



Planning Statement

incorporating a

Design & Access Statement

in support of an application for
Outline Planning
by

Sunrise Renewables (Barry) Limited

under

the Town and Country Planning Act 1990

3rd February 2015

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Appendices referred to in this Planning Statement

1	Location Plan (2014)
2	Air Emissions Assessment (2014)
3	Layout (2014)
4	Elevations for the Project (2014)
5	Traffic Movement Plan (2014)
6	Policy Review (2014)
7	Visual Impact Analysis (2015)
8	Ecology Report (2014)
9	Noise Assessment (2014)
10	Transport Statement (2014)
11	Geology and stability report (2009)
12	Environmental data report (2009)
13	Flood risk assessment (2009)

1. INTRODUCTION

- 1.1 The Applicant, Sunrise Renewables (Barry) Limited, is developing a renewable energy plant based on an advanced conversion technology (ACT) at Woodham Road, Barry, CF63 4JE within the Port of Barry (the “Project”) - refer to the Location Plan at Appendix 1 for the Project site.
- 1.2 The principle of establishing a wood fuelled power plant at the Project site was established by planning permission reference 2008/01203/FUL, as approved by appeal reference APP/Z6950/A/09/2114605 on 2nd July 2010 (the “2010 Permission”). The current Applicant is an affiliate of the original applicant for the 2010 Permission, Sunrise Renewables Limited.
- 1.3 The Applicant is now finalizing the detailed technology selection and design layouts for the Project, as described in this Planning Statement. This requires the amendment of certain features of the 2010 Permission and in this connection the Applicant has been advised by the Planning Authority Officers that it is necessary to re-submit the changes to the Project for planning approval. The Applicant has determined to do so by submitting an Application for Outline Planning.
- 1.4 In summary, the changes, relative to the 2010 Permission, are as follows:
 - 1.4.1 **Technology:** a change in the manufacturer of the advanced conversion technology (ACT) from gasification based on pyrolysis to one based on a fluidised-bed. The proposed technology is more fuel efficient and will improve the average annual power output to 10 MWe compared to 9.0 MWe in the 2010 Permission.
 - 1.4.2 **Layout:** accommodation of the proposed technology at the Project site requires a different configuration of the buildings housing the various components – the 2010 Permission contemplated a single connected structure while the revised layout breaks this up into three separate but functionally interconnected buildings. The footprint of these buildings is 7.5% less than under the 2010 Permission.
 - 1.4.3 **Elevations:** the revised layout comprises two buildings that are lower than the building height in the 2010 Permission and one that is higher. The average building height of the 2010 Permission is 14m while the average building height of the revised layout is 16.3m. In order to meet emissions requirements, the stack height will be increased to 43m. This is less than the stack height approved for the waste-energy plant already approved for construction at Atlantic Way on the opposite side of the dock.
- 1.5 The Applicant’s lifecycle analysis for the Project indicates it will generate approximately £21.4 million for Barry/Glamorgan, comprising some £9.0 million for jobs, £5.0 million in business and rent for Barry Port and £7.4 million in business rates paid to the council over the life of the Project.
- 1.6 Except as discussed in this Planning Statement, the Project remains as described in the 2010 Permission and the supporting documents.
- 1.7 This Planning Statement has also been prepared with a view to meeting Design and Access Statement (DAS) recommended by Welsh Government guidelines and the Policy Review (Appendix 6).

2. TECHNOLOGY APPROVAL

- 2.1 It is proposed to replace the system detailed in the 2010 Permission manufactured by Prestige Thermal Equipment (which produced a 9 MW average net output) with an alternative system made by the globally established manufacturer Outotec (www.outotec.com). The Outotec technology is more efficient and will result in the average net output increasing to 10MW for the same amount of fuel input.



Photo 1 - Example of operational Outotec gasification plant in USA

- 2.2 The Outotec equipment produces syngas through a fluidized-bed process while the Prestige Thermal Equipment produces syngas through a pyrolysis process. Both technologies are forms of 'gasification'. The general sequence of the proposed gasification process is as follows:
- 2.2.1 Wood-waste feedstock is chipped off-site and delivered to the plant prior to being gasified. At the time of delivery, feedstock has a variable moisture content, the water having a function as a reformation agent in the gasification process.
 - 2.2.2 The wood fuel is fed into the gasifier system where it is converted into a raw natural gas ('syngas') which is reformed and used as the primary fuel in the gasification boiler to generate steam to power the steam turbine. The Outotec gasifier will process up to 72,000 dry tonnes of wood waste per year to produce an average net output of up to 10 MW (compared to 9 MW with the Prestige system) and is more flexible with respect to moisture content.
 - 2.2.3 The steam turbine uses the steam to produce electricity and the plant transfers electricity to the grid via an alternator, transformer and on-site substation. The turbine is enclosed in an acoustically attenuated extension to the electricity switchroom, to reduce noise to a minimum. The process is regulated from a computerised control room. The buildings will be lit internally using electricity generated from the process.
 - 2.2.4 The Outotec equipment utilises a single turbine-alternator which replaces the previously proposed system of multiple reciprocating piston engines.
 - 2.2.5 Burning of the refined syngas in the gasifier to produce energy combined with various plant and equipment used to reduce emissions results in cleaned exhaust emissions from the facility.

The Applicant considers the proposed new plant to be better suited to the specific requirements of the Barry scheme and will maximise operational efficiencies and versatility in addition to being a more established and therefore 'bankable' technology.

- 2.3 Concerning other site infrastructure:
- 2.3.1 There will be no change to the mobile plant deployed at the site. This will include a loading shovel and / or grab, a water bowser to control dust as necessary in vehicle circulation areas and a road sweeper to maintain the site access road and the highway in a clean condition, primarily for use during the construction phase.
 - 2.3.2 The proposed buildings will continue to be of steel portal frame construction. The colour and specification of external cladding will be agreed with the planning authority prior to construction. The floor slab of the building will be surfaced with reinforced concrete to a specification approved by Natural Resources Wales.
 - 2.3.3 The amended plant design will continue to require an Environmental Permit from Natural Resources Wales. The Applicant consulted extensively with Natural Resources Wales' predecessor agency at the time of the original application and is consulting again in connection with the present application.
 - 2.3.4 Internal surfaces will continue to drain to a sealed sump or foul sewer. External surfaces including roof water will drain to a sustainable surface water system.
 - 2.3.5 Internal parking provision remain as under the 2010 Permission allows for at least 5 spaces plus 1 disabled space and 4 cycle parking spaces (two locations have been proposed). Details will be agreed with the Planning Authority.
 - 2.3.6 The site will be enclosed by new galvanised steel palisade security fencing with entrance gates with a maximum height not greater than 2.6 metres, as under the 2010 Permission.
 - 2.3.7 The access into the site remains essentially as in the 2010 Permission, from the southern end of the property from David Davies Road.
 - 2.3.8 The details of plant operation for the revised scheme will remain the same as for the 2010 Permission. The plant will operate continuously in order to generate electricity with the exception of routine maintenance and other downtime. The following time limits will continue to apply for the receipt of fuel and general access:

Weekdays 07 00 - 19 00;
Saturdays 07 00 - 19 00;
Sundays and Bank/Public holidays 08 00 - 16 00.

The entrance gates will be closed outside of these hours to prevent unauthorised access.

- 2.4 Concerning the decision to change the manufacturer of the advanced conversion technology (ACT) for the plant: at a technical level what is being proposed is a change from gasification using pyrolysis to gasification using a fluidised bed. However, the ACT remains one based on gasification. Inspector Thickett references this in his appeal decision to (in respect of the 2010 Permission):

“32. The South East Wales Waste Group, Regional Waste Plan 1st Review, 2008, identifies residual waste managed by high levels of pyrolysis as the best practicable environmental option (BPEO).....The appellant submits a site specific BPEO analysis which concludes that pyrolysis and direct combustion both represent the best practicable environmental option for waste wood. Having considered the appellant’s analysis, I concur with its conclusion that pyrolysis should be preferred as it has a greater potential for electricity generation.”

- 2.5 It should be noted that Ofgem do not distinguish between pyrolysis and fluidised-bed based gasification for the purposes of renewable power generation and support (extracted from Ofgem Guideline for Generators):

“Gasification and pyrolysis are examples of advanced conversion technologies (ACTs). These technologies use waste and biomass feedstocks to produce either a synthesis gas (syngas) and / or liquid fuels (bio-oils) which can be used to generate electricity”

- 2.6 Both are considered advanced conversion technologies (also called advanced thermal treatment (ATT) technologies) providing the most efficient form of biomass conversion. This was recognised in The South East Wales Waste Group, Regional Waste Plan 1st Review, 2008 report itself:

6.6.8 Advanced Thermal Treatment (ATT) technologies are primarily those that employ pyrolysis and/or gasification to process MSW. Pyrolysis and Gasification are considered to be multistage processes and require additional facilities to prepare the material to a suitable standard. The gasification and pyrolysis of solid materials is not a new concept. It has been extensively used to produce fuels such as charcoal, coke and town gas. It is only in recent years that pyrolysis and gasification has been commercially applied to the treatment of MSW.

6.6.12 There are a variety of features promoted to differentiate ATT from conventional incineration technologies. These include:

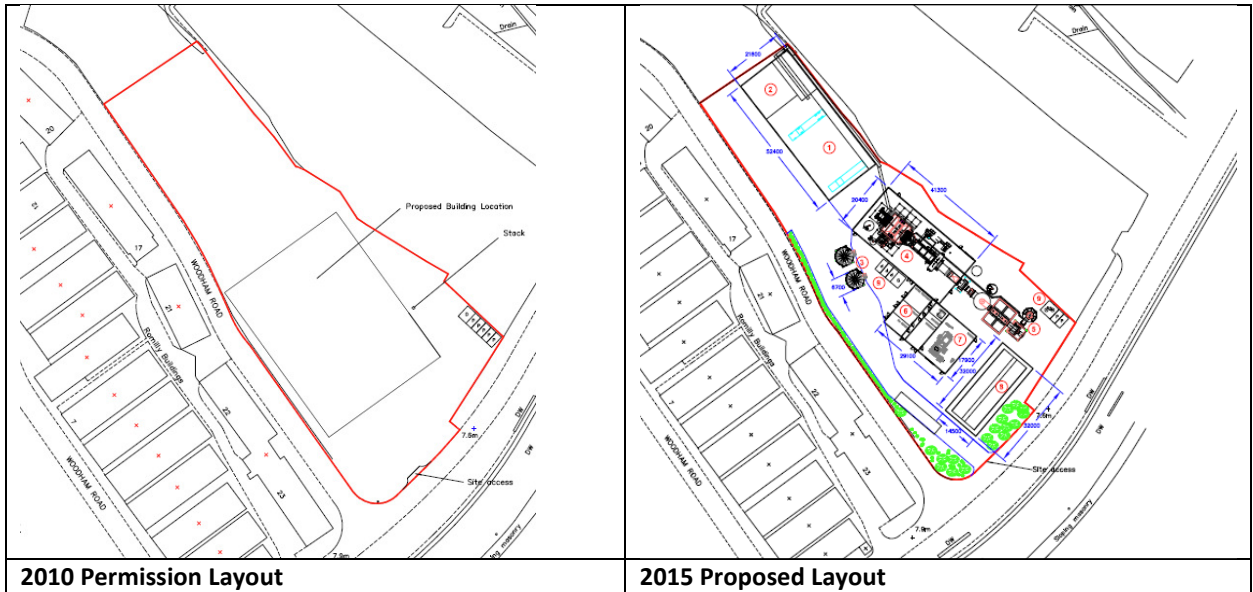
- *The potential smaller scale of ATT processes in comparison to incineration, which may facilitate local use of the output heat and electricity;*
- *Reduced emissions from ATT processes may mean that abatement costs are reduced (although all the processes must meet the same emissions standards); and*
- *The potential to use the syngas.*

- 2.7 Pyrolysis and gasification using a fluidised-bed can properly be considered to be interchangeable for the purposes of selecting an advanced conversion technology to function within the power plant.

- 2.8 The selection of the technology discussed above also results in an increase in the average annual generating capacity to 10 MWe compared to 9.0 MWe for the 2010 Permission as a result of improved efficiency. Such increased efficiency means there will be no surplus heat generated (ie it is not a Combined Heat and Power (CHP) plant). Such increased output has no visual or technical impact and will be limited by the capacity of the transmission network to transmit the power (which is separately regulated). From a technical standpoint the change is neutral.

3. LAYOUT APPROVAL

- 3.1 For convenience, the revised plant layout (see Appendix 3) is shown below in comparison to the layout for the 2010 Permission:



3.2 Originally all plant operations were located within a single structure with a total footprint of 2700 sqm. Under the revised arrangements it is proposed to separate the power plant functions into separate structures to accommodate the revised plant (total building footprint 2,497 sqm). The result will therefore be a net 7.5% reduction in building footprint at the site. Details of the structures are as follows:

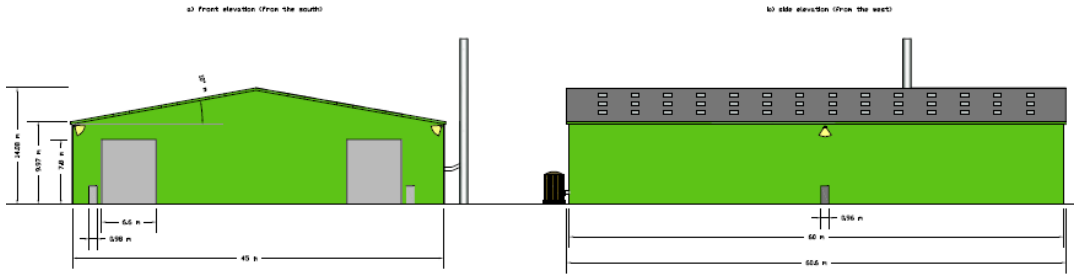
- 3.2.1 Wood Storage and Feed Building: The wood storage and feed building (at 52.4 x 21.6 x 13.7m high) remains similar in height to that of the previously approved building (14m). The submitted Traffic Movement plan (in Appendix 5) prepared by the project contractor confirms there is adequate space for articulated vehicles to access the building.
- 3.2.2 Turbine, Welfare & Ancillaries Building: This building (29.1 x 17.9 x 11m high) has a reduced height compared to that of the previously approved building and incorporates switchgear, the main control room and a turbine room (to replace the formerly proposed piston engines).
- 3.2.3 Main Process Building: The gasification equipment will be entirely enclosed within a bespoke structure (41.4 x 20.4 x 23m high). This will significantly improve containment of the process as a whole. The maximum height of the previous plant was 14m so there will be a net increase in height of 9m for this element.
- 3.2.4 ACC Unit: An external air cooled condenser (ACC) unit (32m x 14.5m x 20m high) mounted on steel stilts is now proposed adjacent to the Turbine, Welfare & Ancillaries Building.
- 3.2.5 External Equipment: ash residue from the combustion process will be stored in two externally located silos (18.4m high x 6.7m diameter) allowing ease of access (see Traffic Movement Plan included in Appendix 5). Flue Gas treatment (FGT), exhausting to the chimney stack will also be external to the buildings.
- 3.2.6 Chimney Stack: the chimney stack being re-sited some 20m to the south-east relative to the original location and in order to meet emissions requirements, the stack height will be increased to 43m (which is less than the stack height approved for the waste-energy plant approved for construction at Atlantic Way on the opposite side of the dock).

4. ELEVATIONS APPROVAL

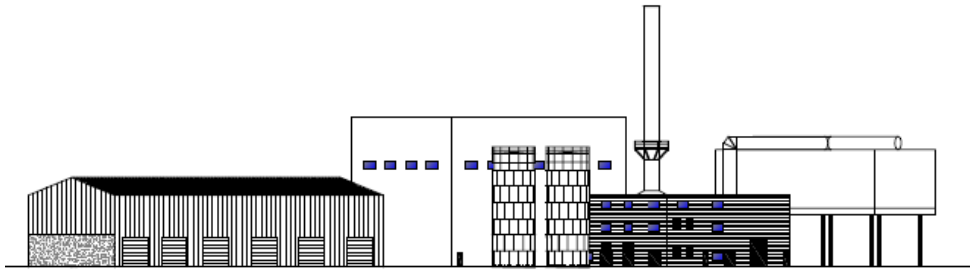
4.1 Appendix 4 contains the elevations for the revised layout; however, for convenience Elevations A and B, below illustrate the differences between the elevations for the 2010 Permission and the current application.

4.2 The revised layout comprises two buildings that are lower and one that is higher than the building height in the 2010 Permission, as more particularly detailed in Section 3.2 above, and Appendix 4. Main points to note are:

- 4.2.1 The average building height of the 2010 Permission is 14m while the average building height in the revised layout is 16.3m.



Elevation A: Elevations for the 2010 Permission



Elevation B: Elevations for the revised layout

4.2.2 The change in chimney stack height has been determined in order to comply with the requirements of the Waste Incineration Directive (WID)/Industrial Emissions Directive (IED). This will result in the chimney stack increasing in height from 20m to 43m with adjustments to the diameter to allow for the increase in height – the diameter will increase from 1.0m to 2.75m.

4.3 The visual impact of the proposed changes to the elevations and layout is discussed in Appendix 7; however, the Applicant does not believe them to be material given the industrial context of the plant, as was recognised during the appeal hearing in respect of the 2010 Permission.

5. OPERATIONS APPROVAL

5.1 Deliveries

5.1.1 As under the 2010 Permission, the Applicant intends to maintain flexibility as to where best to source wood products for energy conversion by the plant and how best to transport them to site, be it by road, rail or sea.

5.1.2 In so far as the Applicant arranges such transportation by road, the maximum number of annual deliveries will remain unchanged from the 2010 Permission, being 4015 per year (or 77 per week).

5.1.3 The comments of the Director of Environmental and Economic Regeneration to the Planning Committee relating to the 2010 Permission, dated 21 May 2009, are recalled:

“Since the trip generation in the scale of things for Barry Docks is minimal, and the highway network is already designed to take such large HGVs, the Highways Authority has no objection to the proposals.”

5.1.4 Wood fuel will normally be delivered to the site during a 12 hour day between 07:00 and 19:00 hours on weekdays (in contrast to the 2010 Permission which also allowed for deliveries on Saturdays and Sundays). Weekend deliveries would be restricted to emergency deliveries only (where required to avoid an interruption in the operation). This is considered a material improvement relative to the 2010 Permission.

5.2 Site Access

5.2.1 Access to the plant itself will remain unchanged from the 2010 Permission being from David Davies Road immediately to the south of the development and across the land leased by the applicant and covered by the 2010 Permission. Access and traffic movements to and from the plant can be seen in Appendix 5 (Traffic Movement Plan).

5.2.2 Provision for parking, including disabled parking and provision for bicycle/motorbikes remain as provided for under the 2010 Permission.

5.3 Emissions

5.3.1 In order to operate, the Project will require an Environmental Permit and this will only be given provided the plant continues to be WID/IED compliant, as was the case for the 2010 Permission. This includes a need to agree the proposed abatement technology to minimise air emissions before the site can operate and confirmation that the Best Available Technology (BAT) has been employed. Therefore, local air quality will not be adversely affected by the proposals. In this respect there is therefore no material change from the 2010 Permission.

5.3.2 The Applicant has commissioned an Air Emissions Assessment for the present application (see attached at Appendix 2). This exercise was pre-scoped in conjunction with the local officers of Natural Resources Wales with the agreed objective of determining the increase in stack height necessary to achieve a negligible change of environmental impact relative to the previously improved scheme.

6. **NOISE ASSESSMENT**

6.1 Best practicable means will be used during site operations to ensure that noise does not exceed agreed levels. The Applicant has selected a leading national contractor to carry out such work and it is well versed in compliance procedures in this regard. The enclosure of the operating process within structures and/or buildings will ensure that noise levels are not significant.

6.2 The plant has been designed to meet the BAT (Best Available Technology) requirements of the Environmental Permitting regime which include noise emissions controls. The steam turbine produces the most noise, but is enclosed within an acoustically attenuated compound within the Turbine, Welfare & Ancillaries building.

6.3 The plant as a whole is designed to be fully compliant with applicable dBA requirements. The roller shutter doors will generally be closed except to receive deliveries in order to provide additional acoustic attenuation.

6.4 The Applicant has consulted extensively with the main contractor selected for the project to ensure that the plant is fully compliant and obligations have been imposed on them to ensure that the design, procurement, construction and operation comply with all applicable law and guidelines. These include the following:

- Welsh Statutory Instrument 2006 No. 2629 (W.225)
- The Environmental Noise (Wales) Regulations 2006 (as amended by the Environmental Noise (Wales) (Amendment) Regulations 2009 (SI2009/47)).
- Welsh Statutory Instrument 2007 No. 3519 (W.311) The Environmental Noise (identification of Noise Sources) (Wales) Regulations 2007
- Technical Advice Note (Wales) 11, 'Noise',
- Welsh Statutory Instrument 2006 No. 2629 (W.225) The Environmental Noise (Wales) Regulations 2006. See also Welsh Statutory Instrument 2007 No. 3519 (W.311)
- The Environmental Noise (identification of Noise Sources) (Wales) Regulations 2007
- <http://wales.gov.uk/docs/desh/publications/140731planning-policy-wales-edition-7-en.pdf>
- <http://wales.gov.uk/docs/desh/publications/131217noise-action-plan-for-wales-en.pdf>

- 6.5 The contractors are carrying out their work taking these points into account and also the findings from the Noise Study for the Project which has been updated by PCML for the purposes of the present application (refer to Appendix 9).
- 6.6 Verification that noise levels continue to comply with such legislation and guidelines will take place during commissioning of the plant in accordance with a background noise measurement scheme to be agreed with the Local Authority prior to commencement of construction. In this regard the Applicant has no objection to inclusion of the following condition from the 2010 Permission:

“16) No development shall take place until details of a scheme to measure background noise levels in the following locations has been submitted to and approved in writing by the local planning authority: i. 57 Dock View Road ii. Cory Way iii. Estrella House, Cei Dafydd The survey shall be implemented as approved and the results submitted to and agreed in writing with the local planning authority before the development hereby permitted is brought into use. At no time shall noise attributing from the site exceed the agreed background noise levels.”

7. TRANSPORT ASSESSMENT

- 7.1 For the purposes of the present application, the Applicant has retained UKPDP to prepare an update of the Project's Traffic Assessment and this is included at Appendix 10.
- 7.2 The principal findings of the updated Traffic Assessment are that:
- 7.2.1 traffic levels in the area of Barry Docks and the approach/feeder roads are not materially different from the levels referred to in 2009 and referenced in the Transport Assessment for the 2010 Permission;
- 7.2.2 annual traffic movements for the Project do not exceed those contemplated in the original Traffic Assessment.
- 7.3 A suite of planning conditions covering highway and access matters was imposed under the 2010 Permission. This includes amongst other matters:

“15) No development shall take place until there has been submitted to and approved in writing by the local planning authority details of secure parking on site for bicycles. The bicycle parking spaces shall remain available for their designated use for as long as the development hereby permitted remains in existence.

19) The measures incorporated into the Green Travel Plan accompanying the application shall be implemented when the development is brought into use and thereafter monitored and reviewed in accordance with the Green Travel Plan.

20) Deliveries to the site, and all other external operations, shall not take place outside the hours of 07.00 to 19.00 Monday to Saturday and 08.00 to 16.00 on Sundays, Bank and Public Holidays.”

If permission is granted for the current proposals it is therefore assumed and accepted that these conditions would be imposed.

8. ENVIRONMENTAL CONTROL

- 8.1 **Air emissions:** As the site exceeds the 3MW threshold it requires an Environmental Permit from Natural Resources Wales and the gasification process must meet strict limits on air emissions set out in the Environmental Permit. This includes a need to agree the proposed abatement technology to minimise air emissions before the site can operate and confirmation that the Best Available Technology (BAT) has been employed. Therefore, local air quality will not be adversely affected by the proposals.
- 8.2 **Dust:** There is no material change to the proposed environmental control measures. Site operations will be carried out to minimise the creation of dust. A mains water supply will be available and all external water pipes are to be lagged to prevent frost damage. Water sprays and/or bowsers will be used as necessary to reduce dust levels in external circulation areas. Staff will monitor dust emissions continuously whilst the plant is in operation and will take appropriate action when required. Regular visual inspection will take place with recording of results in a diary.

- 8.3 **Mud / detritus:** Measures will be put in place to prevent any deposit of debris on the highway. There will be regular visual inspection and a road sweeper will be deployed as necessary, including during the construction phase
- 8.4 **Odour:** No material will be accepted which is likely to cause an odour nuisance. The biomass plant itself does not produce odorous emissions.
- 8.5 **Pests / vermin:** The proposed fuel type will ensure that the site will not suffer from a vermin infestation. However, the site will be inspected daily given the presence of nearby water bodies and a pest control contractor will be hired if necessary.

9. ENVIRONMENTAL IMPACT

The Project's environmental and geology studies, prepared by Groundsure, continue to be applicable to the Project and are reproduced at Appendix 11 and Appendix 12). The main conclusions were that:

- 9.1 the site is partially vacant and occupied by a container storage and refurbishment operation;
- 9.2 the site is within an area affected by flooding and is within the indicative Zone 3 floodplain;
- 9.3 the site is not located over a groundwater Source Protection Zone (SPZ). In any event the site will not impact upon groundwater as any potentially polluting outputs will be discharged to foul sewer in accordance with the requirements of a trade effluent consent or removed from the site by vehicle;
- 9.4 an ecological survey is not required [although one was carried out] as the site is previously developed and consists only of a compacted hard standing surface which is not vegetated. There are no sites with sensitive flora or fauna having a statutory or local nature conservation designation within 500 metres of the site. The nearest designated site is the SSSI named "Hayes Point to Bendrick Rock" at a distance of 616 metres from the site (SSSI 510 administered by the Countryside Council for Wales) and covering an area of 29 hectares;
- 9.5 the site has no clearly defined planning history but historical maps indicate that the following uses have occurred on the site:
 - 1879: Undeveloped estuarine land and river bed of Cadoxton River
 - 1898 to 1900: Land reclaimed to rail head, coal tip/loading dock
 - 1920 to 1973: Railway engineering works/rail head
 - 1989: Builder's yard

These conclusions remain unchanged for the purposes of the present application.

10. FLOOD RISK ASSESSMENT

- 10.1 The Project's Flood Risk Assessment from RSK Group continues to be applicable to the Project and is reproduced at Appendix 13. The conclusions were that:
 - 10.1.1 the proposed development is located within Zone B but outside Zone C2, as identified by Technical Advice Note 15: Development & Flood Risk (July 2004) (TAN15). Zone B can be defined as "*areas known to have been flooded in the past evidenced by sedimentary deposits*" and Zone C2 as "*areas of floodplain without significant flood defence infrastructure*". Any development within Zone C would require a full Flood Consequences Assessment (FCA);
 - 10.1.2 the proposed development is also located outside the Environment Agency Wales (EAW) extreme (0.1%) Flood Map, which would normally underlay Zone B;

A topographic survey of the site (prepared on a precautionary basis, in line with EAW recommendations) produced three cross sections from north of the site through to the direction of the dock to confirm that the development is above the adjacent extreme flood outline and corresponding Zone C2;

Following submission of this information to the EAW, the Development Control Officer of the EAW confirmed that the site was not at risk of flooding and the cross sections were acceptable.

Policy changes within the EAW at the time meant that applications in Zone B were taken on a risk-based approach and since the zone is outside the Q1000 Flood Map, there is no perceived risk to the development.

10.2 The current proposals relate to the same area as the previously approved site. A comparison of the approved site layout plan with the current proposals confirms that there would be a very limited change in the overall footprint of the buildings within the site. As with the currently approved scheme sustainable drainage techniques (SUDs) would be used to attenuate site run-off to agreed rates.

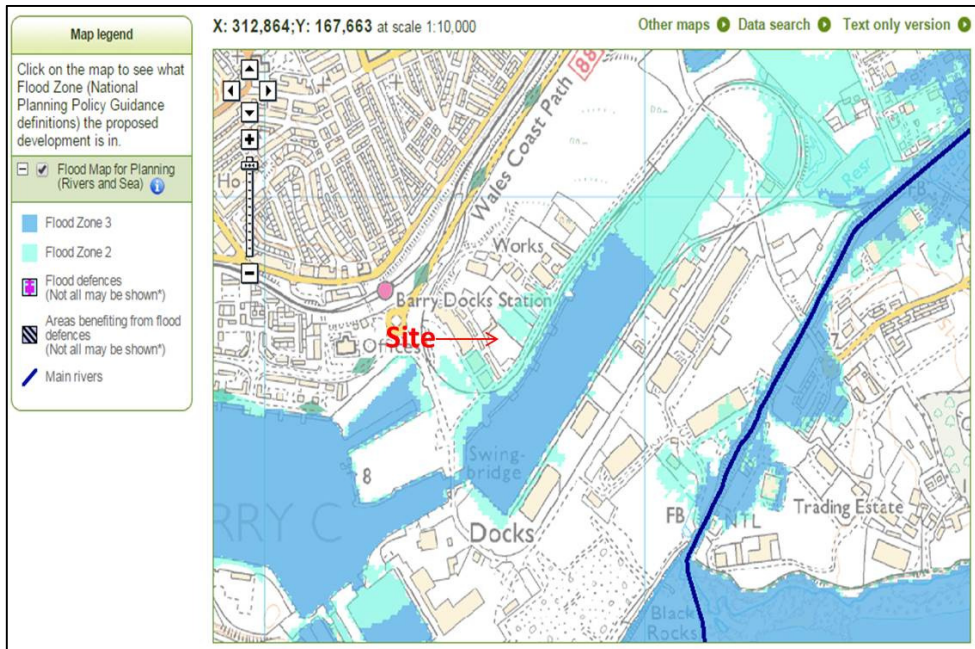
10.3 Conditions requiring details of surface drainage measures (Conditions 10 and 11) were imposed on the 2010 Permission:

“10) The building hereby permitted shall not be occupied until surface water drainage works have been implemented in accordance with details that have been submitted to and approved in writing by the local planning authority. Before these details are submitted an assessment shall be carried out of the potential for disposing of surface water by means of a sustainable drainage system and the results of the assessment provided to the local planning authority. Where a sustainable drainage scheme is to be provided, the submitted details shall: i) provide information about the design storm period and intensity, the method employed to delay and control the surface water discharged from the site and the measures taken to prevent pollution of the receiving groundwater and/or surface waters; ii) include a timetable for its implementation; and provide a management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public authority or statutory undertaker and any other arrangements to secure the operation of the scheme throughout its lifetime.

11) The building hereby permitted shall not be occupied until the sustainable drainage scheme for the site has been completed in accordance with the submitted details. The sustainable drainage scheme shall be managed and maintained thereafter in accordance with the agreed management and maintenance plan.”

Imposing in respect of the present application would cover the points made in the Flood Risk Assessment.

10.4 At the date of the present application the Environment Agency’s Flood Map for the Project site is as shown below. The Project is not located in either Zone 2 or Zone 3 (under the present regime for categorising flood risk):



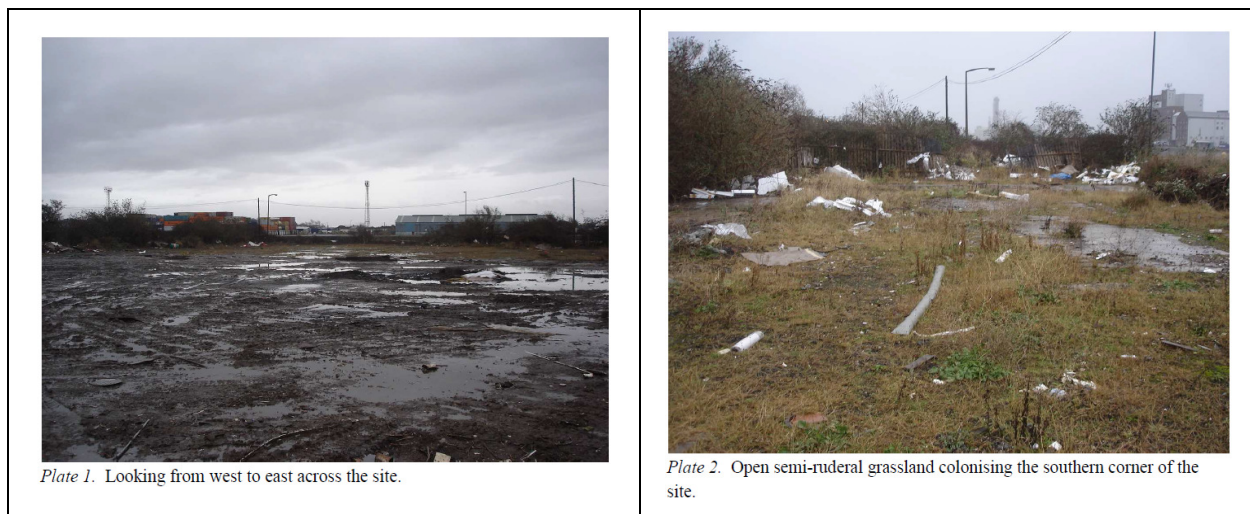
11. ECOLOGY

11.1 **Ecology – the application site:** The site comprises a roughly rectangular parcel of derelict land on the north side of Barry Docks bordered by Woodham Road and David Davies Road to the west and south, and areas of derelict land to the east and north (containing hard standing and rough grassland with scattered scrub). There are no designated wildlife sites within 500m of the site.

A strip of grassland and a railway line separate the site from the wet dock to the south and there is a row of commercial buildings to the west. The wider landscape features a mixture of industrial and post-industrial habitats including an expanse of colonising grassland on derelict land to the west.

An ecological survey of the site was conducted in December 2008 by RSK Carter Ecological Limited in support of the original planning application. This was updated for the purposes of the present application in November 2014 by PCML (refer to Appendix 8) following informal discussions with the Planning Authority's ecology officer. The current proposals do not affect any land outside the development footprint of the previous permission.

Photographs of the site were taken in December 2008 for the 2009 Ecological Report (Plates 1 and 2). More recent photographs taken in July 2014 (Plates 3 and 4) are also shown below for comparison. There is little change except that summer growth of vegetation can be seen in the 2014 pictures.



Site Photos from 2009 Ecological Report



Site Photos from July 2014

- 11.2 **Landscaping Scheme:** A landscaping scheme (a reserved matter under the present application) will be required and this will have the potential to increase the quality of new habitats overall within the site. The technical changes proposed under the present application will not have an impact on the conclusions from the Ecology Report.
- 11.3 **Ecology – air emissions:** The Applicant has commissioned an updated Air Emissions Assessment (including a dispersion analysis) to take account of the proposed change in technology and feedstock consumption levels described in this application and this is attached as Appendix 3.

Natural Resources Wales is the appropriate technical body for determining air quality with respect to plant regulated under the Waste Incineration Directive/Industrial Emissions Directive. Air emissions from the site will therefore be tightly regulated under this agency's environmental permitting system. Comprehensive emission abatement will be imposed as part of this process. The stack height will be increased by up to 43m to ensure

adequate dispersion of emissions for the proposed facility is compliant with the Waste Incineration Directive/Industrial Emissions Directive.

12. CONCLUSIONS

12.1 The benefits from the Project remain essentially the same as for the 2010 Permission, namely:

12.1.1 **Renewable electricity:** Utilising established biomass energy technology in order to contribute to national targets for renewable energy provision. The facility will supply electricity via the electricity grid which is equivalent to the annual energy usage of approximately 23,600 households (increased from the previous level of 22,000) based on an average UK household consumption of 3,300kWh.

12.1.2 **Climate change:** Contributing to creating “A resilient and sustainable economy for Wales that is able to develop whilst reducing its use of natural resources and reducing its contribution to climate change.” (Planning Policy Wales Edition 7, Para 4.1.5).

12.1.3 **Reduced landfilling:** Reducing the need to dispose of wood to landfill, thereby conserving finite landfill capacity and facilitating a more sustainable end use for waste wood as a renewable energy resource in accordance with the waste hierarchy (Planning Policy Statement 10). There remains an over-supply of waste wood in the UK and consequently, large volumes of wood continue to be directed to landfill or other less sustainable uses.

12.1.4 **Assisting wood recycling:** Providing an additional outlet for recycled wood to enhance the commercial viability of wood recycling, both locally and nationally.

12.1.5 **Traffic:** Achieving a reduction in the number of vehicle movements carrying waste wood to local and national landfill sites.

12.1.6 **Economy/employment:** Utilising a vacant industrial plot in order to provide skilled employment opportunities and investment in local goods and services. Up to 12 full-time equivalent jobs based at the site plus 2 office staff will be provided.

12.2 To summarise the Applicant’s views in respect of the present application compared to the 2010 Permission:

Change	Comment
Technology	<ul style="list-style-type: none"> Gasification by pyrolysis and fluidised-bed are inter-changeable as advanced conversion technologies
Plant Output	<ul style="list-style-type: none"> 11% “invisible” increase = increased contribution to renewable policy targets
Layout	<ul style="list-style-type: none"> 7.5% Reduction in total Building Footprint
Building Height	<ul style="list-style-type: none"> Non-material (2m) average increase in height
Stack Height	<ul style="list-style-type: none"> Below that approved for the neighbouring plant sited at Atlantic Way
Emissions	<ul style="list-style-type: none"> WID/IED compliant
Traffic	<ul style="list-style-type: none"> No change in weekly traffic movements by road

12.3 The Applicant therefore requests the Planning Authority to approve the present application under the TCPA 1990.