



Appendix 3.1

**Barry Biomass Facility Environmental Statement Adequacy Report
(WSP, November 2019)**



Welsh Government

BARRY BIOMASS FACILITY

Environmental Statement Adequacy Report





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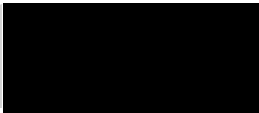

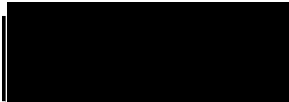
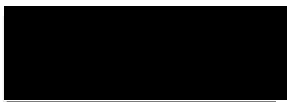

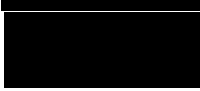
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EXECUTIVE SUMMARY

An independent review has been undertaken by WSP on the 2010 and 2019 retrospective Environmental Statements produced for a planned biomass facility in Barry, South Wales. WSP is one of the founding members of the Institute of Environmental Management and Assessment's Environmental Impact Assessment Quality Mark Scheme.

Technical teams were assigned to review the Environmental Statements in line with the relevant EIA Regulations at the time (the Town and Country Planning (Environmental Impact Assessment) (England and Wales) 1999) and assigned a Red, Amber, Green rating to determine if the assessment was undertaken was adequate.

In summary a variety of topic areas have shown that there were significant gaps in both the 2010 and 2019 Environmental Statements (to ecology, landscape, air quality, ground conditions, noise, water and climatic factors), with the 2019 retrospective being recommended that it should have been written in accordance with the Town and country Planning (Environmental Impact Assessment) (Wales) Regulations 2017. In addition, a high-level review of the EIA Regulations has led to the recommendation that the applications are deemed a Schedule 1 development whereby EIA should have been undertaken at the time of original planning application in 2008 and 2015.

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2 INTRODUCTION

2.1.1. The Welsh Government has commissioned WSP to undertake a review on the adequacy of the Environmental Statements (ES) for the Barry Biomass facility.

2.2 2008 PLANNING APPLICATION

2.2.1. In August 2008, the Developer (Biomass UK (No.2) Ltd submitted a screening request from Vale of Glamorgan Council under Schedule 2, 11 (b) of the Town and Country (Environmental Impact Assessment) (England and Wales) Regulations 1999 (hereby the 'EIA Regulations') (hereby the 'EIA Regulations'. A copy of the decision letter by Vale of Glamorgan Council is omitted from the planning application site, however, it can be assumed that since various regulators including the Environment Agency Wales and the Countryside Council for Wales (now Natural Resources Wales) concluded the facility would have no adverse effects that the screening decision was successful.

2.2.2. A planning application was subsequently submitted 09 September 2008 without an Environmental Statement but with additional reports to support the development would have no significant adverse effects including:

- Green Travel Plan
- Sustainability Statement
- Noise Assessment
- Fuel Supply Assessment
- Ecology Report
- Flood Risk Assessment

In June 2009, the Welsh Assembly Government contacted Sunrise Renewables Limited that it was believed the facility actually fell under Schedule 1 of the EIA Regulations.

Vale of Glamorgan Council subsequently refused planning permission in July 2009 citing the facility contravened policies WAST2, ENV27, ENV29, EMP2, EMP3, and TRAN11 of the Adopted Unitary Development Plan 1996-2011. In addition, further grounds for refusal included that the facility would be a retrograde step for the council's aspirations of the water front in line with the Barry Waterfront Development Principles Supplementary Planning Guidance.

Subsequently, Sunrise Renewables Limited launched a planning appeal, whereby an Inspector appointed by the Welsh Ministers ordered Vale of Glamorgan Council should pay all costs of the appeal proceedings citing that the grounds for refusal had little basis or had not been acted on by the Council

2.2.3. The planning case officer reviewed the application in January 2009 response to Welsh Assembly Governments queries about whether the facility fell under Schedule 1 (10) of the EIA Regulations. The planning case officer reviewed the case and concluded that the facility would have no significant adverse effects on the environment 'by virtue of factors such as its nature size or location' and directed that the facility did not constitute EIA Development. The schedules are summarised in Table 1 below.

Table 1 – Schedules relating to the Barry Biomass facility application under the EIA Regulations

Schedule	Detail
1	10. Waste disposal installations for the incineration or chemical treatment (as defined under Annex IIA to Council Directive 75/442/EEC(3) under heading D9) of non-hazardous waste with a capacity exceeding 100 tonnes a day
2	11(b) installations for the disposal of waste (unless included in Schedule 1): <ul style="list-style-type: none"> i) The disposal is by incineration; or ii) The area of the development exceeds 0.5 hectare; or iii) The installation is to be sited within 100m of any controlled waters.

2.3 2015 PLANNING APPLICATION

- 2.3.1. Since this date, a new application was submitted by Sunrise Renewables (Barry) Limited in February 2015 (2015/00031/OUT) for the facility to use new gasification technology and a changed site layout.
- 2.3.2. This application was screened in accordance with the EIA Regulations by Vale of Glamorgan Council in July 2015 and it was concluded that no EIA was required as part of planning application.
- 2.3.3. As a result of the previous planning application, Vale of Glamorgan Council issued the EIA Screening to the Minister of Natural Resources at Welsh Government to review their screening direction. The response from Welsh Government on 30 July stated that they agree that the facility falls within description at 2.11(b) of the EIA Regulations and that the facility exceeds the thresholds of Schedule 2. The letter from Welsh Government concluded that a screening direction by the Welsh Ministers is not required. Subsequently, the outline planning permission was granted on 30 July 2015 with reserved matters.
- 2.3.4. In 2019 an ES was prepared on behalf of the Developer relating to the 2015 application with the intention of presenting to Welsh Government that the facility had due regard to the “protection of the local amenity and the environment as a whole, would have been unaffected by the absence at the time of an ES.”
- 2.3.5. The 2019 ES was prepared retrospectively and focused on the information available at the time of the 2015 planning application. The 2019 ES states that the document has ‘no statutory basis’ with no challenge for the planning application to be judicially reviewed being called in to question. It remains unclear if this ES is meant to be an addendum to the 2010 ES, or a full ES to support the 2015 planning application.

2.4 ADEQUACY REVIEW

- 2.4.1. This report is the outcome of the review of both the 2010 and 2019 ESs relating to the facility to inform Welsh Government of whether the information is sufficient for decision making in the light of the nature of the development and the environmental issues of concern and in accordance with the EIA Regulations. The methodology for the review is set out in Chapter 2.

- 2.4.2. This includes an assessment of whether the facility falls under Schedule 1 or Schedule 2 of the EIA Regulations, to determine if an ES should have been provided and more rigorous assessment undertaken prior to the submission of the 2008 and 2015 planning applications.
- 2.4.3. A summary table listing out the key differences in the 2010 and 2015 planning applications are summarised in Table 2 below:

Table 2 – Differences in the 2010 and 2015 Planning Applications

	2010 Planning Application	2015 Planning Application
Generation output	9MW	10MW
Building footprint	2,700sqm (one building) Chimney stack 20m Diameter of stack – 1m Car parking for 12 cars	2,497sqm (several structures) including Wood storage and feed building: 52.4 x 21.6 x 13.7m high Turbine, Welfare and Ancillary Buildings: 29.1 x 17.9 x 11m high Main process building: 41.4m x 20.4m x 23m high ACC Unit: 32 x 14.5 x 20m high External equipment: 18.4m high x 6.7m diameter of ash silos. Chimney stack – 43m Diameter of stack – 2.75m Carparking for 12 cars
Building height (worst case)	14m	23m
Syngas Production	Pyrolysis	Fluidised Bed
Technology Brand	Prestige Thermal Equipment	Outotec
Combined Heat and Power	Yes	No
Operational days	Seven days a week	Five days a week (excludes weekends) but plant self-operational

3 METHODOLOGY

- 3.1.1. WSP is one of the founding members of the Institute of Environmental Management and Assessment’s Environmental Impact Assessment Quality Mark Scheme. It requires a more rigorous and independent check of EIAs produced by those companies signed up to the scheme. The Quality Mark demonstrates that our EIAs are independently rated and regularly monitored to high standards. In addition, our technical specialists are interviewed and appraised by IEMA on their training, knowledge and application of EIA best practice.
- 3.1.2. In conducting the review, qualified and competent technical specialists were commissioned to undertake an analysis of the both the 2010 and 2019 ESs. Each specialist was requested to provide a Red, Amber, Green (RAG) rating the assessments based on professional judgement, best practice with the information available to them at the time of writing.
- 3.1.3. Table 3 below shows the criteria used for this technical review.

Table 3 – RAG Ratings for Technical review

RAG	Description
Red	A full EIA is needed, significant gaps identified in the assessment.
Amber	Potential for significant data gaps or inadequate mitigation, control measures can be corrected without full re-assessment,
Green	Assessment deemed fit for purpose, minor caveats identified.

- 3.1.4. The following technical specialisms were identified to conduct a review of the ESs:
 - Environmental Impact Assessment (EIA);
 - Ecology;
 - Landscape and Visual;
 - Air Quality;
 - Ground Conditions;
 - Noise;
 - Water;
 - Materials and Waste;
 - Climate Resilience; and
 - Climate Change and Greenhouse Gases.
- 3.1.5. Traffic and Transport has been scoped out of this review due to the fact that only 9 to 11 Heavy Goods Vehicles loads were proposed (22 vehicle movements per day) in the 2010 ES and were deemed non-significant. The 2015 planning application included a Transport Assessment in Chapter 10 of the Planning Statement, that concluded no material changes were proposed as part of the new planning application compared to the one in 2008.

- 3.1.6. In addition, given the extensive history of the site, being located on a former coal tip / loading dock rail head (1898 to 1900), railway engineering works / rail head (1920-1973) and a builders yard (1989), the Vale of Glamorgan Council in their Officers Report to Committee in relation to the 2008/01203/FUL application concluded that there are no archaeological constraints surrounding the site, and therefore no assessment was undertaken.
- 3.1.7. Within this report, each technical specialist was mindful that the EIA was conducted with now superseded EIA Regulations when making their comments. Once the RAG assessments were undertaken, the ESs were then analysed to establish if they aligned to Schedule 4 of the EIA Regulations as detailed in Chapter 3 and shown in Appendix A.

4 THE EIA REGULATIONS

4.1 SCHEDULE 1 OR SCHEDULE 2

- 4.1.1. The feedstock for the biomass facility in both ESs propose to utilise reclaimed wood as the fuel feedstock, which will be delivered to site in the form of woodchip that would undergo further chipping and drying to allow the wood to be used as a fuel. The planning applications state that the facility would receive 216 tonnes of woodchip feedstock a day.
- 4.1.2. The fuel accepted is stated as ‘clean wood, pallets, construction timber and other woods which have been removed from the construction and demolition waste stream. Waste wood feedstock is chipped off-site and delivered to site, whereby further chipping and drying of the material would occur prior to be used a fuel’ as detailed in the 2010 ES.
- 4.1.3. As the feedstock will be deemed non-hazardous, it is assumed that the wood chip received on site would need a waste transfer note as per the Waste (England and Wales) Regulations 2011 and therefore still deemed a waste product.
- 4.1.4. In relation to whether pyrolysis can be defined as a type of incineration, the key characteristic of pyrolysis is that it is a thermal-chemical process that takes place in the absence of oxygen, or with very low oxygen levels. It is included in the generic ‘incineration’ description of thermal waste treatment processes.
- 4.1.5. An Environmental Permit for the biomass facility was issued by NRW¹ on the basis of Part 1 of Schedule 1 to the Environmental Permitting (England and Wales) Regulations 2016 (EPR):
- Incineration of non-hazardous waste in a waste incineration plant or waste co-incineration plant with a capacity exceeding 3 tonnes per hour.
- 4.1.6. The EPR defines ‘waste incineration plants’ and waste co-incineration plants as:
- “waste co-incineration plant” means a stationary or mobile technical unit whose main purpose is the generation of energy or production of material products and which uses waste as a regular or additional fuel or in which waste is thermally treated for the purpose of disposal through the incineration by oxidation of waste as well as other thermal treatment processes, such as pyrolysis, gasification or plasma process, if the substances resulting from the treatment are subsequently incinerated.”*
- 4.1.7. With this definition and on the basis daily delivery of non-hazardous waste (reclaimed wood) exceeding 100 tonnes per day, it is concluded that the biomass facility falls under Schedule 1, 10 of the EIA Regulations: ‘Waste disposal installations for the incineration or chemical treatment (as defined under Annex IIA to Council Directive 75/442/EEC(3) under heading D9) of non-hazardous waste with a capacity exceeding

¹ <https://naturalresources.wales/media/683375/barry-biomass-final-draft-decision-document.pdf>

100 tonnes a day'. Therefore, an Environmental Statement is deemed to have been mandatory for both the 2008 and 2015 planning applications.

4.2 SCHEDULE 4 OF THE EIA REGULATIONS

- 4.2.1. In this section, the compliance with the Schedule 4 of the EIA Regulations is addressed. In line with the requirements of EIA, section headings are a summary of Part 1, Schedule 4 of the EIA Regulations as listed in full in Appendix A.

1. DOES THE ES CONTAIN A DESCRIPTION OF THE DEVELOPMENT AS PER PART 1 SCHEDULE 4 OF THE REGULATIONS?

2010 ES

- 4.2.2. Chapter 2 of the ES, describes a description of the facility, including external features such as the proposed steel portal frame. The description makes clear that external appearances of exterior panels would be agreed with Vale of Glamorgan Council. Elevation drawings are shown of the facility, which also is stated to possess directional floodlights. The project description does not make it clear what operations are being undertaken outside, e.g. will the woodchip feedstock be further chipped and dried within a building, would a conveyor system be used?
- 4.2.3. The project description described that the facility would be open seven days a week, and operate 24 hours a day. The project description lacks information on how the facility will be constructed. It is not made clear until Chapter 7 (Ground Conditions), that construction activity and plant is introduced, in relation to site preparation, excavation, rolling and compaction, piling, welding / cutting steel. It is therefore difficult to establish a holistic scenario where the construction methodology and phasing of the construction phase is complete. However, this does not render the ES non-compliant under the EIA Regulations.
- 4.2.4. Given the nature of data gaps identified Schedule 4 (3) and (4) described below relating to this ES, the description of the development should lead to identification of receptors, assessment of impacts and applied mitigation to determine significance. In a number of topic areas described in this chapter, this review has identified significant gaps in a number of technical assessments (including ecology, flood risk, ground conditions and noise) that render the possibility that the project description was not written in enough detail for a thorough assessment.

2019 ES

- 4.2.5. Chapter 1 (Description of the Development) highlights the key changes to the planning application submitted in 2015 compared to that in 2008. The description includes the revised layout of buildings including dimensions and footprints, allowing the detail as highlighted in Table 2 above. Additional details including high level drainage, access, plant and lighting. Section 1.5 describes the operational detail, including details of process outputs for wood fuel, cooling water, drainage condensate and char/ ash quantities. As per the 2010 ES, no details are given within the project description about the construction of the facility, bar the duration. Therefore, an understanding of the proposed effects isn't gleaned until a review is undertaken of each technical topic area.

2. HAS THE ES OUTLINED THE KEY ALTERNATIVES CONSIDERED TAKING IN TO ACCOUNT ENVIRONMENTAL EFFECTS?

2010 ES

- 4.2.6. The ES stated in paragraph 1.13 that the site in Barry was selected because it met a variety of criteria including:
- Dockside location to ensure wood can be transported via the sea
 - Industrial location
 - Within close proximity of existing and proposed energy consuming land use so that waste heat can be effectively utilised
 - Within close proximity of waste wood processing facilities so that wood need not be transported long distances by road
 - Close to good highway accessibility
 - Within close proximity to the National Grid.
- 4.2.7. The ES states that due to the number of requirements, the number of alternative sites is restricted and therefore no alternative sites were considered.
- 4.2.8. In concluding whether or not this justification was compliant with the EIA Regulations, a review of Circular 11/99: Environmental impact assessment² was undertaken. Paragraph 83 of Circular 11/99 states:
- “although the Directive and the Regulations do not expressly require the developer to study alternatives, the nature of certain developments and their location may make the consideration of alternative sites a material consideration. In such cases, the ES must record this consideration of alternative sites. More generally, consideration of alternatives (including alternative sites, choice of process, and the phasing of construction) is widely regarded as good practice, and resulting in a more robust application for planning permission”.*
- 4.2.9. In conclusion, as Vale of Glamorgan Council did not cite alternatives as a material consideration, the ES has noted the reason for site selection and included some environmental considerations such as proximity to marine and road transport networks and wider landscape context. Therefore, the ES is compliant with the EIA Regulations, although further detail would be needed to make in line with best practice.

2019 ES

- 4.2.10. Chapter 6 (Alternatives) of this ES is dedicated to the assessment, the chapter relays the reasons for site selection given in the 2010 ES, but goes in to further detail in relation to the choice of technology as the updated 2015 outline application (as highlighted in Table 2 above) included a new type of technology that would use

² Welsh Office (1999). Circular 11/99: Environmental Impact Assessment (EIA).

pyrolysis through a fluidised bed process to generate syngas and ultimately generate electricity. The ES concluded that the Outotec equipment was more efficient and versatile, and cited that the increase in flue stack as a result of the new technology would help aid dispersion of emissions.

- 4.2.11. Ultimately the chapter also raised the 'do-nothing' scenario which stated that as there were no other energy recovery facilities in the locale, waste wood would go to landfill or to other energy recovery facilities further afield.
- 4.2.12. The ES also appended the Design and Access Statement that accompanied the planning application in 2015 which provided more detail on to the justification and alternatives considered in relation to the site layout and operational arrangements. However, this appendix was not cross referenced or sign posted in Chapter 6 to provide context, and would have been difficult for stakeholders (including the public) to locate without having detailed planning knowledge. In conclusion, the 2019 ES provided more details on alternatives considered compared with the 2010 ES and still remains compliant in line with Circular 11/99 and the EIA Regulations.

3. DO THE ENVIRONMENTAL STATEMENTS (2010 AND 2019) PROVIDE A DESCRIPTION OF THE ASPECTS OF THE ENVIRONMENT LIKELY TO BE SIGNIFICANTLY AFFECTED BY THE DEVELOPMENT E.G. POPULATION, FAUNA, FLORA, SOIL, WATER, AIR, CLIMATIC FACTORS AND MATERIAL ASSETS.

2010 ES

- 4.2.13. Topic areas covered in the 2010 ES include the following:
 - Air Quality
 - Ecology – relating to the presence of Rough Marsh-Mallow (*Althaea Hirsuta*)
 - Ground Conditions
 - Landscape
 - Noise
 - Traffic
 - Water resources.
- 4.2.14. A breakdown and technical review of these assessments is detailed in Appendix B.
- 4.2.15. In relation to Ecology, a Preliminary Ecological Appraisal (PEA) has not been seen to inform whether species for flora and fauna (outside of the Rough Marsh-Mallow) should inform the EIA.
- 4.2.16. In addition, no reference is made to materials and waste therefore it is unknown whether the works achieve a cut and fill balance during construction and whether materials need to be imported to get to site. It is acknowledged that the biomass will create an end product of ash and char that could be re-used in the construction industry, sold as filter media or disposed of at landfill. It is unknown if these have been considered in the traffic and transport assessment.

4.2.17. In summary, acknowledging the EIA was retrospective to inform the planning appeal, there are gaps in the assessment which are contradictory to the detail requested as part of Part 1 (3) of the EIA Regulations.

2019 ES

4.2.18. The Developer acknowledged that discussions were undertaken with the Welsh Government to provide a voluntary submission of this ES in the form of an addendum ES. No formal EIA Scoping exercise had been undertaken, and that to determine the baseline conditions in relation to the site and its surroundings the ES was based on the approved documents formed as part of the 2010 submission. Mitigation proposed as part of the 2015 application only constituted to those formed as to the operational practice.

4.2.19. Topic areas scoped into the ES included:

- Air Quality, due to the changed impacts from dispersion and determining the optimal stack height of the new technology provision.
- Noise, again due to the change in technology provision.
- Landscape and visual, due to changes in the built form.
- Alternatives to justify the decision on the new technology provision and the principal reason as to the choice of applying for a new planning permission in 2015.

4.2.20. Topic areas scoped out of the assessment include:

- Transport, as no material changes to the transport details in the 2010 consent and it was confirmed that the background traffic level in 2015 remained comparable (unconfirmed source).
- Ecology due to an updated survey being undertaken for Rough Marsh-Mallow in 2014 in agreement the Vale of Glamorgan's Ecology Officer, stating no material change to the condition of the site and no sign of Rough Marsh-Mallow.
- Ground Conditions, no material changes to the nature of the proposals upon Ground Conditions were identified.
- Planning Policy, through agreement with the Welsh Government.

4.2.21. At the time of writing this report, there is no evidence to conclude why further assessments relating to climate resilience and the FRA and material assets have been excluded from assessment. In addition, due to the retrospective nature of the ES, no formal EIA Scoping was undertaken. Therefore an assumption has been made that the scope of assessment has been agreed by Regulators, including the consideration of Schedule 4 of the EIA Regulations and is therefore are deemed acceptable. However, the review of the ES has considered these wider topic areas (climatic factors and material assets) which are outlined in Appendix B.

4. A DESCRIPTION OF THE LIKELY SIGNIFICANT EFFECTS OF THE DEVELOPMENT COVERING DIRECT, SECONDARY, CUMULATIVE, SHORT, MEDIUM AND LONG-TERM, PERMANENT, TEMPORARY EFFECTS.

2010 ES

Ecology

- 4.2.22. In relation to Ecology, the ES only looks at the relationship with the site having due regard to flora and was specific to the Rough Marsh-Mallow. Therefore, species specific surveys relating to terrestrial and marine fauna were excluded from the assessment. A query arose as to the scope of the air quality assessment relating to emissions from the flue stack and a SPA and Ramsar site located 3.9km east of the site and whether an HRA Screening should have been undertaken and submitted with wider documents accompanying the planning application.

Material Assets

- 4.2.23. For assessments of similar size and scale, it would be best practice to have assessments that identify the Bill of Materials and Cut and Fill of any materials and waste.
- 4.2.24. The significant issue in this ES is that it is retrospective at the time of planning appeal. Although most data would have been in date to conduct the assessment (two years old), as a need for EIA had been screened out as part of the planning application implies that the rigour of assessment that would be applied for a development of this scale has been toned down e.g. no technical EIA Scoping was undertaken, or inclusion of discussion of scope of the ES with a Regulatory body.

Ground Conditions

- 4.2.25. In relation to Ground Conditions, the chapter focused on the Preliminary Risk Assessment (PRA) baseline study and conceptual site model. The assessment does not scope in or out source, receptor pathways and therefore it is unknown whether any intrusive works during the construction phase could cause indirect pollution events. Furthermore, effects to the geology, soils, mineral resources or geomorphology are excluded from the assessment, which may not have been the case if the facility had undergone EIA Scoping.

Noise

- 4.2.26. Chapter 9 (Noise) was not undertaken in accordance with best practice at the time for construction and operation. In addition, no reference or assessment was made to any external plant or machinery in the operational assessment including the stack, louvres, doors and HGV movements within the site.

Flood Risk & Water

- 4.2.27. In addition, although the Environment Agency Wales did state that the site was not at risk off flooding, the accompanying FRA did not assess climatic factors to determine if the site is resilient over its 25-year operational life span. The FRA was based on the 2009 report which does not have site specific data and extrapolates from surrounding areas. In addition, there appears to have no Water Framework Directive screening or assessment undertaken on water resources or quality in the ES.

Climatic Factors

- 4.2.28. Given the fact that the facility is deemed to be renewable, no assessment has been undertaken on greenhouse gases which would be generated as an output from the flue stack and relate to climatic factors identified in Schedule 4 of the EIA Regulations.

5. CUMULATIVE EFFECTS

- 4.2.29. In terms of cumulative assessment, most of the focus was on the Biogen gasification facility, located approximately 500m from the biomass plant, no significant effects were identified for Air Quality and Noise. The report states that it is stated that the incorporation of practical mitigation measures means the facility will have only a minor/negligible impact on air quality, ecology, noise and traffic – it is uncertain where the ecology and traffic assessments have been detailed in this assessment and what mitigation measures are proposed.

Conclusion

- 4.2.30. In summary, there are a number of gaps in the 2010 assessment that are deemed to require further assessment and therefore renders whether significant adverse effects have been fully considered and appropriately mitigated.

2019 ES

Ecology

- 4.2.31. A Red RAG rating has been assigned to the Ecology chapter as biodiversity was scoped out and the 2014 survey only covered botanical impacts. In addition, along with Air Quality, concerns were raised that no additional assessment was undertaken following the increase in width on the flue stack, which raises concerns about whether impact pathways (critical loads) and operational effects had been properly considered in relation to the facility.

Landscape and Visual

- 4.2.32. An impact assessment was not undertaken which does not conform with current best practice. The chapter made some observations on the new facility design compared to the 2010 ES. No clarity is given on the building changes and how they would affect landscape character or visual amenity.
- 4.2.33. There is an over reliance in the chapter on the comparison with the BioGen proposals (to which planning permission had lapsed at the time of this assessment which isn't clearly stated). The general narrative is that as the new proposals will be similar in height to the BioGen proposals which got approval, there shouldn't be any issues. There is no comparison or appraisal made with the consented scheme.
- 4.2.34. The chapter refers to the proposed facility changes as having an 'average building height' of 16.3m across three buildings instead of the actual building heights, whereby EIA is based on a worst-case scenario. It is considered likely that the reasoning for this would be to ensure the height is comparable to the 2010 ES building height of 14m.
- 4.2.35. The chapter does not provide appropriate information to fully justify this assessment and has mis-interpreted significance values, with 'Major Beneficial' an incorrect conclusion for combined visual and landscape effects when using their presented methodology significance criteria (which also refers to Major Positive, not Major Beneficial). There is no evidence of consultation over study area, viewpoints or methodology. There is a ZVI presented but no detail of how this was created or what it was based on.

Ground Conditions

- 4.2.36. Operational impacts did not consider individual receptors in the assessment. A moderate positive residual effect was determined overall based on the ground being remediated. However, the impacts to various receptors from the potentially contaminative processes of the Biomass facility have not been considered, and may be adverse.

Noise

- 4.2.37. Various issues were identified relating to how the residual effect have been assessed, and that most of the assessment was made on the assumption that the operational noise would be contained with a building. There are no references to outside noise sources such as the ACC, stack, louvres / doors and from HGV movements within the site.

Flood Risk

- 4.2.38. The Flood Risk Assessment identified gaps in the data on climate change and future resilience (also identified in the 2010 proposal) and therefore does not align with the Well-being and Future Generations Act (Wales).

Cumulative Effects

- 4.2.39. The chapter focuses on the Biogen gasification plant, where planning permission had expired without ever being constructed. It is reported in the ES (para 3.3.4) that by the time the Vale of Glamorgan Council planning committee met to determine the 2015 planning application, the cumulative effects considered were no longer a consideration due to the fact that the Biogen planning consent had lapsed without being implemented. No further consideration was given to wider developments in the ES.

Conclusion

- 4.2.40. In summary, there are a number of gaps in the 2019 assessment that are deemed to require further assessment and therefore renders whether significant adverse effects have been fully considered and appropriately mitigated. It is also unknown at the time of writing, why this ES was written in accordance with the EIA Regulations, when they had been superseded by the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 which highlight additional topic areas for assessment. These include sustainable availability of resources, light, the disposal and recovery of waste, risks to human health and accidents and disasters, and the impact of the project on climate change (including vulnerability). Therefore, in this instance, this ES does not conform to Part 1 (4) Schedule 4 of the EIA Regulations.

6. A DESCRIPTION OF THE MEASURES TO PREVENT, REDUCE AND WHERE POSSIBLE OFFSET ANY POSSIBLE ADVERSE EFFECTS ON THE ENVIRONMENT.

- 4.2.41. With a number of assessments in the 2010 and 2019 ESs resulting a Red RAG rating, there is the potential that not all likely significant adverse effects have been identified and assessed, and therefore suitable mitigation measures proposed. It is possible that following further clarity on the assessment process and additional work, that further

mitigation measure could be identified. In addition, the monitoring of the facility through the construction and operation phases (including the implementation of the Environmental Permit), it is likely that significant adverse effects could be retrospectively mitigated.

7. A NON-TECHNICAL SUMMARY OF THE INFORMATION PROVIDED

- 4.2.42. A non-technical summary was included in both 2010 and 2019 ESs that were written in relative plain english and contained a fair representation of the Environmental Statements produced. The key issue is if Part 1 Schedule 4 (3) and (4) relating to the scope and assessment of likely significant effects has not been considered in full, the public may not have been informed in full of the likelihood of significant effects. As the RAG list has identified areas where there are significant deficiencies in both the 2010 and 2019 assessments, it could be assumed that if the non-technical was compliant at the time of writing but would need updating in-line with any updated assessments requested by Welsh Government as a result of this study.

8. AN INDICATION OF ANY TECHNICAL DIFFICULTIES (TECHNICAL DEFICIENCIES OR LACK OF KNOW-HOW) ENCOUNTERED BY THE APPLICANT IN COMPILING THE REQUIRED INFORMATION.

2010 ES

- 4.2.43. Chapter 14 relates to difficulties encountered, which in this case only related to the Preliminary Risk Assessment undertaken on site in relation to ground contamination whereby access to part of the site could not be achieved during a site visit.

2019 ES

- 4.2.44. The 2019 ES stated they encountered no technical difficulties during the undertaking of the retrospective EIA. When assessing effects to nearby properties, all surveys were undertaken from public areas and that this has no impact on the thoroughness of the impact assessment. Although as this is a retrospective EIA, undertaken four years later than the planning submission, no baseline information can be re-checked. It is understood at the time of writing this report, that construction of the facility is underway. It is therefore difficult to acknowledge the robustness of an ES whereby baseline data largely relies on out of date data.

5 CONCLUSION

- 5.1.1. WSP have reviewed the 2010 and 2019 retrospective ESs in relation to planning applications made in 2008 and 2015 for a proposed biomass facility in Barry. WSP have used professional judgement to review the assessment in accordance with the EIA Regulations and have found some significant gaps in relation to ecology, landscape, air quality, ground conditions, noise, water and climatic factors which is detailed in Appendix B.
- 5.1.2. As both ESs were written retrospectively, they were written based on the Town and Country Planning (Environmental Impact Assessment) (England and Wales) 1999. In addition, the 2019 ES was written to take in to account of the 2015 planning application therefore did not take account of the updated EIA Directive 2014/52/EU³ and updates to the EIA Regulations⁴ which have instructed new and/or more detailed assessments relating to topic areas. These include (as per the updated Schedule 4) including sustainable availability of resources, light, the disposal and recovery of waste, risks to human health and accidents and disasters, and the impact of the project on climate change (including vulnerability) that would mean additional topic areas would need a robust assessment should Welsh Government decide to have the Developer update their assessment in line with current best practice and regulatory procedures.
- 5.1.3. In line with the assessment, WSP recommend that gaps relating to these ESs are reviewed by the Developer and an agreement reached with Welsh Government to ensure assessments have been undertaken and mitigated appropriately.

³ The European Parliament and the Council of the European Union (2014). Amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment,

⁴ The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017

Appendix A

SCHEDULE 4 OF THE EIA REGULATIONS





SCHEDULE 4 – INFORMATION FOR INCLUSION IN ENVIRONMENTAL STATEMENTS WITHIN THE TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) (ENGLAND AND WALES) REGULATIONS 1999

PART I

1. Description of the development, including in particular—
 - (a) a description of the physical characteristics of the whole development and the land-use requirements during the construction and operational phases;
 - (b) a description of the main characteristics of the production processes, for instance, nature and quantity of the materials used;
 - (c) an estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed development.
2. An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for his choice, taking into account the environmental effects.
3. A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors.
4. A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development, resulting from:
 - (a) the existence of the development;
 - (b) the use of natural resources;
 - (c) the emission of pollutants, the creation of nuisances and the elimination of waste, and the description by the applicant of the forecasting methods used to assess the effects on the environment.
5. A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.
6. A non-technical summary of the information provided under paragraphs 1 to 5 of this Part.
7. An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.

PART II

1. A description of the development comprising information on the site, design and size of the development.
2. A description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects.
3. The data required to identify and assess the main effects which the development is likely to have on the environment.



4. An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for his choice, taking into account the environmental effects.
5. A non-technical summary of the information provided under paragraphs 1 to 4 of this Part.

Appendix B

TECHNICAL ASSESSMENTS AND RAG RATINGS

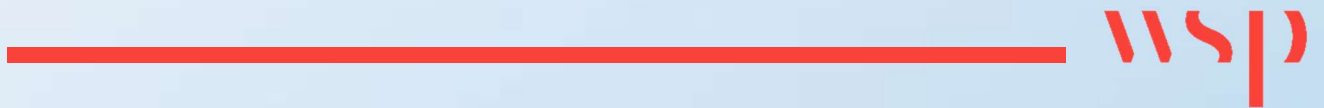


Table B1 - Ecology Technical Review

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
2010 Environmental Statement					
6	6.1	65	The chapter only addresses the site suitability for Rough Marsh-Mallow and states that 'no other ecological matters require addressing as there are no other sites with sensitive flora or fauna having a statutory of local nature conservation interest within 500m of the appeal site.'	A Preliminary Ecological Appraisal (PEA) should have been undertaken as part of the 2008 planning application to rule out further botanical or faunal species. It is noted that the Countryside Council for Wales did not foresee any significant effects at EIA Screening.	
2019 Environmental Statement					
			Biodiversity was scoped out of the 2019 ES and this seems to have been done on the basis of out of date botanical survey work only. No Phase 1 Survey or Preliminary Ecological Assessment (PEA) has been included within the document package. No further justification as to scoping out has been provided.	Undertake a suitable PEA which can assess the baseline ecological conditions and highlight any suitable ecological receptors.	
App 1	9	94	The 2014 Ecological survey only highlights botanical issues, it is also out of date (being undertaken in 2009 and updated in 2014).	An updated survey should be undertaken at a suitable time of year.	



Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
App 1	9	94	The 2014 Environ check desk study is out of date and will require updating. The desk study did not include a protected species records search, as such, it is not fit for purpose.	Undertake a full ecological desk study, using records centre data to identify any protected and notable species. This should form part of a PEA.	Yellow
App 1	9	201	The survey for rough marshmallow was undertaken in January 2009. This is not a suitable time to undertake a plant survey, particularly for rough marsh-mallow. Generally, the whole of the report contradicts itself and is inconclusive.	An updated survey to be undertaken at the suitable time of year, to confirm presence / likely absence of rough marsh-mallow.	Yellow
App 1	2	55	The Appendix states that the SPA is a 6.2km east and the Ramsar site is 3.9km east. This is incorrect as both the SPA and Ramsar are about 3.9 east (Sully Island)	It is likely that a Habitat Regulations screening process may be required, particularly to screen for impact pathways associated with Air Quality. Additional assessment would be required if likely significant effects could not be screened out at this stage.	Red
App 1	2	102	States the primary sensitive habitat for the SPA and Ramsar site is improved grassland. This is incorrect and should be updated within the likely updated air quality assessment.	This will have to be updated within an update PEA.	Yellow
App 1			The original ecological report is not available only an assessment of rough marsh-mallow.	This will have to be updated within an update PEA.	Yellow
App 1	8	90	The air quality impacts on ancient woodland will have to be re-visited and possibly modelled from at height. A quick search of	Update desk study search of the ancient woodland inventory to inform Air Quality.	Yellow



Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
			MAGIC does not highlight the presence of ancient woodland. Further investigation required.		
App 1			The air quality assessment and impacts on the surrounding habitats / receptors (SINC, woodlands, SPA and Ramsar sites) will have to be re-done with correct stack-size. This may influence % of critical level or the % of the critical load. This may also change for the SPA which has an incorrect distance of 6.2km rather than the correct 3.9km.	A Habitat Regulations Screening Assessment is likely to be required. Additional assessment would be required if likely significant effects could not be screened out at this stage.	



Table B2 – Landscape and Visual Technical Review

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
2010 Environmental Statement					
8	8.10	82	Description of baseline visibility of site appears to relate to the ground level only and as such dismisses some potential key views for later assessment.	In general, it is agreed that the proposal (single 14m building and stack <20m) would not have significant landscape or visual effects, its scale and appearance is similar to adjacent development and wider industrial character, and with a limited ZTV. However, the LVIA itself does not provide appropriate information to fully justify this assessment and has inflated significance values, with 'major beneficial' a strange conclusion for combined visual and landscape effects when using their presented methodology significance criteria. Overall, the LVIA reads more as an appraisal than an LVIA appropriate for an ES based on current standards. It perhaps reflects the guidance available at the time, and less stringent consultation approaches and methodologies.	Yellow
8	8.9	82	Landmap reference limited - more discussion on townscape character would be expected.		Yellow
8	8.11	83	Zone of Visual Influence - no methodology given as to how this was constructed and what it was based upon. Not clear if it is based on the site, building height or stack height.		Yellow
8	8.12	83	Methodology - references views rather than visual receptors which may reflect older guidance and date of assessment.		Yellow
8	8.15	84	Construction impacts - Negligible impacts on views of local residents - would agree not significant but not negligible - using their methodology 'minor adverse' would be more appropriate.		Yellow
8	8.16	85	Visual Impacts - use of term 'significant views' rather than 'significant effects upon visual receptors' - likely related to older guidance.		Green
8	8.18	85	Negligible visual impacts assessed could be argued to be too low, in accordance with their own methodology "minor adverse" would be more appropriate.		Yellow
9	8.21	86	Making a combined judgement on landscape and visual impact is not appropriate and the 'major beneficial' judgement is at odds with their methodology.		Yellow



Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
8			General comment: No mention of consultation with Regulators or how the study area was defined in the chapter.		
8	App 1		General comment: Limited detail in methodology and approach. No clear methodology defined in establishing landscape or visual receptor sensitivity, or magnitude of change - which were defined by GLVIA2. Confusion over viewpoints and visual receptors.		
2019 Environmental Statement					
5	5.1	73	<i>'This Report addresses the changes though commentary on, and updates to, the previous LVIA for the project, prepared for the 2010 Permission...'</i>	This document does not constitute a LVIA - it is a reconfiguration to account for the 2015 assessment which did not include an updated LVIA and refers to the 2010 LVIA. This is deemed inadequate for the modified proposals and would not conform to current best practice LVIA guidance.	
5	5		General comment: 'No direct comparison given to the change of the modified proposal from the consented scheme which is the most important aspect. Attention is wrongly diverted to the comparison with the BioGen consented (but lapsed) proposal which should have no bearing on an LVIA in 2019.'		
5	5		General comment: 'This document constantly refers to the proposed development changes as having an 'average building height' of 16.3m across three buildings instead of the actual building heights which for a LVIA is a critical part of the assessment. This has clearly been used to more closely relate to the 14m height of the original planning permission which inaccurately infers a minimal change.'		
5	5.2	74	This states that the landscape and visual baseline conditions remain accurate at the time of the 2015 application. However, the 2015 application did not update the 2010 Proof of Evidence and LVIA, and a major change is that the BioGen development's planning consent has lapsed.	Needs further assessment – It would be anticipated that the study area for the modified proposals would be much larger and include additional landscape and visual	

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
				receptors compared to the 2010 assessment.	
5	5.2	75	'Use of the same 2015 VIA reference to the 2010 Inspector's notes that the site lies within an industrial area and mis-uses this statement ' <i>looking down from Dock View Road the new building would be seen in the context of the development within the Docks and , in my view, would sit comfortably in its industrial surroundings.</i> ' This relates to a much smaller development and not the modified proposals.	Not relevant to the modified proposals.	
5	5.2	75/76	A comparison provided of this modified facility with the now lapsed BioGen Project. At no point is discussion given as to how this relates to the modified proposals and why it's presence or now lack of presence would affect the landscape and visual impacts of the modified facility.	Needs further assessment	
5	5.3	78	No evidence is provided to support the following statement and "negligible" is an underestimate of effect: <i>'The 2015 Application shares the majority of it's characteristics with the approved 2010 permission, and the changes in dimensions to the plant did not fundamentally alter the way in which the development would interact with the landscape and the views to which the plant would be subject during the construction stage. The conclusions about the landscape therefore remained valid, and as such the impacts of the construction phase on Visual Amenity and Landscape Character remained Negligible.'</i>	Needs further assessment	
5	5.2	76	<i>'The 2015 Application proposed changes to the elevations, layout, stack position and height. It remained the case that the principal views were available from Dock View Road and Dyfrig Road and that these views would be available in the context of the industrial setting.'</i> No evidence provided in the 2015	Needs further assessment	

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
			application to justify that these were the only key views with the modified proposals.		
5	5.3	79	<i>'The rearranged structures in terms of elevation and layout continued to have a comparable impact upon the landscape and available views and from Dock View Road would barely break the skyline, if at all.'</i> No evidence provided in the 2015 application to justify this statement.	Needs further assessment	
5	5.3	79	Reference is made to the principal changes being the stack, but no mention of the two +20m high buildings. The stack or change in mass/height was not explicitly considered in the 2015 VIA and no justification given to the findings presented.	Needs further assessment	
5	5.3	79	Comparison provided with the now lapsed BioGen Project to state that both projects were directly comparable and would have a similar visual impact and 'de facto, viewed as acceptable by VoGC in the context of the available views. No evidence provided in the 2015 application or this chapter to justify this reasoning.	Needs further assessment	
5	5.3	80	<i>'It is considered therefore that these conclusions remained valid notwithstanding the change in elevations, stack and layout associated with the 2015 Application and that as such the impact of the operational phase on Visual Amenity and Landscape Character would be Negligible'.</i> No evidence to support this is provided to consider 'negligible' is justified. .	Needs further assessment	
5			General comment: 'There were no accompanying photomontages or wirelines of the modified proposals presented or referred to within the LVIA (only a reprint of BioGen Proposal montages and comparison section).	Visualisations required	



Table B3 – Air Quality Technical Review

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
2010 Environmental Statement					
5	5.13	36	Dispersion modelling should have been based on the Waste Incineration Directive ⁵ (WID) emission limits and not a combination of WID emission limits and emission rates for a different plant permitted locally (Barry Energy Recovery Facility, Biogen).	Provide further detail on assessment methodology	Yellow
5			No information i.e. trip generation is provided to support the decision to scope out assessment of operational traffic effects on local air quality, or indeed shipping emissions from boats that will deliver the waste wood. A description on how operational dust emissions have been assessed is needed, if an assessment has been undertaken. Mitigation measures are provided for operational dust.	Provide further detail on assessment methodology.	Yellow
5	5.23	42	It is unclear as to how the nitrogen and acid deposition calculations have been undertaken, specifically what methodology has been followed, what deposition velocities have been used and where the background deposition rates and critical loads have come from.	Provide further detail on assessment methodology	Yellow
5	5.44-49	60	If these mitigation measures are for the operational phase, then where is the assessment of dust during operation, as these mitigation measures are all for this?	Provide further detail on assessment methodology	Green

⁵ European Commission (2000). Directive 2000/76/EC on the Incineration of Waste (the WI Directive).

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
5		64	What significance criteria have been used to determine the significance of effects both before and after mitigation?	Provide further detail on assessment methodology	
2019 Environment Statement					
3	3.2	37	No information i.e. trip generation is provided to support the decision to scope out assessment of operational traffic effects on local air quality.	Chapter updated so that this information is provided.	
3	3.5	44	The Entan assessment referred to, and provided in Appendix 1(2), on which the 2019 ES is reliant for the assessment of operational effects, was undertaken on the basis that the diameter of the flue was 1.23m (see Table C1 of Appendix C). However, according to Section 1.1 page 27 of the 2019 ES, the flue diameter was increased to 2.75m following the increase in flue height from 20m to 43m. Increasing the flue width by c 2m will affect the flue emission characteristics (i.e. plume rise) such that this may have a significant impact on the predicted concentrations.	The dispersion modelling of operational effects should be updated with the correct flue diameter and emission parameters.	
3	3.5.2	46	Local monitoring data for 2009 to 2012 was used by Entran to inform baseline conditions at the Site and in the local area. Given that Entran completed their assessment in June 2015, there is no justification provided as to why more recent data has not been used. The 2019 ES also does not provide an update on baseline air quality conditions in the study area.	Comparison of the annual mean baseline NO ₂ concentration used in the Entran report with the latest monitoring data to confirm that it's use is appropriate, and that is representative. Predicted concentrations should be updated with the most recent background concentrations if they are found to be significantly higher. There is no reference to any of the monitoring data	

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
				recently collected by VoGC locally. The number of monitoring sites in Barry has increased in recent years.	
3	3.5.2	47/49	The background concentrations presented in the 2019 ES have been taken directly from the Entran report and are for varying time periods up to 2011 or 2012. Given the Entran assessment was completed in 2015, the background concentrations available at the time of the assessment should have been used.	Check of background concentrations used against the most recent data available.	
3	3.5.3	51/52	Significance criteria used are those provided by the Environment Agency for undertaking risk assessments for the permitting process. Environment Protection UK and the Institute of Air Quality Management have published criteria for the use in air quality assessments for planning purposes and these should also have been used in the 2019 ES Chapter for the assessment of human health effects.	Comparison of assessment results for human health effects against these significance criteria should be undertaken.	
3	3.5.3	51/52	No tables showing the total predicted concentrations (i.e. Process Contribution plus background concentration) are presented for the assessment of human health effects.	Chapter should be updated so that these are provided.	
5	5.3.4	55	Data from the Entran report has been summarised here with no comparison made between the baseline acid and nitrogen deposition rates now (2019) and then (2015), and how changes in these might affect the assessment conclusions.	Chapter should be updated so that these are provided.	



Table B4 – Ground Conditions Technical Review

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
2010 Environmental Statement					
7	7.1	71	Ground conditions: General No mention of legislation, guidance or best practice used, specifically for ground conditions.	Without this information we cannot comment on the applicability of assessment.	Yellow
7	7.2	71	Ground conditions: Methodology The methodology only describes how the baseline information was obtained and does not detail the methodology of completing the EIA, i.e. how receptor sensitivity was determined etc.	Without this information we cannot comment on the applicability of assessment.	Yellow
7		71-79	Ground conditions: General This chapter appears to be taken from the Preliminary Risk Assessment including a baseline study and conceptual site model. Other than a short table at the end, the chapter does not assess receptors in terms of EIA. There is no consideration of the impacts of the development on geology, soils, mineral resources or geomorphology as attributes, and no classification of their significance, etc.	The chapter discusses the risk to the receptors from the site currently as low to high. An ES chapter should discuss the significance of and effects to each receptor associated with the proposed development in line with EIA guidance.	Red
7	7.3	71	Ground conditions: Technical Non-aquifer and minor aquifer are outdated terms. Mercia Mudstone is a Secondary B Aquifer and the Tidal Flats are a Secondary Undifferentiated Aquifer.		Green
7	77.17	76	Ground conditions: Technical Groundwater within the Mercia Mudstone not considered to be a receptor. As the bedrock in this area is shallow and classified	Regulators are likely to question the potential contamination risk to the underlying bedrock aquifer.	Green

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
			as a Secondary B Aquifer, the effects of the proposed development should be discussed in relation to this.	There is no reason for it to have been ruled out as a receptor.	
7	7.15	76	Ground conditions: Technical There does not appear to be any consideration of receptors including geology, soils, mineral resources or geomorphology at attributes, including agricultural land. Although the sensitivity is low, no evidence is available to show that these have previously been scoped out.	Clarification or re-assessment needed.	
7	7.23	78	Ground conditions: Technical Construction impacts: This table does not break down the effects on individual receptors. Groundwater during construction is not considered for example. A moderate residual impact has been determined but it is not specified whether this is moderate adverse or moderate beneficial. In terms of human health for construction workers, due to the short term nature of the works and the assumed health and safety control measures, generally this would be considered negligible, not moderate.	Clarification or re-assessment needed.	
7	7.23	78	Ground conditions: Technical As above, operational impacts have not been considered for each individual receptor. A moderate positive residual effect has been determined overall based on remediation. However, the impacts to various receptors from the potentially contaminative processes of the Biomass facility have not been considered, and may be adverse.	Clarification or re-assessment needed.	
Appendices	16-19	330-435	Ground conditions: Site Area	It would need to be clarified that the information in the main body of the report was	



Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
			The Groundsure report including historical maps and the RSK PRA do not cover the full extent of site area - only the southern half.	not based on the information in the PRA and Groundsure report only as information may have been omitted from northern extent of the site.	
7	7.22	78	<p>Ground conditions: General</p> <p>Conclusions of the baseline study recommend a ground investigation is undertaken in order to further refine these risks. Has this been done? No evidence to suggest so. Negligible/ positive impacts cannot be assumed without this information.</p>		
2019 Environmental Statement					
			<p>Ground conditions: General</p> <p>No geology and soils chapter or any reference to geo-environmental impacts in this report. The same extract from the 2010 Groundsure report is used in the appendix but not referenced in main body. No evidence of an intrusive geo-environmental survey as recommended by RSK in 2009 has been undertaken.</p>	No evidence that the impacts on ground conditions have been scoped out prior to being omitted in the ES.	



Table B5 – Noise Technical Review

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
2010 Environmental Statement					
9	-	-	General comment: BS 5228 which at the time of planning submission was deemed best practice for construction assessment for not considered in the 2010 ES.	This assessment is insufficient and it should be revised in accordance with BS5228 ⁶	
9	9.20	92	The operational noise prediction and subsequent assessment are based on the assumption that all noisy equipment will be contained within a building, and that the internal noise level would not exceed 90dB(A).	This assessment is insufficient and it should be revised in accordance with BS4142 ⁷ .	
9		92/93	The 2010 ES chapter does not make any reference to: external plant shown in the layouts in the ES such as the noise emissions from the stack, louvres/doors on the building envelope, HGV movements within and outside the red line boundary.	This assessment is insufficient and it should be revised in accordance with BS4142 ⁷ .	
2019 Environmental Statement					
4	4.5	71	An assessment to determine the likely noise and vibration effects arising from the construction phase has not been undertaken. Instead, Section 4.5 refers to the assessment provided in the Voluntary ES Chapter 7 (2010). The construction noise and vibration assessment undertaken in 2010 fails to identify the assessment methodology or standard	This assessment is insufficient and it should be revised in accordance with BS5228 ⁶	

⁶ British Standard (2008). Code of practice for noise and vibration control on construction and open sites. Version superseded in 2014 (draft 13/30258085).

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
			<p>followed to prepare the construction assessment. No significance criteria are identified.</p> <p>It only provides an indication of the magnitude of impact prior to mitigation and then assigns a 'minor impact' to the residual impacts that are identified.</p> <p>In the 2019 ES, there is no evidence of assessment assumptions, calculations undertaken, or noise levels adopted for construction plant or activities.</p> <p>An impact of magnitude is only estimated at Location 1 (Dock View Road)</p> <p>There is no reference to physical mitigation options or the application of best practicable means. The only mitigation measure which is mentioned is the hours of operation.</p>		
4	4.2.1	63	<p>This section described the revised baseline noise survey undertaken in 2015 by Hunter Acoustics.</p> <p>There are no references to guidance of standards</p> <p>There is no reference to equipment used in the noise survey.</p> <p>Noise measurements were undertaken during extremely short periods during two days only. Statistical analyses suggested in BS4142⁷ were not undertaken and there would have been insufficient data to do so in any event. No noise measurements</p>	Assessment methodology and alignment with best practice needed. It needs re-assessment.	

⁷ British Standard 4142 (1997). Methods for rating industrial noise affecting residential and mixed areas/ British Standard 4142 (2014) Methods for rating and assessing industrial and commercial sound.

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
			<p>were carried out during the weekend. The survey duration was inadequate.</p> <p>Measurements were undertaken during the daytime with wind speeds slightly higher than 5m/s. This exceeds the recommendation in BS4142, there is no commentary to justify the adequacy of the measurements.</p> <p>Wide discrepancies in levels measured by Hunter Acoustics and by AB (in the Voluntary ES 2010) are identified but only subject to a cursory discussion with no reason for the differences suggested.</p>		
4	4.3	67	<p>This section, titled 'Methodology' does not set out the assessment methodology. It simply makes selective references to standards and guidance.</p> <p>The commentary on BS 4142 selectively reports elements of the assessment methodologies and appears to confuse elements of the respective versions of the Standard. This is significant as there some aspects of the two versions are very different.</p> <p>Where the initial impact estimation guidance is set out there is a typographical error in c) where it is stated that 'a difference of around +5dB or more is likely to be an indication of a significant adverse effect - depending on context'.</p> <p>It should read adverse impact instead.</p> <p>The summary of selected World Health Organisation Guidelines is selective and inappropriate.</p>	Removal of the word significant.	
4	4.3	67/68	<p>The summary of mitigation provided is extremely superficial with no details of the noise sources or the acoustic performance required of the containing structure.</p>	Assessment methodology and alignment with best practice needed. It needs re-assessment.	



Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
			There is no description of the methodology/standard followed to predict the operational noise levels. We would expect reference to ISO 9613- Part 2 ⁸		
4	4.3	67/68	<p>The operational noise prediction and subsequent assessment are based on the assumption that all noisy equipment will be contained within a building, and that the internal noise level would not exceed 90dB(A). The assumptions used in the assessment originates from the 2008 noise assessment prepared by AB Acoustics.</p> <p>There is no reference to any differences in the assumptions or reference to any differences in the design/technology.</p> <p>The 2019 ES chapter does not make any reference to: external plant shown in the layouts in Appendix 1 such as the ACC; noise emissions from the stack, louvres/doors on the building envelope, HGV movements within and outside the red line boundary.</p>	Details of the assessment undertaken are needed and the assessment should be broader in scope to account for external plant and activities.	
4	4.3	68	<p>The chapter refers to the operational noise levels predicted in 2008. It is noted in the chapter that the rating levels have a +5dB correction factor in accordance with BS4142:1997^{Error! Bookmark not defined.}</p> <p>The chapter refers to differences in rating methodology described in BS4142:2014 but it fails to apply the new corrections appropriately. A +2dB correction due to tonal</p>	Updated assessment needed in-line with best practice.	

⁸ International Organisation for Standardisation (1996). Acoustics – Attenuation of Sound during Propagation Outdoors – Part 2: General Method of Calculation (ISO 9613-2:1996).

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
			<p>component is added to the rating level rather than the specific level.</p> <p>As the external sources have not been considered, specific levels and potential feature corrections for these sources have not been identified.</p>		
4	4.3	68	<p>The chapter describes the assessment for operational noise at Location 3 as 'Low impact depending on context'. Based on the values stated, this should correspond to an initial impact estimation of 'adverse impact' instead.</p> <p>No explicit consideration of the context is provided despite this being a key element of an assessment based on the Standard</p>	Updated assessment in-line with best practice.	
4	4.4	70	The text refers to Appendix 4 for the noise impact significance criteria. A table is presented in Appendix 4, It is not clear if this table corresponds to both construction and operational effects, or only operational.	Clarification needed.	
4			There is no discussion/agreement of methodology with the Environmental Health Officer (EHO).	Confirmation methodology and assessment has been agreed with the EHO.	
4			There is no Policy / Guidance section. Technical Advice Note (TAN) 11 ⁹ is not mentioned in the chapter.	Detail of alignment of facility with planning policy.	
4	App 1		Appendix 1: D&A 2015 states that Best practicable means will be used for construction and that the plant has been designed to	Alignment with Environmental Statement and the	

⁹ Technical Advice Note (Wales) 11, Noise, October 1997.



Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
			meet Best Available Technology (BAT). This is not mentioned in the 2019 ES chapter 4	Environmental Permit application needed.	



Table B6 – Water Technical Review (Including Flood Risk Assessment)

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
2010 Environmental Statement (2009 Flood Risk Assessment)					
FRA	-	-	Very limited information available in this report. FRA does not use site specific data as none was available, this may no longer be the case. The assessment does not include an assessment of future risk or surface water.	New FRA required including site specific data, current climate predictions and surface water risks to site and required access areas.	
11		105	Chapter 11 states that RSK Environment Ltd were commissioned to provide an assessment for flood risk, however consultation with the Environment Agency Wales confirmed that the site was not at risk of flooding. Therefore, no FCA was required.	Regardless of flood risk, no assessment was undertaken for water resources, quality, water framework directive screening. Assessment not deemed fit for purpose as no assessment has been undertaken.	
2019 Environmental Statement (2015 Planning Statement)					
ES	Preamble in Scoping	18	Flood risk matters were discussed in both the original 2010 Application and ES. The original Flood Risk Assessment was included as Appendix 1(13) to this Statement. There was no significant change to the proposed footprint of development or the area within which it was proposed. There was assumed to be no material change to the flood conditions between the original application and the 2015 Application. This was addressed in more detail within the Planning Statement accompanying the 2015 Application, included at Appendix 1. It concluded, as there was no material change proposed to the area of the development, nor the flood risk context between the original and 2015 Application, there are no material impacts to be considered by this ES.	New FRA required to current standards undertaken to be reported in revised ES Chapter.	

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
			Although there is no change in footprint, flood risk guidance and Climate Change have progressed. In addition, there have been no acceptable assessment of future risks.		
1	1.2	30	<p>Drainage</p> <p>As with the 2010 Permission, under the 2015 Application, all internal surfaces were intended to drain to a sealed sump or foul sewer. External surface drainage was to be directed to a sustainable surface water system, to be agreed with the planning authority, and roof water would drain to a soakaway or be reused in the process.</p> <p>No ground contamination or groundwater level information for use of soakaway is presented. Groundwater Flooding noted as High Risk in Groundsure data (ES Vol Doc 2, ES Apps, Pg 324/355).</p> <p>No information on final drainage design or in-principle agreement from stakeholders so no evidence of Environmental Impacts can be assessed.</p>	An assumption has been made that drainage design and agreement would be subject to 2015 conditions. Ground contamination and groundwater levels should be investigated if infiltration required.	
Planning Statement	2.3.4	5	<p>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.</p> <p>Very limited drainage strategy information, no details.</p>	<p>No assessment undertaken: assumption that drainage design and agreement would be subject to 2015 conditions for planning but no drainage evidence presented for ES.</p> <p>Much more detailed drainage design should be presented.</p>	
Planning Statement	10.1	9	The Project's Flood Risk Assessment from RSK Group continues to be applicable to the Project from 2009. This FRA	An FRA should have been produced in accordance with up to date information and	

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
			<p>lacks specific site flood data, extrapolating from surrounding areas only.</p> <p>Although the Facility did not change between the 2008 and 2015 applications, the policy regime did in relation to flood risk and climate change within the EIA and wider environmental regulations (including Well-being and Future Generations (Wales) Act 2015).</p>	policy including best practice and outcomes should be reported in up to date EIA.	
Planning Statement	10.3	9	No agreed rates for drainage and general SuDs design.	Planning conditions associated with the 2015 outline application stipulate drainage design should be signed off prior to occupation (planning conditions 10 & 11).	
Planning Statement	10	9	Well-being of Future Generations (Wales) Act 2015 not considered in the assessment, which requests that development is resilient and has the capacity to adapt to change e.g. climate. No reference to climate change has been included as part of the assessment.	The assessment has not considered future risk, when the facility is meant to be operational for 25 years.	



Table B7 – Materials and Waste Technical Review

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
2010 and 2019 Environmental Statement					
N/A			<p>Materials and Waste: General Comment:</p> <p>The 2010 Environmental Statement was completed in line with the Town and Country Planning (EIA) Regulations 1999 (as amended) which required a description of materials and waste and to be included 'as is reasonably required to assess the environmental effects of the development'.</p> <p><i>"A description of the likely significant effects of the development on the environment resulting from, inter alia, the use of natural resources, in particular land, soil ... considering as far as possible the sustainable availability of these resources; and the ... disposal and recovery of waste."</i></p> <p>Given the absence of a 'Materials and waste' chapter, there is no information relating to scope (construction, operation, decommissioning) or baseline assessment made. Waste policy has been included throughout the 2010 and 2019 ES and supporting documentation.</p>	It is recommended that the document is updated in line with the 2017 EIA Regulations, and a material and waste chapter should be prepared.	
			<p>Material Resources Consumption - Construction and Operation:</p> <p>There is no detailed description of the material resources required for the construction or operational (maintenance / repair) aspects of the development, as required by current EIA regulations. The feedstock material (wood recoverable from waste streams in Wales) is described.</p> <p>The 2010 Environmental Statement (section 2.1 pg 11), as updated by the 2019 Environmental Statement (Chapter 1 pg 27), gives a brief indication of the construction of the project. This comprises 'a steel portal frame construction to be</p>	Given the absence of material resource data, and assessment of the potential significant effects cannot be made. It is however noted that the ES was not produced in line with the 2017 EIA Regulations, and therefore requires a lesser focus on material resources.	

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
			<p>surfaced with micro profile or box profile cladding to all external elevations'. 'The total footprint of the development is 2,497m²'.</p> <p>Appendix 13 Sustainability Appraisal of the 2010 ES (pg 239) notes that 'materials used in construction...will be selected for quality and durability. Where possible, timber used...will be sourced from sustainably managed forests...carrying the Forestry Stewardship Council (FSC) logo.'</p> <p>There is a commitment in Appendix 5 of the 2019 ES (Planning application waste audit and facilities strategy, point 9, pg 2) for 'all raw materials to be sourced from local suppliers to the detailed design specification'.</p>	Should the project need to be updated in line with the 2017 EIA regulations, an assessment of the impacts on material resource consumption should be undertaken for construction and operation. This would require obtaining data on (for example, but not limited to) the type and quantity of material resources required, information on the recycled content or other sustainable features of materials, details of the cut and fill balance.	
	2010 ES - paragraph 2.11; 2019 ES - section 6.2	2010 ES - page 15; 2019 ES - page 8	<p>Waste generation and disposal - Operation: The 2010 Environmental Statement stated '<i>The wood feedstock will be produced to specification at the site by appropriate chipping, shredding and screening plant equipped with magnetic separators to remove nails etc.</i>'</p> <p>The 2019 Environmental Statement provided an update and stated that 'Wood-waste feedstock is chipped off-site and delivered to the plant prior to being gasified.' There is no information provided as to how contaminants would be removed before the feedstock is chipped and therefore minimise the chance of hazardous waste materials being delivered to the site.</p>	Information should be provided as to how contaminants would be removed before the feedstock is chipped to ensure that the feedstock is uncontaminated	
	2010 ES - (bullet points after paragraph	3.4	<p>Waste generation and disposal - Operation: The 2010 Environmental Statement's 'Predicated Impacts' section does not consider operational waste such as</p>	'Appendix 6 Officer's Report to Committee stated in section 6. Other Material Considerations Handling of	

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
	3.3); 2019 ES - section 1.5; Waste Planning Assessment - section 3.4		<p>char/bottom ash and fly ash. Table 2.1 (Process input requirements and outputs), stated that the process could generate 45.36 tonnes of char/ash per week and that this was 3% of the input fuel.</p> <p>The 2019 Environmental Statement included the same table (Figure 9 Process Outputs, page 31). Section 3.4 of the Waste Planning Assessment (Type and Quantities of Waste to be Managed) stated that 'The Outotec gasifier will process up to 72,000 dry tonnes of waste wood per year...' and 'The process results in residual ash (8% of the input fuel), which is collected automatically from the various stages of the process.' There is no clarification as to whether the 8% is 'by weight' or 'by volume', however, by weight, this would equate to the Outotec gasifier process generating up to 5,760 tonnes of ash per year (72,000*0.08), or up to 120 tonnes per week, based on 48 weeks' operation. This is almost three times the total weight of ash previously estimated.</p>	Waste Outputs that '...a methodology statement condition is recommended which would cover any required storage and subsequent disposal.'	
			<p>'Waste generation and disposal - Operation:</p> <p>The Transport Statement states '3.4 Ash is a by-product of the gasification process and the majority of it can be used for building products such as block manufacture. It will be removed from site in separate contained loads by the feedstock supplier for recycling. Backloading is not possible due to the need to avoid contamination of incoming feedstock. However, there is a substantial reduction (over 94%) between the weight of wood fuel processed and the weight of ash requiring removal from the site. Therefore, the total amount of ash removed from the site per annum will not exceed 2200 tonnes.' There is no mention of this expected tonnage limit seen anywhere else in the Environmental Statements during the review, nor how it was calculated.</p>	Clarification is needed as to the expected weight and/or volume of char/ash and fly-ash (and how this has been calculated) which is applied consistently across the Environmental Statement.	

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
			'3.5 The filter/abatement process designed to control emissions also produces a low volume of waste residues (fly-ash) which will be transported to specialist landfill in sealed containers by the feedstock supplier. The exact tonnage will depend on the abatement technology which the Environment Agency requires, but is unlikely to exceed 1500 tonnes per annum.' There is no mention of this expected tonnage limit seen anywhere else within the Environmental Statements during the review, nor how this was calculated.		
			<p>Waste generation and disposal - Operation:</p> <p>There is no information concerning the management arrangements for waste generated by employees on-site (e.g. from welfare facilities), or from the maintenance of on-site plant and equipment - the latter would be expected to generate a range of hazardous waste materials (such as oil and tyres) which will require specialist storage, handling and disposal.</p>	Information should be provided as to how operational waste from employees and maintenance activities would be segregated, stored and managed.	



Table B8 – Climate Resilience Technical Review

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
N/A	N/A	N/A	<p>An assessment covering Climate Resilience has not been undertaken and there is no rationale for its omission from the assessment. The assessment has been undertaken in accordance with the Town and Country Planning (EIA) Regulations 1999 (as amended) which identifies 'climatic factors' as an aspect of the environment likely to be significantly affected by the proposed development.</p> <p>It is best practice that the assessment be undertaken in line with the updated EIA regulations (2017). The EIA Regulations 2017 Schedule 4 Part 5(f) identify 'the vulnerability of the project to climate change' to be addressed within Environmental Statements therefore this ES presents a significant omission in relation to climate vulnerability. Given the close proximity of the Scheme to the docks, particular consideration should be given to projections of sea level rise.</p>	<p>It is recommended that the resilience of the project to climate change be considered over the proposed construction phase (3-4 years) and operation phase (the ES identifies the proposed development to have a design life in excess of 25 years) and decommissioning (should the facility be decommissioned).</p> <p>Baseline climate (current and projected) for the scheme should be presented based on Met Office regional climate profile and UKCP18 projections. Climate variables to consider include temperature (average and extreme), precipitation (average and extreme) and sea level rise. Potential impacts arising from changes in climate variables over the lifetime of the project should be identified and the significance of these effects should be assessed based on the likelihood of occurrence and the consequence if they do occur. Embedded mitigation within the Project</p>	

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
				<p>which contributes to its resilience to climate change should be identified and used to determine the significance of effects.</p> <p>Following the identification of projected changes in climate in the project area and assuming that the design of the project contains measures which ensures its resilience to the projected climatic changes, it is not anticipated that there would be any residual significant effects.</p>	
N/A	N/A	N/A	<p>The FRA identifies the scheme to be in an area 'known to have been flooded in the past' and doesn't require a full flood assessment. A form of assessment has been carried out however it does not appear to consider changes in climate, or a climate change allowance.</p>	See Table B6 above	



Table B9 - Climate Change and Greenhouse Gases Technical Review

Chapter Number	Sub-section	Page Number	Gap in Assessment	Recommended Action	RAG Rating
N/A	N/A	N/A	<p>A GHG assessment has not been undertaken, and there is no rationale for its omission.</p> <p>Since the planning application was completed (2015) the EIA regulations have been updated. The EIA Regulations 2017 Schedule 4 Part 5(f) identify the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions), as requiring assessment if the emissions due to the project have the potential to be significant. The assessment has been undertaken in accordance with the Town and Country Planning (EIA) Regulations 1999 (as amended) which identifies 'climatic factors' as an aspect of the environment likely to be significantly affected by the proposed development.</p> <p>Given that the Project is a thermal power plant (biomass), there is the potential for significant GHG emissions. As such the lack of a GHG assessment is considered to be a gap.</p>	<p>It is recommended that a GHG assessment of the Project is undertaken to determine the significance of any GHG emissions (as well as avoided emissions).</p>	



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