

LAND AT FORMER LLYNFI POWER STATION, BRIDGEND

**Town and Country Planning (Environmental Impact
Assessment - Wales) Regulations 2017:**

**Regulation 33 Request for a Scoping Direction for a
proposed Energy Recovery Facility**

Prepared for: Morgan Credit Limited

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APPENDICES

N/A.

1.0 INTRODUCTION

General

This document comprises a formal request on behalf of Morgan Credit Limited for a ‘Scoping Direction’ under Regulation 30 of the Town and Country Planning (Environmental Impact Assessment)(Wales) Regulations 2017 (the ‘EIA Regulations’).

This request is being made to the Planning Inspectorate for Wales (acting on behalf of the Welsh Ministers) and has been prepared by SLR Consulting Limited (SLR). SLR has been appointed to undertake an Environmental Impact Assessment (‘EIA’) of the proposed development and prepare an Environmental Statement (‘ES’) to support an application for planning permission under Part 5 of the Planning (Wales) Act 2015.

Morgan Credit Limited (the ‘*prospective applicant*’) is minded to submit a planning application to the Welsh Ministers for the construction and operation of an Energy Recovery Facility (‘ERF’) and associated ancillary infrastructure (the ‘*proposed development*’). This is expanded upon in Section 1.5 below, with more detail provided in Section 3 of this document.

Development of National Significance

The proposed development would be in accordance with the definition of a “*Generating Station*” as set out in Regulation 4 (1) of the Developments of National Significance (Specified Criteria and Prescribed Secondary Consents) (Wales) Regulations 2016, namely “*the construction of a generating station expected to have an installed generating capacity of between 10 and 50 megawatts*”. As such, the proposed development is classed as a “*Development of National Significance*” (‘DNS’ for short).

The statutory basis for the DNS process is set out in Part 5 of the Planning (Wales) Act 2015, which amends the Town and Country Planning Act 1990. The determination of the prospective application is undertaken by the Welsh Ministers with the procedural elements relating to the application administered through the Planning Inspectorate for Wales (PINS Wales).

The Applicant

Morgan Credit is a sector leading energy from waste technical project developer. The organisation was established in 2017 to bring together a highly experienced team of renewable energy development and delivery experts. Our collective experience brings a strong track record of enabling renewable energy projects in England with two energy from waste facilities now financially closed and further opportunities under due diligence. We offer a cradle to grave solution for waste management infrastructure with Morgan Credit forming a strategic partnership with the DMG Global family of brands to incorporate exceptional waste handling and management expertise.

Our experienced team are working to develop a fleet of energy from waste facilities across the UK, with the first facility due to start construction in the coming months, the total network of EfW treatment capacity will reach c. 1 million tonnes of processing in the first phase of development due to become operational in early 2023-2024.

SLR Consulting Limited

This scoping request has been prepared by SLR Consulting Ltd (SLR) on behalf of the prospective applicant. SLR is a multidisciplinary environmental consultancy to *inter alia* the minerals and waste management industries, and also provides advice to local authorities and the Environment Agency on strategic issues¹.

Regulation 18(5) of the EIA Regulations states that an Environmental Statement (referred to as an ES for short, refer to Section 4 below for more details) must be prepared by a “competent expert”. SLR is a registered Environmental Impact Assessor Member of the Institute of Environmental Management and Assessment (IEMA) and has achieved their EIA Quality Mark. Allied to this, SLR is affiliated to a number of professional organisations and professional staff are also professionally qualified. SLR has undertaken a large number of EIAs for waste management and energy developments throughout the UK, including Energy Recovery Facilities. In view of this, SLR believes that it is well placed to be considered a competent expert. Allied to this, since the introduction of the 2017 version of the EIA Regulations SLR has completed EIAs throughout the UK and in relation to the proposed development, secured planning permission for an ERF in Irvine, North Ayrshire in January 2020. As part of this scoping process therefore, SLR is seeking confirmation from PINS Wales that it is satisfied that SLR is a ‘competent expert’ under the EIA Regulations.

The Proposed Application

The prospective applicant is minded to submit a planning application for the construction and operation of an Energy Recovery Facility with associated ancillary facilities and infrastructure on vacant land off the A4063 formerly occupied by the Llynfi coal fired power station. **Section 2** below provides more detail on the location and context of the proposed development site.

The proposed development comprises a new road (and potentially rail) connected Combined Heat and Power (CHP) enabled energy facility, referred to in this document as an Energy Recovery Facility, or ‘ERF’. The proposed ERF would be located on a vacant plot of land lying to the east of the A4063 and a railway line, and south of an established paper mill operated by WEPA. To the east of the proposed development site is the Afon Llynfi.

The proposed ERF would recover value (primarily in the form of energy, but also recycled materials) from some 250,000tpa of residual waste² in the form of pre-sorted commercial and industrial waste and refuse derived fuel (RDF) to generate around 25 to 28MW of energy (initially in the form of electricity and potentially (subject to agreement with WEPA) energy can also be exported as heat/steam). In addition, the reception facilities for the ERF would include a Materials Recycling Facility (MRF) where imported waste would be processed to remove any recyclable material such as ferrous and non-ferrous metals.

The ERF would also produce Incinerator Bottom Ash (IBA). This is the residue from the combustion of the waste and can be processed to produce a secondary aggregate which counts towards recycling targets in Wales. The IBA would be screened to remove any ferrous/non-ferrous material prior to any further processing (which would be undertaken off site) The other residue produced by the ERF would be from the ‘cleaning’ of emissions from the stack (known as Air Pollution Control Residues, ‘APCR’).

Ancillary to the ERF and IBA facility would be roadways, manoeuvring areas, weighbridges, reception building, electricity substation and peripheral landscaping and fencing.

Section 3 below provides a description of the proposed ERF and associated facilities.

¹ Further details regarding SLR Consulting Limited can be found on its web site www.slrconsulting.co.uk

² Residual waste is the fraction that is left after re-use and recycling has taken place

Statutory background

1. European Context

EIA is an important procedure for ensuring that the likely effects of a new development on the environment are fully understood and taken into account before the development is allowed to proceed. The term EIA describes a procedure that must be followed for certain types of development before they are given “*development consent*”, which in the UK includes the grant of a planning permission. The procedure is a means of drawing together, in a systematic way, an assessment of a project’s likely significant environmental effects.

The Environmental Impact Assessment Directive (the ‘EIA Directive’) requires that, before granting development consent for projects, including development proposals, authorities should carry out a procedure known as environmental impact assessment of any project which is likely to have significant effects on the environment. The aim of the EIA Directive is to ensure that the authority giving consent for a project makes its’ decision in the knowledge of any likely significant effects on the environment. The first EIA Directive (85/337/EEC) came into force in 1988 and an amended Directive (97/11/EC) came into force in the UK on 14 March 1999. Directive 97/11/EC was further amended and subsequently ‘codified’ by Directive 2011/92/EU of 13 December 2011. As a result of a review process, on 26 October 2012, the Commission adopted a proposal for a revised Directive. The newly amended EIA Directive (2014/52/EU) came into force on 15 May 2014 to simplify the rules for assessing the potential effects of projects on the environment. This Directive was transposed into UK law through Regulations which came into effect in Wales on 16th May 2017.

2. UK Context

The EIA Directive has been implemented by regulations for development proposals under the Town and Country Planning Act 1990 (the 1990 Act). The current regulations for England are the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (the ‘EIA Regulations’) and the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. In relation to the application at Bentinck it is the former that are of relevance. Separate regulations also are in force for the devolved governments in Scotland, Wales and Northern Ireland.

The EIA Regulations specify certain types of development for which EIA is mandatory (Schedule 1 projects), and categories of development where an EIA may be required (Schedule 2 projects) dependent upon the likely significance of the impacts. In connection with the proposals for Llynfi, the proposed development would fall within the scope of Schedule 1 (part 10), namely, “*Waste disposal installations for the incineration or chemical treatment (as defined in Annex I to Directive 2008/98/EC under heading D9) of non-hazardous waste with a capacity exceeding 100 tonnes per day*”.

3. The Scoping Request

This document is a request, in accordance with the provisions of Regulation 33 of the EIA Regulations, for a Scoping Direction from the Welsh Ministers as to the information to be provided in the ES intended to accompany the proposed planning application. An ES is a report of an EIA that is required to be submitted with a planning application for certain types of development that are likely to have significant impacts on the environment. It evaluates the likely environmental impacts of the development, together with an assessment of how the severity of the impacts could be reduced through the implementation of appropriate mitigation measures.

Regulation 33 of the EIA Regulations provides for a developer to obtain a formal ‘scoping’ direction from the Welsh Ministers on the topics that should be focussed upon in the EIA. Referring to Regulation 33(2) requests for scoping directions should be accompanied by:

- “(a) a plan sufficient to identify the land [see Drawing LF 1];
- (b) a brief description of the nature and purpose of the development, including its location and technical capacity [refer to Section 3 of this document];
- (c) its likely significant effects on the environment [refer to Section 4 of this document];
- (d) a statement that the request is made in relation to a development of national significance for the purposes of section 62D of the 1990 Act; [refer to Section 1.2 above] and
- (e) such other information or representations as the person making the request may wish to provide or make. [refer to this Section and Section 5]”

The purpose of the scoping exercise is:

- to focus the EIA on the environmental issues and potential impacts which need the most thorough attention;
- to identify those which are unlikely to need detailed study; and
- to provide a means to discuss methods of impact assessment and reach agreement on the most appropriate.

It is important to clearly identify the main significant environmental issues to allow for a more detailed and targeted assessment to be carried out; **it is not the role of EIA to identify each and every impact.**

The EIA Regulations require all significant environmental considerations to be addressed; however if the development would not have any significant impact on a particular issue, that issue can be scoped out. In this respect, Section 4 of this document sets out the principal issues upon which SLR considers that the EIA should specifically focus.

Guidance on Developments of National Significance and EIA

PINS Wales has prepared a suite of guidance for the DNS process. Appendix 3³ to that Guidance covers matters relating to EIA. The DNS Guidance assists in setting out the minimum information to be provided with a scoping request and also indicates that information should also be provided on:

- an outline of the main alternatives considered and the reasons for selecting a preferred option;
- results of desktop and baseline studies where available;
- a record of consultation undertaken with relevant bodies (including any public engagement) to date;
- referenced plans presented at an appropriate scale to convey clearly the information and all known aspects associated with the proposal;
- guidance and best practice to be relied upon, and whether this has been agreed with the relevant bodies (for example the statutory nature conservation bodies or local authorities) together with copies of correspondence to support these agreements;
- methods used or proposed to be used to assess impacts and the significance criteria framework used;
- any mitigation proposed and the extent to which these are likely to reduce impacts;

³ <https://gov.wales/sites/default/files/publications/2019-07/developments-of-national-significance-guidance-environmental-impact-assessment.pdf>

- where impacts from consequential or cumulative development have been identified, how applicants intend to assess these impacts in the ES (for example, a high level assessment of the grid connection where this does not form part of the proposed development for a power station);
- an indication of any European designated nature conservation sites that are likely to be significantly affected by the proposed development and the nature of the likely significant impacts on these sites;
- key topics covered as part of applicants' scoping exercise; and
- an outline of the structure of the proposed ES.

Where relevant or known, these aspects are set out in Section 5 below. Notwithstanding this, details about consultation are set out in Section 1.9 below.

Planning and Environmental Permitting

The proposed ERF would need to operate under an Environmental Permit (EP) issued by Natural Resources Wales (NRW) in addition to having a valid planning permission. An EP will contain a number of conditions intended to regulate the day to day management of the site with the aim of minimising the effect of the operation on the environment and risk to health of the local community; it will also contain conditions regulating site management and monitoring.

The Welsh Government's advice on waste planning makes it clear that it is important to avoid unnecessary or confusing duplication of control. In this respect paragraph 1.20 of PPW (Edn. 10, December 2018):

"The planning system should not be used to secure objectives which are more appropriately achieved under other legislation. The aim should be to maintain the principle of non-duplication, wherever possible, even where powers and duties resulting from other legislation may also be the concern of local authorities."

Moreover, paragraph 5.13.3 states:

"Planning authorities, other relevant local authority departments and Natural Resources Wales (NRW) must work closely together to ensure that conditions attached to planning permissions and those attached to Environmental Permits are complementary and do not duplicate one another."

It is therefore important that the scope of the EIA does not duplicate the requirements of the Environmental Permitting Regulations and focuses on the land use planning matters relating to the development. This is an important consideration as a number of the environmental aspects that could potentially be affected would also be considered as part of the environmental permit. In this respect, the planning system should focus on whether the intended development is acceptable in terms of land use planning.

Consultation Process

4. Overview

The prospective applicant intends to undertake a full and open consultation exercise with stakeholders, local communities and PINS Wales. This will take the form of an engagement website to anchor community engagement and consultation. There will be a non-statutory and statutory consultation phase for this DNS alongside supporting community and stakeholder engagement.

To date, the prospective applicant has met with PINS Wales as part of the pre-application process. At this meeting, an outline of the project was presented along with the ecological considerations.

The prospective applicant has also had discussions with operators of the adjoining paper mill regarding the supply of electricity and heat/steam.

5. Objectives

The Planning Inspectorate recognises and advocates ‘enthusiastic’ engagement for developers where there is a potential impact with a development on local communities and believes that local people should be involved in helping shape the environment in which they live. The importance of pre-application engagement is recognised in the Government’s National Planning Policy Framework (NPPF), adopted in March 2019, which states that:

“Early engagement has significant potential to improve the efficiency and effectiveness of the planning application system for all parties. Good quality pre-application discussions enable better coordination between public and private resources and improved outcomes for the community.” (Section 39)

It would be suggested that with relation to the Llynfi application, engagement is completed in accordance with the NPPF, including engagement with the local community, to ensure that local people have the opportunity to inform the proposals prior to the submission of a planning application. This programme is also compliant with the National Planning Policy Guidance (NPPG).

Against this background, the objectives of the engagement strategy and programme would be as follows:

- To meet the requirements for pre-application consultation on major planning applications set out in the Planning and Compulsory Purchase Act 2004 and supporting guidance, including the Council’s SCI and the Localism Act;
- To ensure that the local community and its elected representatives are informed and consulted in respect of the proposed plans;
- To demonstrate how feedback has been incorporated in the revised proposals, and to explain why not, if it has not been. Effective community involvements should ensure that people;
 - Have access to information;
 - Can put forward their own ideas and feel confident that there is a process for considering those ideas;
 - Can take an active part in development proposals and options;
 - Can comment on formal proposals;
 - Get feedback and can be informed about progress and outcomes.

By aligning a structured engagement approach to these principles will support the demonstration of clear, justifiable and best-practice engagement around the application. Drawing these principles into an approach that demonstrates best practice and alignment with justifiable, responsible and enthusiastic engagement we feel that our seven-point plan will guide our delivery and subsequent communications on key decisions to ensure the project can demonstrate to stakeholders, key decision makers and the community that due regard has been paid to the feedback issued to the project.

- **Notify** the public and stakeholders of the consultation programme

- Notification must be comprehensive: the community must be made aware of the consultation programme along with a timescale of different activities. It is not desirable that any individual or group emerge at the end of the process feeling they have been excluded.
- **Inform** those being consulted about the proposal and the constraints of the proposals and how they may impact.
 - Having notified people of the consultation process, information is then provided on the background of the proposed changes and activity and any constraints which may be influential.
- **Consult** with the public and stakeholders and solicit their views
 - Members of the public and key stakeholder groups to liaise with the project team and put forward ideas and aspirations for the project. Methods can vary widely from newsletters and web-sites to exhibitions.
- **Measure** responses and analyse the results
 - Having allowed an acceptable timeframe for everyone with an interest to comment, the results are then quantified using both qualitative and quantitative techniques.
- **Report** back to the local community about the views expressed
 - Feedback is then analysed and the results publicised within the community and through stakeholder groups to keep consultees informed throughout the process.
- **Respond** by amending the proposals where sensible
 - We respond to the views of the community and incorporate changes into the scheme where appropriate. It is important to try to include as much input from consultees as possible. This may involve, not only making amendments to the scheme, but also recording how much of the feedback accords with the original thinking about the proposals.
- **Publish** details of the revised scheme and how the consultation programme has influenced it
 - At the conclusion of the programme, a full consultation assessment report will be shared with the advisory committee. This document will demonstrate how the programme has been implemented, and the resultant implications for the scheme. Records of all feedback will also be made available and open to public scrutiny.

6. Consultation Methods

Stakeholder engagement

Throughout the project, stakeholders at a local, business, regional and national political and statutory level will be engaged to inform, education and mobilise understanding for the project.

Virtual drop in exhibitions

The project team will host sessions with 'virtual drop-in' exhibitions to be scheduled and advertised within the local community. This will again see the project team man a chat room where community members are able to be connected to members of the project team to answer specific questions about the emerging proposals.

Promotion of the consultation period within the community

To promote the consultation an advert will be placed in the local media (digital and print versions), along with promotion through the stakeholder network and potentially on the LPA's social media channels. The project team will also write to an agreed radius around the project boundary with a short information flyer to promote the web-based project engagement platform.

Engaging with identified hard-to-reach groups

Reflecting the presence of those who do not traditionally engage with digital or online resources, the project team will make copies of a summary document available by mail upon request, and depending on the government guidance at the time interpretation boards summarising the project will be made available in a public place (open air) to enable those walking in the community to engage with the project. All materials for the statutory consultation will be bi-lingual.

Communications channel	Consultation approach
Information hosted on an accessible web-based engagement platform with interactive functionality	The project will create a dedicated web-based engagement platform, hosting information about the project, the emerging masterplan and engagement process
Direct engagement with key and interested stakeholders	The project will engage with core stakeholders to the project as per the developed stakeholder database. Meetings will be held on a free video-calling platform or the telephone where required, consultation will also be conducted via email
Local media	The project will engage with local media outlets to promote relevant news stories around the project
Social media	Engaging with the local community through existing local social media channels
Printed collateral	To support the project, printed information leaflets and posters will be produced
Open air information board	An open-air information board (or boards) may be installed in the community to carry further details
Face to Face engagement (virtual)	The project will host virtual information drop in sessions to support the consultation phase Physical face to face engagement will be reviewed on an ongoing basis
Email and telephone contact points	The project will create a dedicated email address and phone line for members of the community to contact to find out more about the project

2.0 SITE SETTING AND DESCRIPTION

General

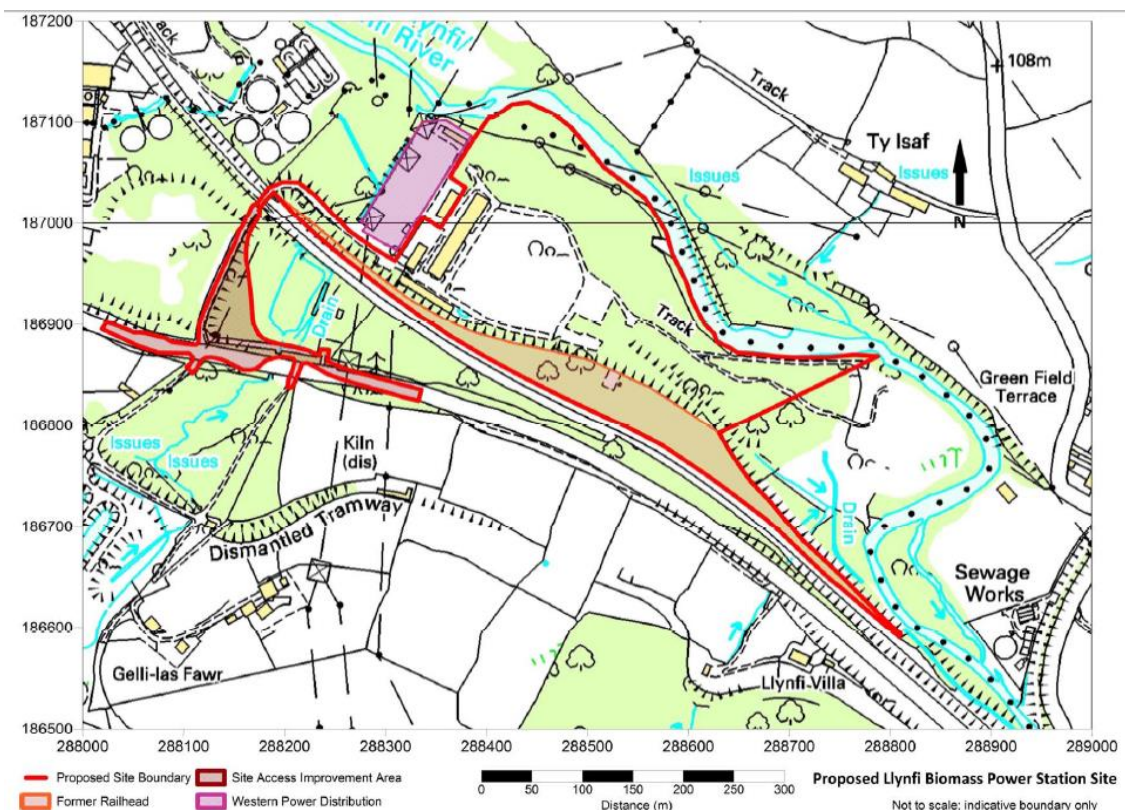
This section describes the existing physical and environmental characteristics of the land comprised within and the surrounding the proposed development site.

Site Description

7. Location

The land which the prospective applicant is thinking about developing (referred to in this document as the 'prospective application site' or 'site') is located on the site of the former Llynfi power station within Cwm Llynfi; a valley orientated north to south between Maesteg to Junction 36 of the M4. In this respect, Bridgend lies some 7.5 km to the south and Maesteg lies around 4.7km to the north⁴. More specifically, the proposed application site lies to the east of the A4063 and a single railway line (both running between Bridgend and Maesteg, where the latter terminates) and south of a paper mill. The proposed application site is flanked on its eastern boundaries by the Afon Llynfi.

Figure 2-1
Site Location



⁴ Distances measured from centre of site to centre of settlement using Google Earth and so do not represent the distance to closest receptors in each settlement.

The prospective application site is located within the administrative area of Bridgend County Borough Council.

8. Site Description

General

The prospective application site extends to around 8.1ha and with the main body of the site located immediately to the north-east of a single railway line and south and north-west of the Afon Llynfi. The north-western boundary is formed by a former substation associated with the previous use of the site (as a coal fired power station) with the southern boundary being an arbitrary line within woodland/scrub that bounds the site. The site also extends in a southerly direction along the line of the access road into the site, to form a triangular parcel of land and includes part of the A4063. The extent of the proposed application site is illustrated on **Drawing LF 2**; it is the same as within a previous planning permission granted by Bridgend County Borough Council on the site for a biomass power station on 8th May 2015 (permission ref. P/11/21/FUL).

The site has been subject to previous ground disturbance associated with the development (in c. 1942) and subsequent demolition (in c. 1979) of a coal fired power station. It is understood⁵ that the former power station included a number of buildings that provided administrative, laboratory and engineering functions, some of which also included underground basements and chambers. Two cooling towers, estimated to be approximately 26m high, were present on site. The power station remained operational until 1977 when power generation activities ceased. In 1979 the original cooling towers were demolished; much of the demolished material was left in situ. The railway sidings (used for the importation of coal) were also decommissioned following closure of the site.

Currently, the site is predominantly vacant bare ground with limited vegetation cover within the central part. Some emergent vegetation has established on piles of rubble along with the peripheral areas. This is more prevalent within the vicinity of the former sidings, where a substantial belt of vegetation has developed. The site is a mix of semi-natural woodland and riparian edge, hard standing, aggregate, ephemeral vegetation, scrub, and soil and wood chip stockpiles that have been redundant for several years with resultant further development of scrub and ephemeral vegetation.

It is located within mature semi-natural deciduous woodland with areas of Beech and birch/alder dominance. A glade of mature beeches dominates the access road into the site. At this point woodland to the west of the road has been felled and a paper mill is immediately obvious, to the east a wetland area just east of the development footprint and shown on the OS map, appears to have succeeded to willow and alder scrub, though this area was not immediately physically accessible and water may be present at different times of year. The Environmental Statement 2011 refers to pools of standing water being present and to areas of the site qualifying as wet woodland (Version V1.10 September 2011. Just Ecology), though this was not observed within the site visit as it was undertaken at a time of drought.

The road turns south east and an electricity station is present immediately to the north. The footprint of the site then opens into a large area (approximately two hectares) of hard standing, with significant stockpiles of large rubble and soil that have developed scrub being present within this as well as aggregate material and ephemeral vegetation. Four buildings noted as supporting lesser horseshoe bat (*Rhinolophus hipposideros*) roosts in the Ecological Statement (Version V1.10 September 2011. Just Ecology), appear to have been removed some time ago with some rubble still present. An abandoned portacabin and car is present on the southern edge and a series of underground man-made chambers, remnants of a previous building are present on the eastern edge of the hard standing within the southern woodland edge. These were partially accessible but with some roof collapse and not extensively examined. East of here are substantial stockpiles of wood

⁵ Paragraph 2.2.3, Design and Access Statement

chipping, creating the attenuated four scars visible from google maps with an additional log pile to the north of larger stacked logs and tree trunks. These stockpiles represent a significant biomass on site. The Llynfi River forms the northern boundary of the site but was difficult to access due to the log piles and dense scrub. The riparian edge could be seen to be dominated by Japanese knotweed *Fallopia japonica* along the eastern section. Access to the river was only possible for a track west of the electricity station.

Baseline conditions: key points to consider in due diligence process:

- The site is ecologically complex and will require a diverse suite of taxa surveys (outlined in detail below) to establish its baseline value.
- The 2011 Ecological statement outlines some of the key ecological issues at the site, but the data is now too old to be considered within a planning process and it is likely that all surveys will require repetition. There may be the opportunity to discuss with the county ecologist whether some surveys (notably dormouse *Muscardinus avellanarius*) are still required, although more detail on survey techniques used and a local data search are required to inform this decision.
- There are extensive areas of Invasive plant species that will require a bespoke long-term management strategy. The most common species is Himalayan balsam (*Impatiens glandulifera*) which is relatively easy to treat but is abundant across the site and within all habitats. The ubiquitous nature of this species may be a significant management and fiscal constraint.
- A far more challenging species to treat is Japanese knotweed (*Fallopia japonica* var. *japonica*) which is also frequently encountered dominating certain areas and particularly dominant along the eastern corridor of the River Llynfi. There is some evidence of on-going chemical treatment, but it is by no means exhaustive. This plant requires several years of chemical management and the soil within which it grows will be required to take to Landfill. Given its presence within some of the extensive onsite stockpiles, this could involve a prohibitive amount of contaminated soil and woodchip to manage. Other less intrusive invasive species are also present notably butterfly-bush (*Buddleja davidii*) and Rhododendron (*Rhododendron ponticum*).
- A due diligence process to investigate the management of these species would be a starting point in evaluating the site and the development implications. It is recommended to commence this process immediately with a specialist consultancy. In addition, on-going management on these species prior to planning permission would advance development time-lines post- planning permission.
- A key finding within the 2011 Ecological Statement [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] and that this was a key facet of the 2011 planning proposal, it is recommended to both enquire as to the circumstances of the loss of the buildings and open discussion with the Local Planning Authority (LPA) County ecologist as to how to go forward given this event has occurred.

Baseline conditions: Flora

The habitats present have been outlined above. Alder (*Alnus glutinosa*) dominates much of the semi- natural woodland although there are a variety of other species present including willow (*Salix* sp.), Silver birch (*Betula pendula*), ash (*Fraxinus excelsior*), Scots pine (*Pinus sylvestris*), Beech (*Fagus sylvatica*) (dominant in some areas) copper beech (*Fagus sylvatica* 'purpurea') and yew (*Taxus baccata*). Wood anemone (*Anemone nemorosa*) was common on the edge of the woodland and indicative of an undisturbed woodland flora. Of note is the presence of southern Marsh-orchid (*Dactylorhiza praetermissa*) on the southern slope. The invasive species, Himalayan balsam, is present across the site in varying degrees of dominance, and stands of Japanese

knotweed are present south of the entrance, on the northern rubble and boulder piles, woodchip piles to the east, as well as along the northern edge of the site, and dominating the eastern section of riparian edge of the River Llynfi. Signs that the aggregate has been present for sometime is indicated by some of the ephemeral vegetation with calcareous (chalk loving) specialist species present such as yellow-wort (*Blackstonia perfoliate*) present within a fairly neutral to acidic habitat. Other ephemeral species present include great mullein (*Verbascum thaspous*), bird's-foot-trefoil (*Lotus corniculatus*) and docks (*Rumex sp.*). Rosebay willowherb (*Chamaenerion angustifolium*) was the most frequently observed native ruderal vegetation. This unusual combination of calcareous species within a neutral to acidic woodland complex will create an unusual assemblage of botanical diversity. The scrub vegetation is dominated by Alder, birch and willow scrub with areas of bramble (*Rubus fruticosus agg.*) also present. A full list of plant species recorded on the site visit.

Recommendations: a full botanical survey of the site at an appropriate time of year Timing: suite of Surveys in Early Spring (woodland) and June (exposed areas).

Baseline conditions: Wetlands and aquatic habitats

A small pond is located east of the electricity station, which was dry at the time of survey. There is also a larger pond indicated on the OS map, east of the access road, but which could not be observed during the survey. Small wet areas between the woodchip log piles are dominated by Hard (dominant) and Soft (occasional) rush. The River Llynfi appeared to show some signs of industrial pollution but as a sandy bottomed river was supporting beautiful demoiselle damselfly (*Calopteryx virgo*).

Recommendations: Further investigation of wetland areas, accessing data search for potential presence of great crested newt. In addition, eDNA surveys should be undertaken to confirm presence or absence of great crested newts in ponds is recommended in first instance to ascertain whether this is a constraint on site

Baseline conditions: Invertebrates

The unusual mix of habitats and flora and presence of a mosaic of bare ground, diverse flora, semi- natural woodland, aggregate, rubble and soil stockpiles and extensive woodchip and logs means that the site has the potential to be of outstanding interest for its invertebrate community and a full suite of surveys is recommended:

Recommendation: A full suite of invertebrate surveys

Baseline conditions: White-clawed crayfish

White-clawed crayfish (*Austropotamobius pallipes*) was not recorded in surveys undertaken for the 2011 Environmental Statement although the extent of survey effort was unclear. The data search should inform the need for further surveys.

Recommendation: Identify need for surveys based in part on results of data search and detail of previous survey effort

Baseline conditions: Reptiles

The Environmental Statement makes no mention of the presence or absence of reptiles but the habitat within this site, though disturbed, could support both adder *Vipera berus* and grass snake *Natrix helvetica* and possibly common lizard *Zootoca vivipara*. There are ample areas of suitable edge habitat for these species, should there have been a remnant population able to colonise the site, post- disturbance, although the areas of hard standing offer only peripheral habitat suitability. The presence of a reptile population would be

challenging to effectively translocate given the vast extent of cover provided by the woodchip, rubble and soil stockpiles.

Recommendation: The data search to inform whether reptile surveys required. Likely to be recommended

Baseline conditions: Badger, water vole and otter

No signs of these species were recorded during the survey, though suitable habitat is present and otter was identified as present in the 2011 Environmental statement and would be likely to be present again. Water vole (*Arvicola amphibious*) is very uncommon in this area and the site is on the edge of recent range. The current footprint would be unlikely to greatly affect Badger (*Meles meles*) or otter (*Lutra lutra*) but further investigation required.

Recommendation: full badger, otter and water vole surveys.

Baseline conditions: Dormouse

Previous dormouse surveys for the Environmental Statement stated that this species was not present. Although these surveys are no longer valid due to their age, this species is a very slow colonist of new sites. However, this has to be balanced against improved methods of detection which are now being used and repeat surveys may be necessary.

Recommendation: Review previous survey methods and data search, and initiate discussion with LPA county ecologist as to whether to undertake further survey.

Baseline conditions: Bats

[REDACTED]
[REDACTED]
[REDACTED]. The site is likely to be of high importance for bats and the following surveys are recommended.

Recommendation: A full suite of bat transect surveys from Spring to Autumn coupled with use of static detectors in distinct periods of season

Baseline conditions: Birds

Twenty-six species of birds were recorded on site, although this is only a record of a single day visit. Two specially protected species were recorded that could be breeding within the valley; Goshawk (*Accipiter gentilis*) and Red Kite (*Milvus milvus*). In addition, [REDACTED]
[REDACTED]

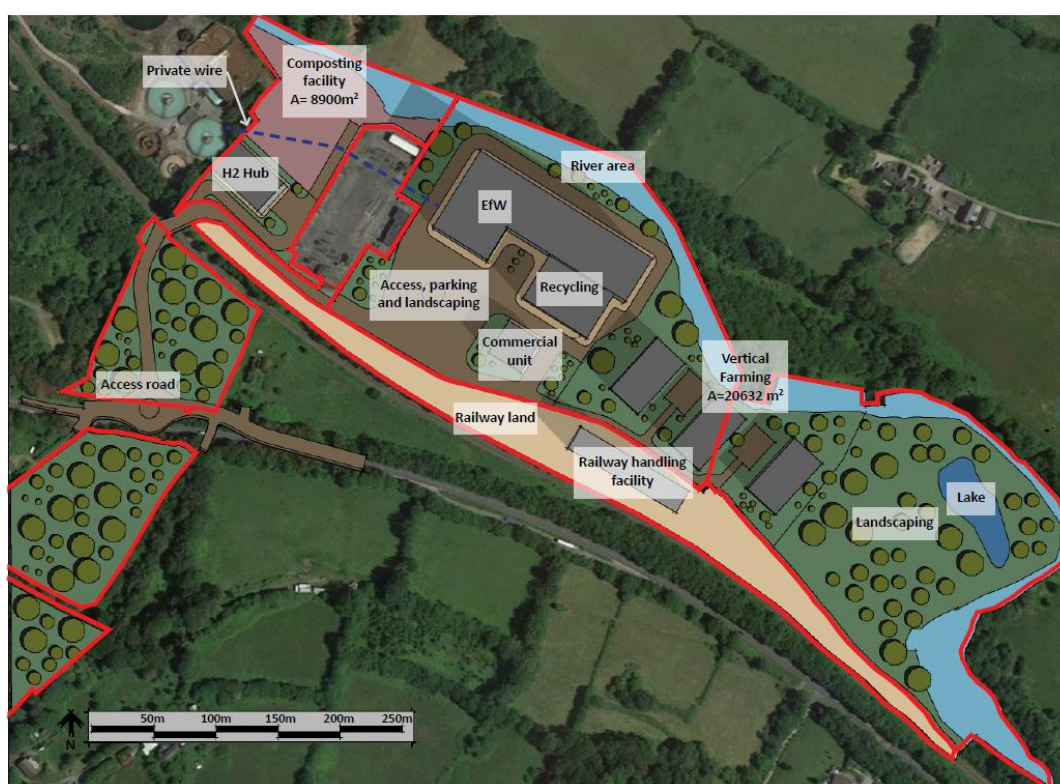
[REDACTED] Given that the site was visited in the middle of a very hot day, this list is not considered to be in any means exhaustive and the nature of the site has the potential to support a number of other specially protected species and of conservation concern. It is recommended to undertake both wintering and breeding bird surveys of the site on account of the capacity of the site to support a diverse and ecologically significant bird assemblage.

Recommendation: A wintering bird survey which in turn will inform a full breeding bird survey. In addition, there may be a need (defined by data search and possibly wintering bird surveys) for additional bespoke surveys for specially protected and crepuscular (species which occur at dusk and dawn) species.

The main body of proposed application site is broadly rectangular in shape orientated along a north-west to south-east axis, tapering to the south before fanning out into two triangular protrusions; one towards the river and the other towards the railway line. It has dimensions of around 445m by 235m, decreasing to around 120m towards the southern end. The site also extends northwards in a 140m narrow corridor south of the substation before crossing the railway line (via an existing bridge) and then extending 155m in a south-westerly direction to join the A4063. Finally, the proposed application site will include around 290m of the A4063, with around 210m to the south of the entrance and 80m to the north.

Figure 2-1 below illustrates the form of the prospective application site based on aerial photography provided by Google Earth.

Figure 2-2
Site Context



Topography

It is understood⁶ that overall, the site gradually decreases in elevation from north west to south east. The topographic elevation is about 67m AOD near the access road and substation. The topographic elevation decreases in a south easterly direction to about 65.5m AOD in the vicinity of the central section, where the width of the site (from north-east to south-west) is reduced. At the south eastern end of the site the topographic elevation is about 63m AOD. OS mapping data shows the 70m contour on the southern side of the application site in the vicinity of the railway, crossing into the site in the vicinity of the substation.

To the north-west and south-east of the site, the topography is fairly even forming a shallow valley within which the Afon Llynfi flows. The valley sides are generally formed by gentle slopes in the immediate vicinity of the proposed application site, but become steeper, forming valleys within which tributaries of the Afon Llynfi flow.

⁶ Flood Consequence Assessment, Katherine Colby, May 2011

Gradients also become steeper to the north, in the vicinity of Moel Cynhordy (SS 88541 90154) and Garth Hill (SS 87298 90317).

Around 2km to the west-southwest of the site is Mynydd Baedan, which reaches an elevation of 251m AOD (demarcated by a triangulation pillar at SS 87017 85561). Moel Cynhordy, which is around 3km to the north of the site, reaches an elevation of 346m AOD and Pen y Foel (4.2km to the north east) reaches 356m AOD. Pen y Foel is at the southern end of the Mynydd Llangeinwyr, a north-south orientated ridge separating the Cwm Garw and Cwm Ogwr Fawr, reaching a high point of 568m AOD (SS 91261 94755).

9. Access

Access to the prospective application site is currently gained from the A4063 at NGR SS 88114 86879. The junction is of a standard bell mouth construction aligned perpendicular to the A4063. At the mouth, the access is wide enough for two lanes, but rapidly tapers from 19m to around 5.5m. Set back from the junction (by around 18m) is a metal barrier.

Immediately to the south of the site entrance (within the entrance splay) is a bus stop with a shelter (Llangynwyd, Gelli-las Fawr (SE-bound) - First Bus service no 32 and 36). Similarly, a further bus stop is located around 58m to the north of the site entrance on the northbound carriageway; this stop also has a shelter and layby pull in.

The A4063 in the vicinity of the site entrance is subject to a national speed limit (60 mph).

The A4063 provides access to Bridgend to the south along with Junction 36 of the M4, which provides good links east and west. To the north the A4063 provides access to Maesteg and the A4107.

Adjacent to the site is a railway line which runs between Bridgend and Maesteg, where it terminates. The Llynfi power station had a connection to this railway line for the importation of coal, with sidings located on the southern boundary of the site (an area that has now vegetated over). As noted above, these sidings have been decommissioned.

10. Land Use

The site does not benefit from a dominant land use and appears to be vacant land that has been disturbed through historic development, and more recently, demolition works.

The site is not crossed by any public rights of way. The nearest footpath runs in a southerly direction following a private access track (to Cefn Ydfa) opposite the site entrance. Another footpath runs in a north-westerly direction on the eastern side of Afon Llynfi from Green Field Terrace, passing Ty Isaf.

The Surrounding Area

The site lies within a predominantly rural location with the exception of a large paper mill which occupies a triangular area of around 9.5 ha adjacent to the A4063 to the north of the site. The mill and comprises a range of industrial style buildings of varying size, form and height, along with water treatment plant.

The nearest settlements are the hamlet of Shwt (around 250m from the boundary) and the village of Bettws (around 1030m from the boundary), both in a general south-easterly direction from the site. Slightly further afield is the village of Pont Rhyd-y-cyff, which lies around 2.2km to the north of the site. Between the settlements, the landscape is punctuated by individual properties and farmsteads, with these surrounded by a patchwork of fields of varying size and areas of woodland. The landscape is also crossed by a number of overhead electricity lines.

Table 2/1 below provides a summary of the land uses in the area surrounding the site and distances to key receptors and properties.

Table 2-1
Land Use

Site Setting	Details
North-west	An electricity substation, other vacant land/woodland and a water treatment works associated with the paper mill. Beyond this are the buildings associated with the paper mill. This island of industrial development is surrounded by agricultural land and woodland.
North-east	Afon Llynfi, which flows in a southerly direction within a wooded corridor in the vicinity of the site. Beyond this is agricultural land, comprising a patchwork of fields bounded by hedgerows. Also evident are minor roads and a small number of properties/farmsteads.
South-east	Woodland and the Afon Llynfi, along with agricultural land. Settlements of Shwt and Coytrhen, the latter being developed around the A4063.
South - west	Transportation corridor comprising a single Railway line and A4063. Beyond this is agricultural land, again comprising a patchwork of fields, bounded by hedgerows, and individual properties/farmsteads

Sensitive Receptors

11. Land use designations

Referring to the DEFRA MAGIC website and the NRW Interactive Map Viewer, there are no nationally or internationally significant land use designations within the proposed application site. Within 2km of the proposed development area there are no:

- Special Areas of Conservation (SAC) or prospective/candidate SAC;
- Special Protection Areas (SPA) or prospective/candidate SPA;
- Ramsar sites;
- Sites of Special Scientific Interest (SSSI);
- National Nature Reserve;
- Local Nature Reserve;
- Scheduled Monuments; and

Ecology

Figure 2-2 illustrates the main ecological designations in the vicinity of the proposed development site.

Given the ERF process would result in the dispersion of pollutants via a flue stack, consideration would need to be given to the presence of any Natura 2000 sites within 10km. the MAGIC mapping shows the following sites within a 10km radius of the site:

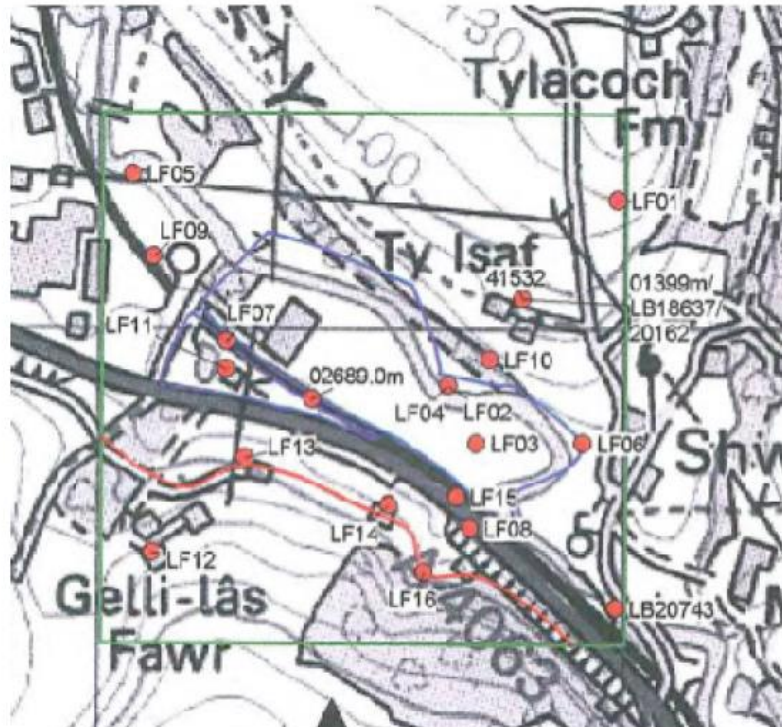
- ## Cultural Heritage

In relation to listed buildings, consideration has been given to those within 1km of the site. Using Historic Wales web based mapping this has shown that there are four; three are buildings (Ty Isaf, Cwm Cedfyw and Cefn Ydfa) and the fourth is a bridge (Pont-Y-Rhyd-Ddu). All are Grade II.

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Figure 2-4 Heritage Designations

Figure 11-1 The site study area (green outline) and the archaeological sites (red)



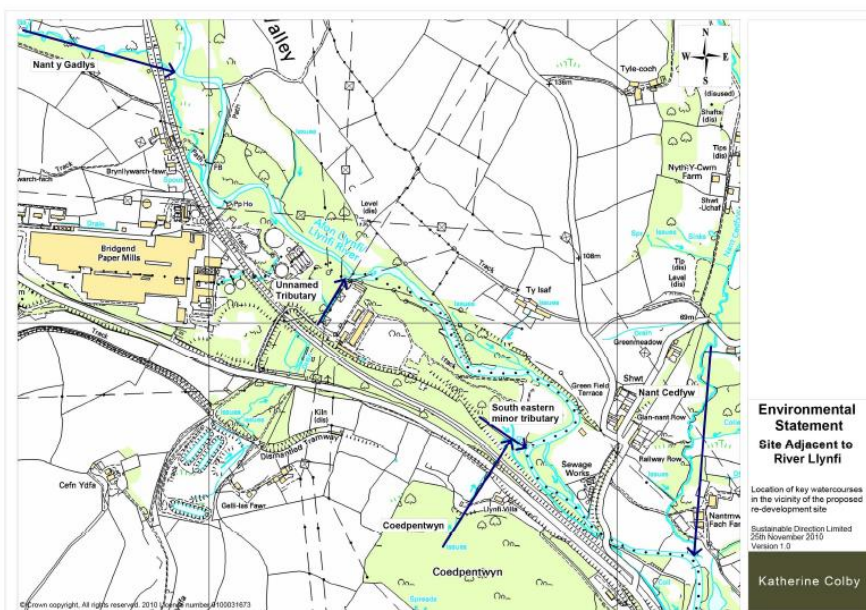
Water

In terms of the water environment, based on Flood Mapping produced by NRW the site lies within Flood Zones 1, 2 and 3 and is not underlain by a Source Protection Zone (SPZ).

The majority of the site (central and southern edge) lie within Flood Zone 1. Flood Zone 2 and 3 (associated with the Afon Llynfi) extend into the site on its northern edge, as well as the north-western edge in the vicinity of the substation (which is also in Flood Zone 2 and 3). Flood mapping also shows that the north-western part of the site and adjacent substation are vulnerable to surface water flooding.

Figure 2-5 Water Environment

Figure 9-2 Location of Key Water Courses in the Vicinity of the Proposed BPS



12. Residential/Human receptors

The nearest group of residential properties are located around 250m to the southeast of the proposed development site within the hamlet of Shwt. These properties comprise a two rows of terraced properties (Glannant Row and Green Field Terrace) and located at an elevation of around 70m AOD. The western edge of the village of Bettws is around 1km from the site with the closest properties located off Cwm Coed, a recent residential development. These properties are at an elevation of between 130m AOD and 140m AOD. The northern part of the village is mainly residential, whilst a school (primary) is located off Bettws Road, south of the residential area.

The closest individual property to the site is Ty Mel, which is around 80m from the western boundary with the railway line, but around 320m from the main development area within the site. This property is at an elevation of just below 90m AOD. The farmstead Ty Isaf is around 200m from the site boundary, situated on the 90m AOD contour. Finally, Gelli-Las Fawr lies around 300m south east of the boundary with the railway line.

Planning History

A planning application was submitted by Morgan Credit Energy (Wales) Ltd for a 25MW Biomass Power Station in January 2011 (application reference P/11/21/FUL). This application was supported by an Environmental Statement. Planning permission was subsequently granted on 8 May 2015 (see **Appendix 01**).

3.0 The Prospective Development

General

As noted from Section 1 above, the prospective applicant is minded to submit an application for Planning Permission to develop an ERF on vacant land at the site of the former Llynfi power station.

This section provides an overview of the proposed development. It should be noted that the final design of the ERF has not been fixed and will be subject to some iterative amendment as the architectural design of the ERF evolves, with input from the landscape and visual assessment work. Notwithstanding this, it is considered that sufficient information is known about the broad building envelope to allow scoping to proceed. Indeed, the PINS Guidance (Appendix 3) at paragraph 3.20 states:

“The scoping direction can only respond to the information available at that time. Therefore, it will be reasonable for applicants to refine topics within the ES. This should result in a more focussed ES. To support with this, the Inspectorate can provide ongoing pre-application advice. Where necessary, the Inspectorate can issue updates to Scoping Directions”.

In view of this, as the EIA progresses, SLR will liaise and re-consult with technical consultees and PINS Wales as appropriate.

Site Layout

The proposed ERF would include a number of built elements set within a landscaped framework, with the majority of the landscaping works located along the eastern boundary adjacent to the railway line.

The ERF houses the waste reception and processing equipment, facilities for maintenance, administration, welfare and the visitor area.

Gatehouse and weighbridges - The gatehouse controls all operational traffic entering and leaving the ERF. The gatehouse would accommodate operators and the necessary equipment for accurately measuring and recording vehicles and their loads. Two weighbridges would be utilised for recording of deliveries and collections.

Manoeuvring areas and roadways – The manoeuvring area provides the required space for vehicles to reverse into the tipping positions. A system of roadways would be established to allow an efficient flow for HGVs minimising crossing points as well as separating cars (employees and visitors) from HGVs

Materials Recycling Facility (MRF) and Reception Hall - The MRF allows vehicles to tip feedstock onto the floor of the MRF where it would be inspected. Pre-treated feedstock would then be transferred using front end loader to the designated storage area whereas other (un-treated) waste would be loaded into the pre-treatment plant. In order to minimise dust and odour release, the MRF is a fully enclosed space. The height of this building is determined by the requirement for vehicles to tip. The tipping hall allows vehicles delivering the waste to back up and tip into the ERF's feedstock storage bunker or on the floor for inspection. In order to minimise dust and odour release, the tipping hall is a fully enclosed space operating under a slight negative pressure to maintain an inward flow of air. The height of this building is determined by the requirement for vehicles to tip.

Feedstock Bunker - The feedstock bunker provides a storage area for feedstock prior to treatment. In order to minimise dust and odour release the waste bunker is a fully enclosed space under negative pressure. The volume of the feedstock bunker is designed to provide in excess of 4 days storage. The overall height of the feedstock bunker is determined by the position of the waste feed hopper. Overhead cranes would be utilised to deposit feedstock into the feed hopper.

Boiler Hall - The boiler hall houses the equipment required for feedstock combustion, water demineralisation, steam generation, primary/secondary air systems and ash collection. The demineralisation plant treats the water supplied from the mains supply to the standards required. The demineralised water is stored in a designated tank prior to entering the boiler. The primary and secondary air fans provide the air for the combustion process. The boiler hall is an enclosed space providing weather protection, noise mitigation and visual screening. The overall dimensions of the boiler hall are determined by the sizes of the process equipment and requirements for access and maintenance.

Flue Gas Treatment Area - The gaseous emissions from the combustion process need to be cleaned before being released into the atmosphere. The Flue Gas Treatment (FGT) area contains the consumables silos (for example ammonia, lime, activated carbon etc depending on the final choice of the process manufacturer), flue gas cleaning equipment needed for the treatment of the emissions from the incineration process, Air Pollution Control Residue (APCR) silos, and an associated emissions monitoring equipment. The overall dimensions of the FGT area are determined by the sizes of the equipment and their requirements for access and maintenance. The FGT area also contains the flue gas stack; the height of the stack would be determined through the dispersion modelling but for the purposes of scoping, the height would provisionally be between 60m and 80m high based on experience with other projects.

Turbine Hall - The turbine hall would house the equipment necessary to generate electricity from steam. The turbine hall is an enclosed space providing weather protection, temperature control and noise mitigation.

Air Cooled Condensers - The steam exiting the turbine is condensed in the air cooled condensers (ACC) before returning to the process. The size and height above the ground of the ACC are determined by the required air flow through the ACC.

Emergency Diesel Generator – The emergency diesel generator room houses the diesel generator equipment and can be used for safely shutting down the ERF during an emergency. This is typically a standard containerised generator set.

Substation – The substation houses the electrical equipment required to export the electricity produced on-site. The substation equipment includes transformers, circuit breakers and metering equipment.

IBA handling area - IBA from the combustion process is quenched and transferred to the IBA handling area by a covered conveyor. The IBA is held in hoppers/silos pending loading onto HGVs for onward transfer to a suitable recycling facility.

Administration Building – Based on experience elsewhere the ERF would be operated by around 25 to 30 staff working on a conventional shift pattern. The administration building comprises of a workshop, offices, meeting rooms, a staff entrance lobby, a visitors' area, male and female toilets and changing rooms including provisions for disabled staff, associated storage areas and a control room. The control room would be located at a high level adjacent to the waste bunker to allow the crane operator to view the waste feed hopper and bunker. The workshop is utilised for some of the maintenance activities and is located on the ground floor of the administration building. This location for the workshop provides good access to the plant as well as for delivery of spares.

The ERF Building

The proposed ERF plant would be totally enclosed within a purpose-built new building that is appropriately designed for its surroundings. The main building would, at its highest point (above the boiler) be in the region of 45m in height; other parts of the building would be lower, for example the tipping hall would be around 15m high, whilst the bunker would be 35m high to accommodate the cranes. The overall footprint of the ERF would be around 125m by 50m in plan, being rectangular in shape and orientated along a north-south axis within the site.

The ERF requires a distinctive, high quality and attractive appearance. In considering this, the design team recognises the challenges that a proposal of this size and scale brings. The design team is considering the buildings appearance in relation to its site and surroundings and the views of it from local areas. To this end, the final design would be a collaboration between landscape architects considering the visual effects of the proposed ERF and the architects in terms of the design solutions (choice and orientation of materials for example) to minimise the visual intrusion.

The design will strive to synthesize the functional requirements of the process technology and the need to enclose, drape and screen this, with the need to consider the visual impact on the local communities by providing an attractive, sustainable, environmentally friendly, exemplar waste management facility that fits well into its setting.

Given the size of the proposals, the aim is not to camouflage the structures, but to integrate them with the surrounding landscape setting, whilst at the same time celebrating the ERF's function. The architecture would therefore be light, bright, accessible and sustainable, and rooted in the landscape and landform.

The final shape would emerge from a synergy between:

- a technical study of the options for the size and technology available to process the throughput capacity of the plant.
- the operational management requirements of the various activities and their location possibilities. This includes the operations of construction, access for regular and periodic maintenance and ultimately decommissioning.
- careful analysis of the shaping options for the "wrapping" of the technology.

For the purposed of scoping it is anticipated that the form of the ERF would be a series of rectangular structures for each of the main 'buildings' identified above, which allows for the overall massing of the building to be reduced compared to a single curved approach.



Access

13. Infrastructure

Access to the ERF would be off the A4063 Bridgend Road, extending in a northerly direction to cross the railway line via an existing bridge before turning south-eastwards into the main body of the site. From the entrance an internal roadway system would provide access to the gatehouse and associated weighbridge two stacking lanes would be provided to hold incoming vehicles pending weighing, and avoid vehicles queuing out onto the public highway. From the weighbridge, vehicles would proceed to the internal road system, which would split traffic depending on their destination (i.e. Tipping Hall, IBA area or delivery/removal of reagents).

As with the previous planning application (see Section 2 above) a new access point onto the A4063 would be created to the south of the current access. In this respect a three armed roundabout would be constructed on the A4063, with the site access forming the northern arm, and the A4063 carriageway the other two. The site access road off the A4063 would be widened to accommodate two way flow of traffic up to a point just before the railway bridge.

The new access arrangement would require the relocation of an existing bus shelter; a new pull in/layby would be created on the northern side of the site entrance to accommodate the new bus stop.

All roads within the site would be surfaced with bituminous bound material ("tarmac") and appropriately drained.

14. HGV Movements

It is anticipated that the ERF would receive up to 200,000t of residual waste per annum. With the road only scenario the vast majority of the waste would be delivered to the ERF in 'bulk'ers' from transfer stations located across the South-West Wales region; it is possible that some, local deliveries would be directly delivered in refuse collection vehicles (RCV's). Allied to this, small quantities of materials ("reagents") would need to be imported for the treatment of exhaust gases, whilst recycled bottom ash, metals and air pollution control residues would need to be exported. It is estimated that the facility would generate an average of around 35 to 40 HGV movements (one way) per day.

15. Rail Sidings

As noted in Section 2, the previous power station had a connection to the adjacent railway and the previous biomass scheme also sought to utilise the railway.

Consideration is being given to the option to connect the ERF to the rail network to allow for the importation of feedstock by rail. It could also allow pulp to be imported for the adjacent paper mill and paper products from the mill to be exported by rail.

The rail infrastructure within the site would comprise a long (at least 200m) concrete apron and two sidings for unloading the containers onto the concrete apron for transport to the reception building by slave tractor units. The sidings would require crossover points to allow a locomotive to switch between the ends of the train.

As noted in the previous planning application for the biomass plant, the rail head would also require the installation of new junction and signalling on the existing railway line.

16. Surface Water Management

Surface water runoff would be managed in accordance with the principles of SUDS so that the rate of runoff would be no greater than the existing (pre-development) situation. Clean surface water (rainwater) from roofs would be captured and stored in tanks for use in the process. Water from roadways would be passed via silt and oil interceptors to a surface water attenuation pond, prior to discharge from the application site (with consent from NRW).

It is proposed that surface water runoff from the proposed application site would be routed to a new attenuation pond on the southern part of the site. This pond would be landscaped to afford biodiversity enhancements. The pond would discharge into the Afon Llynfi, with a shut-off valve installed into the outlet from the surface water attenuation lagoon.

Ancillary Development

Any development of this nature would include a range of ancillary uses including:

- car-parking;
- electrical substation and grid connection;
- heat connection;
- lighting; and
- fencing and security.

Energy Recovery Process Description

The proposed ERF would use a proven technology based on the 'mass burn moving grate', being the most common form of energy from waste technology employed in the UK and across Europe. The ERF would be a recovery operation under the Waste Framework Directive and is designed to achieve R1 Recovery Status.

The operation of an ERF plant consists of four key elements:

- combustion;
- energy recovery;
- flue gas treatment;
- residues Handling

17. Combustion

The furnace would be fitted with a grate that transports, mixes and turns the waste as it passes through the furnace. The grate is designed primarily for municipal waste and commercial and industrial (C&I) wastes with a similar CV.

Combustion takes place in two stages, with primary combustion undertaken on a moving mechanical grate to promote the mixing of burning/unburnt wastes. The combustion gas from the primary stage is heated further in the secondary combustion chamber to reach the specified minimum temperature of 850°C for a minimum of two seconds. The burnt waste from primary combustion on the moving grate is removed as an ash.

Combustion control is fully automatic; the operator only selects the desired steam output. Large variations of the calorific value (CV) of feedstock may require manual adjustment, although “CV-correction” is a feature that is fully integrated in the control system. Manual adjustments of the control system are not normally required, but the automatic system can be over-ridden if necessary, under unusual circumstances.

Under normal circumstances combustion is self-sustaining without external fuel sources. In the event that the temperature falls close to or below the legally permitted limit of 850°C, oil-fired auxiliary burners automatically start operation. Experience shows that use of the burners to support secondary combustion occurs rarely. Predominantly, the burners remain in a stand-by position and are cooled by the cooling fans provided. The burners are primarily used for start-up and shut-down of the plant.

18. Energy Recovery

The heat from combustion of the waste is recovered initially to form steam and ultimately as electrical energy at approximately 20 Megawatts (net of on-site power requirements). The heat that is produced is recovered within a waste heat boiler to form high pressure steam, which is used to drive turbines to generate electricity. A proportion of this site generated energy would be used within the facility itself, but the majority would be exported to the National Grid.

The design of the heat recovery boiler is particularly suited to waste combustion and incorporates facilities to minimise dust carry-over and for online cleaning through rapping systems and soot blowers to minimise maintenance impacts. Dust collected from the boilers is discharged as fly ash and collected with the flue gas treatment residues. The boiler would use de-mineralised water, prepared by treating in ion-exchange columns. All water treatment chemicals would be stored in a secure area within the building.

The power generation and auxiliary equipment provided include a turbine/generator set, air cooled condensers and a heat recovery unit able to extract further energy from the partially cooled steam or hot water after it has been through the turbines. The waste heat would be recovered as hot water, low pressure steam or as high pressure steam, depending on the end-use requirements. The turbine has been specifically designed to optimise the combined heat and power (CHP) potential of the facility which would be capable of meeting local heat energy demands.

If the surplus heat is exploited through the implementation of a district heating scheme, the overall efficiency figure of the facility can be increased. The generation of CHP therefore represents a considerable environmental benefit.

The steam condenses in air-cooled condensers before being returned to the boiler.

19. Flue Gas Treatment

The air pollution control (APC) system would form an integral part of the plant to treat all flue gas prior to release to atmosphere to ensure that emissions would meet the stringent EU Industrial Emissions Directive (2010/75/EU, which enshrines the former Waste Incineration Directive (2000/76/EC)) standards. The IED places limits on the following substances:

- total particulates (dust);
- acid and corrosive gases – hydrogen chloride, hydrogen fluoride, sulphur dioxide and nitrogen oxides;
- heavy metals – cadmium, mercury, lead and other heavy metals; and
- organic compounds – dioxins, furans, and volatile organic compounds (VOCs).

The treatment would involve a process called “*Selective Non-Catalytic Reduction*” (SNCR) to control the release of nitrogen oxides (NO_x) gases. The process is a proven and widely used system of pollution abatement and would reduce emissions from the facility to well within the stringent IED emission limits. The process involves the injection of a diluted ammonia solution into the high temperature gases at the top of the first pass of the boiler.

The flue gas treatment in the proposed facility would be a “dry” system, to clean the cooled exhaust gases after they have left the boiler. The gases would be passed through sodium bicarbonate to neutralise acid gases such as hydrogen chloride, hydrogen fluoride and sulphur dioxide, and activated carbon which adsorbs dioxins, furans and gaseous mercury.

Residues collected in the flue gas treatment process would be collected in hoppers/silos with up to 3 days of storage, prior to be exported from the site for further treatment/disposal. Quantities would be in the region of 3% to 5% of annual throughput.

20. Residues Handling

Of the waste material that is introduced to the ERF process, three main waste residues would be generated. “*Bottom ash*” from the grate combustion unit (which amounts to approximately 25% of input material) would be re-used, and ferrous metals recovered from the bottom ash would also be recovered and sold as scrap. “*Fly ash*” from the heat recovery system would be collected and combined with the flue gas treatment residues (APCRs) and exported from the site for disposal at a suitably permitted facility.

21. Water Usage

The ERF process is designed as a net consumer of water and therefore there would be no requirement for regular disposal of any wastewater from the combustion process.

The process would minimise the use of water and would clean and re-circulate process water for re-use within the plant. The main sources of water supply would be:

- mains public supply for amenities, critical applications such as in the flue gas cleaning system, back-up supply, cleaning and distribution in the fire fighting hydrant network; and
- rainwater collected from roofs of buildings that would replace mains water for some applications and be used as process water.

22. Operational Hours

The facility would have a design life of 25 years, but is likely to be in operation for a longer period.

The plant would operate on a continuous basis, 24 hours a day, 7 days a week throughout the year, operating for a total of 365 days per year.

The delivery of waste to the facility would occur during the period 0700 hours to 2200 hours during the week (Monday to Friday) and 0700 hours to 1700 hours on Saturdays.

Construction Operations

23. Overview

In general terms, construction would commence with enabling and preparation works to provide suitable access and laydown areas for temporary accommodation and plant and materials storage. The enabling works would also include for the provision of power, drainage and communications necessary for the duration of the construction phase. The general sequencing of civil engineering and building works would be subject to the contractor's detailed proposals, the following is intended to provide a typical approach:

- i) Demolition of buildings, site clearance and enabling works;
- ii) groundworks and concreting works for waste bunker;
- iii) construct floor slabs;
- iv) construction of general foundations and boiler slab together with boiler floor slab area to provide laydown area for plant delivery
- v) construct turbine hall;
- vi) construct foundations for flue gas treatment area;
- vii) construct internal plant and electrical rooms;
- viii) construct administrative and office/welfare facilities;
- ix) installation of process equipment coordinated with erection of steel superstructure and cladding;
- x) mechanical and electrical fit-out;
- xi) construct reception building and MRF including excavating foundations, concreting of floor slab, erection of portal frame followed by cladding of frame;
- xii) construct air cooled condenser area;
- xiii) commissioning of plant and equipment;
- xiv) external works to include drainage, services, general pavements/hardstandings and site entrance works;
- xv) landscaping works.

Main items of plant which are likely to be required during the construction phase would include:

- i) Excavators;
- ii) Dozers;
- iii) Piling rigs;
- iv) mobile and tower craneage (some with high lifting capacities);
- v) scissor lift;
- vi) telescopic handlers/cherry pickers;
- vii) dumpers/general earthmoving vehicles;
- viii) concrete delivery wagons and concrete pumps;

The construction period for the scheme is forecast to be 36 months (including commissioning). All parking and functions associated with this phase would be accommodated on the proposed application site.

24. Site Preparation

At the outset of the construction phase, any construction fencing/hoarding would be erected around the periphery of the site to ameliorate the effects of construction dust and noise. Following on from this, the development platform upon which the plant is to be erected would be created by levelling the site.

The laying and installation of drainage and utilities would be phased with much of the work being undertaken in the early phases of the project, for example during the site preparation works.

25. Civils

The foundations to the buildings would be excavated, which would also involve the pouring of concrete. Foundations are likely to be strip or pad footings. In addition, reinforced concrete pads for the floors of the buildings would be cast in-situ.

It is anticipated that piling would be necessary to carry the load of the boiler and turbine.

Following on from the formation of foundations and concrete slabs, work would commence on the above ground concrete works, such as the bunker and any push walls.

External civil engineering works are likely to be undertaken towards the end of the main construction works in parallel with the commissioning period. These works would comprise the laying of access roads, the car park, external hard standing areas to the buildings and the landscape works.

26. Erection of Buildings

The buildings would be steel portal framed structure. The frame of the building would be constructed using cranes to lift steelwork into position. Where possible, sections of each structure would be assembled at ground level, then erected using a crane. Where the buildings are to house large pieces of plant, this would be lifted into position as installation of the steel structures progresses, and prior to the top frames being closed. Once the steel structures are complete and internal plant is in place the buildings would be clad with steel sheeting and then roofed.

27. Installation of Plant

Plant installed during the erection of buildings would be aligned and mounted in place. Plant parts would be welded together after which pipes, ducts, cables and electric cabinets would be installed.

28. Testing and Commissioning

Once the control system is in place, commissioning of the plant would commence. This would be undertaken in two phases, often referred to as cold and hot commissioning.

Mechanical & Electrical Completion

This initial test follows the mechanical installation works and includes the checking and testing of equipment prior to their cold commissioning and prior to putting power on. Such tests will include, but are not limited to, alignment and direction of rotating parts, verification of the wiring and cabling, verification of the PLC system, verification of correct mounting of piping, verification of correct mounting of valves and actuators, cold pressure testing of piping and vessels, etc.

Cold Commissioning

Cold commissioning activities are carried out without feedstock being processed. For the individual plant elements, this will comprise a combination of tests carried out on individual elements both at the place of manufacture (factory acceptance testing) and onsite testing of the individual elements and assembled plant, as a whole. During both sets of cold commissioning tests, all mechanical and electrical elements and control and instrumentation systems would be fully checked, calibrated and proved to ensure that they meet the requirements of the manufacturer and the relevant design specification.

Cold commissioning would also include checking of all ancillary process equipment including noise mitigation measures, lighting, air quality management system and other emissions control equipment (e.g. odour control). All fire detection and protection, HVAC and compressed air systems would be installed and tested in line with legislation, industry standards and best practice.

Cold commissioning must include testing and demonstrating the completion and integrity of all items such as rotational equipment like pumps, fans, motors, process control systems and logic, and the integrity of all pipe and ductwork and process vessels having been installed and operated.

Pressure systems

Pressure systems for steam and water would be subject to hydrostatic testing following installation. Welding specifications, non-destructive testing and weld repairs heat treatment documentation will be provided prior to testing.

Plant operability and Hot Commissioning

Trial running of the plant would be required to fulfil the hot commissioning requirements of the plant and to ensure that the plant (including plant operability demonstration) and the operators personnel are ready to commence performance testing of the plant upon issue of the certificate for readiness to commence the take-over tests of the plant.

The plant demonstration of operability would typically consist of operating the plant for 14 days prior to issuing the readiness to commence the take-over tests certificate.

Hot commissioning and performance testing of the Plant, using the design feedstocks is to be carried out to fully demonstrate that the ERF is able to meet all of the performance guarantees.

29. Construction Compound

To facilitate the construction phase, it would be necessary to establish a construction compound. This would comprise:

- office, canteen and welfare accommodation (in the form of portable modular style buildings), which, to save space, would be three storey (i.e. three modules stacked vertically) with external metal steps;
- portable style secure storage buildings;

- bunded/dual skinned fuel tanks and oil storage;
- separate containers for office, canteen and construction wastes (construction wastes would be segregated wherever possible);
- car parking;
- security gatehouse.

In addition to the compound, areas would be required for lay down and storage of construction materials.

The compound area would be securely fenced and gated.

30. Access

During the construction period, all access to the site would be gained off the A4063 via the existing access. Temporary signage would be erected within the site to direct traffic. The following types of vehicle would visit the site during construction operations:

- rigid bodied trucks delivering aggregates;
- low loader/flatbed trucks delivering plant, equipment, steel etc;
- concrete truckmixers;
- concrete pumps;
- cranes;
- piling rigs; and
- light vans.

31. Construction Programme

It is anticipated that the construction of the proposed development would commence in c. 2022. A 36 months construction programme is estimated at this stage, with a 6-month commissioning period.

It is anticipated that construction would comprise the following activities:

- Earthworks, enabling works and civils – 12 months;
- Construction of building shell and installation of process equipment – 18 months;
- Finishing civil works such as permanent roads, lighting and landscaping – 6 months;
- Commissioning and testing – 6 months (overlapping with finishing above).

32. Environmental Management

Environmental control measures would be imposed to mitigate and minimise adverse environmental effects during construction and a Construction Environmental Management Plan would be prepared and adopted to include sections on: noise, vibration, air quality, water quality, surface quality (prevention of contamination of ground surface), site transportation and traffic management, visual intrusion and waste management.

All construction activities, which have the potential to generate significant amounts of noise and/or vibration, would be undertaken during daytime periods.

33. Waste Management and Disposal

Waste would be generated during all stages of the construction works. A Site Waste Management Plan would be prepared and all relevant contractors would be required to seek to minimise waste arising at source and, where such waste generation is unavoidable, to maximise its recycling and reuse potential. Any recycling of materials will take place off-site where noise and dust are more easily managed and less likely to impact on the occupants of surrounding properties.

4.0 Environmental Considerations

General

Defining the scope of an EIA is a fundamental element of the assessment process. Based upon discussions with the prospective applicant, together with SLR's knowledge of the site and experience of undertaking EIA's for similar developments, a range of environmental issues has been identified for investigation.

Regulation 4(2) of the EIA Regulations indicates that an EIA must “*identify, describe and assess*” in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on:

- (a) population and human health;
- (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC(a) and Directive 2009/147/EC(b);
- (c) land, soil, water, air and climate;
- (d) material assets, cultural heritage and the landscape;
- (e) the interaction between the factors referred to in sub-paragraphs (a) to (d).

It goes on to add that the significant effects to be identified, described and assessed include the expected significant effects arising from the vulnerability of the proposed development to major accidents or disasters that are relevant to that development.

In the context of an ES, the EIA Regulations⁷ indicate that it must include the information reasonably required for reaching a reasoned conclusion on the significant effects of the development on the environment, taking into account current knowledge and methods of assessment. Regulation 17(3) of the EIA Regulations indicates that an ES should include at least:

- (a) a description of the proposed development comprising information on the site, design, size and other relevant features of the development;
- (b) a description of the likely significant effects of the proposed development on the environment;
- (c) a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;
- (d) a description of the reasonable alternatives studied by the applicant or appellant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the significant effects of the development on the environment;
- (e) a non-technical summary of the information referred to in sub-paragraphs (a) to (d); and
- (f) any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.

For ease of reference, the box below sets out the requirements of Schedule 4.

⁷ Regulation 17(4)(d)

- 1) A description of the development, including in particular:
 - (a) a description of the location of the development;
 - (b) a description of the physical characteristics of the whole development;
 - (c) a description of the main characteristics of the operational phase of the development
 - (d) an estimate of expected residues and emissions and quantities and types of waste produced during the construction and operation phases.
- 2) A description of the reasonable alternatives;
- 3) A description of the current baseline conditions and an outline of the likely evolution thereof without implementation of the development
- 4) A description of the factors specified in regulation 4(2) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.
- 5) A description of the likely significant effects of the development on the environment resulting from, inter alia:
 - (a) the construction and existence of the development, including, where relevant, demolition works;
 - (b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;
 - (c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;
 - (d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);
 - (e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;
 - (f) the impact of the project on climate and the vulnerability of the project to climate change;
 - (g) the technologies and the substances used.

The description of the likely significant effects should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development.
- 6) A description of the forecasting methods or evidence used including details of difficulties.
- 7) A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements.
- 8) A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned.
- 9) A non-technical summary of the information provided under paragraphs 1 to 8.
- 10) A reference list detailing the sources used

Timescales

The scoping exercise has identified a range of potential environmental issues, many of which vary both in terms of when they occur within the life cycle of the development, and the length of time during which they may be significant. In relation to the proposals the life cycle of the development can be divided into two phases; namely the “*Construction Phase*” and “*Operational Phase*” as it is not intended to apply for a temporary planning permission. Notwithstanding this, should it be necessary to consider the decommissioning phase (i.e. the demolition of the ERF) then the effects would be similar to the construction phase.

Construction	Typically being within the first three years of the development, encompassing the construction operations and commissioning of the plant.
Operational	This would cover the operation of the ERF for a period of at least twenty five years.

It is usual to classify the duration of identified impacts into three timeframes; Short Term, Medium Term and Long Term. The duration of each is dependent upon the nature of the environmental topic under consideration.

Notwithstanding this, short term impacts are typically those with a duration of up to 3 years, whilst medium term impacts are defined as being from 3-10 years and long term impacts are 10 years or more.

Nature of Impacts

The nature of identified effects or impacts can be temporary or permanent; direct or indirect; and positive or negative.

34. Temporary/Permanent effects

In relation to the different time frames identified above and in particular to the development of the ERF some of the effects would be temporary, for example construction operations, whilst others would be permanent, such as some impacts on landscape.

35. Direct/Indirect effects

The prospective development has the potential to affect properties and settlements within the area surrounding the site, together with the environment as a whole in relation to emissions of noise, dust, and the changing appearance of the site. These would be direct impacts. Indirect impacts can also occur, typically in relation to the transportation of imported waste or export of IBA, metals and APCR's.

36. Positive/Negative effects

The proposed development would generate both positive and negative effects, either by the virtue of the proposals themselves or as a result of the mitigation measures proposed. These benefits might include the reduction of volumes of waste that would otherwise be disposed of to landfill, the potential to generate energy from waste as opposed to by means of burning fossil fuels; the effective use of otherwise vacant land, and the potential socio-economic benefits (such as employment and input into the local economy) of the development.

37. Cumulative Impacts

Cumulative impacts can be described as the impacts caused by the sum of the project's activities and impacts on the environment, or the impacts when added to those of other projects. The combined impact of the proposed operations and other similar developments in the surrounding area would be assessed to determine the overall impact on sensitive receptors.

Summary of the Potential Environmental Effects

Having considered the above issues the potential environmental effects flowing from the proposed development have been identified.

Accordingly, the following paragraphs identify the significant environmental topics to be addressed by the ES. This provides a brief description of the potential impacts and, where appropriate, an additional commentary.

A fundamental aspect of any EIA is to determine the baseline environmental conditions prevailing at the application site, identify key receptors and the sensitivity of these receptors to change. These form the benchmark against which predicted changes resulting from the development can be assessed to determine the magnitude of any impact.

The baseline conditions will be determined by a number of different methods including desktop research, analytical modelling and the acquisition of data from third party sources.

Methodologies for predicting the nature and magnitude of any potential environmental impacts are entirely dependent on the subject area. Quantitative methods of assessments are employed to predict values which can be compared against published thresholds and indicative data contained within Government guidance and standards. However, it is not always possible to ascribe quantitative values to environmental assessments and, in these instances, qualitative assessments are used. This type of assessment is largely subjective and therefore relies on previous experience and professional judgement to arrive at a sound conclusion.

Finally, if significant environmental impacts are predicted in the EIA process, then the ES provides measures which would be employed to eliminate or ameliorate the impact to acceptable levels. Mitigation measures have been formulated based on a hierarchy of avoid, reduce, compensate, remediate and enhance. As such mitigation measures can be in the form of changes to operational practice, or changes/additions to the design of the site. Accordingly, the EIA process forms part of the iterative design process.

Alternatives and cumulative effects will also be considered where appropriate.

Table 4-1
Environmental Topics

Topic	Aspect of Proposed Development Giving Rise to Potential Impact	Potential Impact	Comments
Air Quality	act of additional traffic on concentrations of Air Quality Strategy pollutants during both construction and operational phases.	Potential effect of emissions (from vehicles and ERF) on health of nearby human receptors.	Air quality in the vicinity of the proposed application site would generally be influenced to some (limited) degree by traffic using the local road network, including the A4063 and the adjacent paper mill (which was noted in an earlier ES). In this respect DERFA air quality mapping shows the application site to have low concentrations of NO_x, but slightly elevated in the vicinity of the paper mill (and Maesteg to the north). There are no other power generating installations in close proximity to the proposed ERF. In view of this it is anticipated that baseline air quality conditions would be good and not approaching any statutory limits in terms of Air Quality Management. During the construction phase, the main effects would be the potential for dust emissions from earthworks. However, good practice and the adoption of a suitable Dust Management Plan can ameliorate the effects. The number of sensitive receptors within 400m of the site are limited. During the operational phase effects would relate to the emissions from the stack; this in the main would be a permit consideration but EIAs for other ERFs have included dispersion modelling to demonstrate the acceptability of the development in land use terms (i.e. it is compatible with neighbouring uses). The EIA would therefore include a detailed quantitative dispersion model using AERMOD in line with NRW and NE guidance. Consideration would be given to both human and ecological receptors. Effects can also occur through emissions from HGVs visiting the site. It would therefore be necessary to undertake a screening exercise in line with Local Air Quality Management Technical
	t impacts mainly during the construction and to a lesser extent, through the transportation of waste, IBA, APCRs and metals.	Disturbance/loss of amenity to neighbouring sensitive properties and receptors.	
	iculate and gaseous emissions to the atmosphere from the flue stack during the operation of the ERF.	Potential effect of emissions on designated areas of nature conservation.	
	ur emissions during the operation of the ERF.		

Topic	Aspect of Proposed Development Giving Rise to Potential Impact	Potential Impact	Comments
			Guidance LAQM.TG(16) and DMRB Vol. 11 Section 3, Part 1 HA207/07.
			Impacts from construction operations would be temporary, whilst those associated with the operation of the ERF are considered to be local and permanent
Archaeology and Cultural Heritage	preparation and construction works. tion of new buildings within the site, including a stack of some 85m in height. ement of plant, machinery and vehicles within the site. ting associated with 24 hour operations.	Potential damage to features of cultural heritage and archaeological importance. Impact upon the setting of the listed buildings within the area.	The site has been affected through previous development and so the likelihood of archaeological features remaining within the site are low. There are 10 monuments within 4km; the closest is 'Plas-Y-Betws Relict Garden' located to the east of Bettws within Cwm Garw around 2km from the site. Being in a different valley, it is visually separated from the site. Around 2.3km to the west is 'British Fortified Residence'; again it is highly likely that views of the site would be obstructed due to topography. The same goes for a cluster of three monuments located 2.6km to the west in the vicinity of Mynydd Ty-talwyn. Of the 10 monuments it is only the 'Garth Hill Platform House' that has the potential for views of the site (at a distance of over 3km) and it is likely that existing woodland would screen a large part of the proposed building. In relation to listed buildings, consideration has been given to those within 1km of the site. This has shown that there are four; three are buildings (Ty Isaf, Cwm Cedfyw and Cefn Ydfa) and the fourth is a bridge (Pont-Y-Rhyd-Ddu). All are Grade II. The 2010 ES for the Biomass Power Station identified 20 sites of archaeological interest within 100m of the development, the vast majority being of local importance. However, the assessment concludes <i>"Impacts on cultural heritage are likely to be minimal as the sites identified are not formally identified and have a low probability of being greater than of local importance. In addition, the sites are expected to have only a minor impact from the development, and those that are subject to a major</i>

Topic	Aspect of Proposed Development Giving Rise to Potential Impact	Potential Impact	Comments
			<i>effect will be protected by the Archaeological Working Brief which will be implemented before construction".</i> In view of this it is considered that Cultural Heritage can be scoped out of the EIA.
Ecology (flora and fauna)	preparation and construction works (dust emissions). ssions from the stack.	Loss of habitat of ecological value within the development footprint. Potential for disturbance to protected species due to habitat loss. Potential damage to features of natural heritage (ecological) importance (designated sites) due to construction dust or emissions from the stack.	The site has been affected through past development and has little vegetative cover. However, the disturbed nature of the site does not rule out the occurrence of species, such as reptiles for example. Similarly, unmanaged sites can result in Open Mosaic Habitats forming (a priority habitat). The presence of the Afon Llynfi also means that certain other protected species cannot be ruled out. It is considered that an extended Preliminary Phase 1 habitat survey would be required to inform the EIA; this would need to be supplemented by a data search of ecological records in the area surrounding the site. This would then provide an indication as to whether any targeted surveys are needed. Based on the survey work and desk based assessment an Ecological Impact Assessment (EclA) would be undertaken in accordance with Guidelines for Ecological Impact Assessment published by the Chartered Institute of Ecology and Environmental Management (2018).
Highways and Access	ort of waste materials to the ERF. ort of "bottom ash", metals and "APCRs" from the site processes.	Effects of traffic on local highway network, in terms of capacity and safety. Loss of amenity due to site related traffic movements.	The proposed development would generate HGV movements during both the construction and operational phases; the construction phase would also generate a large number of light vehicle movements. The site is generally well connected to the main highway network; however, improvements to the site entrance will be required (in common with the previous planning permission for the site). In terms of the assessing the potential effects associated with traffic it will be assumed that all feedstock to the ERF would be imported by road. The EIA would therefore include a detailed

Topic	Aspect of Proposed Development Giving Rise to Potential Impact	Potential Impact	Comments
Hydrology and Hydrogeology	ing of fuel oils on site. ential pollution of surface and ground water from site operations. ration of catchment areas and surface water flows.	Contamination of surface water by pollutants. Adverse effects on the groundwater and surface water regime. Risk of flooding (both onsite and offsite). Indirect impacts on any ecological interests in nearby water bodies.	Transport Assessment in line with guidance published by Department for Transport and IEMA. The assessment would look at traffic flows during construction and operational phases and how that may affect both link and junction capacities of the closest roads and junctions to the site. Consideration would also be given to sustainable transport and highway safety, having regard to accident data. Finally, the assessment would look at the environmental effects of traffic visiting the proposed ERF. Impacts are considered to be local, up to County Borough level (sub-regional), and permanent. The majority of the site (central and southern edge) lie within Flood Zone 1. Flood Zone 2 and 3 (associated with the Afon Llynfi) extend into the site on its northern edge, as well as the north-western edge in the vicinity of the substation (which is also in Flood Zone 2 and 3). Flood mapping also shows that the north-western part of the site and adjacent substation are vulnerable to surface water flooding. In terms of the potential for pollution to ground water, suitable designed in mitigation (such as enclosure of the process, siting on an impervious base and surfacing of roads) along with best practice would minimise the potential for significant effects. In terms of the potential for pollution to ground water, suitable designed in mitigation (such as enclosure of the process, siting on an impervious base and surfacing of roads) along with best practice would minimise the potential for significant effects. The main consideration would therefore the risk of the proposed ERF to flooding from the Afon Llynfi and the risk of the development to cause flood risk offsite (due to increased areas of hard standing and roof plane). As part of the application an outline surface water management scheme would be developed, adopting where possible the principles of SUDS, which would be informed by an PPW compliant Flood Consequence Assessment. Impacts are considered to be local and permanent.

Topic	Aspect of Proposed Development Giving Rise to Potential Impact	Potential Impact	Comments
Landscape and Visual Impact	tion of new buildings within the site, including a stack of some 60m - 80m in height. ement of plant, machinery and vehicles within the site. ting associated with 24 hour operations. nge in appearance of the site.	Loss of visual amenity from sensitive properties, public rights of way and public areas. Effects on the intrinsic character of the area.	The site is not located in, or close to an area designated for it national landscape importance (such as a National Park or AONB); it is through located within the countryside and not part of an urban setting. The size of the ERF building is such that it cannot be screened and would be a dominant feature in the local landscape, protruding above the height of neighbouring buildings. As such the visual and landscape considerations would be an integral part to the design of the ERF in terms of ameliorating the potential visual effects. Although large, a well-designed building has the ability to improve the appearance of an area, providing an iconic landmark. The EIA would need to include a full landscape and visual impact assessment undertaken in accordance with the Guidelines for Landscape and Visual Impact assessment (version 3). Consideration would be given to local Landscape Character Types and assessments undertaken to assess the effects on the local landscape. Consideration would equally be given to the potential visual effects of the development; this would involve the calculation of a 'zone of Theoretical Visibility' (ZTV) based on 3D OS digital terrain model (DTM), verified by site survey work, with photographs taken from identified sensitive receptors (local residential areas, public open spaces and public footpaths, along with transport corridors). Generally, viewpoints would be limited to a radius of 2km from the site boundary. Photographs would be taken from the viewpoints using high resolution digital camera and if necessary, basic visualisations (i.e. not rendered photomontages)/wireframes created to help illustrate the potential views. Impacts are considered to be local and permanent.

Topic	Aspect of Proposed Development Giving Rise to Potential Impact	Potential Impact	Comments
Noise and vibration	preparation and construction works (including clearance, levelling/regrading and landscaping). se generated from the operational processes. transportation of waste materials to the ERF, and export of "bottom ash", metals and "fly ash", by HGV's.	Loss of amenity at/disturbance to noise sensitive receptors surrounding the ERF. Loss of amenity/disturbance due to vibration from construction (piling) operations	The noise climate in the area is likely to be affected by traffic noise on local roads and the nearby paper mill. Referring to the noise assessment for the previous ES, background noise levels during the day ranged from 38.6 dBLA90 to 58.3 dBLA90. At night, noise levels dropped to between 33.7 dBLA90 and 44.7 dBLA90. In SLRs experience due to the enclosed nature of the ERF, operations do not tend to be overly noisy; low frequency noise is mitigated through good design (such as enclosing the turbine in a concrete walled room). It would be necessary to demonstrate that the proposed ERF would not have an adverse effect on nearby residential properties (i.e. it is compatible for surrounding land uses). Despite noise monitoring being undertaken in c. 2010, new noise monitoring would be undertaken at locations representative of the nearest receptors. An assessment would then be undertaken in line with relevant guidance (such as BS4142 for the operation of the ERF) to assess the effects. Consideration would be given to the movement of HGVs around the site and the cumulative noise effects of the operation of the ERF and HGV traffic within the site. The assessment would also consider the construction phase, including any vibration effects through piling; however, experience shows that such effects are local to the piling operation and reduce rapidly with distance. The construction noise and vibration levels would be predicted using the guidance contained in British Standard 5228:2009+A1:2014 <i>Code of practice for noise and vibration control on construction and open sites – Part 1: Noise and Part 2 – Vibration</i>. During the construction phase impacts are considered to be local and reversible (temporary) whilst during the operational phase, impacts would be local and permanent.

Topic	Aspect of Proposed Development Giving Rise to Potential Impact	Potential Impact	Comments
Climate Change	Emissions of NOx from the stack Diversion of waste from landfill to more sustainable management	Contribution to climate change (balancing carbon emissions with carbon savings)	The proposed ERF, being a combustion process, would result in carbon emissions. However, the emissions from the ERF are small compared to the carbon savings that arise through offsetting energy generation using fossil fuels (especially coal and oil) and diverting waste from landfill (with landfill gas being over 20 times more damaging than CO₂). A proportion of the energy (derived from the biogenic fraction in the waste stream) would be considered renewable and overall, the energy is classed as 'low carbon'. To demonstrate the benefits an assessment using the EA's WRATE tool would be undertaken to illustrate the carbon savings compared to a range of scenarios, including landfill, electricity only generation and CHP. Consideration would also be given to other climate change issues, such as sustainable building/construction; flooding (linking into the FCA, see above) and transport (linking to air quality, see above).
Accidents, Natural Disasters and Hazards		Whether the development is susceptible to natural disasters/hazards or is at risk from other major industrial installations	There are no hazardous installations (as regulated under COMAH) in close proximity to the proposed ERF that could affect the development. The engineering design of the ERF would be such that it would withstand any natural weather events. Similarly, the design of the ERF, and particularly the inclusion of suitable measures within the operational procedures/control equipment (which is fully monitored) to ameliorate the potential for the ERF to be considered a hazard to neighbouring premises. Under the Environmental Permit, consideration is given to fire risk. Overall, in view of the limited likelihood of the ERF giving rise to a significant effect and that, in part, matters are addressed through the Environmental Permit, it is considered that natural disasters and hazards can be scoped out of the EIA.

Topic	Aspect of Proposed Development Giving Rise to Potential Impact	Potential Impact	Comments
Population and Health (socio-economic)	Creation of new employment opportunities during both construction and operational phases. Contribution to local economy. Inward/outward migration and effect on local services. Aerial and noise emissions.	Positive contribution to local economy through creation of new jobs and need for services. Impact on health and wellbeing of local community.	The development is likely to require between 200 and 300 employees during the construction phase, many of which would be sourced from the local area. It would also require local services and provide a temporary boost to the local economy. During the operational phase, the development would generate around 30 new jobs ranging in the skill sets required; again, a number of these jobs can be sourced locally. The development would also have an indirect effect on the economy in terms of the requirement for services (engineering, hauliers, cleaners, landscaping for example). It would also be a sizable contributor to business rates. There is no evidence to suggest that the development of an ERF causes significance inward or outward migration of the local population. As such it is considered that the effects on local services would be neutral. In terms of health, this has been considered at numerous planning appeals and in each occasion, the Planning Inspector (and Secretary of State) has concluded that there is no risk to human health. This is further corroborated by guidance issued by the former Health Protection Agency. Moreover, the potential effects on health is a consideration for the Environmental Permit. In view of this, even though positive benefits are identified they are not to the extent that would indicate that they should be included in the EIA; they can play an important role in considering the planning balance, but that is not the role of the EIA. Also, it is not considered necessary to address health, as this would be dealt with through the Permit process. Moreover, government guidance clearly indicates that there is no causal link between ERFs and health. Accordingly, it is considered that population and health can be scoped out of the EIA.

5.0 FORMAT OF THE ENVIRONMENTAL STATEMENT DOCUMENT

General

It is proposed that an ES would be produced as a single bound document containing the chapters set out below.

The scope of the ES would be informed by the Scoping Direction. The initial chapters of the ES would provide an introduction to the EIA process, setting out the legislative requirements and describing the development site and the proposed development. The ES would include a review of current and emerging National and Local planning policy relevant to the EIA (but would **not** seek to justify the development). Technical assessments would be contained within individual chapters of the ES. Where necessary, other technical information would be appended to chapters of the ES whilst drawings would also be included in the ES.

The ES would therefore comprise the following chapters;

- 1) Introduction;
- 2) Site Setting and Description;
- 3) Development Scheme and Alternatives (considered as part of the EIA);
- 4) EIA Methodology;
- 5) Summary of relevant Planning Policy;
- 6) Landscape and Visual Impact;
- 7) Air Quality;
- 8) Noise;
- 9) Traffic;
- 10) Ecology;
- 11) Water Environment (including FCA);
- 12) Topics Scoped out of the EIA; and
- 13) Cumulative Impact.

Each Environmental Topic (Chapters 6 to 13) would be structured as follows:

- **Introduction** – a brief introduction to the environmental topic
- **Methodology** – setting out the methodology followed in the assessment, having regard to *inter alia*
 - Legislation and Guidance notes
 - Planning and other policies
 - Consultation (including scoping)
 - Topic specific methodologies (i.e. what data is used, how collected, sphere of influence)
- **Baseline** – setting out the characteristics of the baseline environment within and surrounding the development site. This will be based on the condition of the proposed development site and surrounding

area at the time of preparing the EIA, having regard to how this baseline may change over time in the absence of the development.

- **Assessment of Effects** – providing an assessment of the likely significant effects and having regard to any ‘designed-in’ mitigation, along with the need for any additional mitigation measures to ameliorate predicted effects. Mitigation will follow the mitigation hierarchy.
- **Residual Effects** – describing the residual environmental effects once all mitigation has been employed.
- **Cumulative and in-combination effects**
- **Conclusion** – setting out the overall conclusions of the assessment.

In accordance with the EIA Regulations a Non-Technical Summary (NTS) of the ES would be provided as a stand-alone document in line with best practice. It is proposed that the NTS will be bi-lingual.

The ES would be accompanied by the necessary application forms, notices and certificates together with a Waste Planning Assessment⁸ and a Design and Access Statement.

The Planning Statement would contain information in support of the planning application that cannot be included in the ES. The statement would include an introduction to the planning application; describe the application site and its environs and set the application against the policy framework of the area, together with any material considerations.

Landscape and Visual Impact

The assessment would be based on recognised and up to date guidelines, principally the 3rd edition of the Guidelines for Landscape and Visual Impact Assessment (GLVIA 3) (Landscape Institute and Institute of Environmental Management and Assessment, 2013). The process followed would conform with the recommendations of GLVIA 3 as well as SLR’s own professional experience, focusing on likely significant effects, rather than assessing all potential effects. This would allow determination of the key residual effects that would need to be addressed through offsetting or mitigation. Given the location of the site and nature of the local landform it is anticipated that the analysis would concentrate on the local context. The key assessment stages would be:

- Confirming the scope of the assessment, in terms of study area extent, key viewpoints and LVIA content, including cumulative considerations;
- Advice regarding the avoidance, reduction or potential mitigation of any significant adverse impacts; and
- Preparation of the assessment and accompanying graphics

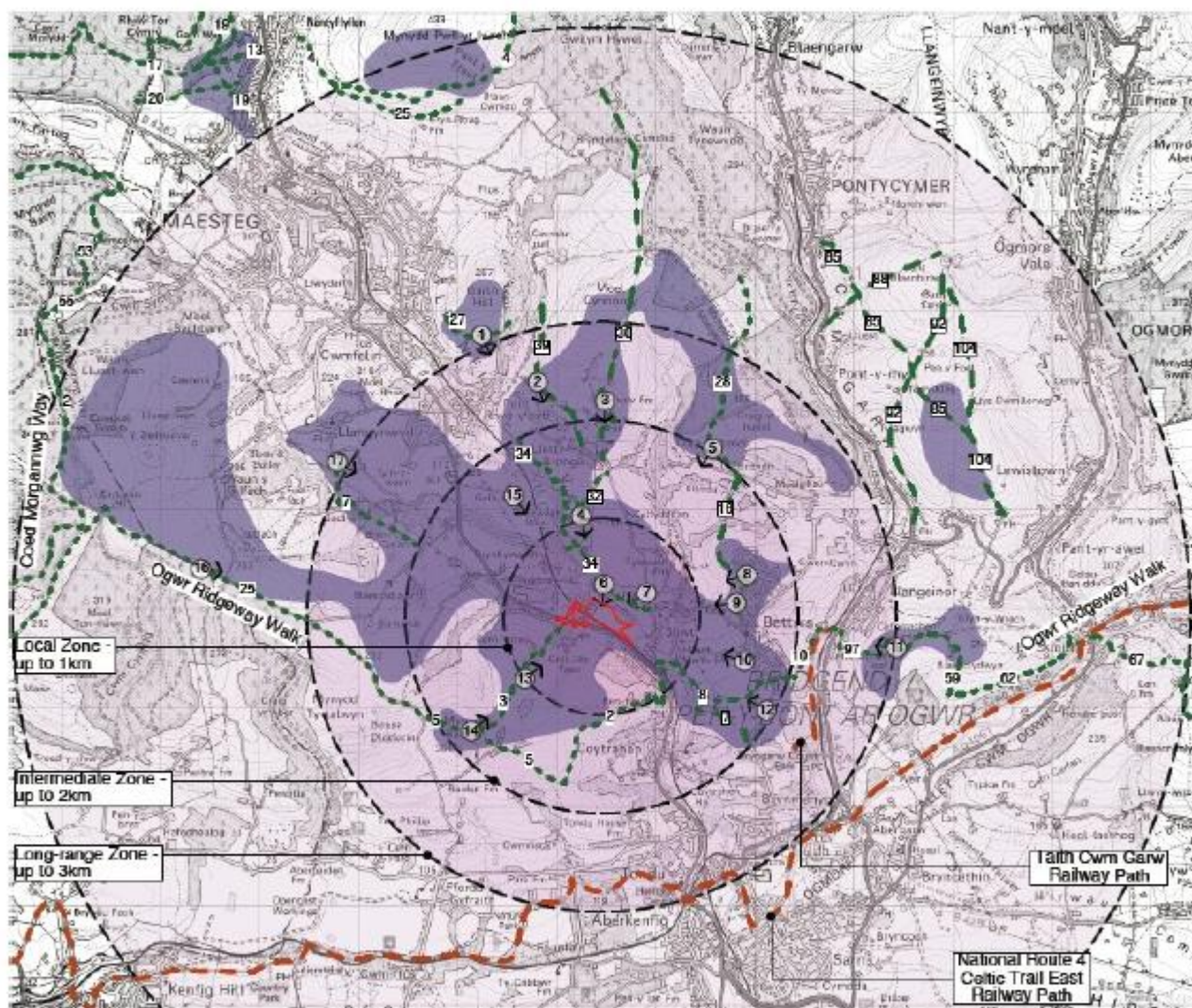
We anticipate that the LVIA would concentrate upon a focused 5km study area. The assessment would identify key characteristics of the wider landscape and visual context that may inform scheme design and would enable the identification of key viewpoints. The emphasis of the baseline study would be the recording and describing of existing features that are important in the local context and their contribution to character. This approach may require discussion with the relevant stakeholders, such as the local planning authority, but we think this is appropriate and can be justified based on our experience of the distances where significant landscape and visual effects are more likely to occur.

The assessment would involve a combination of desk study and fieldwork. The desk study and baseline assessment would include analysis of published information on landscape character and designations. This would inform judgements in relation to the value, susceptibility and sensitivity of landscape and visual

⁸ As required by Technical Advice Note (TAN) 21: Waste. (February 2014)

receptors. We would also prepare a Zone of Theoretical Visibility (ZTV) of the main mass and height of the building using bare earth terrain models in CAD software.

Figure 12-1 Visual envelope of works during the operational phase



Fieldwork would involve familiarisation with the study area and visiting the assessment viewpoints to enable appropriate judgements to be made. Viewpoint photography would be recorded for inclusion in the assessment at locations agreed with the local planning authority. It is anticipated that 10 viewpoints would be included in the assessment and for each viewpoint a photograph would be presented showing the existing view.

The assessments would be supported by graphic information to clearly communicate potential effects. We normally use parameter type representations of the development as part of our viewpoint analysis at an early stage to aid in site planning and early identification of visual issues without the expense of photomontages. These representations can be used to help inform and illustrate the early design ideas with the benefit of quick and easy analysis of options although they are not always included in the planning submissions, as illustrated in Figure 5-1.

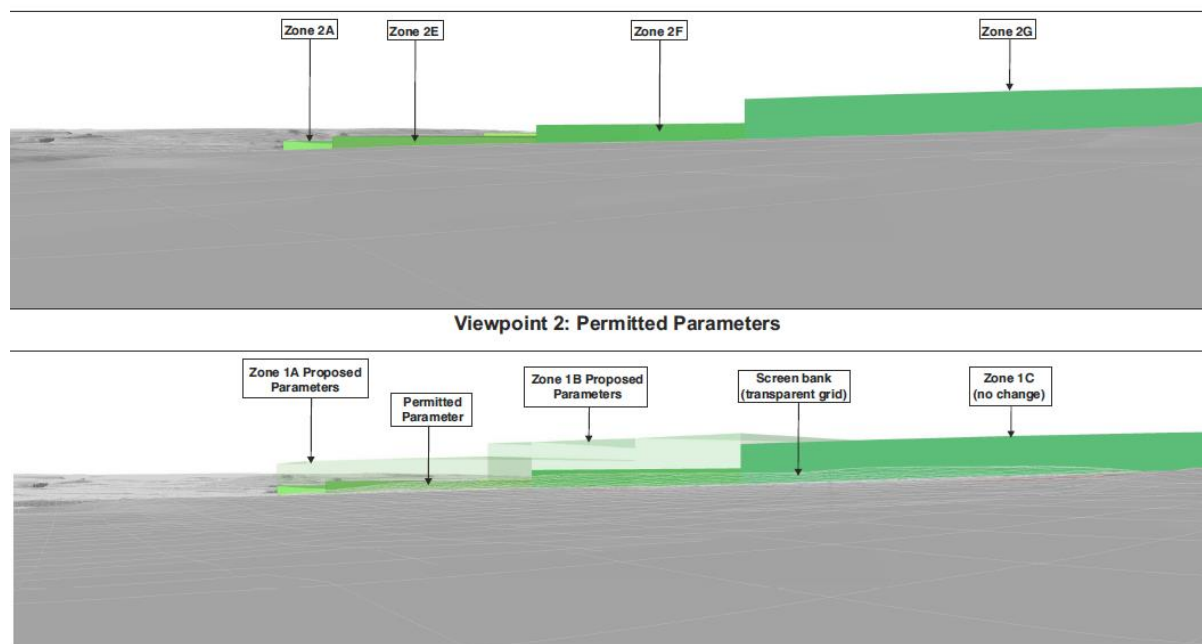


Figure 5-1
Example of Parameter Plan Comparison Visual

If considered necessary, it is envisaged that photomontages could be prepared for key viewpoints to be agreed with the relevant stakeholders. The visualisations would be prepared in accordance with relevant good-practice guidance e.g. Landscape Institute Advice Note 01/2011: Photography and Photomontage in Landscape and Visual Assessment. Recently released draft guidance from the Landscape institute, and existing wind farm based methodologies, have made the production of visualisations a complex subject.

Paragraph 5.1 of the GLVIA3 describes how landscape effects are concerned with *“how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character”*.

Paragraph 6.1 of the GLVIA3 describes how visual effects are concerned with *“assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the content and character of views as a result of the change or loss of existing elements of the landscape and/or introduction of new elements”*.

Thus, our assessment would deal separately with each of these effects, although where relevant and appropriate, cross references may be made to the same features or elements where they are relevant to both topics.

The significance of the potential effects, and appropriateness of mitigation measures, would be determined using professional judgement and a robust method. The evaluation of potential effects would focus on potential effects on landscape fabric, the perception of landscape character, how the changes in the environment would affect visual amenity, particularly for local residents, and potential cumulative impacts.

The adjacent industrial uses associated with the paper mill already influence the landscape character and visual amenity of the local area and form part of the baseline.

It is anticipated that the LVIA will inform the design and treatment of the ERF building, offering a degree of ‘built in’ mitigation. For example, valuable contributions to projects include the approach to building colour to help reduce potential landscape and visual impacts, or where planting of native trees around the site boundary can provide screening of ground level elements. Figure 3-2 illustrates a photomontage done for a series of colour studies to aid the design process.



Figure 3-2

Photomontage of Newhurst EfW from Garrendon Park (Grade II Registered Park and Garden/listed buildings)

Cumulative Issues

The adjacent industrial uses already influence the landscape character and visual amenity of the local area and form part of the baseline. This is beneficial for the proposed development, siting like with like. Although, this brings with it cumulative interactions with the existing adjacent industrial uses and other potential large-scale developments, which may need to be considered to some degree.

Air Quality

The proposed that the scope of works comprises:

- baseline evaluation – review of existing air quality in the local area;
- construction phase assessment – assessment of potential air quality impacts associated with the construction phase of the proposed scheme (construction dust and vehicle emissions);
- traffic emissions assessment – consideration of potential air quality impacts associated with the operational phase vehicle movements;
- energy from waste combustion emissions assessment – stack height assessment, modelling of potential impacts on air quality against standards for the protection of health and ecosystems;
- cumulative assessment – consideration of combined impacts of EfW and traffic emissions; and
- fugitive emissions assessment – assessment of potential dust and odour emissions during the operational phase.

38. Baseline Evaluation

A review of baseline and background air quality would be undertaken by:

- consultation with Environmental Health;

- reference to LAQM reports and monitoring data in the public domain; and
- Defra background air quality maps; and
- Air Pollution Information System for Critical Levels and Loads.

39. Construction Phase Assessment

It is proposed that potential dust impacts during the construction phase would be assessed using the approach defined Guidance on the Assessment of Dust from Demolition and Construction (v1.1, 2016) published by the Institute for Air Quality Management (IAQM). Road traffic and Non-Road Mobile Machinery emissions would be screened in accordance with IAQM and Defra Local Air Quality Management Technical Guidance (LAQM.TG(16)). No detailed assessment is anticipated to be required and is excluded from the scope of works.

40. Traffic Emissions Assessment

A screening of development traffic flows against IAQM guidance 'Land-use planning and development control: planning for air quality' would be undertaken. If traffic increases cannot be screened out as insignificant, or the EHO makes it a requirement in Scoping, then further detailed assessment would be undertaken.

If detailed assessment is required, the assessment of impacts would be undertaken using the 'ADMS-Roads' dispersion model following LAQM.TG(16)) guidance. Emissions of nitrogen dioxide (NO₂) would be assessed as a minimum.

The scope of the dispersion modelling assessment of traffic emissions is proposed for the following scenarios:

- Baseline / verification assessment;
- Projected baseline no development;
- Projected baseline with consented development; and
- Projected with development.

41. Waste to Energy Combustion Emissions Assessment

The operation of the facility would give rise to emissions to atmosphere that are regulated under the Environmental Permitting Regulations and Industrial Emissions Directive (IED).

The atmospheric dispersion modelling and detailed air quality assessment would be undertaken using the AERMOD model in accordance with guidance from NRW. The modelling would incorporate geographical information (mapping, topography, human and ecological receptor locations) and pollutant emission from the facilities based on design information.

The assessment would include.

- Stack height assessment to inform Project design (limited to a single incinerator design and building configuration);
- comparison of predicted ground level concentrations with existing air quality and relevant air quality standards and guidelines;
- comparison of predicted ground level concentrations and deposition with air quality standards for protection of vegetation (critical levels and critical loads);
- assessment of abnormal operating scenarios (as allowed under IED);
- assessment of the sensitivities of the process and dispersion model; and
- cumulative impact assessment with traffic emissions and the adjacent paper mill.

The assessment would consider human and ecological receptors within 2km of the site boundary, along with Natura 2000 sites within 10km of the site.

This dispersion modelling assessment would be reported in a Technical Appendix to the ES chapter, and would be suitable for use within the application for an Environmental Permit.

At this stage the requirement for cumulative assessment with other reasonably foreseeable planning applications for combustion processes cannot be defined and is excluded from the scope of works.

42. Fugitive Emissions Assessment

The potential for the proposed developments, to generate dust and odours would be assessed qualitatively with reference to the potential for release and the effectiveness of the designed in mitigation, the location of sensitive receptors and the local meteorological conditions. At this stage no dispersion modelling is proposed and is excluded from the scope of works.

The above assessments would identify the nature and significance of potential air quality impacts that may arise as a result of the construction and operational phases of the scheme. As necessary mitigation measures would be recommended in line with best practice, to ameliorate any adverse effects.

Noise

It is considered that the noise assessment will need to encompass the following aspects:

- A baseline noise survey.
- A construction noise assessment.
- An operational phase assessment upon human receptors and/or ecological receptors.
- An operational assessment of off-site traffic impacts upon human receptors only.

The scope of the assessment and precise requirements will be agreed with the relevant technical representatives in the determining authority or advisers. Through discussion, the precise requirements and methodology will be established for the assessment at all noise sensitive receptors (NSRs) in the vicinity of the proposed development.

43. Baseline Noise Survey

Subject to being able to gain access to nearby receptor locations to install a noise meter, the baseline noise survey would be undertaken over a 96-hour period (to include a weekend), during which time the sound level meters would be left unattended. If this is not possible, then a noise meter would be placed on site over a 96 hour period and attended monitoring would be undertaken at locations representative to the nearest receptors.

In addition, regard would be had to the results of previous noise monitoring.

Monitoring locations would include the following properties:

- Ty Isaf
- Shwt
- Llynfi Villa
- Gelli-Las Fawr

It should be noted that noise monitoring is weather dependant and should only be undertaken during calm and dry weather conditions, i.e. at wind speeds below 5.0ms^{-1} and avoiding periods of heavy rain.

44. Construction Noise Assessment

The assessment would be completed in accordance with BS5228:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites*. Noise.

A noise model of construction activities at the site would be developed using the proprietary noise modelling software CadnaA® and noise levels generated by all construction activities would be predicted at the closest noise-sensitive receptors.

The predicted noise levels would be compared to the noise limits determined using the 'ABC Method'. If necessary, mitigation to reduce construction noise would be proposed.

45. Operational Phase Assessment

Model Development

For the assessment of operational noise upon human receptors and/or ecological receptors it would be necessary to develop a noise model of the EfW Facility including noise source such as (but not limited to):

- The Air-Cooled Condensers.
- The ID fans at the base of the stack.
- Fans associated with the cooling of the Turbine Hall.
- Noise from the Flue Gas Cleaning Area.
- Noise from bottom ash removal.
- Noise breakout from buildings to include the Turbine Hall, the Reception Building, the Boiler House, and the Transformer compound.

Human Receptors Assessment

Sound levels generated by the ERF would be predicted at the nearest noise-sensitive properties using the proprietary software-based noise model, CadnaA®, which implements the full range of UK calculation methods.

The predicted sound levels would be assessed against the measured background sound levels and site setting/context in accordance with the guidance contained in British Standard 4142:2014+A1:2019 *Methods for rating and assessing industrial and commercial sound*.

The assessment would indicate whether mitigation is required. The scope of this study includes consideration of generic mitigation measures but does not include detailed design of such measures.

Ecological Receptors Assessment

It is considered that the Natura 2000 sites are too distant from the proposed development to be affected. As there are no other sensitive ecological designations in close proximity to the site, no assessment would be undertaken on ecological habitats.

Assessment of Off-Site Traffic

A simple assessment of existing effected links would be undertaken. Effected links are those that would experience a 1dB(A) change in the $L_{A10,18\text{hr}}$ noise level in the short-term and/or a 3dB(A) change in the $L_{A10,18\text{hr}}$ noise level in the long-term as a result of the development.

It is not expected that a Design Manual for Roads and Bridges 11.3.7: *Noise and Vibration* assessment would be required.

Traffic and Transport

Whilst the option of using rail is being considered, for the consideration of transport it will be assumed that all waste is imported by road to allow for a robust assessment of the effects on the highway network.

It is noted from the previous ES for the Biomass Power Station that mitigation in the form of improvements to the site access were required. It is therefore an integral aspect of the new proposals to carry forward the highway improvements.

46. Site Investigation

A detailed site investigation would be undertaken in order to understand the site location in the context of the local and strategic road network. An understanding of the local highway network would be established, from which any potential network capacity or road safety issues may be identified. Access requirements and junction operation would be assessed, and any HGV restrictions or advisory signs noted. The site investigation would also include the following:

- historic planning consents for the site would be reviewed pertinent to highways and transportation (such as HGV routing agreements);
- obtain existing traffic data for the local roads; and
- the most recent 60 months of Personal Injury and Accident Data records would be obtained from the Local Highway Authority to inform the assessment. This information would highlight any existing safety issues relating to the existing highway network. The data would be collated and reviewed as part of the investigation into the existing highway conditions.

If no suitable traffic data is available for the A4063 then an Automated Traffic Count (ATC) would be undertaken by a specialist survey firm. Data in the 2010 ES for the Biomass Power Station⁹ indicates that AM and PM peak flows for a base year of 2010, 2015 and 2025 are:

Direction	AM Peak			PM Peak		
	Base (2010)	2015	2025	Base (2010)	2015	2025
Northbound	400	446	499	754	839	935
Southbound	799	891	997	397	442	493

47. EIA Highways & Transportation Chapter

The EIA Highways & Transportation Chapter is likely to comprise the following elements:

- Background:
 - Provide context of the site location and surrounding uses;
 - Provide a summary of the existing site, its history and traffic generation patterns;
 - Provide a summary of the proposals;
 - Summarise any pre-application discussions with the Local Highway Authority;
- Existing Conditions:

⁹ Table 10-1

- An audit of the site location and existing local highway conditions;
 - A review of national and local transport policy to determine the suitability of the site in a transport policy context;
 - Review and summarise traffic data;
 - A detailed review of the latest personal injury accident data would be undertaken in order to determine any existing highway issues;
 - Overall review of the suitability of the local road network and access arrangements;
- Development Operation:
 - Provide a detailed description of the proposed site's operation and its transport characteristics;
 - Forecast the proposed level of site generated daily HGV traffic and how vehicle movements would be spread across the working day;
 - Clarify likely fuel and residual material origin/destination to determine traffic distribution patterns;
 - Consider internal layout, such as access suitability and parking provision for the proposed development would be reviewed to ensure compliance with local standards, developer aspirations and effective site operation;
 - Detail proposed mitigation measures and good practice operations;
- Construction Works:
 - Consideration of construction works phase and likely schedule of works;
 - Provide likely vehicle trip generation estimate/profile;
 - Detail proposed mitigation measures and good practice operations;
- Consideration of Impacts:
 - Undertake assessment of effects;
 - Consider the impacts of the traffic in terms of highway safety;
 - Consider the impacts of the traffic in terms of traffic impact and network operation;
 - Consider likely environmental effects and severity;
 - Consideration of any further mitigation measures (if necessary) and subsequent residual impacts, if required; and
- Summary and Conclusion in support of the proposals.

Ecology

Assessment methodology to be provided by MKA Ecology...

Water

Based on our experience we propose that a Hydrology and Hydrogeology ES Chapter is prepared which is supported by a standalone Flood Consequence Assessment (FCA) and Drainage Design and SuDS technical appendix. We have found that this approach is well received by statutory consultees (notably NRW and

Environment Agency) as all the information they require to determine impacts on the water environment is readily found.

Based upon our understanding of the local water environment, the majority of the site is designated as being at low probability of fluvial flooding (Flood Zone 1) from Main Rivers. Irrespective of the site's formal flood zone categorisation, a FCA is required to accompany any future planning application for the site as the proposals constitute 'major development' (i.e. site area > 1 hectare).

Considerable work was undertaken in relation to the 2010 ES for the Biomass Plant, including the 'construction' of a HEC-RAS model of a 2km stretch of the Afon Llynfi.

Hydrology and Hydrogeology ES Chapter

Using published data sources and any previous site-specific reports available we would characterise the existing site conditions (the baseline condition). Details of local water use (water abstractions and discharges), rainfall, water quality and permitted activities near to site would be obtained from NRW and Bridgend CBC to inform the assessment. The baseline assessment would characterise current ground conditions, the site geology, hydrology and hydrogeology.

It is assumed that it would not be necessary to undertake any site investigation (e.g. ground investigation or soils or water sampling) nor undertake a Phase 2 assessment of ground conditions to support the baseline assessment to support the EIA (a Phase 1 preliminary land quality risk assessment would be undertaken as part of this assessment). It is noted that the site is within the South Wales Coalfield and include on the Coal Authority Interactive Map as a Coal Mining Reporting Area, but is outside of the Development High Risk Area and free of any mine entries. It is also outside of any shallow Coal Mine Workings or areas of Surface mining.

The assessment would detail embedded mitigation included in the site design and the best practice that would be used during construction and operation of the ERF in order to limit the scope of the impact assessment. If any impacts are identified, further mitigation measures would be confirmed, and then residual impacts assessed.

It is assumed no cumulative assessment of impacts would be required as we expect to show that there would be no effects beyond the application site boundary.

A summary of the site flood risk assessment and drainage / SUDS design would be presented in the ES Chapter.

Flood Consequence Assessment, Drainage Design and SUDS

It is proposed a standalone flood consequence assessment (FCA) and drainage / SUDS strategy technical report is prepared in line with best practice (BS8533) taking into account current UK/Welsh guidance, relevant Surface Water Management Plans, relevant Strategic Flood Risk Assessments, and local planning policies and guidance. The FCA would be presented as a technical appendix to the Hydrology and Hydrology ES Chapter.

The FCA would assess all potential sources of flooding that could affect the site (e.g. fluvial, surface water flow, groundwater, infrastructure and reservoir failure etc.) as required by TAN15. With reference to local and national planning policy, a drainage and SUDS strategy for the site would be developed. This strategy would also consider the need for the control and management of firewater. Outline details, including the sizing of any required water attenuation measures, of the drainage / SUDS design would be presented e.g. our report would not constitute a detailed drainage design.

Alternatives

In accordance with the EIA Regulations the ES will set out the alternatives considered as part of the EIA. In the main this will set out the design iterations for the layout and form of the building, along with the choice of colour scheme.

It is proposed that the EIA will not consider alternative site locations for the proposed ERF.

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