

PLANNING AND DESIGN AND ACCESS STATEMENT: PLANNING APPLICATION FOR A HYDROGEN PRODUCTION FACILITY

WESTERN WOOD BIOMASS PLANT | MARGAM | PORT TALBOT



PREPARED BY



PREPARED FOR



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APPENDIX SCHEDULE

Appendix No.	Title
A	Ecological Appraisal
B	Arboricultural Assessment
C	Flood Consequence Assessment
D	Drainage Strategy
E	Phase 1 Geotechnical Desk Study



1. INTRODUCTION

1.1 FOREWARD

- 1.1.1 Climate change is generally considered to be the greatest existential threat to the environment, our way of living and humanity in general. Addressing this huge challenge requires a sea change in how we live our lives in the future and the decisions we make.
- 1.1.2 In order to address this challenge, the UK Government have set a target to decarbonise the power grid thus moving away from fossil fuels and replacing this capacity with renewable energy.
- 1.1.3 In addition to this, the past few years has brought into stark focus the need for the UK to improve its energy security to ensure both continuity of supply, reduced costs to the consumer and avoid future price spikes caused by geo-political events. In response to this additional challenge, the UK Government has published The British Energy Security Strategy which commits to strengthening Britain's energy needs, moving from fossil fuels to home-grown, clean energy to eliminate emissions and tackle climate change.
- 1.1.4 This transition is predicted to result in an increase in electricity demand by 40-60%, all of which must be met from renewable and low carbon energy sources.

1.2 PURPOSE OF THIS STATEMENT

- 1.2.1 This planning statement has been prepared by Sirius Planning Limited on behalf of Western Bio Energy Limited (WBE) as the Applicant and Protium Green Supply Limited (PGS Ltd.) as the Agent, who are applying for planning permission for the following development (collectively referred to as the Proposed Development) located at the existing Western Wood Biomass Energy Plant, Margam, Port Talbot, SA13 2NR:
- An Electrolytic Hydrogen Production Facility (HPF) and associated compression and storage;
 - A Hydrogen Tube-Trailer Filling Station (HTTFS); and
 - Renewable electricity provided from a co-located biomass power plant via private wire.
- 1.2.2 The Proposed Development will produce up to 960 kgs of green hydrogen per day, which will be trailered offsite to regional customers. It is estimated that the system will abate approximately 3,000 tonnes of CO₂ per year whilst also reducing tail-pipe emissions from conventional vehicles. The Proposed Development supports both Neath Port Talbot County Borough Council's and the Welsh Government's net zero targets.

1.3 THE APPLICANT

- 1.3.1 The Applicant is Western Bio-Energy Limited who are a sustainably resourced Biomass Power Plant in Margam, South Wales exporting electricity to the national grid.

1.4 THE AGENT

- 1.4.1 The proposal will be delivered under the SPV Protium Green Supply Ltd, which is a fully owned subsidiary of Protium Green Solutions Ltd (Protium).
- 1.4.2 Protium is one of the largest funded renewable energy and green hydrogen developers in the UK. The company's aim is to use green energy hydrogen in tandem with other technologies and energy sources such as solar, wind, batteries, and digital tools to allow businesses to move towards a truly net zero greenhouse gas emissions. Due to the wide applicability and potential for green hydrogen, Protium works across several diverse sectors, including manufacturing, chemicals, food and beverage, transport and infrastructure.
- 1.4.3 In early 2023, Protium commissioned their first operational unit, Pioneer One, in partnership with the University of South Wales. This is the UK's largest Anion Exchange Membrane (AEM) integrated electrolyser, sourced from award winning design and manufacturing brand, Enapter, responsible for developing the first scalable AEM electrolyser, to generate electricity and green hydrogen. As a fully-

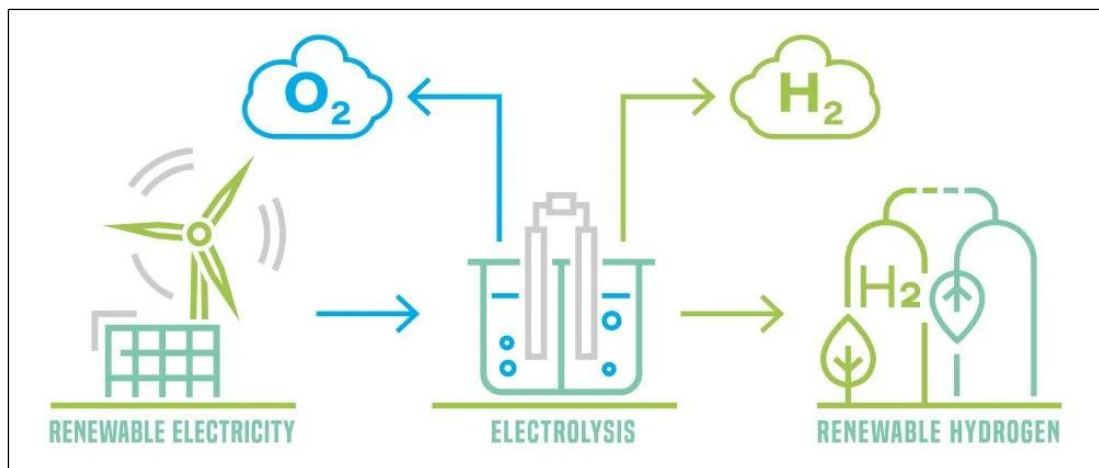
fledged operational unit, Pioneer One produces up to 40kgs of green hydrogen per day without emitting greenhouse gases. It can displace up to 111 tonnes of CO₂ per annum which is equivalent to planting 4,440 trees or offsetting emissions of 113 London to New York flights.

- 1.4.4 To date, Protium has partnered with several major companies such as Wales and West Utilities, Marubeni and AB InBev. Sister projects, Major Net Zero and Samlesbury Net Zero, are being developed with AB InBev at two of their largest breweries in the UK in a bid to reduce their reliance on fossil fuels in their brewing processes and HGV fleets. Protium secured planning permission for Samlesbury Net Zero on 1st February 2024, making it one of the most advanced green hydrogen projects in the UK.

1.5 GREEN HYDROGEN

- 1.5.1 Green hydrogen is an alternative carbon-free fuel that can be used to displace natural gas and fossil fuels in the journey to reach net zero. It is produced through a process called electrolysis, which uses electricity produced by renewable sources to split water into its component parts, hydrogen and oxygen. This is a carbon-free process.

Figure 1.1: Green Hydrogen Fundamentals



- 1.5.2 When producing green hydrogen, the hydrogen is collected and stored, whilst the oxygen (a by-product of the process) can either be captured and sold to customers or emitted to the atmosphere with no negative effects. The Proposed Development will not capture any of the oxygen produced, it will be emitted safely to the atmosphere.
- 1.5.3 Electrolysis requires a supply of electricity, therefore, to ensure the hydrogen produced by the electrolysis process has zero carbon emissions, the electricity used must come from renewable energy sources. This energy source can either be secured through supply contracts referred to as green Power Purchase Agreement (PPA), where the green power is produced at different locations across the UK, or by direct electrical connections (private wires) to dedicated renewable energy sources, as is the case for the Proposed Development.

1.6 OUTLINE DESCRIPTION OF THE SITE AND PROPOSAL

- 1.6.1 The application site shown bordered red on Plan No. **PRO1000/01/01** (the Site) is located within at the Western Wood Biomass Energy Plant operated by Western Bio Energy Ltd (WBE) located off Heolcae'r Bont, Margam, Port Talbot, SA13 2NR.
- 1.6.2 The Proposed Development will be located along the northern border of the wider Biomass Power Plant site on an area that comprises an existing flat hardstanding which is proposed to be extended to include the perimeter banking in order to accommodate the Proposed Development.
- 1.6.3 The WBE Biomass Power Plant ('the Biomass Plant') generates renewable energy through the process of combustion of waste / reclaimed wood and wood chips. The Biomass Plant has an export capacity of

14.7MW, 10MW of which is available to off-takers, and has a negative carbon footprint. Protium, in agreement with WBE, will offtake approximately 3MW of electricity from the Biomass Plant for the proposed HPF via a private wire connection.

- 1.6.4 The Proposed Development will produce up to 960 kgs of green hydrogen per day. The hydrogen will be compressed by hydrogen gas boosters and pressurised into Hydrogen Tube Trailers (HTT) before being trailed offsite to regional customers. It is estimated that the system will abate approximately 3,000 tonnes of CO₂ per year whilst also reducing tail-pipe emissions from conventional vehicles.
- 1.6.5 Drawing No. **PRO1000/01/01** illustrates the site location and Drawing No. **PRO1000/01/03** shows the proposed site layout.

1.7 PRE-APPLICATION DISCUSSIONS

- 1.7.1 A Pre-Application request was submitted to Neath Port Talbot County Borough Council on 22nd February 2024 (Payment Reference 149-98444). At the time of writing, a pre-app response has not been received.

1.8 PLANNING AND DESIGN AND ACCESS STATEMENT STRUCTURE

- 1.8.1 This Planning, Design and Access Statement has been organised into the following chapters:

- The Site and Surroundings;
- The Proposed Development;
- Environmental Considerations;
- Planning Policy and Material Considerations;
- Design and Access Statement;
- Summary and Conclusions.

1.9 OBTAINING INFORMATION

- 1.9.1 Electronic copies of all documents submitted to Neath Port Talbot County Borough Council in respect of the planning application are available at the following website:

[Simple Search \(npt.gov.uk\)](https://npt.gov.uk/simple-search)

- 1.9.2 Paper format copies of the planning application and supporting information are available on request.

- 1.9.3 All requests for hard copy information should be addressed to the following:

Protium Green Hydrogen Supply Ltd
c/o Sirius Planning
4245 Park Approach
Thorpe Park
Leeds
LS15 8GB



2. THE SITE AND SURROUNDINGS

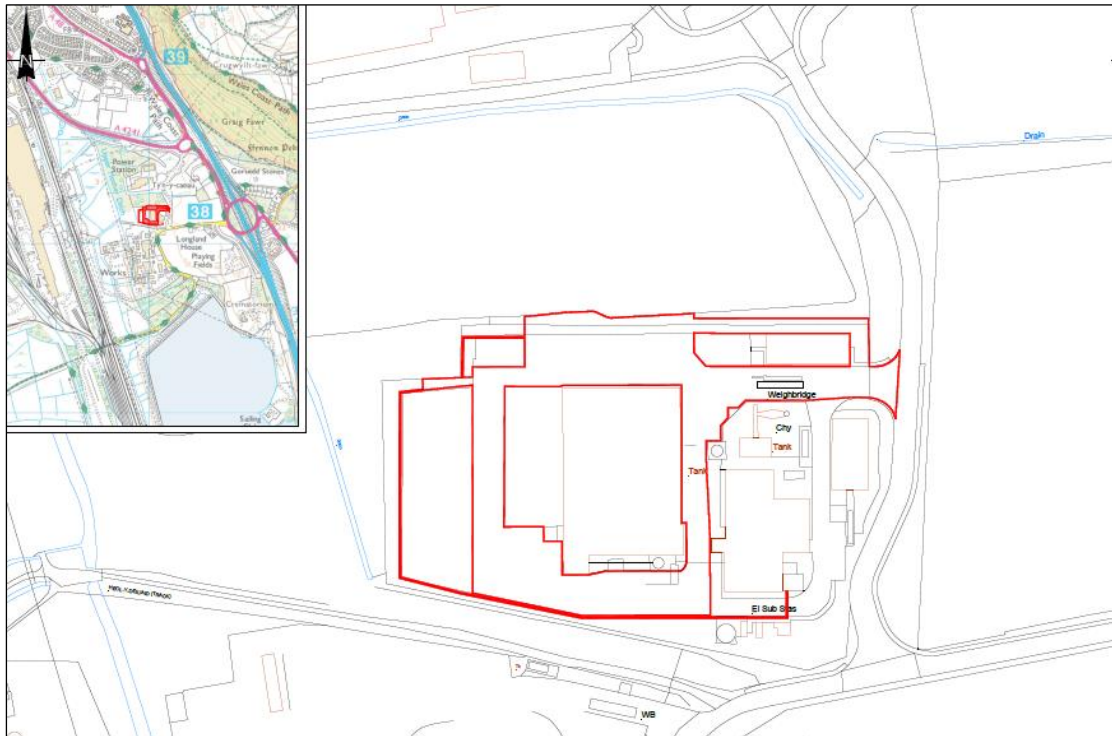
2.1 INTRODUCTION

2.1.1 This chapter provides a description of the Site in terms of location, history, and surrounding land uses.

2.2 LOCATION & SURROUNDINGS

2.2.1 The Site is situated within the northern part of the Western Wood Biomass Energy Plant site on approximately 6,575m² of land. The Site is located 4km to the west of Port Talbot and 330m west of Junction 38 of the M4 (the Margam Interchange), centred on approximate National Grid Reference 279000, 186219. The location of the Site is shown on Drawing No. **PRO1000/02/01** and **Figure 2.1** below.

Figure 2.1: Site Location



2.2.2 The Site is located within an industrialised area. Immediately to the north of the Site is an area of woodland beyond which is the Margam Green Energy Plant (MGEP) approximately 90m from the Sites northern boundary. The MGEP is also a biomass facility and a dominant feature in the local landscape with an emission stack of approximately 65m above ground level. To the east of the Site is the Biomass Plant access road. The A48 and junction 38 of the M4 (the Margam Interchange) lies 330m east, beyond which is Margam County Park, Margam Cricket Club and St Mary's Abbey Church located approximately 1km from the site. To the south of the Site is the BOC Gas & Gear Margam Site, beyond which is woodland and the Eglwys Nunydd Reservoir used by the Tata Steel and Sea Cadet Siling Clubs. To the west is the London to Swansea railway line and the Port Talbot Steelworks. The two blast furnaces and steel production plant buildings associated with the steelworks are major landmarks in the area, visible from the M4 and which dominate the landscape.

2.3 SITE CHARACTERISTICS

2.3.1 The wider landholding currently comprises a wood chip Biomass Power Plant including the biomass building with associated plant, emissions stack (approx. 65m AOD), external storage bays, office, car parking, electrical substation and internal one-way access road. A topographical survey of the wider Biomass Plant shows the landholding falling from east to west. The eastern boundary of the landholding has the highest elevation with a level of approximately 9.50m AOD, with the lowest elevation occurring on the western boundary with an elevation of approximately 4.50m AOD.

- 2.3.2 The Site within the wider Biomass Plant site measures an approximate area of 6,575m² which includes the HPF and HTFS compound area (the HPF Compound), the internal access route for the HTT, the proposed substation and the cable route. The Site comprises existing hardstanding, an existing internal access route, bare ground, existing northern boundary fence line, a strip of broadleaved woodland and semi-improved neutral grassland along the proposed cable route running the western and southern boundary of the Site.

2.4 SITE ACCESS

- 2.4.1 The Biomass Plant is currently accessed from the east off Heolcae'r Bont. The existing access will also be utilised for the Proposed Development.

2.5 IDENTIFIED RECEPTORS AND DESIGNATIONS

- 2.5.1 Under the adopted Local Development Plan Proposals Map, the Site is designated as within a safeguarded Coal Resource Minerals Area and within a Coastal Corridor Strategy Area. The eastern section of the Western Wood Biomass Energy Plant is designated as within a Settlement Protection Zone.
- 2.5.2 The nearest residential receptor to the Site is Ty'n-y-caeau off the A48 approximately 260m from the Proposed Development and Longlands House off Heolcae'r Bont Road, approximately 290m from the Proposed Development.
- 2.5.3 The nearest statutory ecological designations are the Eglwys Nunydd Reservoir SSSI located approximately 525m to the south and the Margam Moors SSSI located 1km to the south-west of the Site. The nearest non-statutory designated site is the Junction 38 Wetland Complex SINCE located directly north of the site.
- 2.5.4 The nearest Listed Building to the site is the Grade II* Listed Margram Crematorium 720m to the south-east of the Site. There are numerous listed buildings associated with the Margram Park Abbey and County Park approximately 900m to the east of the site beyond the M4. The nearest Schedule Monument is the Margram Abbey situated 1.6km to the east of the Site.
- 2.5.5 The majority of the Site is located within Flood Zone A with a very small portion of the western side of the Site located within Flood Zone B.

2.6 SITE HISTORY

- 2.6.1 From using the planning application search facility on Neath Port Talbot County Borough Council's website, **Table 2.1** below outlines a summary of the planning history at the wider Biomass Power Plant site.

Table 2.1: Site Planning History

Planning Reference	Planning Description	Date
P2004/0035	Proposed Biomass Power Plant	Approved April 2004
P2004/1822	Proposed amendments to Condition 17 and 33 of Planning Permission P004/0035; A) Proposed change to condition 17 to allow wood fuel delivery vehicles to enter and leave the site between 07:00 and 19:00 hours Mondays to Fridays and 07:00 and 14:00 hours on Saturdays B) Proposed change to condition 33 to allow 30 wood fuel carrying vehicles to enter the site on any working day	Approved February 2005
P2006/1504	Agree Condition 28 of Planning Application 04/35 regarding storage of roundwood	Approved November 2006
P2006/1144	Agree Condition 22 of Planning Application 0435 regarding water vole survey	Approved November 2006

P2006/1513	Agree Condition 8 of Planning Application 04/35 regarding surfacing of access road	Approved November 2006
P2006/1514	Agree Condition 31 of Planning Application 04/35 regarding dust suppression scheme	Approved November 2006
P2006/1448	Agree Condition 16 of Planning Application 04/35 regarding noise mitigation scheme	Approved November 2006
P2006/1280	Agree Condition 3 of Planning Application 04/35 regarding means of enclosure	Approved November 2006
P2006/1281	Agree Condition 5 of Planning Application 04/35 regarding access point	Approved November 2006
P2006/1549	Agree Condition 11 of Planning Application 04/35 regarding highway drainage improvements	Approved November 2006
P2006/1282	Agree Condition 32 of Planning Application 04/35 regarding Archaeological Watching Brief	Approved November 2006
P2007/0104	Screening Report for Biomass Power Station	EIA Development March 2007
P2007/0826	Biomass Fired Power Station	Approved September 2007
P2008/0357	Agree Condition 14 of Planning Application 07/826 to allow wood chipping operations to be carried out without enclosing within a building	Approved July 2008
P2008/1046	Agree Condition 34 of Planning Application 07/826 regarding fire precautions and fire systems	Approved September 2008
P2008/1047	Agree Condition 33 of Planning Application 07/826 regarding air emissions monitoring	Approved September 2008
P2008/1456	Details relating to Condition 5 (lighting and road improvements) of previous planning consent P2007/0826	Approved May 2009
P2008/1048	Agree Conditions 21 and 22 of Planning Application 07/826 regarding landscaping	Approved June 2010
P2012/0052	Revised condition details to be agreed in associated with Condition 25 (log storage area) of application P2007/0826 approved on the 18/09/2007	Approved January 2012
P2014/1013	Non-material amendment following grant of Planning Permission P2007/826 (Approved on the 18/9/2007) - restriction of access off Longlands Lane	Approved November 2017
P2020/0954	Lawful development certificate for a proposed use relating to the construction of ammonia / urea storage tank and associated foundation	Permitted Development December 2020
P2024/0016	Certificate of Lawful Development (Proposed) for a replacement Substation (measure 5.8m in height, 9m in length and 6.5m in width); an LV Switch Room (9m in length, 6.6m in width and 5.3m in height) and a Transformer with associated compound (measuring 7.5m by 7m) and 2m high compound fencing	Permitted Development Feb 2024



3. THE PROPOSED DEVELOPMENT

3.1 INTRODUCTION

- 3.1.1 This section provides a description of the Proposed Development, its operational layout, and the equipment and structures proposed within the Site.

Green Hydrogen

- 3.1.2 Heavy industry and long-distance transport are sectors where greenhouse emissions are particularly hard to abate, owing to factors such as very high heat demands, capital, inability to electrify (battery size, cost and grid connection availability) and more. Green hydrogen provides an opportunity to tackle these hard to abate industries through its unique properties.

- **Aviation** – Hydrogen has a specific energy-per-unit mass that is three times higher than that of traditional jet fuel. When burned, hydrogen does not emit CO₂ emissions, making it a suitable solution for powering large aircraft over long distances, without the undesirable by-product of CO₂. Hydrogen can be combusted through modified gas-turbine engines or converted into electrical power that complements the gas turbine via fuel cells. The combination of both creates a highly efficient hybrid-electric propulsion chain powered entirely by hydrogen.
- **HGV's** – Hydrogen vehicles are more efficient than conventional Internal Combustion Engine (ICE) vehicles and produce no harmful exhaust emissions, they only emit water vapor and warm air. However, similar to conventional ICE vehicles, they can fuel in approximately five minutes and have a driving range of more than 300 miles. Compared to the payload of batteries, long charge times and reduced mileage of electric HGVs (compared to an ICE vehicle), hydrogen could be the solution to decarbonising HGVs and long-distance transportation.
- **Hydrogen for Heat** – Hydrogen boilers work exactly like current gas boilers, except the fuel is hydrogen instead of natural gas. Hydrogen does not produce CO or CO₂ when combusted and does not contain contaminants that can be found in natural gas such as hydrogen sulphide, mercaptans, mercury and dissolved solids. Therefore, replacing natural gas with hydrogen has the potential to displace the carbon emissions associated with industrial heating processes.

- 3.1.3 WBE are seeking planning permission for a HPF with associated infrastructure and HTTFS. The Proposed Development supports the net zero targets of both Neath Port Talbot and Welsh Government.

3.2 PROPOSED DEVELOPMENT

- 3.2.1 The Site boundary covers an approximate area of 6,575m² and is situated within the northern part of the wider existing Western Wood Biomass Energy Plant site.

- 3.2.2 The proposed site layout is illustrated on Drawing No. **PRO1000/02/03** and the general arrangement of the HPF and HTTFS Compound is presented on Drawing No. **PRO1000/02/04**.

- 3.2.3 The proposed HPF and HTTFS Compound will comprise of the following:

- Utilisation of approximately 758m² of existing hardstanding;
- Construction of concrete hardstanding extension (the Extension Area) measuring 340m² north of the existing hardstanding area but within the wider site ownership boundary including retaining wall. Construction details of which to be finalised at the detailed design stage;
- Concrete Firewall measuring 2.5m in height along the northern and western boundaries of the HPF compound area;
- Electricity Switchgear Container, measuring 6.05m wide, 2.4m depth and 2.6m high;
- Electrolyser Package including:
 - Electrolyser Container measures 12.2m wide, 2.4m depth and 3.6m high, with the hydrogen vent stack measuring 9.1m in height

- Power Supply Container measures 6.05m wide, 2.4m deep and 2.9m high
 - Cooler Container measures 6.05m wide, 2.4m deep and 2.8m high
 - 2no. Compressor Package including:
 - Compressor Container measures 6.05m wide, 2.4m deep and 5.02m high
 - Chiller measures 2.2m wide, 0.9m deep and 2m high
 - Buffer measures 1.03m wide, 1.7m deep and 2.2m high
 - 4no. Multi-Cylinder Pallets (MCPs), each measuring 1.05m wide, 1.05m deep and 2m high
 - Water filter / container measuring 3m wide, 2.2m deep and 1.5m high
 - Water tank measuring 2m wide, 2m deep and 2m high
 - Air Supply Unit measuring 2m wide, 1.5m deep and 2m high
 - Proposed Substation on a gravel hardstanding surrounded by a 2m high paladin fence including:
 - LV Switchgear measuring 3m wide, 2m deep and 2.5m high
 - Transformer measuring 2m wide, 2m deep and 2.5m high
 - RMU measuring 2m wide, 2m deep and 2.5m high
 - 3no. Tube Trailer Bays;
 - Connecting Pipes;
 - Underground cables, cable trench is anticipated to be 0.5m wide and 0.5m deep; and
 - 2m high Paladin security fencing along the eastern and southern boundary of the HPF compound.
- 3.2.4 Details of all equipment and infrastructure can be found on Drawing No's. **PRO1000/02/07 – PRO1000/02/16.**

3.3 PROCESS DESCRIPTION

- 3.3.1 The below provides a description of the green hydrogen production process. A Process Flow Diagram is presented on Drawing No. **PRO1000/02/17.**

Water

- 3.3.2 The HPF will be connected to the mains water that supplies the Biomass Plant within the wider landholding. Due to mineralisation and impurities, the water supply will be treated before it can be used in the electrolysis process. To achieve this, the water is passed through a water filter consisting of a bank of filters with very fine pores to filter out minerals dissolved in the water (physical and chemical filtering) while deionising the water at the same time. The water filters are periodically replaced to ensure optimum efficiency and to guarantee the water supply specifications for the electrolyser are maintained. The reject water from the filter will be routed to the existing Biomass Plants drainage network to discharge off site. Drawing No. **PRO1000/02/13** provides details of the Water Filter and Conditioner.

Electrolysis

- 3.3.3 The demineralised water is introduced into the largest of the three electrolyser containers via a pipe at a maximum rate of 700l/hr. The electrolyser consists of two large, sealed tanks within which there is an anode (positively charged) and a cathode (negatively charged) that are connected to the green electricity supply via the Power Supply Unit. The anode and cathode are separated by a membrane

referred to as a Proton Exchange Membrane (PEM) which permits the diffusion of hydrogen ions only.

Hydrogen and Oxygen Gas Capture and Compression

- 3.3.4 The electrolyser unit is connected by two small diameter pipes, one at the cathode side and the other at the anode side of the PEM. The pipes allow hydrogen (produced at the cathode) and oxygen (produced at the anode) to be released from the electrolyser. Under pressure, the hydrogen gas passes through this pipework and exits the electrolyser containers before transferring to either the compressor or the compressor buffer tank. The buffer tank, which is also connected to the compressor, comprises four multi-cylinder pallets (MCPs) and acts as a hydrogen store so that the compressor can be continually supplied with hydrogen at the right pressure. Details of the compressor and buffer storage can be found on Drawing No's. **PRO1000/02/09** and **PRO1000/02/14**.
- 3.3.5 The hydrogen is compressed within the compressors and discharged into the HTT or MCP's.
- 3.3.6 The oxygen gas produced in the electrolyser is released to the atmosphere through a vent.

Hydrogen Tube Trailers

- 3.3.7 The HPF and HTFS Compound comprises three HTT parking bays and two HTT filling interfaces, as illustrated on Drawing No. **PRO1000/02/04**. The interfaces are located downstream of the compressor. Each of the gas trains will be fitted with a flowmeter to record the mass of gas dispensed. The HTT interfaces comprises of a push-fit nozzle that will connect with the storage compartment on the trailers and dispense gas. The system is capable of simultaneously filling two HTT at the same time.
- 3.3.8 The Proposed Development will support HTTs with a maximum fill pressure of 380 bar(g) and a typical mass of 420kgs.

3.4 SURFACE WATER MANAGEMENT

- 3.4.1 Currently, surface water from the existing Biomass Plant hardstanding areas and access road drains via a series of road gullies, which subsequently fall into underground carrier pipework. The carrier pipework generally falls in a westerly direction where all collected surface water passes through a separator, before draining into an attenuation pipe along the western boundary of the site for subsequent infiltration into the underlying geological strata. Any overflow is discharged into the local ditch network in the north-western corner of the site.
- 3.4.2 The majority of the Proposed Development is located on existing hardstanding within the northern boundary of the Biomass Plant site where existing surface water drainage has already been installed. Where the Proposed Development is located on existing hardstanding, this area will not increase the amount of hardstanding / impermeable area draining to the existing surface water drainage network for the Biomass Plant and therefore shall not increase the flood risk.
- 3.4.3 A surface water drainage design associated with the proposed Extension Area (measuring 342m²) has been prepared. The proposed surface water drainage system for the Extension Area comprises two infiltration structures to the north of the Extension Area, measuring 52m² for the larger structure and 21m² for the smaller structure, with both being 1.2m deep. To allow surface water to runoff from the Extension Area to the infiltration structures there shall be 150mm diameter pipes installed at the base of the concrete firewall which runs along the northern boundary of the Extension Area at a maximum of 5m centres. Drawing No. **PRO1002/01/01** illustrates the proposed surface water general arrangement for the concrete Extension Area.
- 3.4.4 A SAB application will be submitted prior to the construction of the Proposed Development for approval, however the proposed surface water management strategy ensures that surface water can be effectively managed and the design follows the principals of a SAB compliant scheme.

3.5 CABLE ROUTE

- 3.5.1 The Proposed Development will take electricity from the Biomass Plant as part of the hydrogen

production process. A supply cable is proposed from the existing substation serving the Biomass Plant, which will run along the southern and western boundary of the Biomass Plant to the proposed new substation located within the north-western part of the wider Biomass Plant site. A cable will then be routed from the proposed substation to the proposed electricity switchgear container within the HPF and HTTFS Compound.

- 3.5.2 The indicative cable routes are presented on Drawing No. **PRO1000/02/03**. The cable trench is anticipated to be 0.5m wide and 0.5m deep. The exact alignment of the route and construction details of the cable trenches will be confirmed at the detailed design stage.

3.6 BOUNDARY TREATMENTS

- 3.6.1 During construction, the works area will be fenced off along the northern boundary to prevent any adverse impacts to the woodland and any protected species. A detailed Construction Environmental Management Plan will be submitted to the Local Planning Authority for approval prior to the commencement of the Proposed Development.
- 3.6.2 Once operational, the HPF and HTTFS Compound will be secured by a 2.5m high concrete firewall along the northern and western boundaries and a 2m high paladin security fence along the eastern and southern boundary excluding the HTTFS bays. Drawing No. **PRO1000/02/12** illustrates details of the concrete firewall and Drawing No. **PRO1000/02/16** presents the paladin security fencing details.

3.7 CONSTRUCTION PROGRAMME

- 3.7.1 The main construction element for the Proposed Development is the concrete Extension Area covering of 342m². A retaining wall along the northern boundary is proposed to retain the Extension Area. Indicative section details are provided on Drawing No. **PRO1000/02/06** with details to be finalised at the detailed design stage.
- 3.7.2 The main components of the HPF and HTTFS Compound comprise of an electrolyser, a compressor and cooling system which are shipped either as containers or assembled skids, and designed for ease of integration. The plant and equipment will be delivered to the Site in a range of vehicles, primarily flatbed lorries. The containers will be lifted onto the extended concrete pad by crane and secured.
- 3.7.3 The construction period is expected to last between three to six months with commissioning taking place concurrently during the last three months. The majority of plant and equipment will be delivered within the first three months, followed by the fit-out and commissioning stages for the last three months when vehicle movements will reduce. It is anticipated that between five to eight technicians will be required during the construction phase of the Proposed Development .
- 3.7.4 Whilst the equipment is being delivered and positioned, the cable trenches will be dug and cables installed along the proposed cable route (Drawing No. **PRO1000/02/03**) between the existing electrical substation and the proposed power container.
- 3.7.5 Once the key infrastructure packages are installed, the HPF and HTTFS Compound will be fitted out, and the connections and pipework between the equipment will be installed. Once fitted, the Proposed Development will enter commissioning with the operation checked against the Site Acceptance Test Procedures.
- 3.7.6 Full details of construction will be provided within a Construction Environmental Management Plan which can be dealt with by a suitably worded planning condition.

3.8 SITE ACCESS

- 3.8.1 The Proposed Development will utilise the existing Biomass Plant access point to the east of the HPF and HTTFS Compound. This existing Biomass Plant access has suitable visibility splays and entrance radii for HGV's.

- 3.8.2 Vehicles accessing the Site, during both the construction and operational phases, will approach from the M4. Taking exit 38 (the Margam Interchange), vehicles will proceed in a westerly direction along Heolcae'r Bont, to the Biomass Plant access road. Heolcae'r Bont is a two-way road which is well lit with street lighting and pedestrian pavement along the northern side of the road. Vehicles will then turn right onto the WBE private access road (Longland Lane) before proceeding for approximately 100m and turning left into the Biomass Plant. Vehicles will exit the site taking the route in reverse.
- 3.8.3 The WBE private access road continues in a northerly direction and joins the access road to Margam Green Energy Plant, however this road link is no longer in use and contains physical barriers to prevent vehicles using it. The junction from Heolcae'r Bont onto the WBE private access road has established signing directing vehicles to the Biomass Plant entrance.
- 3.8.4 Once on the Biomass Plant, there is an existing internal one-way system in place. HTTs will circulate the Site in a clockwise direction, following the internal one-way system and reverse into the hydrogen refuelling bays to be refilled. Once filled, the HTTs will leave in a forward gear to the Biomass Plant entry/exit gates. A Swept Path Analysis illustrating internal traffic movements is presented on Drawing No. **PRO1000/02/05**.

Car parking

- 3.8.5 The wider Biomass Plant site has existing car parking areas along with an overflow car park to the west of the existing site offices. Site operatives during both the construction and operational phases for the Proposed Development will use these existing car parking spaces which is considered to be sufficient for the number of operatives required. There will be no parking on the local highway network.

3.9 OPERATIONAL CONSIDERATIONS

Hours of Operation

- 3.9.1 Once operational, the HPF will run for twenty-four hours, seven days a week, except during shutdown periods. There will be two planned shutdown periods annually which will coincide with the planned maintenance shutdowns for the Biomass Plant.
- 3.9.2 For the purpose of flexibility, HTT movements will also be twenty-four hours, seven days a week.

Vehicle Movements

Construction Phase

- 3.9.3 **Table 3.1** below illustrates the anticipated maximum vehicle generation per day during the construction phase of the Proposed Development. The numbers account for construction worker movements and deliveries to site over a six month construction period.

Table 3.1: Construction Vehicle Movements

Vehicle Movements Per Day	Cars	Vans / SGVs	HGVs	Total
Construction Phase (Six Months)	5	2	2	18

- 3.9.4 An anticipated maximum of 18 trips per day will be required during the construction phase, or 36 two-way movements (in and out). It should be noted that this is the maximum number and vehicle movements will vary depending on the construction activities on site.

Operational Phase

- 3.9.5 **Table 3.2** below illustrates the anticipated maximum vehicle generation per day during the operational phase of the Proposed Development. The numbers account for site operatives, deliveries and any required effluent removal from site.

Table 3.2: Operational Vehicle Movements

Vehicle Movements Per Day	Cars	Vans / SGVs	HGVs	Total
Operational	2	2	2	12

- 3.9.6 A maximum of 12 trips per day will be generated during the operational phase of the proposal, or 24 two-way movements (in and out).

Employment

- 3.9.7 Once fully operational, two technicians and one supervisor will be required to operate and maintain the HPF and HTTFs Compound over three rotating shifts a day. Welfare facilities and office space will be shared with the existing provisions at the Biomass Plant.

Lighting and Security

- 3.9.8 The wider Biomass Plant site benefits from an existing lighting scheme which is considered adequate for the Proposed Development. Minimal additional low-level lighting will be implemented above the access doors to the ISO Containers. Lighting will be directed downwards to avoid light pollution and disturbances to nocturnal animals.



4. SUMMARY OF ENVIRONMENTAL ASSESSMENTS

4.1 INTRODUCTION

- 4.1.1 This chapter sets out and briefly summarises the environmental assessments that have been carried out in support of the application. Those environmental topics not requiring detailed consideration due to the likely negligible effects have also been referenced.

4.2 SPECIFIC ENVIRONMENTAL AND TECHNICAL ASSESSMENTS

- 4.2.1 The following environmental and technical topics have been assessed:

- Ecological Assessment;
- Arboriculture Assessment;
- Flood Consequence Assessment;
- Drainage Strategy; and
- Phase 1 Geotechnical Desk Top Study

- 4.2.2 These environmental and technical assessments are provided within Appendices A and E respectively but are summarised below.

Ecology

- 4.2.3 An Ecological Appraisal has been prepared by Acer Ecology and is presented in **Appendix A**.
- 4.2.4 No adverse impacts are concluded on identified statutory designated sites due to the small-scale nature of the Proposed Development and the separation distances from identified designated sites. The Junction 38 Wetland Complex SINC lies directly north of the Proposed Development and therefore, impacts from run-off and / or pollutants can be avoided by the implementation of pollution prevention mitigation measures.
- 4.2.5 Habitats recorded on site include existing hardstanding, a concrete wall, a post-wire fence line, bare ground and a strip of broadleaved semi-natural woodland.
- 4.2.6 The proposal uses existing hardstanding with a minimal hardstanding extension proposed (342m²) to accommodate the Proposed Development. The facility has been designed to avoid vegetation removal as far as possible with only limited vegetation removal required to accommodate the 342m² Extension Area.
- 4.2.7 Access for plant and machinery during construction works may potentially be required around the back of the existing WBE office block, therefore a strip of scrub and trees may potentially be removed / any overhang pruned in this area. However, the probability of tree felling for T1 and G1 (see **Appendix B**) is low and this will be confirmed prior to the construction of the Proposed Development as part of a CEMP.
- 4.2.8 No plant species considered to be of either national, regional or local significance were recorded on site. No direct evidence of reptiles was recorded on site. In addition, no dormice or evidence of their presence, such as nuts with teeth-markings characteristic of having been opened by dormice, were noted on the site during the survey. Section 4 of the Ecological Appraisal provides requirements to adhere to as part of the limited vegetation clearance required to prevent any adverse impacts to protected species.
- 4.2.9 To prevent any accidental damage to the broadleaf woodland located adjacent to the northern boundary of the Proposed Development temporary fencing (e.g. Herra's fencing) will be installed during the construction phase. This will maintain an ecological buffer that will negate adverse impacts to the adjacent land.
- 4.2.10 A Construction Environmental Management Plan (CEMP) will be provided prior to construction of the Proposed Development outlining the environmental management processes, procedures and systems

that will be implemented in order to protect the habitats to the north of the Site.

- 4.2.11 As part of the Proposed Development, various enhancements have been incorporated into the design including one bat box and one bird box to be installed upon the tree T1 within the woodland north of the Proposed Development and within the ownership of WBE to allow for undisturbed dispersal to local foraging habitats. In addition, the infiltration structures proposed as part of the proposed drainage strategy to the north of the hardstanding Extension Area will be enhanced post-development by planting with woodland flower seed mix.
- 4.2.12 The Ecological Appraisal concludes that the site's ecological value is not considered to represent a fundamental in-principle constraint to the proposed development. Provided the necessary mitigation measures (detailed in Section 4 of **Appendix A**) are implemented, the development is not anticipated to result in adverse impacts to any protected sites, habitats or species.

Arboriculture

- 4.2.13 An Arboricultural Assessment has been prepared by TreeCare Consulting and is presented in **Appendix B**.
- 4.2.14 Clearance of scrub and pruning works on trees along the HPF and HTTFS Compounds northern boundary up to the ownership boundary will be required to accommodate the Proposed Development. At present, there are some minor self-set trees/scrub north of the Extension Area all of low quality. This clearance will not adversely affect the main separate ownership woodland edge.
- 4.2.15 Access for plant and machinery during construction works may potentially be required around the back of the existing WBE office block, therefore a strip of scrub and trees may potentially be removed / any overhang pruned in this area. However, the probability of tree felling for T1 and G1 is low and this will be confirmed prior to the construction of the Proposed Development as part of a CEMP.
- 4.2.16 Numerous saplings and dormant seeds are located within the woodland edge to the north of the HPF and HTTFS Compound which is under separate ownership. These woody plants will form the replacement trees/woodland edge as they develop and they will be accelerated due to the reduction in canopy coverage in this area.
- 4.2.17 Any surface water run-off from the hardstanding Extension Area will run into a proposed infiltration structure to the north of the Extension Area and therefore there will be no runoff from the proposed hardstanding onto the adjacent owned land north of the HPF and HTTFS Compound.

Flooding

- 4.2.18 A Flood Consequence Assessment has been prepared by JBA Consulting and is presented in **Appendix C**.
- 4.2.19 The Site is predominately located within Development Advice Map Classification Zone A, with part of the western extent of the Proposed Development shown to be located within Zone B. Zone A is defined as areas considered to be at little or no risk of fluvial or tidal / coastal flooding. Zone B is defined as areas known to have been flooded in the past evidenced by sedimentary deposits.
- 4.2.20 The Flood Map for Planning identifies the site as being located within Flood Zone 1. Flood Zone 1 are areas which have a less than 1 in 1000 (0.1%) (plus climate change) change of flooding in a given year.
- 4.2.21 The Flood Consequence Assessment concludes that the Site is flood free during the fluvial 1% AEP plus climate change and 0.1% AEP event. It also remains flood free during the tidal 0.5% AEP event and the 0.1% AEP event with allowances for climate change.
- 4.2.22 Overall, the assessment concludes that on the grounds of flood risk, the Proposed Development meets the requirements set out in Tan-15 and the aims of Planning Policy Wales.

Drainage

- 4.2.23 A Drainage Strategy has been prepared by Sirius Environmental and is presented in **Appendix D**.
- 4.2.24 Currently, surface water from the existing Biomass Plant site hardstanding areas and access road drains via a series of road gullies, which subsequently fall into underground carrier pipework. The carrier pipework generally falls in a westerly direction where all collected surface water passes through a separator, before draining into an attenuation pipe along the western boundary of the Biomass Plant for subsequent infiltration into the underlying geological strata. Any overflow is discharged into the local ditch network in the north-western corner of the Biomass Plant.
- 4.2.25 The majority of the Proposed Development will be located on an existing hardstanding surface within the northern boundary of the Biomass Power Plant site which is subject to the existing surface water drainage system. Where the Proposed Development is located on existing hardstanding, this area will not increase the amount of hardstanding / impermeable area draining to the existing surface water drainage network for the Biomass Plant and therefore shall not increase the flood risk.
- 4.2.26 A surface water drainage design associated with the proposed Extension Area (measuring 342m²) has been prepared. The proposed surface water drainage system for the Extension Area comprises two infiltration structures immediately of the Extension Area (and within the Applicant land ownership boundary), measuring 52m² for the larger structure and 21m² for the smaller structure, with both being 1.2m deep. To allow surface water to runoff from the Extension Area to the infiltration structures, there shall be 150mm diameter pipes installed at the base of the concrete firewall which runs along the northern boundary of the Extension Area at a maximum of 5m centres.
- 4.2.27 Micro-drainage calculations show that the proposed infiltration structures can appropriately deal with the 1% Annual Exceedance Probability event with an additional allowance of 40% for climate change.
- 4.2.28 Whilst the proposed drainage strategy remains subject to SAB approval, the drainage strategy concludes that surface water generated by the Proposed Development can be effectively managed and follows the principles of a SAB compliant surface water drainage system, and therefore the Proposed Development should not be precluded on drainage grounds.

Phase 1 Geotechnical Desk Top Study

- 4.2.29 A Phase 1 Geotechnical Desk Top Study has been prepared by Sirius Geotechnical and is presented in **Appendix E**.
- 4.2.30 The study concludes that the risk to site stability from historical mining and quarrying is considered to be low, with no further works required in this respect.
- 4.2.31 A review of the site's history, current condition and environmental setting has identified that the site was undeveloped prior to construction of the existing Biomass Plant, and since the Biomass Plant was constructed, it has been operated under IPPC/LAPPC. Furthermore, the Site walkover survey did not identify any evidence of ground contamination at the Site, or of potential ground contamination sources at the Site. The assessment therefore concludes that no significant contaminant linkages affect the Proposed Development and the risk to any potential receptors is very low to negligible. No specific remedial works are considered to be necessary. In addition, no significant sources of hazardous ground gases that may affect the Proposed Development have been identified.
- 4.2.32 In order to confirm foundation solutions for the proposed retaining wall, intrusive ground investigation works are recommended prior to construction of the Proposed Development which can be dealt with by a suitably worded planning condition.

4.3 OTHER ENVIRONMENTAL AND TECHNICAL CONSIDERATIONS

Visual

- 4.3.1 The Proposed Development is located on the existing Western Wood Biomass Energy Plant site, which

is situated within an industrial area, surrounded by established industrial uses (Margam Green Energy Plant to the north, BOC Gas & Gear works to the south and Tata Steel Works to the west). Given the position of the Proposed Development within an existing industrial site, the existing screening vegetation surrounding the site, the infrastructure on site and the limited scale of the Proposed Development (highest piece of equipment being the hydrogen vent stack of the electrolyser at 9.1m), it is considered that the scale and appearance of the Proposed Development is not out of character of the surrounding area.

- 4.3.2 The proposal includes equipment of an industrial form, within an already industrialised scene, and it is therefore considered that the local landscape of the site and immediate surroundings can accommodate the Proposed Development without substantial change in character. The site's ready-made industrial landscape structure and being well screened from its surroundings provides limited visibility to the surrounding area.
- 4.3.3 Overall, given the limited nature of the Proposed Development, the established industrial site and wider industrial setting it is considered that the Proposed Development can be successfully integrated into the landscape without causing substantial impact to the landscape character and visual amenity in the local area.

Noise

- 4.3.4 The loudest piece of equipment of the Proposed Development are the compressors which are housed in containers, emitting 85dB measured from a distance of 1m. The nearest residential receptors are Ty'n-y-caeau off the A48 approximately 260m from the Proposed Development and Longlands House off Heolcae'r Bont Road, approximately 290m from the Proposed Development. The Site is located on land characterised and surrounded by existing industrial operations, with associated noise effects and significant levels of road traffic associated with the A48 and M4 motorway. Proposed activities within the HPF and HTTFS Compound are not anticipated to cause detriment to local amenity. In regards to vehicle movements, the HTT's will be moving within the site for a longer period than HGV's associated with the Biomass operations, however given the small number of HTT vehicle movements anticipated per day it is not considered that this will result in adverse noise impacts.
- 4.3.5 Therefore, it is highly unlikely that the site operations will intrude above established background noise levels. Temporary construction noise will be present during the 6-month construction phase, however best practice guidance during construction will be followed. Furthermore, majority of the construction work on site is the placement, installation and fitting of equipment, therefore given the high level of background noise already established in the area, construction noise is unlikely to cause detriment to local amenity.

Air Quality

- 4.3.6 During normal operations, hydrogen oxygen and trace levels of air exhaust will be vented from the Proposed Development. The venting of hydrogen and nitrogen will occur during shut down and maintenance periods circa twice a year and will occur over a very short time.
- 4.3.7 The Proposed Development will not generate a significant amount of traffic during the construction or operational phases. A maximum of 36 two-way movements are anticipated during the 6-month construction phase and 24 two-way movements during the operational phase. Given the nature of the Proposed Development, the minimal level of traffic generated and the surrounding existing industrial uses (Margam Green Energy Plant to the north, BOC Gas & Gear works to the south and Tata Steel Works to the west) it is not considered that there will be any adverse impacts to air quality.

Traffic

Site Access

- 4.3.8 The Proposed Development will utilise the existing access point for the Biomass Plant to the east of the

HPF and HTTFS Compound off Heolcae'r Bont. This access has suitable visibility splays and entrance radii for HGV's.

Vehicle Routing

- 4.3.9 Vehicles accessing the Site, during both the construction and operational phases, will approach from the M4. Taking exit 38 (the Margam Interchange), vehicles will proceed in a westerly direction along Heolcae'r Bont, to the Biomass Plant access road. Heolcae'r Bont is a two-way road which is well lit with street lighting and pedestrian pavement along the northern side of the road. Vehicles will then turn right onto the WBE private access road (Longland Lane) before proceeding for approximately 100m and turning left into the Biomass Power Plant. Vehicles will exit the Site taking the route in reverse.

Vehicle Generation

- 4.3.10 A maximum of 18 trips per day will be required during the temporary construction phase, or 36 two-way movements (in and out). It should be noted that this is the maximum number, vehicle movements will vary depending on the construction activities on site. The vehicle movements will be made up of HGVs, vans and personal vehicles.
- 4.3.11 A maximum of 12 trips per day is anticipated during the operational phase, or 24 two-way movements (in and out). These numbers account for site operatives, deliveries and any required effluent removal from the HPF and HTTFS Compound.

On-Site Movements

- 4.3.12 Once on site, there is an existing internal one-way system in place. HTT's will circulate the Site in a clockwise direction, following the internal one-way system and reverse into the hydrogen refuelling bays to be refilled. Once filled, the HTT'S will leave in a forward gear to the entry/exit gates. A Swept Path Analysis illustrating the internal traffic movements is presented on Drawing No. **PRO1000/02/05**.
- 4.3.13 To ensure safe manoeuvring of the HTT's and to control any conflicts with the existing Biomass Plant traffic, Site operatives will be used as 'Banksmen' to assist in guiding the HTT reversing into and pulling out of the bays.

Car Parking

- 4.3.14 The Biomass Power Plant site has existing car parking areas, along with an overflow car park to the west of the existing site offices. Site operatives during both the construction and operational phases of the Proposed Development will use these existing car parking spaces which are considered to be sufficient for the number of operatives required. There will be no parking on the local highway network.

Summary

- 4.3.15 Given the minimal trip generation outlined above and the temporary nature of the construction phase, it is considered that the construction and operation of the Proposed Development will have minimal impact on the local highway network and there are no highway safety concerns from the proposal.

Archaeology and Cultural Heritage

- 4.3.16 The majority of the Proposal Development is located on an existing hardstanding area as part of the wider Western Wood Biomass Energy Plant site, which is situated within an area surrounded by industrial works. Whilst the existing hardstanding area is proposed to be extended by 340m², the Extension Area is located within the ownership boundary of the Biomass Plant Site and partly on previously disturbed land.
- 4.3.17 The nearest historic designation is the Grade II* Listed Margam Crematorium 720m to the south-east of the Site. Given the separation distance between the Site and any historic designations, and the limited scale of development proposed within an already industrialised scene, the proposal is unlikely

to cause impact upon archaeology and cultural heritage features.

Lighting

- 4.3.18 The existing Biomass Plant benefits from lighting which is considered adequate for the Proposed Development. Minimal additional low level lighting will be implemented above the access doors to the ISO Containers. Lighting will be infrared motion activated sensors and be directed downwards to avoid light pollution and disturbances to nocturnal animals. The lights will only be activated by human presence and will not be activated by animals. The Proposed Development is therefore considered unlikely to cause any adverse impacts from lighting.



5. PLANNING POLICY AND MATERIAL CONSIDERATION CONTEXT

5.1 INTRODUCTION

- 5.1.1 This section sets out the planning policies and material considerations, which are relevant both to the Site and the type of development proposed, giving consideration to national and local planning policy. Section 38 of the Planning and Compulsory Purchase Act 2004 requires planning applications to be determined in accordance with the provisions of the Development Plan.
- 5.1.2 Given the primacy of the development plan in the decisions-making process, this planning statement identifies and summarises those planning policies of relevance to the determination of the planning application.
- 5.1.3 In addition to local planning policy, this section of the planning statement also summarises the material considerations at a national and local level.

5.2 NATIONAL ENERGY CONTEXT

Climate Change Act

- 5.2.1 The Climate Change Act 2008 required long term targets for the UK to achieve an 80% reduction in greenhouse gases by 2050 against 1990 levels. In June 2019, the Climate Change Act 2008 (2050 target Amendment) Order came into effect which required the net UK carbon account for the year 2050 to be 100% of 1990 levels.
- 5.2.2 Under the Climate Change Act there is a requirement for government to set legally binding 'carbon budgets'. Each budget provides a five-year cap on total greenhouse emissions; in order to meet the UK's emission reduction commitments caps should not be exceeded.
- 5.2.3 The first carbon budget target (2008-12) and the second (2013-17) have been met, the UK outperformed the third (2018-2022). However, it is not on track to meet the fourth (2023-27) or the fifth (2028-32).

Net Zero Strategy

- 5.2.4 The UK Government have set a target of decarbonising the electricity grid by 2035. To deliver the strategy overall electricity demand is expected to increase 40-60% by 2035, all met from low carbon sources.

Environmental (Wales) Act 2016

- 5.2.5 This Environmental (Wales) Act 2016 provides the necessary legislation to improve planning and management of natural resources in Wales. Part 2 of the Act relates to Climate Change and places an obligation on Welsh Ministers to reduce greenhouse gas emissions such that in the year 2050 they are at least 80% lower than baseline figures for 1990 or 1995, depending on the type of greenhouse gasses (GHG).

Advice Report: Path to a Net Zero Wales

- 5.2.6 Required under the Environmental (Wales) Act 2016, this report provides ministers with advice on Wales' climate targets between now and 2050 and assesses progress on reducing emissions to date. Prepared in December 2020 by the Climate Change Committee, (an independent statutory body) the report states that meeting the net zero target in Wales requires action across four key areas; Reducing demand for carbon intensive activities; Take-up of low-carbons solutions; Expansion of low-carbon energy supplies; Land; and Flexibility to meet net zero.
- 5.2.7 In April 2019, the Welsh Minister for the Environment, Energy and Rural Affairs, Lesley Griffiths AM declared a climate emergency in Wales. The Welsh Government initially committed to a 95% reduction in emissions by 2050, but in February 2021 they amended this to a legal commitment to achieve net zero emissions by 2050, with a stated ambition '*get there sooner*'. Neath Port Talbot County Borough Council declared a climate emergency in September 2022.

Prosperity for All: A Low Carbon Wales

- 5.2.8 The Environment (Wales) Act 2016 requires Welsh Government to reduce GHGs in Wales by at least 80% for the year 2050 from 1990 levels with a system of interim emissions targets and carbon budgets. The Plan sets out how Wales aims to meet the first carbon budget (2016-2020) and consequently the 2020 interim target, through implementation of 100 policies and proposals across Ministerial portfolios.

The Well-being of Future Generations (Wales) Act 2015

- 5.2.9 In addition to the policy provisions outlined above, under the Well-being Future Generations (Wales) Act 2015 all public bodies in Wales have a duty to secure sustainable development by improving the economic, social, environmental and cultural well-being of Wales to achieve the 7 'well-being goals'. All planning applications in Wales need to demonstrate how they align with the following seven well-being goals:

- A Prosperous Wales
- A Resilient Wales
- A More Equal Wales
- A Healthier Wales
- A Wales of Cohesive Communities
- A Wales of Vibrant Culture and Thriving Welsh Language
- A Globally Responsible Wales

- 5.2.10 One of the well-being goals set in the Act is for a globally responsible Wales. Statutory guidance on the Act (Shared Purpose: Shared Future 1: Core Guidance), explains that action on climate change benefits both people and communities in Wales, whilst also contributing to the wider global effort to tackle the causes of climate change and reduce its effects.

5.3 LOCAL PLANNING POLICY

- 5.3.1 Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that planning applications are determined in accordance with the provisions of the adopted Development Plan unless material considerations indicate otherwise. The Site falls within the administrative boundary of Neath Port Talbot County Borough Council. The adopted Development Plan comprises:

- Neath Port Talbot Local Development Plan

- 5.3.2 Under the adopted proposals map the site is designated as within a safeguarded Coal Resource Minerals Area and within a Coastal Corridor Strategy Area. The eastern section of the Western Wood Energy Plant is designated as within a Settlement Protection Zone.

Neath Port Talbot Local Development Plan

- 5.3.3 The Neath Port Talbot Local Development Plan covers the period 2011 to 2026 and was adopted in January 2016. The plan provides the basis for decisions on land use planning in the County Borough, up to 2026. The following table provides an assessment of policies within the Local Development Plan which are considered relevant to the proposed development.

Table 5.1 – Policies from the Neath Port Talbot Local Development Plan

Policy	Commentary
<u>Policy SP 1 – Climate Change</u> <i>"The causes and consequences of climate change will be addressed by implementing the following measures.</i> <i>In relation to the causes of climate change:...</i>	The proposal is for a Hydrogen Production Facility and Hydrogen Tube Trailer Filling Station on land within the northern border of the Western Wood Biomass Energy Plant site. Green Hydrogen is an alternative carbon-fuel that can be used to displace natural gas and fossil fuels in heavy industry and long-distance transport sectors.

2. Greenhouse gas emissions from transport will be minimised through encouraging freight / commercial transport by alternatives to road...

4. Provision will be made for the County Borough's appropriate contribution to renewable and low carbon energy generation

In relation to the consequences of climate change:

1. Likely increased flood risk will be taken into account and addressed by ensuring that there is a greater resilience by avoiding development on land that is at risk from flooding in the first instance in accordance with the sequential approach set out in national guidance or in locations that could increase the risk of flooding elsewhere;

2. The fragmentation of habitats will be minimised and opportunities made for habitat and species change and migration where possible".

The proposal will produce up to 960kgs of green hydrogen per day which will be trailered offsite to regional customers. It is estimated that the proposal will abate approximately 3,000 tonnes of CO₂ per year whilst also reducing tail-pipe emissions from conventional vehicles.

Surplus renewable electricity will be taken from the biomass power plant within the wider site for the hydrogen facility.

The majority of the proposal is located on existing hardstanding using previously developed land, removing the requirement for using a greenfield site. A small extension of the hardstanding will be required to accommodate the proposal.

The proposal supports the net zero targets of both Neath Port Talbot CBC and the Welsh Government.

The Flood Consequence Assessment (**Appendix C**) concludes that the site remains flood free during fluvial and tidal events with allowances for climate change. The majority of the proposal is located on existing hardstanding which drains into the existing Biomass Power Plant surface water network therefore not increasing the amount of impermeable area or the risk of flooding. A surface water drainage design is proposed for the hardstanding extension area (**Appendix D**) comprising two infiltration structures to the north of the hardstanding extension. The micro-drainage calculations show that the proposed infiltration structures can appropriately deal with the 1% AEP with an additional allowance of 40% for climate change. The proposal will not increase the risk of flooding on site or in the surrounding area.

Habitats recorded on site include existing hardstanding, a concrete wall, a post-wire fence line, bare ground and a strip of broadleaved semi-natural woodland. The Arboricultural Assessment (**Appendix B**) confirms that clearance of the scrub and trees along the hydrogen compounds northern boundary up to the ownership title boundary will be required to accommodate the Proposed Development. At present, there are some minor self-set trees/scrub north of the pad extension area. Numerous saplings and dormant seeds are located within the woodland edge under separate ownership. These woody plants will form the replacement trees/woodland edge as they develop.

As part of the Proposed Development, various enhancements have been incorporated into the design including one bat box and one bird box to be installed upon the tree T1 within the woodland north of the Proposed Development and within the ownership of WBE to allow for undisturbed dispersal to local foraging habitats. In addition, the infiltration structures proposed as part of the proposed drainage strategy to the north of the hardstanding Extension Area will be enhanced

	post-development by planting with woodland flower seed mix. The Ecological Appraisal (Appendix A) concludes that the site's ecological value is not considered to represent a fundamental in-principle constraint to the proposed development. Provided the necessary mitigation measures (detailed in Section 4 of Appendix A) are implemented, the development is not anticipated to result in adverse impacts to any protected sites, habitats or species. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy SP 3 – Sustainable Communities</u> <i>“The delivery of sustainable, healthy and cohesive communities and the conservation of the countryside will be promoted by:</i> <i>1. Defining sustainable communities and locations for development by the identification of a settlement hierarchy that reflects the role and function of settlements,</i> <i>2. Defining settlement limits within which development which accords with the settlement hierarchy will be permitted in principle;</i> <i>3. Resisting inappropriate development outside settlement limits”.</i>	The proposal is located within the existing Western Wood Biomass Energy Plant site along the northern boundary. The majority of the proposal is located on existing hardstanding with a 340m² hardstanding extension area proposed to accommodate the HPF. It is considered that the proposal would not constitute as inappropriate development outside settlement limits given its location on an existing industrial site within an already industrialised surrounding. Given the limited nature of the proposal, established industrial site and wider industrial setting, it is considered that the proposal can be successfully integrated within the landscape without causing adverse impacts. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy SC1 – Settlement Limits</u> <i>“...Outside settlement limits, development will only be permitted under the following circumstances: ...</i> <i>10. It is associated with...energy generation...”.</i>	The proposal is for a Hydrogen Production Facility within an established industrial site, the Western Wood Biomass Energy Plant site. The site has a locational need to be near to a renewable energy point of connection with the proposal being located on an existing Biomass Power Plant site. The proposal will produce up to 960kgs of green hydrogen per day which will be trailered offsite to regional customers. It is estimated that the proposal will abate approximately 3,000 tonnes of CO₂ per year whilst also reducing tail-pipe emissions from conventional vehicles. The proposal supports the net zero targets of both Neath Port Talbot and the Welsh Government. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy SP 4 – Infrastructure</u>	The production of green hydrogen requires a supply of renewable energy. A HPF therefore has a

<i>"Developments will be expected to make efficient use of existing infrastructure and where required make adequate provision for new infrastructure, ensuring that there are no detrimental effects on the area and community..."</i>	locational need to be located near a renewable energy point of connection. The proposal is located along the northern border of on the established Western Wood Biomass Energy Plant site. The Biomass Power Plant will provide renewable electricity to the HPF via a private wire. The proposal will provide an alternative carbon-fuel that can be used to displace natural gas and fossil fuels in heavy industry and long-distance transport sectors, supporting the net zero targets of both Neath Port Talbot and the Welsh Government. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy SP 5 – Development in the Coastal Corridor Strategy Area</u> <i>"In the Coastal Corridor Strategy Area, sustainable growth and development will be promoted to benefit the Country Borough as a whole, while protecting and enhancing the area's character and environment..."</i>	The proposal is located within the existing Western Wood Biomass Energy Plant site along the northern boundary on an existing hardstanding area with a minimal hardstanding extension to the north. Given the limited nature of the proposal, established industrial site and wider industrial setting, it is considered that the proposal can be successfully integrated within the surrounding area without causing adverse impacts to landscape character. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy SP 14 – The Countryside and the Undeveloped Coast</u> <i>"The countryside and undeveloped coast, including landscapes, seascapes and agricultural land, will be protected and where feasible enhanced through the following measures:</i> <i>1. The protection of the open countryside through the control of inappropriate development outside settlement limits;</i> <i>2. The protection of the undeveloped coast through the control of inappropriate development..."</i>	The site is located within an existing industrial site with the majority of the proposal on an existing hardstanding area, utilising previously developed land. A hardstanding extension is required to accommodate the proposal measuring 342m². The site has a locational need to be near to a renewable energy point of connection with the proposal being located on an existing Biomass Power Plant site. Given the existing industrial nature of the site and surroundings and the limited scale of the proposal, it is considered that the proposal will not cause adverse impacts to any nearby sensitive receptors. It is estimated that the proposal will abate approximately 3,000 tonnes of CO₂ per year whilst also reducing tail-pipe emissions from conventional vehicles. The proposal supports the net zero targets of both Neath Port Talbot and the Welsh Government. It is therefore considered that the proposed development is in accordance with the objective of this policy.

<u>Policy SP 15 – Biodiversity and Geodiversity</u> <i>“Important habitats, species and sites of geological interest will be protected, conserved, enhanced and managed through the following measures:</i> <i>1. The identification of the following internationally and nationally designated sites within the County Borough to enable their protection:</i> <i>(a) Special Areas of Conservation (SACs) and Ramsar Sites;</i> <i>(b) Sites of Special Scientific Interest (SSSIs)</i> <i>(c) National Nature Reserves (NNRs)</i> <i>2. The identification and protection of sites of regional and local importance</i> <i>3. The protection of important natural heritage features”.</i>	The Ecological Appraisal (Appendix A) concludes no adverse impacts to statutory designated sites and no adverse impacts to the adjacent SINC with implementation of mitigation measures as necessary. Habitats recorded on site include existing hardstanding, a concrete wall, a post-wire fence line, bare ground and a strip of broadleaved semi-natural woodland. A Construction Environmental Management Plan (CEMP) will be provided prior to construction of the development outlining the environmental management processes, procedures and systems that will be implemented in order to protect habitats surrounding the site. The nearest historic designation is the Grade II* Listed Margam Crematorium 720m to the south-east of the site. Given the separation distance between the site and any historic designations and the limited scale of development proposed within an already industrialised scene, the proposal is unlikely to cause impact upon archaeology and cultural heritage features. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy EN 6 – Important Biodiversity and Geodiversity Sites</u> <i>“Development proposals that would affect Regionally Important Geodiversity Sites (RIGS), Local Nature Reserves (LNRs), Sites of Interest for Nature Conservation (SINCs), sites meeting SINC criteria or sites supporting Local Biodiversity Action Plan (LBAP) or S42 habitats or species will only be permitted where:</i> <i>1. They conserve and where possible enhance the natural heritage importance of the site; and</i> <i>2. The development could not reasonably be located elsewhere, and the benefits of the development outweigh the natural heritage importance of the site.</i> <i>Mitigation and / or compensation measures will need to be agreed where adverse effects are unavoidable”.</i>	The Ecological Appraisal (Appendix A) concludes no adverse impacts to statutory designated sites and no adverse impacts to the adjacent SINC with implementation of mitigation measures as necessary. Habitats recorded on site include existing hardstanding, a concrete wall, a post-wire fence line, bare ground and a strip of broadleaved semi-natural woodland. A Construction Environmental Management Plan (CEMP) will be provided prior to construction of the development outlining the environmental management processes, procedures and systems that will be implemented in order to protect habitats surrounding the site. As part of the Proposed Development, various enhancements have been incorporated into the design including one bat box and one bird box to be installed upon the tree T1 within the woodland north of the Proposed Development and within the ownership of WBE to allow for undisturbed dispersal to local foraging habitats. In addition, the infiltration structures proposed as part of the proposed drainage strategy to the north of the hardstanding Extension Area will be enhanced post-development by planting with woodland flower seed mix. The Ecological Appraisal (Appendix A) concludes that the site’s ecological value is not considered to represent a fundamental in-principle constraint to the proposed development. Provided the

	necessary mitigation measures (detailed in Section 4 of Appendix A) are implemented, the development is not anticipated to result in adverse impacts to any protected sites, habitats or species. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy EN 7 – Important Natural Features</u> <i>“Development proposals that would adversely affect ecologically or visually important natural features such as trees, woodlands, hedgerows / field boundaries, watercourses or ponds will only be permitted where:</i> <i>1. Full account has been taken of the relevant features in the design of the development, with measures put in place to ensure that they are retained and protected wherever possible; or</i> <i>2. The biodiversity value and role of the relevant feature has been taken into account and where removal is unavoidable, mitigation measures are agreed”.</i>	Habitats recorded on site include existing hardstanding, a concrete wall, a post-wire fence line, bare ground and a strip of broadleaved semi-natural woodland. A Construction Environmental Management Plan (CEMP) will be provided prior to construction of the development outlining the environmental management processes, procedures and systems that will be implemented in order to protect habitats surrounding the site. The Arboricultural Assessment (Appendix B) confirms that clearance of the scrub and trees along the hydrogen compounds northern boundary up to the ownership title boundary will be required to accommodate the Proposed Development. At present, there are some minor self-set trees/scrub north of the pad extension area. Numerous saplings and dormant seeds are located within the woodland edge under separate ownership. These woody plants will form the replacement trees/woodland edge. As part of the Proposed Development, various enhancements have been incorporated into the design including one bat box and one bird box to be installed upon the tree T1 within the woodland north of the Proposed Development and within the ownership of WBE to allow for undisturbed dispersal to local foraging habitats. In addition, the infiltration structures proposed as part of the proposed drainage strategy to the north of the hardstanding Extension Area will be enhanced post-development by planting with woodland flower seed mix. The Ecological Appraisal (Appendix A) concludes that the site’s ecological value is not considered to represent a fundamental in-principle constraint to the proposed development. Provided the necessary mitigation measures (detailed in Section 4 of Appendix A) are implemented, the development is not anticipated to result in adverse impacts to any protected sites, habitats or species. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy SP 16 – Environmental Protection</u>	Surface water from the existing hardstanding will run into the existing site surface water drainage system which passes through a separator being draining to an attenuation pipe. Therefore, there will be no impacts in terms of water quality from

<i>“Air, water and ground quality and the environment generally will be protected and where feasible improved through the following measures:</i> <i>1. Ensuring that proposals have no significant adverse effects on water, ground or air quality and do not significantly increase pollution levels;</i> <i>2. Giving preference to the development of brownfield sites over greenfield sites where appropriate and deliverable; and</i> <i>3. Ensuring that developments do not increase the number of people exposed to significant levels of pollution”.</i>	the proposal on the existing hardstanding area. The proposed hardstanding extension shall not be subject to any vehicle movements and only minimal part of the HPPF are located on it. Therefore it is unlikely any contamination of surface water shall occur. Above the proposed infiltration structures there shall be a dense layer of grassed vegetation overlying a thick layer of top soil. The Drainage Strategy (Appendix D) concludes that this mitigation shall maintain surface water quality from the hardstanding extension. Detailed pollution prevention measures will be outlined in a CEMP to be submitted prior to the commencement of development. The only emissions from the hydrogen production process to the atmosphere is oxygen gas produced in the electrolyser which will be released via a vent stack. Given the minimal amount of traffic generation, it is not considered that there will be any adverse impacts on air quality from the proposal. The majority of the proposal utilises existing hardstanding areas within the Western Wood Biomass Energy Plant site. To accommodate the proposal and for operational requirements, the hardstanding areas will be extended by 342m² but still be within the wider land ownership boundary. The proposal therefore utilises brownfield land removing the requirement for a greenfield site. The proposal is not anticipated to provide significant levels of pollution given its limited nature and scale and therefore no amenity adverse impacts are predicted. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy EN 8 – Pollution and Land Stability</u> <i>“Proposals which would be likely to have an unacceptable adverse effect on health, biodiversity and/or local amenity or would expose people to unacceptable risk due to the following will not be permitted:</i> <i>• Air pollution</i> <i>• Noise pollution</i> <i>• Light pollution</i> <i>• Contamination</i> <i>• Land instability</i> <i>• Water (including groundwater) pollution</i> <i>Proposals which would create new problems or exacerbate existing problems detailed above will not be acceptable unless mitigation measures are included to reduce the risk of harm to public health, biodiversity and/or local amenity to an acceptable level”.</i>	The only emissions from the hydrogen production process to the atmosphere is oxygen gas produced in the electrolyser which will be released via a vent stack. Given the minimal amount of traffic generation, it is considered that there will not be any adverse impacts on air quality from the proposal. The site is located on land characterised and surrounded by existing industrial operations, with associated noise effects and significant levels of road traffic associated with the A48 and M4 motorway. It is unlikely that the site operations during both the construction and operational phases will intrude above established background levels. The existing site benefits from lighting which is considered adequate for the proposed development. Minimal additional low level lighting will be implemented above the access doors to the ISO Containers. Lighting will infrared motion

	activated sensors and be directed downwards to avoid light pollution and disturbances to nocturnal animals. The proposal is therefore considered unlikely to cause any adverse impacts from lighting. The Phase 1 Geotechnical Report (Appendix E) concluded that no significant contaminant linkages affect the Proposed Development and the risk to any potential receptors is very low to negligible. Surface water from the existing will run into the existing site surface water drainage system which passes through a separator being draining to an attenuation pipe. Therefore, there will be no impacts in terms of water quality from the proposal on the existing hardstanding area. The proposed hardstanding extension shall not be subject to any vehicle movements and only minimal part of the HPPF are located on it. Therefore it is unlikely any contamination of surface water will occur. Above the proposed infiltration structures there will be a dense layer of grassed vegetation overlying a thick layer of top soil. The Drainage Strategy (Appendix D) concludes that this mitigation will maintain surface water quality from the hardstanding extension. Detailed pollution prevention measures will be outlined in a CEMP to be submitted prior to the commencement of development. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy M 1 – Development in Mineral Safeguarding Areas</u> <i>“Development proposals within mineral safeguarding areas will only be permitted where it can be demonstrated that:</i> <i>1. The mineral concerned is no longer of any value or potential value; or</i> <i>2. The mineral can be extracted satisfactorily prior to the development taking place; or</i> <i>3. In the case of temporary development, it can be implemented and the site restored within the timescale that the mineral is likely to be needed; or</i> <i>4. There is no overriding need for the development; or</i> <i>5. The scale and location of the development would have no significant impact on the possible working of the resource”.</i>	The site is an established industrial site comprising of a biomass plant. The majority of the HPF will be situated on existing hardstanding with a proposed 340m² hardstanding extension to accommodate the facility. It is considered that the minimal scale and nature of new hardstanding will have no significant impact on the possible working of mineral resource. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy SP 18 – Renewable and Low Carbon Energy</u> <i>“A proportionate contribution to meeting national renewable energy targets and energy efficiency targets will be made while balancing the impact of development</i>	Green Hydrogen is an alternative carbon-fuel that can be used to displace natural gas and fossil fuels in heavy industry and long-distance transport sectors.

on the environment and communities. This will be achieved by: 1. Encouraging where appropriate, all forms of renewable energy and low carbon technology development ... 3. Ensuring that development will not have an unacceptable impact on the environment and amenity of local residents”.	Renewable electricity will be used from the Biomass Power Plant within the wider site for the hydrogen facility. The proposal will produce up to 960kgs of green hydrogen per day which will be trailered offsite to regional customers. It is estimated that the proposal will abate approximately 3,000 tonnes of CO₂ per year whilst also reducing tail-pipe emissions from conventional vehicles. The proposal supports the net zero targets of both Neath Port Talbot CBC and the Welsh Government. Given the limited scale and nature of the proposed development in context to the established industrial site and existing surrounding industrial landscape structure, it is considered that the proposal will have no unacceptable impacts on the environment and amenity of local residents. Environmental and technical assessments which accompany the planning application (Appendices A – E) conclude that no significant adverse impacts are anticipated. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy RE 1 – Criteria for the Assessment of Renewable and Low Carbon Energy Development</u> “Proposals for renewable and low carbon energy development will only be permitted subject to the following criteria: ... 4. All renewable energy or low carbon energy development proposals will be required to demonstrate that: (a) Measures have been taken to minimise impacts on visual amenity and the natural environment; (b) There will be no unacceptable impacts on residential amenity (c) The development will not compromise highway safety; (d) The development would not interfere with radar, air traffic control systems, telecommunications links, television reception, radio communication and emergency services communications; and (e) There are satisfactorily proposals in place for site restoration as appropriate”.	It is considered that the proposal will not generate any adverse residential amenity impacts. The proposal will utilise the existing and established access point for the Biomass Power Plant to the east of the site off Heolcae’r Bont. Once on site, vehicles will following the existing internal one-way system, with sufficient room provided for tube tailers to reverse into the refuelling bays as presented on the Swept Path Analysis (Drawing No. PRO1000/02/05). Given the minimal trip generation associated with the construction and operational phases, it is considered that the proposal will have minimal impact on the local highway network and will not present any highway safety concerns. The Hydrogen Production Facility will not interfere with any nearby radar or air traffic control systems or any telecommunication links. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy SP 20 – Transport Network</u> “The transport system and infrastructure will be developed in a safe, efficient and sustainable manner through the following measures: ... 6. Restricting development which would have an unacceptable impact on highway safety; ...	The proposal will utilise the existing and established access point for the Biomass Plant to the east of the site off Heolcae’r Bont. This access has been designed to accommodate HGV’s. Given the minimal trip generation associated with the construction and operational phases, it is considered that the proposal will have minimal

8. Requiring appropriate parking provision...".	impact on the local highway network and there are no highway safety concerns. Site operatives will use the existing car parking spaces within the wider Biomass Plant site which is considered to be sufficient for the construction and operational requirements. There will be no parking on the local highway network. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy TR 2 – Design and Access of New Development</u> <i>"Development proposals will only be permitted where all of the following criteria, where relevant, are satisfied:</i> <i>1. The development does not comprise the safe, effective and efficient use of the highway network and does not have an adverse impact on highway safety or create unacceptable levels of traffic generation;</i> <i>2. Appropriate levels of parking and cycling facilities are provided and the access arrangements for the site allow for the safe manoeuvring of any service vehicles associated with the planned use; ...".</i>	The proposal will utilise the existing and established access point for the Biomass Power Plant to the east of the site off Heolcae'r Bont. Once on site, vehicles will following the existing internal one-way system with sufficient room provided for tube tailers to reverse into the refuelling bays as presented on the Swept Path Analysis (Drawing No. PRO1000/02/05). Given the minimal trip generation associated with the construction and operational phases, it is considered that the proposal will have minimal impact on the local highway network and there will be no highway safety concerns arising. Site operatives will use the existing car parking spaces within the wider Biomass Power Plant site which is considered to be sufficient for the construction and operational requirements. There will be no parking on the local highway network. It is therefore considered that the proposed development is in accordance with the objective of this policy.
<u>Policy SP 21 – Built Environment and Historic Heritage</u> <i>"The built environment and historic heritage will, where appropriate, be conserved and enhanced through the following measures:</i> <i>1. Encouraging high quality design standards in all development proposals;</i> <i>2. Protecting aerial gateways from intrusive and inappropriate development;</i> <i>3. Safeguarding features of historic and cultural importance;</i> <i>4. The identification of the following designated sites to enable their protection and where appropriate enhancement:</i> <i>(a) Landscape and Historic Interest;</i> <i>(b) Historic Parks and Gardens;</i> <i>(c) Conservation Areas;</i> <i>(d) Scheduled Ancient Monuments; and</i>	The majority of the site is located on an areas of existing hardstanding within an established industrial site. The nearest historic designation is the Grade II* Listed Margram Crematorium 720m to the south-east of the site. Given the separation distance between the site and any historic designations, and the limited scale of development proposed within an already industrialised scene, the proposal is unlikely to cause impact upon archaeology and cultural heritage features. It is therefore considered that the proposed development is in accordance with the objective of this policy.

(e) Listed Buildings and their curtilage”.	
Policy BE 1 – Design <i>“All development proposals will be expected to demonstrate high quality design which fully takes into account the natural, historic and built environmental context and contributes to the creation of attractive, sustainable places.</i> <i>Proposals will only be permitted where all of the following criteria, where relevant, are satisfied:</i> <i>1. It complements and enhances the character and appearance of the site, building or area in terms of siting, appearance, scale, height, massing and elevation treatment;</i> <i>2. It respects the context of the site and its place within the local landscape, including its impact on the important arterial gateways into the County Borough, its effects on townscape and the local historic and cultural heritage and it takes account of the site topography and prominent skylines or ridges;</i> <i>3. It utilises materials appropriate to its surroundings and incorporates hard and soft landscaping and screening where appropriate;</i> <i>4. It would not have a significant adverse impact on highway safety, the amenity of occupiers of adjacent land or the community;</i> <i>5. Important local features (including buildings, amenity areas, green spaces and green infrastructure, biodiversity and ecological connectivity) are retained and enhanced as far as possible; ...</i> <i>8. It uses resources, including land and energy, as efficiently as possible through: ...</i> <i>(b) The layout and form of the development does not preclude the reasonable use of other adjacent land;</i> <i>(c) Developing brownfield land in preference to greenfield land where possible; ...</i> <i>9. Its drainage systems are designed to limit surface water run-off and flood risk and prevent pollution...”.</i>	The design of the HPF is in response to operational requirements on site and to be compatible with operations for the existing use of the wider site whilst giving consideration to the nature of its surroundings. The proposal includes equipment of an industrial form on an established industrial site. It is considered that the scale and appearance of the proposal is not out of character with the local industrial setting. The proposal uses existing hardstanding with a minimal hardstanding extension proposed (342m²) to accommodate the proposal. The facility has been designed to avoid vegetation removal as far as possible. The Arboricultural Assessment (Appendix B) confirms that clearance of the scrub and trees along the hydrogen compounds northern boundary up to the ownership title boundary will be required to accommodate the Proposed Development. At present, there are some minor self-set trees/scrub north of the pad extension area. Numerous saplings and dormant seeds are located within the woodland edge under separate ownership. These woody plants will form the replacement trees/woodland edge as they develop. Given the minimal trip generation associated with the construction and operational phases, it is considered that the proposal will have minimal impact on the local highway network and there are no highway safety concerns. Given the minimal scale and nature of the proposal on a wider industrial site, no adverse impacts are anticipated on the amenity of adjacent land users. The Ecological Appraisal (Appendix A) identifies the habitats recorded on site include existing hardstanding, a concrete wall, a post-wire fence line, bare ground and a strip of broadleaved semi-natural woodland. A Construction Environmental Management Plan (CEMP) will be provided prior to construction of the development outlining the environmental management processes, procedures and systems that will be implemented in order to protect habitats surrounding the site. As part of the Proposed Development, various enhancements have been incorporated into the design including one bat box and one bird box to be installed upon the tree T1 within the woodland north of the Proposed Development and within the ownership of WBE to allow for undisturbed dispersal to local foraging habitats. In addition, the infiltration structures proposed as part of the proposed drainage strategy to the north of the hardstanding Extension Area will be enhanced post-development by planting with woodland flower seed mix.

	The Ecological Appraisal (Appendix A) concludes that the site's ecological value is not considered to represent a fundamental in-principle constraint to the proposed development. Provided the necessary mitigation measures (detailed in Section 4 of Appendix A) are implemented, the development is not anticipated to result in adverse impacts to any protected sites, habitats or species. The proposal utilises brownfield land and is situated adjacent to the point of connection for renewable electricity. The facility has been designed taking into account the operational requirements of the wider Biomass Power Plant site and will not preclude the use of the wider site. The Drainage Strategy (Appendix D) concludes that the proposed surface water generated from the hardstanding extension area can be effectively be managed and the drainage design follows principles of a SAB compliant surface water drainage system. In addition, proposed mitigation shall maintain surface water quality from the hardstanding extension. It is therefore considered that the proposed development is in accordance with the objective of this policy.
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- 5.3.4 From the above tables, the proposed development accords with the policies from the adopted Local Development Plan.

5.4 MATERIAL CONSIDERATIONS

Planning Policy Wales

- 5.4.1 The Welsh Government published Planning Policy Wales Edition 12 (PPW) in February 2024. This provides the overarching national level source of planning policy for Wales and is a material consideration. It seeks to support the requirement for sustainable development via the planning system whereby the presumption in favour of sustainable development forms the overarching role, together with a firm view on improving population wellbeing.
- 5.4.2 Chapter 5 (Providing and Enterprising Places) of the PPW sets out the Welsh Government's policies regarding Enterprising Placemaking and Wellbeing across Wales. One of the key aims in relation to energy is for Wales to generate 70% of its electricity consumption from renewable generation by 2030.
- 5.4.3 Paragraph 5.7.1 of PPW states that
- "The Welsh Government's highest priority is to reduce demand wherever possible and affordable. Low carbon electricity must become the main source of energy in Wales. Renewable electricity will be used to provide both heating and transport in addition to power. The future energy supply mix will depend on a range of established and emerging low carbon technologies, including biomethane and green hydrogen".*
- 5.4.4 Chapter 5 of the PPW outlines the importance of the planning system to deliver these targets, paragraph 5.7.15 states:

“The planning system has an active role to help ensure the delivery of these targets, in terms of new renewable energy generating capacity and the promotion of energy efficiency measures in buildings”.

- 5.4.5 Paragraph 5.7.6 states that the planning system should endorse a secure and diverse energy mix, which maximises economic and social benefits and minimises environmental and social impacts. Paragraph 5.7.7 goes on to state that:

“The benefits of renewable and low carbon energy, as part of the overall commitment to tackle the climate emergency and increase energy security, is of paramount importance... The planning system should ...

- *Optimise the location of new developments to allow for efficient use of resources*
- *Maximise renewable and low carbon energy generation...”.*

- 5.4.6 Paragraph 5.9.19 relates to development management for renewable and low carbon energy and states that:

“In determining applications for the range of renewable and low carbon energy technologies, planning authorities should take into account:

- *The contribution a proposal will make to meeting identified Welsh, UK and European targets;*
- *The contribution to cutting greenhouse gas emissions; and*
- *The wider environmental, social and economic benefits and opportunities from renewable and low carbon energy development”.*

- 5.4.7 Paragraph 5.9.20 continues stating that:

“Planning authorities should also identify and require suitable ways to avoid, mitigate or compensate adverse impacts of renewable and low carbon energy development. The construction, operation and decommissioning, remediation and aftercare of proposals should take into account:

- *The need to minimise impacts on local communities, such as from noise and air pollution, to safeguard quality of life for existing and future generations;*
- *The impact on the natural and historic environment;*
- *Cumulative impact;*
- *The capacity of, and effects on the transportation network;*
- *Grid connection issues where renewable (electricity) energy developments are proposed and*
- *The impacts of climate change on the location, design, build and operation of renewable and low carbon energy development. In doing so, consider whether measures to adapt to climate change impacts give rise to additional impacts”.*

Futures Wales: The National Plan 2040

- 5.4.8 Future Wales: The National Plan (2040) adopted February 2021 is the national plan that sets out the direction of development in Wales to 2040. It states:

“Wales can become a world leader in renewable energy technologies. Our wind and tidal resources, our potential for solar generation, our support for both large and community scaled projects and our commitment to ensuring the planning system provides a strong lead for renewable energy development, mean we are well placed to support the renewable sector, attract new investment and reduce carbon emissions”.

- 5.4.9 Furthermore, *Future Wales* sets ambitious targets for the generation of renewable energy including for 70% of electricity consumption to be generated from renewable energy by 2030.

- 5.4.10 In relation to hydrogen, *Future Wales* states:

“...There is also the opportunity across the region for the generation of hydrogen to deliver energy storage capacity and a transport fuel source...”.

- 5.4.11 Policy 17 demonstrates the Welsh Government’s support in principle for all sustainable energy projects and technologies. Proposals should ensure there is no significant unacceptable detrimental impact on the surrounding natural environment and local communities and that the development delivers positive social, environmental, cultural and economic benefits. Policy 17 Renewable and Low Carbon Energy Associated Infrastructure states:

“The Welsh Government strongly supports the principle of developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs. In determining planning applications for renewable and low carbon energy development, decision-makers must give significant weight to the need to meet Wales’ international commitments and out targets to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency...”

Proposals should describe the net benefits the scheme will bring in terms of social, economic, environmental and cultural improvements to local communities...”.

- 5.4.12 The proposal is for a HPF and HTTFS Compound on land within the northern border of the Biomass Plant site. The majority of the proposal is located on existing hardstanding (brownfield land) with a minimal hardstanding extension. The Proposed Development has a locational need to be connected to a supply of renewable electricity, that the Biomass Plant will provide.
- 5.4.13 The fundamental principle upon which the PPW is based is sustainable development. It is considered that the Proposed Development supports the key aim in relation to net zero targets outlined within PPW. Green hydrogen is an alternative carbon-free fuel that can be used to displace natural gas and Fossil fuels in the journey to reach net zero. The proposed HPF will produce up to 960 kgs of green hydrogen per day. The hydrogen will be compressed by hydrogen gas boosters and pressurised into HTTs before being trailered offsite to regional customers. It is estimated that the system will abate approximately 3,000 tonnes of CO2 per year whilst also reducing tail-pipe emissions from conventional vehicles.
- 5.4.14 Given the minimal nature and scale of Proposed Development, on an existing industrial site and surrounded by a wider industrial setting, it is not anticipated that the proposal would cause any adverse impacts on sensitive receptors. Environmental and technical assessments supporting this application (**Appendices A – E**) conclude that no significant adverse impacts are anticipated.

Neath Port Talbot Replacement Local Development Plan

- 5.4.15 Neath Port Talbot County Borough Council are preparing a Replacement Local Development Plan for the Borough. Currently the plan is in the early stages of preparation with a call for sites exercise undertaken in late 2023. Adoption is expected to be in 2027.



6. DESIGN AND ACCESS STATEMENT

6.1 INTRODUCTION

- 6.1.1 This chapter sets out the design and access principles for the proposed development in accordance with the Commission for Architecture and the Built Environment (CABE) guidance.
- 6.1.2 This Design and Access Statement has been produced in accordance with the DCLG Circular 01/2006 *Guidance on Changes to the Development Control System*, and with reference to CABE publication *Design and Access Statements: How to write, read and use them* (2006).
- 6.1.3 The purpose of a Design and Access Statement is to allow the Applicant to demonstrate that the development proposals are based on a thoughtful design process and a sustainable approach to access. The Design and Access Statement should also demonstrate how the development proposals have evolved during the design process.

6.2 EXISTING SITE ANALYSIS

- 6.2.1 The Site is situated within the northern border of the Biomass Plant site located 4km to the west of Port Talbot and 330m west of junction 38 of the M4 (the Margam Interchange). The Site is surrounded by established industrial sites including Margam Green Energy Plant to the north, BOC Gas & Gear works to the south and Tata Steel Works to the west. The Site benefits from excellent links to the strategic road network with the A48 and the M4 running to the east of the Site.
- 6.2.2 The wider landholding currently comprises a wood chip Biomass Plant including the biomass building with associated plant, external storage bays, office, car parking, electrical substation, internal access road. A topographical survey of the landholding shows the wider site falling from east to west. The eastern boundary of the site has the highest elevation with a level of approximately 9.50m AOD, with the lowest elevation occurring on the western boundary with an elevation of approximately 4.50m AOD.
- 6.2.3 The Site measures an approximate area of 6,575m² which includes the HPF and HTTFS Compound, the internal access road within the Biomass Plant, the proposed substation and the cable route and comprises existing hardstanding, bare ground, existing northern boundary fence line, a strip of broadleaved woodland and semi-improved neutral grassland along the proposed cable route running the western and southern boundary of the Biomass Plant.
- 6.2.4 The Site is accessed from the east via a private access road off Heolcae'r Bont. This existing access is proposed to be utilised for the Proposed Development.

6.3 DESIGN

Use

- 6.3.1 The Proposed Development is for the construction and operation of a HPF and HTTFS Compound on the northern border of the Biomass Plant site.
- 6.3.2 Green hydrogen is an alternative carbon-free fuel that can be used to displace natural gas and fossil fuels in the journey to reach net zero. The proposed HPF will produce up to 960 kgs of green hydrogen per day. The hydrogen will be compressed by hydrogen gas boosters and pressurised into HTTs before being trailered offsite to regional customers. The HTTFS within the compound will facilitate the parking and filling of the HTT in three HTT bays. It is estimated that the system will abate approximately 3,000 tonnes of CO₂ per year whilst also reducing tail-pipe emissions from conventional vehicles. The Proposed Development supports both Neath Port Talbot's and the Welsh Government's net zero targets.
- 6.3.3 A description of the hydrogen production process is presented in Section 3.3 of this Planning Statement and a Process Flow Diagram is presented on Drawing No. **PRO1000/02/17**.

Layout and Scale

- 6.3.4 The site has been designed in response to the operation requirements for the HPF and HTTFS and the wider operations of the existing Biomass Plant. The proposed layout is shown on Drawing No. **PRO1000/02/03** and the general arrangement is shown on Drawing No. **PRO1000/02/04**.
- 6.3.5 Once fully operational the HPF and HTTFS Compound will comprise:
- Utilisation of approximately 758m² of existing hardstanding;
 - Construction of concrete hardstanding extension measuring 340m² north of the existing hardstanding area but within the wider site ownership boundary including retaining wall. Construction details of which to be finalised at the detailed design stage;
 - Concrete Firewall measuring 2.5m in height along the northern and western boundaries of the HPF compound area;
 - Electricity Switchgear Container, measuring 6.05m wide, 2.4m depth and 2.6m high;
 - Electrolyser Package including:
 - Electrolyser Container measures 12.2m wide, 2.4m depth and 3.6m high, with the hydrogen vent stack measuring 9.1m in height
 - Power Supply Container measures 6.05m wide, 2.4m deep and 2.9m high
 - Cooler Container measures 6.05m wide, 2.4m deep and 2.8m high
 - 2no. Compressor Package including:
 - Compressor Container measures 6.05m wide, 2.4m deep and 5.02m high
 - Chiller measures 2.2m wide, 0.9m deep and 2m high
 - Buffer measures 1.03m wide, 1.7m deep and 2.2m high
 - 4no. Multi-Cylinder Pallets (MCPs), each measuring 1.05m wide, 1.05m deep and 2m high
 - Water filter / container measuring 3m wide, 2.2m deep and 1.5m high
 - Water tank measuring 2m wide, 2m deep and 2m high
 - Air Supply Unit measuring 2m wide, 1.5m deep and 2m high
 - Proposed Substation on a gravel hardstanding surrounded by a 2m high paladin fence including:
 - LV Switchgear measuring 3m wide, 2m deep and 2.5m high
 - Transformer measuring 2m wide, 2m deep and 2.5m high
 - RMU measuring 2m wide, 2m deep and 2.5m high
 - 3no. Tube Trailer Bays;
 - Connecting Pipes;
 - Underground cables, cable trench is anticipated to be 0.5m wide and 0.5m deep; and
 - 2m high Paladin security fencing along the eastern and southern boundary of the HPF compound.
- 6.3.6 Details of all equipment and infrastructure can be found on Drawing No's. **PRO1000/02/07 – PRO1000/02/16**.

- 6.3.7 The tallest piece of equipment within the HPF and HTTFS Compound would be the Hydrogen vent stack associated with the Electrolyser measuring 9.1m in height.
- 6.3.8 Following appraisals and various environmental and technical considerations, it is considered that the proposed HPF and HTTFS Compound would be of a suitable scale.

Drainage

- 6.3.9 Currently, surface water from the existing Biomass Plants hardstanding and access road drains via a series of road gullies, which subsequently fall into underground carrier pipework. The carrier pipework generally falls in a westerly direction where all surface water passes through a separator, before draining into an attenuation pipe along the western boundary of the Biomass Plant, and then infiltrates into the underlying geological strata. Any overflow is discharged into the local ditch network in the north-western corner of the Biomass Plant site.
- 6.3.10 The majority of the Proposed Development is located on existing hardstanding within the northern boundary of the Biomass Plant site where existing surface water drainage is installed. Where the Proposed Development is located on existing hardstanding, this area will not increase the amount of hardstanding / impermeable area draining to the existing surface water drainage network for the Biomass Plant, and therefore shall not increase the flood risk.
- 6.3.11 A surface water drainage design associated with the proposed Extension Area (measuring 342m²) has been prepared. The proposed surface water drainage system for the Extension Area comprises two infiltration structures to the north of the Extension Area, measuring 52m² for the larger structure and 21m² for the smaller structure and both being 1.2m deep. To allow surface water to runoff from the hardstanding Extension Area to the infiltration structures there shall be 150mm diameter pipes installed at the base of the concrete firewall which will run along the northern boundary of the Extension Area at a maximum of 5m centres.
- 6.3.12 A SAB application will be submitted prior to the construction of the Proposed Development for approval, surface water can be effectively managed and the design follows the principals of a SAB compliant scheme.

Landscaping and Appearance

- 6.3.13 The Proposed Development has been designed in response to operational requirements and to be compatible with the existing use on the Biomass Plant whilst giving consideration to the nature of its surroundings. The proposal utilises the existing hardstanding within the norther border of the Biomass Plant site with a proposed Extension Area 342m² to accommodate the HPF and HTTFS Compound. The site is surrounded by established industrial uses including Margam Green Energy Plant to the north, BOC Gas & Gear works to the south and Tata Steel Works to the west. Given the position of the proposal within a small area of an existing industrial site, the existing infrastructure on the Biomass Plant and the limited development proposed (tallest piece of equipment being the hydrogen vent stack on the electrolyser at 9.1m), it is considered that the scale and appearance of the Proposed Development is not out of character with the local setting.

6.4 ACCESS

- 6.4.1 The existing Biomass Plant site entrance and exit, to the east of the HPF Compound via a private access road and off Heolcae'r Bont, will continue to be used. This access has been designed to have suitable visibility splays and entrance radii for HGVs.
- 6.4.2 Vehicles will approach from the M4 taking exit 38 (Margam Interchange), proceeding in a westerly direction along Heolcae'r Bont and turning right onto the WBE private access road (Longland Lane) before turning left into the Biomass Plant.
- 6.4.3 Once on the Biomass Plant, vehicles will circulate the clockwise as per the existing internal one-way

system. HTT' s will reverse into the refuelling bays and leave in a forward gear. A Swept Path Analysis illustrating the internal traffic movements is presented on Drawing No. **PRO1000/02/05**.

- 6.4.4 A maximum of 36 two-way movements during the construction phase and a maximum of 24 two-way movements is anticipated during the operational phase. Given the minimal trip generation, it is considered that the construction of the Proposed Development will have minimal impact on the local highway network and there are no highway safety concerns from the proposal.
- 6.4.5 Site operatives during both the construction and operational phases for the HPF and HTTFS will use these existing car parking spaces which are considered to be sufficient for the number of operatives required.



7. SUMMARY & CONCLUSIONS

7.1 INTRODUCTION

7.1.1 This Planning and Design and Access Statement describes a proposal by Western Bio Energy Limited (WBE) as the Applicant and Protium Green Supply Limited (PGS Ltd.) as the Agent who are applying for planning permission for the following development located at the existing Western Wood Biomass Energy Plant, Margam, Port Talbot, SA13 2NR:

- An Electrolytic Hydrogen Production Facility (HPF) and associated compression and storage;
- A Hydrogen Tube-Trailer Filling Station (HTTFS); and
- Renewable electricity provided from a co-located biomass power plant via a private wire.

7.1.2 The proposed HPF will produce up to 960 kgs of green hydrogen per day. The hydrogen will be compressed by hydrogen gas boosters and pressurised into hydrogen tube trailers before being trailered offsite to regional customers. It is estimated that the system will abate approximately 3,000 tonnes of CO₂ per year whilst also reducing tail-pipe emissions from conventional vehicles. The Proposed Development supports both Neath Port Talbot County Borough Council's and the Welsh Government's net zero targets.

7.2 ENVIRONMENTAL EFFECTS

7.2.1 A series of environmental and technical assessments have been undertaken and set are provided as Appendices A and E. These consider the effects of the Proposed Development upon the Site and immediate environment. In addition other environmental and technical considerations are set out in Chapter 4 of this Planning Statement.

7.2.2 Given the location of the Site, it is considered that the proposal will not result in significant environmental effects on either the local or wider area due to its minimal scale and the industrialised nature of the surrounding area.

7.3 PLANNING POLICY

7.3.1 The proposals have been considered in the context of national, and local policies. The application demonstrates that the Proposed Development will make a significant contribution to carbon-free fuel within the local area and will reduce CO₂ emissions without causing significant harm to the environment or amenity of local residents.

7.3.2 The proposal has been considered against relevant planning policy and is considered to be in accordance. Furthermore, material considerations in the form of the Planning Policy Wales and Future Wales: The National Plan 2040, weigh heavily in favour of the proposal.

7.4 CLOSURE

7.4.1 It has been demonstrated that the proposal accords the provisions of relevant planning policy.

7.4.2 It has been demonstrated that the proposals will not result in any unacceptable environmental impacts.

7.4.3 It is concluded that no significant impacts are anticipated, and the proposal should be supported.

