disruption to the local landscape and visual environment;
- Erection of safety hoardings which restricted close range views into the Site from the adjoining land; and
- Limiting the plant and equipment to that which is necessary for the construction, including the operational height of cranes and piling rigs.

11.7 Due to the industrial nature of the area before construction in 2016 (at a time when the docks were not being developed for residential use) and the contained area of activity, there were no significant effects in respect of the character of the townscape associated with the Site. The changes were localised and consistent with the baseline situation.

- 11.8 Construction effects are typically a visually disruptive phase of the development. Works associated with the construction of the Facility would be notable in close-range views, although the views at the time were industrial in character.
- 11.9 Significant adverse visual effects were likely experienced by the residents, pedestrians and those travelling on Dock View Road. However, these effects would have been temporary, short-term and localised.
- 11.10 Other effects, some of which were adverse in nature, were not significant, primarily due to the context of the visual receptor or distance from the primary construction activities.

Operation

- 11.11 Inherent mitigation within the design of the Development has been undertaken to minimise impacts. The Facility has been located within an industrialised landscape which is an appropriate receiving landscape for development of this nature. The built form is based on simple geometric forms complementing the built components in the wider Dock landscape. The building facades have limited 'clutter'.
- 11.12 The existing industrial landscape is considered to have the capacity to absorb the introduced characteristic elements without overarching or undue change to the landscape character of the area.
- 11.13 The buildings which house the operational processes and the majority of the ancillary structures have been constructed using the same materials and treated with a similar colour palette. The external appearance of the Facility has minimised visual issues associated with the reflection of sunlight, and incidents of 'glare' in the day-time views.
- 11.14 There would be no significant effects upon either the character of the Site, its immediate environs or adjoining landscape character areas as a result of the operational phase of the Development. The Facility is in context with the existing, industrial landscape that includes large-scale industrial buildings, infrastructure and transport corridors. These are key features of the landscape and as such the Facility does not significantly alter existing character.
- 11.15 The landscape character of the area has not substantially changed since the VoGC reached its own independent conclusions on the project, nor has the form or character of the Development.
- 11.16 The most sensitive visual receptors are the residents on:
- Dock View Road;
 - Dyfrig Street (between Dock Road and Redbrink Point);
 - Charles Darwin Way (including the newly constructed properties); and
 - Cory Way (future residential properties).
- 11.17 Of these groups of people, the most notable change will occur in respect of the residents on Dock View Road who are also closer to the Development. Overall, the visual change is

consistent with the context, in terms of appearance and design, and occupies a small portion of the visual composition experienced from these properties daily. The street furniture, parked cars and scrubby vegetation in the foreground of views filter the views beyond.

- 11.18 Intervisibility between the residential areas, Barry town and docks is maintained and will not experience any detrimental change from the presence of the Development.
- 11.19 The Development is characteristic of the overall visual experience, is seen against the backdrop of the wider Docks and is not intrusive, the changes include features which are already present in the wider view. The built form primarily sits below the skyline formed by the rolling hills in the distance or Dock development in the middle distance. The significance of the visual effect (daytime) is in the mid-range and not significant.
- 11.20 From these same views, the night-time views are consistent with the context and the established situation is well-illuminated across the field of view. 'White lights' are already part of the visual composition and in the case of the Development, the focus of the night-time view has changed but it is a change in emphasis rather than an alteration of the character and appearance of the landscape at night. The night-time effects are at the mid to lower end of the spectrum and not significant.
- 11.21 All other visual receptors are of equal or lesser sensitivity than the people living on Dock View Road or experience a lower magnitude of change. As a result, the visual effects on these groups of people will not be significant.
- 11.22 The conclusions of the LVIA are consistent with the 2015 Permission where the VoGC officers concluded *"it is thus considered that the physical impact of the use and building would neither appear out of character or unacceptably overbearing to the extent that it would cause demonstrable harm to the amenities of those residential properties living near the area..."* **and** "Accordingly, it is concluded that the proposal would not have any unacceptable visual impact."
- 11.23 The height of the structures within the Site are no different from those of the 2015 Permission and the receptors have not become any more sensitive to change in the intervening years.

Decommissioning

- 11.24 The changes associated with any future decommissioning will be localised and only have a direct impact on the townscape in respect of the Site. The activities will be notable but in the context of an industrial landscape which has and continues to experience change the decommissioning phase will not give rise to significant landscape effects.
- 11.25 Decommissioning effects are typically a visually disruptive phase of the development. Works associated with the decommissioning phase will be notable in close-range views, although existing views are industrial in character. Decommissioning of the Facility would inevitably alter features and activity visible in the immediate environs of the Site.
- 11.26 Significant and adverse visual effects will be experienced by the residents, pedestrians and those travelling on Dock View Road and at East Quay, although any effects would be

temporary, short-term and localised. If the Facility were decommissioned views would become more open and a greater depth to the field of view created, although this is not a significant benefit within the context of the wider industrial setting of the Site.

- 11.27 Other effects, some of which were adverse in nature, were not significant, primarily due to the context of the visual receptor or distance from the primary construction activities.

Cumulative Effects

- 11.28 Development within the Site is of a scale and character distinct from the other developments, so that the visual effects will not change the character or nature of the visual experience. From some close views the cumulative developments (for example at Barry Waterfront) will obscure views of the Development, and vice versa.
- 11.29 The Development (and development of adjoining sites) will result in a change to much of the Barry Docks character area, particularly when measured against the surrounding derelict land use. However, the Development is consistent with the broad character area, albeit the new housing is more reflective of the adjoining townscape than the historic docks. This is a location where change is directed to avoid greenfield development and therefore the change in the character is accepted as part of the wider strategy for growth.

12. Effect Interactions

- 12.1 Effect interactions are a type of cumulative effects and can arise where there is interaction between individual effects of a development upon the same receptor (i.e. local residents, properties, habitats, road users etc.). The ES assesses whether the Development could give rise to such effect interactions, however none were identified for any stage of the project.

13. Summary of Mitigation, Monitoring and Residual Effects

- 13.1 The ES summarises the key mitigation and monitoring measures that will be implemented to minimise potential adverse effects during the operational and decommissioning phases of the Development. The ES also considers whether adequate measures were in place during the construction phase.
- 13.2 The following key mitigation and management measures were in place during construction:
- Contaminated land investigation and remediation; and
 - Management plans including construction works, activities, environmental protection and traffic management.
- 13.2 The ES identified significant (adverse) environmental effects in terms of visual effects for residents on Dock View Road, residents off Charles Darwin Way and pedestrians using the new public space and walkway associated with the new development to the south of Dock 1, and vibration effects for local residents associated with the retrospective construction stage of the Development specifically. However, these effects were all short term and temporary in nature.
- 13.3 In order to avoid or reduce environmental effects, a number of measures have been designed into the Development and its operational stage. These include:
- Best available techniques relating to technology and processes;
 - Adherence to the Environmental Permit requirements which include management plans, pollution prevention and control procedures, adherence to environmental emission limits and processes related to the quality and quantity of waste wood fuel, storage and disposal of waste;
 - A revised lighting scheme designed in line with current best practice; and
 - A Green Travel Plan.
- 13.3 The operation of the Facility is highly regulated by both the 2015 Permission and Environmental Permit. Monitoring and post-construction surveys are required to be completed for a range of environmental matters, including air quality, noise, and water.
- 13.4 The ES identifies a need for further noise mitigation measures at the Site. These will be implemented by the Appellant before commercial operations commence. The Facility will also be subject to regular noise monitoring and controls as required by the Environmental Permit.
- 13.5 Overall, when the above is taken into account, the operational Facility will not give rise to any significant adverse impacts in terms of landscape character, visual impact, air quality or noise.

- 13.6 The Development would give rise to a beneficial effect in terms of climate change and greenhouse gas emissions, as it would generate renewable energy for around 25,100 homes would lead to overall carbon savings. However, in line with industry guidance this beneficial effect is assessed as being of negligible significance.
- 13.7 No significant effect interactions or cumulative effects have been identified from the Development in combination with other development projects.