Buttington Quarry Energy Recovery Facility Welshpool

Request For Scoping Direction

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Collaboration Details

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- BSG Ecology
- HZI Zosen AG
- Intermodal Transport
- NewGate Communications
- Noise and Vibration Consultants
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Contents

Contents (continued)

Contents (contiuned)

Contents (continued)

Contents (continued)

List of Tables

List of Figures

List of Appendices

List of Acronyms / Glossary

- AAD – Ambient Air Directive
- ACC – Air Cooled Condenser
- ADMS – Atmospheric Dispersion Modelling Software
- AOD – Above Ordnance Datum
- APC – Air Pollution Control
- APIS – Air Pollution Information System
- AQS – Air Quality Standards
- AQTAG – Air Quality Technical Advisory Group
- As – Arsenic
- ASCR – Application Site Condition Report
- AW – Ancient Woodland
- BAT – Best Available Technique
- BGS – British Geological Survey
- BIS – Biodiversity Information Service
- Broad Energy / The Applicant – Broad Energy (Wales) Limited
- Cd – Cadmium
- CEMP – Construction Environmental Management Plan
- CEMS – Continuous Emissions Monitoring System
- CFA – Continuous Flight Auger
- CHP – Combined Heat and Power
- CIEEM – Chartered Institute of Ecology and Environmental Management
- CIfA – Chartered Institute for Archaeologists
- CIMS – Collections, Infrastructure and Markets Sector
- CO – Carbon Monoxide
- Co – Cobalt
- CPAT – Clwyd-Powys Archaeological Trust
- Cr – Chromium
- CRTN – Calculation of Road Traffic Noise
- CrVI – Hexavalent Chromium
- cSACs – Candidate Special Areas of Conservation
- Cu – Copper
- DAM – Development Advice Map
- DEFRA – Department for Environment, Food and Rural Affairs
- DHN – District Heating Network
- DMRB – Design Manual for Roads and Bridges
- DNS – Development of National Significance
- EA – Environment Agency
- EcIA – Ecological Impact Assessment
- eDNA – Environmental Deoxyribonucleic acid
- EHO – Environmental Health Officer

List of Acronyms / Glossary (cont)

- EIA Regulations – Environmental Impact Assessment Regulations (2017)
- ELVs – Emission Limit Values
- EPAQS – Expert Panel on Air Quality Standards
- EPC – Engineering, procurement and construction
- ERF – Energy Recovery Facility
- ES – Environmental Statement
- EU – European Union
- FAQs – Frequently Asked Questions
- FEH – Flood Estimation Handbook
- GLCs – Ground Level Concentrations
- GVA – Gross Value Added
- HCL – Hydrogen Chloride
- HER – Historic Environment Record
- HF – Hydrogen Fluoride
- Hg – Mercury
- HGV - Heavy Goods Vehicle
- HIA – Health Impact Assessment
- HRA – Habitat Regulations Assessment
- HZC – Hitachi Zosen Corporation
- HZI – Hitachi Zosen Inova AG
- IAQM – Institute of Air Quality Management
- IBA – Incinerator Bottom Ash
- ID – Induced Draught
- IED - Industrial Emission Directive
- IEMA – Institute of Environmental Management Assessment
- IOA – Institute of Acoustics
- JNCC – Joint Nature Conservation Committee
- KEAs – Key Environmental Aspects
- kgN/ha/yr – Kilograms (nitrogen) per hectare per year
- LDP – Local Development Plan
- LPA – Local Planning Authority
- LSA – Local Study Area
- LVIA – Landscape and Visual Impact Assessment
- Met Office – Meteorological Office
- Mn – Manganese
- MSW – Municipal Solid Waste
- MW – Megawatt
- MWe – Megawatt Electrical
- MWt – Megawatt Thermal
- NE – Natural England

List of Acronyms / Glossary (cont)

- NH_3 – Ammonia
- NH_4 – Ammonium
- Ni – Nickel
- NNR – National Nature Reserve
- NO_2 – Nitrogen Dioxide
- NOx – Oxides of Nitrogen
- NRS – Noise Sensitive Receptors
- NRW – Natural Resources Wales
- NTS – Non-Technical Summary
- NWP – Numerical Weather Predictions
- O&M – Operation and maintenance
- OMH – Open Mosaic Habitat
- OS – Ordnance Survey
- PAH – Polyaromatic Hydrocarbons
- Pb – Lead
- PC – Process Contribution
- PCBs – Polychlorinated Biphenyls
- PCC – Powys County Council
- PCDD/Fs – Polychlorinated Dibenzodioxins and Furans
- PEC – Predicted Environmental Concentration
- PIA – Personal Injury Accident
- PINs Wales / The Inspectorate – Planning Inspectorate Wales
- PM_{10} – Particulate Matter with diameter less than 10 micrometres
- $PM_{2.5}$ – Particulate Matter with diameter less than 2.5 micrometres
- PRoW – Public Right of Way
- Ramsar Sites – Wetlands of International Importance
- RDF - Refuse Derived Fuel
- ROMP – Review of Mineral Permissions
- SAC – Special Area of Conservation
- Sb – Antimony
- SNCR – Selective Non-Catalytic Reductions
- SO_2 - Sulphur Dioxide
- SPAs – Special Protection Areas
- SSSI – Special Site of Scientific Interest
- SuDS – Sustainable Urban Drainage Systems
- SWMP – Site Waste Management Plan
- SWMP – Surface Water Management Plan
- TAN – Technical Advice Note
- The Site – Buttington Quarry
- Tl – Thallium

List of Acronyms / Glossary (cont)

- Tpa – Tonnes per Annum
- UPS – Uninterruptable Power Supply
- V – Vanadium
- VOCs – Volatile Organic Compounds
- WAP – Working Age Population
- WaFD – Water Framework Directive
- WFD – Waste Framework Directive
- WHIASU – Wales Health Impact Assessment Support Unit
- WHO – World Health Organisation
- WSA – Wider Study Area
- ZVI – Zone of Visual Influence

1. Introduction

1.1. Purpose of Document

1.1.1. This document comprises a formal request on behalf of Broad Energy (Wales) Limited ("Broad Energy" or "the Applicant") for a Scoping Direction under Regulation 33 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (the "EIA Regulations"). Broad Energy are intending to submit an application for Planning Permission to Welsh Ministers, under Part 5 of the Planning (Wales) Act 2015, for the construction and operation of an Energy Recovery Facility (abbreviated to 'ERF') and ancillary infrastructure ("the Development" or "the Facility").

1.1.2. The ERF would be capable of generating around 13MW of low carbon and renewable energy through the thermal treatment of up to 150,000 tonnes per annum of residual and commercial and industrial wastes. The Development would be located at Buttington Quarry, Buttington, Welshpool, Powys, SY21 8SZ. The location of the Quarry is shown in Figure 1. The planning boundary is shown on Drawing BUT-RCA-00-ZZ-DR-A-0203-Overall_Arrangement_Plan in Appendix 1.

Figure 1: Site Location

1.1.3. The 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, as "the construction of a generating station expected to have an installed generating capacity of between 10 and 50 megawatts". The Development is therefore classed as a "Development of National Significance".

1.1.4. This Scoping Direction Request sets out the proposed structure, content and methodologies to be applied to the Environmental Impact Assessment ("EIA") and the resulting Environmental Statement ("ES") that will be submitted with the planning application.

1.1.5. It may subsequently be used to facilitate pre-application discussions with the Planning Inspectorate Wales ("PINs Wales" or "the Inspectorate") and the Local Planning Authority ("LPA"), Powys County Council ("PCC"), in the event that a formal request for pre-application services under either Regulation 6(1) or Regulation 7(1) of the Developments of National Significance (Wales) Regulations 2016, is submitted, although such a request does not immediately from part of the this request for a Scoping Direction.

1.1.6. This report should be taken as the Statement required under Regulation 33(2)(d) of the EIA Regulations that the request is made in relation to a development of national significance for the purposes of Section 62D of the 1990 Act.

1.2. Formal EIA Scoping Request

1.2.1. 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. The proposed Development is considered to be a Schedule 1 development comprising:

> *"waste disposal installations for the incineration…of non-hazardous waste with a capacity exceeding 100 tonnes per day*". (Category 10)

1.2.2. As such EIA is mandatory and Environmental Statement which is the report of an EIA will be submitted with the application.

1.2.3. This report forms Broad Energy's written request to the Planning Inspectorate Wales on behalf of Welsh Ministers, under Regulation 33 of the EIA Regulations, for its opinion as to the information topics that should be focused upon in the ES prior to embarking on an EIA.

1.2.4. In accordance with Regulation 33(2), requests for Scoping Directions, this request is accompanied by:

(a) a plan sufficient to identify the land (See Figure 1 and Appendix 1);
(b) a brief description of the nature and purpose of the development including its location and technical capacity (See Section 4);
(c) its likely significant effects on the environment (see Section 6 to Section 18);
(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 (see Section 1.1 above); and
(e) such other information or representations as the person making the request may wish to provide or make (see all Sections).

1.3. Project History

1.3.1. A Scoping Opinion for the Development was originally requested from PCC in February 2017. The original proposal was similar, to that currently proposed, except that the Facility was to be for the thermal treatment of up to 100,000 tonnes per annum of residual wastes, generating around 9MW of low carbon and renewable energy. Consequently, the Development did not fall within 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, as "the construction of a generating station expected to have an installed generating capacity of between 10 and 50 megawatts". At the time of the original Scoping Opinion request, the precise technology for the ERF had not been chosen, but was instead based on a generic technology, using suitable design parameters as the basis for reasonable 'worst case' assessment. In response to this PCC issued a Scoping Opinion on 7th April 2017, which, for information, is included in Appendix 2 of this report, together with the consultation responses received by the PCC in response to that request.

1.3.2. Although the design of the ERF has changed, it considered that these changes are not so significant that the nature and scope of the environmental impacts has fundamentally changed since the PCC Scoping Opinion was issued. It is nevertheless considered that it is appropriate to reconsider the scope of the EIA, so that:

a. the Planning Inspectorate Wales on behalf of Welsh Minsters can give its own opinion as to the scope of the EIA;
b. that the scope should be updated in view of the potential for some of the assessed environmental impacts to have changed in the light of the proposed changes to the Development; and
c. to take into account the changes to the EIA Regulations introduced by Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017

(the previous Scoping Opinion was issued by PCC under the predecessor regulations, the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2016).

1.3.3. This document sets out the proposed scope of the EIA and includes the following sections:

- Proposed Scope of the EIA;
- Need for the Development;
- Nature and Purpose of Development;
- Relevant Waste Management and Planning Law and Policy;
- Air Quality;
- Health Impact Assessment;
- Transportation, Traffic and Highways;
- Landscape and Visual Impact Assessment;
- Ecology;
- Water Environment;
- Archaeology and Cultural Heritage;
- Site Condition;
- Socio-Economic;
- Noise and Vibration;
- Geotechnical and Materials Management; and
- Cumulative Impact.

1.4. The Applicant

1.4.1. The Broad Group ("Broad") is a multi-disciplinary group of companies providing, Environmental Waste Management Services, Renewable Energy Infrastructure Development and Alternative Fuel Supply Chain Services to the renewable energy sector.

1.4.2. Established in 2013 with offices in Shrewsbury, Manchester and London, Broad has grown into one of the industry's leading waste management businesses with a multi-million pound turnover and an ever growing client base of some of the UK's largest private and public businesses.

1.4.3. Broad Energy is a special purpose company that has been established by Broad Group (UK) Limited to develop the proposed ERF. This independently owned and operated company will form the key anchor delivering long term cost effective and efficient energy and heat services as part of the wider plans by the owners of Buttington Quarry to create a sustainable eco-business park.

1.4.4. The management team at Broad Energy has forged close working relationships with industry leaders in the renewable energy market sector, enabling the company to deliver a "one-stop-shop" for businesses wanting to maximise land value through the development of a sustainable energy infrastructure solutions.

1.4.5. The proposed energy recovery facility within Buttington Quarry is being positioned as part of the wider plans for the quarry to create a sustainable eco-business park.

1.4.6. Broad Energy has formed a strategic partnership with global leader Hitachi Zosen Inova to design, build and operate a facility will support the generation of renewable energy and heat through the use of non-recyclable waste.

1.4.7. This partnership is keen to ensure that all future developments at the site contribute to the local economy and offers new job opportunities to the local community, with plans to contribute to local good causes and is keen to assist Powys County Council with local recycling initiatives.

1.5. The Operator

1.5.1. HZI Zosen AG ("HZI") is a wholly owned subsidiary of Hitachi Zosen Corporation ("HZC"), a Japanese industrial services business with an average annual turnover (last 3 years) of circa £2.65 Billion and a current net asset value of circa £800 Million. HZI would be both the main technology supplier and operator of the ERF.

1.5.2. HZI is a global technology leader for energy and material recovery from municipal solid waste ("MSW"), refuse derived fuel ("RDF") and organic waste. HZI acts as an engineering, procurement, and construction ("EPC") contractor delivering complete turnkey plants. HZI solutions are based on efficient and environmentally sound in-house technology, are thoroughly tested, can be flexibly adapted to user requirements, and cover the entire plant life cycle. HZI's portfolio is rounded off with strong operation and maintenance ("O&M") capabilities.

1.5.3. HZI's customers range from experienced waste management companies and municipalities to up-and-coming partners in new markets worldwide. HZI has developed innovative and reliable solutions for grate combustion, anaerobic digestion, flue gas treatment, and material and energy recovery.

1.5.4. HZI is the global leader in the design, procurement and construction of moving grate Energy from Waste facilities, with over 500 Energy from Waste references worldwide including 11 in the UK and Ireland.

1.5.5. HZI has an experienced and knowledgeable team of engineers and technicians of more than 300 based in Zurich. HZI adopt an integrated approach from first concept design, through to commissioning and operation, including long term major maintenance and overhaul services. For all the key components, HZI have developed in house proprietary technologies that are tried and tested in design, manufacturing, supply, installation and operation over many years and many projects.

1.5.6. Specific UK and Ireland experience includes the facilities shown in Table 1. These were completed, or are under construction over the last 10 years providing a total waste processing capacity of circa 3.8 million tonnes per year.

Table 1 : HZI Reference Plants

Project	Status	Client	Start Up Date	No of Lines	Nominal Capacity (tonnes/per annum)
Ferrybridge Multifuel 2	In construction	Multifuel Ltd	01.01.2019	2	550,000
Edinburgh	In construction	FCC	06.12.2018	1	154,000
Dublin	Under warranty	Covanta	01.06.2017	2	600,000
Herefordshire & Worcestershire	In operation	FCC/ Urbaser (Mercia)	01.01.2017	1	200,000
Severnside L1, L2	In operation	Suez	01.05.2016	1	150,000
Buckinghamshire	In operation	FCC	03.09.2015	1	300,000
Ferrybridge Multifuel 1	In operation	MEL	02.06.2015	2	500,000
Cleveland L4, L5	In operation	Suez	01.01.2013	2	250,000
Newhaven	In operation	Veolia	06.08.2011	1	300,000
Riverside, London	In operation	Cory	02.02.2011	3	650,000
Cleveland L3	In operation	Suez	01.01.2009	1	150,000
					3,804,000

1.6. Consultation Process Overview

1.6.1. Under the DNS procedure, pre-application consultation forms a central part of the process. This comprises informal and formal or statutory consultation. It is acknowledged that Applicants are strongly encouraged to engage with stakeholders early in the process.

1.6.2. Broad Energy has undertaken early informal discussion with both the PINs Wales (on behalf of Welsh Ministers) and PCC on the proposed DNS application, with a view to providing early details of the proposal and seek advice on the process for, and format and content of, the application.

1.6.3. The statutory provisions and requirements for pre-application consultation are set out in The Developments of National Significance (Wales) Regulations 2016 and The Developments of National Significance (Procedure) (Wales) Order 2016.

1.6.4. Under Regulations 6 and 7 of The Developments of National Significance (Wales) Regulations 2016, applicants may make a request for Pre-Application Services to either the Welsh Ministers or the Local Planning Authority with a view to seeking their views and advice on a proposed DNS application.

1.6.5. In addition, Part 2 of The Developments of National Significance (Procedure) (Wales) Order 2016, sets out a statutory requirement to undertake Pre-Application Consultation on the draft application prior to submission. This includes consultation with the local community and statutory consultees and following this, the preparation and submission of a Pre-Application Consultation Report with the application, detailing how the responses to the consultation have been taken into account in finalising the proposal. It is understood that PINs Wales expects projects will exceed the minimum statutory consultation requirements.

1.6.6. Broad Energy envisages that, a request for Pre-Application Services will be submitted to PCC as the Local Planning Authority and will undertake the full Pre-Application Consultation in accordance with the statutory requirements set out in the Regulations.

1.7. Objectives of Broad Energy's Proposed Consultation

1.7.1. Broad Energy envisages that communications during the planning process for the proposed ERF will seek to engage and consult residents and businesses around Buttington Quarry to ensure they are fully informed about the proposal. Efforts will also be made to publicise the proposals more widely in order to inform the broader community.

1.7.2. The pre-application consultation programme will seek to:

- enable the local community to be informed, involved and influence the development of the final proposals for the ERF;
- inform and reassure residents, businesses, officers, politicians and third-party stakeholder groups about the proposal and address any concerns they might have;
- ensure a comprehensive and socially inclusive consultation that incorporates a wide-reaching audience, including harder-to-reach groups;
- state clearly which decisions can be shaped by stakeholder input.

1.7.3. The pre-application consultation programme will run for a minimum of six weeks but it is envisaged that engagement with local residents, business, elected representatives and interested third party stakeholders will continue following submission of the planning application.

1.7.4. All feedback received during the pre-application consultation programme will be assessed and where possible incorporated into the final planning application.

1.8. Consultation Methods and Contacts

1.8.1. It is proposed that the following methods will be used to inform and involve the local community and stakeholders:

- Newsletters - Newsletters will be distributed via post to all local residents and businesses in the Trewern, Welshpool Gunrog and Forden wards surrounding the site. The first will be distributed at the launch of the consultation programme and will outline the proposals and the consultation programme. A second newsletter will be distributed following the formal submission of the planning application to address frequently raised questions and provide feedback on how the consultation process has influenced the final planning application.
- Letters and Information Packs - Letters and information packs will be developed which explain the proposed ERF and wider solution in more detail, including frequently asked questions ("FAQs"). These will be sent to elected representatives, immediately adjacent residents and businesses and third party stakeholder groups. The various elements of the information pack will also be available to download from the bespoke project website.
- Dedicated Project Website - A bespoke project website will be developed to provide an online source of information about the proposal, the company and the wider waste treatment contract. Content for the website will develop during the pre-application consultation programme and all distributed consultation materials will be available to download. An email address will

enable visitors to the website to leave their feedback with the project team.

- Meetings and Presentations - Meetings will be offered to elected representatives, immediately adjacent residents and businesses and relevant third party stakeholder groups to discuss the proposals in more detail. Presentations will also be offered to all elected members at Powys County Council. Requests to attend established groups / meetings will also be considered and facilitated where appropriate.
- Public Information Days - A series of public information days will be held at community venues close to Buttington Quarry to publicise the proposals and gather feedback from local residents. The public information days will be staffed by members of the development team. Attendees will be invited to submit their questions and feedback via a feedback form, which will be collated and analysed to be included as part of the Statement of Community Involvement. A preview will be held for elected representatives prior to the public information days opening to the public.

1.8.2. Press releases and media packs will be sent to key journalists in the local media throughout the public consultation process. Journalists will also be offered briefings and interviews with senior members of the project team. Press releases will be sent out:

- at the launch of the proposals;
- prior to the public exhibitions;
- following the public exhibitions; and
- following the submission of the planning application.

1.8.3. Advertisements will also be placed in local publications to advertise the public information days, website and contact details for the project team.

1.8.4. A number of dedicated contact mechanisms will be put in place for interested parties to contact the project team. These include:

- freephone: 0800 368 8958;
- email: info@broadenergywales.co.uk;
- website: www.broadenergywales.co.uk; and
- freepost: RTXY-USYY-HAXE, Broad Energy, c/o Newgate Communications, Sevendale House, 5 – 7 Dale Street, Manchester, M1 1JA

1.9. Pre-Application Consultation Report

1.9.1. At the end of the consultation process the results will be detailed in a Pre-Application Consultation report to be submitted with the Planning Application in accordance with Regulation11 of the Developments of National Significance (Procedure) (Wales) Order 2016.

2. Other Information - The Proposed Scope of the EIA

2.1. Scope of the ES

2.1.1. The scope of the ES will be informed by the Scoping Direction received from PINs Wales. The ES will identify the key environmental aspects that may be affected by the Development; the content of the ES will also be based upon the following:

a) review of the current situation through existing information, including data, reports, desk-top studies and site surveys;
b) consideration of the relevant Planning Policies and other relevant guidance;
c) identification of the likely environmental effects and the evaluation of their duration, magnitude and significance;
d) consideration of potential sensitive receptors;
e) expert opinion;
f) use of technical guidance and best practice; and
g) specific consultations with appropriate bodies.

2.1.2. Taking into account the above, the structure of the ES will be broadly as follows, and this may be subject to change depending on the Direction received from PINs and the evolving project:

- Chapter 1 - Introduction: Introducing the project, the project team and explaining why the ES is required;
- Chapter 2 - Selection of Key Environmental Aspects and Methodology: This chapter details the scoping process, the public consultation process and details why each aspect of the environment has been selected for assessment. This chapter will explain the EIA methodology and describes the structure and content of the ES. In particular, it will detail the process of identifying the potential likely significant environmental effects of the Development and the method of assessing the significance of the effects;
- Chapter 3 - Needs and Alternatives: This chapter will outline why the Development is required and discusses any alternatives in respect of other sites, and technologies, that have been considered and why they have been dismissed in favour of the Development;
- Chapter 4 - The Proposed Development: This chapter will detail the construction and operational activities associated with the Development;
- Chapter 5 - The Existing Environment: This chapter will provide the historical context of the Development and will include information relating to the location and character of the Site and its surroundings, its planning history and historical land use. It will identify significant consents and licenses issued on land within or adjacent to the Site, geological, hydrogeological and hydrological data as well as access and infrastructure data. This will set the baseline.

- Chapter 6 - Planning Policy: This chapter will summarise relevant planning policy in relation to the each of the Key Environmental Aspects chapters.
- Chapters 7-18 - Key Environmental Aspects ("KEA") Chapters: Based on the information currently available these would be in accordance with the details set out in paragraph 2.1.1.; the original Scoping Opinion Request to PCC and response; and the response to this Request for Scooping Direction. At this stage the following KEAs are anticipated:
  - Air Quality;
  - Health Impact Assessment;
  - Transportation, Traffic and Highways;
  - Landscape and Visual Impact Assessment;
  - Ecology;
  - Water Environment;
  - Archaeology and Cultural Heritage;
  - Site Condition;
  - Socio-Economic;
  - Noise and Vibration;
  - Geotechnical and Materials Management; and
  - Cumulative Impact.

2.1.3. Each of the KEA Chapters (7-18) will be structured as detailed in Table 2.

Table 2 : Structure of the KEA Chapters

No.	Section	Contents
X.	**KEA Title**	
X.1	**Introduction:**	
	Brief introduction as to why the KEA has been selected and details of any specific consultation undertaken.	
X.2.	**Relevant Legislation:**	
	Details of the relevant legislation pertaining to the KEA, e.g. air quality objectives, protected species etc.	
X.3.	**The Existing Environment:**	
	Environmental Assessment Boundaries	Description of environmental assessment boundaries reflecting the ERF, ecological and/or socio-economic boundaries where relevant
	Methods	Description of the methods used to collect baseline data, use of models, research etc.
	Existing Conditions	A description of the existing base line situation, e.g. existing ecology, air quality, existing noise levels etc.
	Likely Future Conditions	A statement of likely condition of the environment within expected lifespan of Project if the Project is not approved

Table 2 : Structure of the KEA Chapters (cont)

No.	Section	Contents
X.4.	**Environmental Effects Assessment:**	
	Mitigation	A summary of environmental design features integrated into the Project, mitigation and environmental management initiatives for each project phase, as appropriate
X.5.	**Residual Environmental Effects:**	
	Subsections for each project phase	The provision of significance criteria, specific to each KEA to describe the residual environmental effects significance by planned Project phase including, where relevant construction, operation, decommissioning and closure, accidents, malfunctions and unplanned events, the project overall, the project in combination with other projects.
X.6.	**Summary**	
	A concluding summary of the chapter.	

2.2. Non-Technical Summary

2.2.1. The EIA regulations also require that a Non-Technical Summary ("NTS") of the ES be produced. The NTS is a standalone document which summarises (avoiding technical or other jargon) all of the information included within submitted ES. It allows for any non-technical specialist to understand the likely environmental impacts of a proposed development.

2.2.2. It is proposed that the Non-Technical Summary will also be published in the Welsh Language. All other documentation will be provided in English (Rydym yn bwriadu cyhoeddi'r crynodeb annhechnegol yn Gymraeg hefyn. Bydd yr holl ddogfennau eraill yn cael eu darparu yn Saesneg).

3. The Need and Alternatives

3.1. The Need for the Development

3.1.1. The rationale in developing any new waste management facility will be the need for additional waste management capacity to treat the amount of waste arisings within the area served by the facility. This need must be balanced against the potential environmental impacts of constructing operating the ERF.

3.1.2. Waste management policy in Wales, as in the rest of the UK, has in recent decades been driven by the requirements of European Union waste management law in aiming to achieve the more sustainable management of waste, by driving this up the waste hierarchy and ultimately treating waste as a resource and generating zero waste. The requirements of key European legislation, notably the Waste Framework Directive ("WFD") (2008/98/EC) and the Landfill Directive (1999/31/EC), provide the basis for the Welsh Government's national waste management strategy, "Towards Zero Waste" and its supporting Sector Plans, including the Collections, Infrastructure and Markets Sector ("CIMS") Plan.

3.1.3. The CIM Plan identifies that Wales at the time of its publication in 2012 produced approximately 17.4 million tonnes of waste a year from all sources, of which a significant proportion was, and still is disposed of to landfill, and that there has been a need across the whole of Wales to develop more residual waste treatment and recovery capacity. It notes that the requirements cannot be predicted with any degree of complete certainty but it provides a "range of best estimate capacity requirement", which for the North Wales region is between 203,000tpa and 468,000tpa for 2024/25.

3.1.4. The newly adopted Powys Local Development Plan 2011-2026 Policy W1 – Location of Waste Development makes clear that proposals for new waste management facilities in the countryside, will only be permitted where they are for the recovery or disposal of non-hazardous wastes and would meet an identified need at the regional level or a local need, and reflect the priority order of the waste hierarchy.

3.1.5. A detailed assessment of need will be presented in the Waste Planning Statement to be submitted with the DNS application and this will be summarised in the Environmental Statement, setting out details of where and how waste will be managed through the proposed ERF, to be constructed at Buttington Quarry.

3.2. Alternative sites

3.2.1. It is requirement of the EIA Regulations that an Environmental Statement must include a description of the reasonable alternatives considered by the applicant. These must be relevant to the Development and its specific characteristics, provide an indication of the main reasons for the option chosen, and are required to take into account the significant effects of the Development on the environment.

3.2.2. As part of the development of the design for the proposed Energy Recovery Facility, the alternatives considered have included the location and the design of the facility. The Environmental Statement will set details of other sites considered. It will also consider the environmental, engineering and amenity issues and options associated with the specific site proposals in terms of its location within the quarry.

3.3. Alternative Technologies

3.3.1. Broad Energy considered a number of different options for the technology to be used in the proposed ERF at Buttington Quarry. The section will set out details of the different technologies considered and why details of the chosen HZI designed moving grate technology and why this was chosen.

3.3.2. The technologies that are, or are potentially, suitable for the combustion of the waste types proposed to be accepted at the site are:

- fixed stepped hearth,
- moving grate,
- pulsed hearth,
- rotary kiln,
- fluidised bed,
- pyrolysis,
- and gasification.

3.3.3. Of these:

- fixed stepped hearth has not been considered further as it is only suitable for smaller throughputs;
- pulsed hearth has not been considered further as there have been difficulties in achieving reliable and effective burnout of waste, and it is considered that the burnout criteria required by the IED might not be achievable; and
- pyrolysis and gasification have not been considered further as it is considered that their performance is not proven and, on the scale proposed, a large number of small modular units would be required which would be more difficult to manage and control.

3.3.4. Accordingly, only the following techniques were considered in the revised assessment:

- moving grate,
- rotary kiln, and
- fluidised bed.

3.3.5. The HZI-designed moving grate was chosen because it allows a vigorous, stable fire, in which all the combustion phases - drying, gasification, ignition and combustion - occur simultaneously and consecutively at the front end of the grate. The constant stoking motion results in a uniform heat release and ensures excellent burnout. The HZI-designed grate has been used in more than 350 combustion systems in over 200 plants worldwide since 1965.

3.3.6. The best available techniques ("BAT") assessment undertaken to justify this choice of technique for the HZI design will be provided in the EIA, and will also be used in the Environmental Permit Application to be submitted to Natural Resources Wales ("NRW").

3.3.7. HZI have installed this technology at a number of Installations in the UK, including FCC's plant in Lincoln (operational since 2013), and a further FCC plant at Greatmoor (operational since 2015). Both examples of the moving grate design are operated under Environment Agency ("EA") Permits.

4. The Nature and Purpose of the Development

4.1. Proposed Application

4.1.1. The scheme proposes the construction and operation of an ERF capable of generating around 13MWe of low carbon and renewable electrical energy (when operational in full condensing mode) through the thermal treatment of up to 150,000 tonnes per annum of residual MSW and MSW like waste ("the feedstock"). The feedstock would arise from industrial and commercial sources and would consist of material suitable for energy recovery. A Feedstock Assessment Report will be undertaken and will be submitted with the ES.

4.1.2. The ERF would be capable of generating both electrical and heat energy from the thermal recovery of energy through the process and so would be classed as a Combined Heat and Power plant, often referred to by the acronym CHP plant.

4.2. Plans to Identify the Land

4.2.1. The following drawings can be found in Appendix 1 and are included for the purposes of the identifying the land:

- Drawing No. 0202 - BUT-RCA-00-ZZ-DR-A-0202-General Arrangement Plan;
- Drawing No.0203 – BUT-RCA-00-ZZ-DR-A-0203 – Overall Arrangement Plan; and
- Drawing No 0210 - BUT-RCA-00-ZZ-DR-A-0210 – Elevations

4.3. The Site and Surrounding Area

4.3.1. A detailed description of the Site and surrounding area may be found in the original scoping request contained within Appendix 2. In summary, Buttington Quarry is located on the A458 Shrewsbury to Welshpool road (at NGR: 326690, 310106) located approximately 1.5km to the south of the village of Trewern, as shown on Drawing BUT-RCA-00-ZZ-DR-A-0203 – Overall Arrangement Plan in Appendix 1.

4.3.2. The quarry occupies a total land area of 18 hectares and is bounded by the A458 to the northwest, Sale Lane to the east and Heldre Lane to the south (both being unclassified roads). The Welshpool-Shrewsbury railway line runs immediately northwest of the A458, towards the northernmost point of the quarry crossing under the A458 and for a short section runs between the A458 and the Site boundary. The quarry accessed from the A458 and is located within the landownership of the quarry.

4.3.3. The quarry is surrounded by open countryside with the village of Buttington located approximately 2km to the south-west and Trewern approximately 1.5km to the north-

east. Directly to the north-east of the Site is an outlying area of Trewern known as Cefn. This comprises an additional area pf sporadic isolated houses and a larger area of residential development, including a school.

4.3.4. The quarry operated from the late 19th Century and included a brickworks with permissions approved in 1961 and 1997 for extensions to the original quarry workings. The quarry now operates in accordance with the requirements of planning permission granted in 2010 in accordance with a "Review of Mineral Permissions" (ROMP) under the Environment Act 1995 (Planning Permission ref: P/2010/0165). In addition, planning permissions have been granted for an improved access approximately 155m north east of the existing quarry access, the most recent being in 2015 (Planning Permission Ref. P/2015/0439).

4.3.5. Buttington Quarry, is a working claypit which previously supplied clay to the adjoining Buttington Brickworks but, since the closure of the brickworks in 1990, has continued to produce only small amounts of clay for low grade construction purposes.

4.3.6. The former brickworks buildings are now occupied and used for third party commercial uses including storage and distribution.

4.3.7. Six hectares of the Quarry, including the existing quarry void and the former brickworks site, has been allocated for B1, B2 and B8 employment development under Policy E1 - Employment Proposals on Allocated Employment Sites, in the recently adopted Powys Local Development Plan 2011-2026. The supporting text in the Plan also suggests that it may also be an appropriate location for the storage and processing of wastes arising from construction and demolition.

4.3.8. The Site boundary for the proposed ERF development comprises an area of the quarry floor within the main quarry void together with the access corridor to the site entrance and an area of land at the southern edge of the quarry. As the landscaping scheme is yet to be fully developed, the planning boundary has been designed to encompass the whole area under the quarry ownership, as shown on Drawing BUT-ECA-00-ZZ-DR-A-0203 Overall Arrangement Plan in Appendix 1. The planning boundary will be refined during the EIA process.

4.4. The Purpose of the Development

4.4.1. The proposed ERF at Buttington Quarry would be developed to ensure that waste is managed effectively in accordance with Article 4 of the Waste Framework (2008/98/EC) which requires that waste is managed in accordance with the Waste Hierarchy. The intention is to support the management of waste fulfilling the aspirations of both the Welsh Government and PCC.

4.4.2. The operation of the proposed ERF would remove reliance on landfill for the disposal of residual waste and through the use of the proposed HZI technology to provide an efficient system of waste disposal that recovers energy thereby contributing to implement the Towards Zero Waste strategy for Wales.

4.4.3. The Welsh Government's Technical Advice Note 21 ("TAN21"): Waste sets clearly the overriding objectives of waste policy in Wales, which states:

Paragraph. 1.5: Waste is an increasingly important issue in society and there are economic and social imperatives, as well as environmental ones for us all to use non-renewable resources more wisely through resource efficiency measures and the increased use of alternatives. In order to secure our resources and extend their use within the economy we need to prevent waste from arising and where this is not possible we need to be (i) capturing waste in ways that enable us to reclaim materials to be used again and (ii) harnessing waste as a resource in its own right.

Paragraphs. 2.7.4: Where wastes cannot be recycled, other waste recovery operations should be encouraged. Waste recovery operations result in waste that can serve a useful purpose by replacing primary fossil fuel materials (i.e. coal or gas) which would otherwise have been used to fulfil a particular function in the plant or in the wider economy. Energy recovery includes: incineration, incineration with energy recovery, co-incineration (e.g. cement kiln), anaerobic digestion, pyrolysis and gasification with energy recovery and the spreading on land of a separated out bio-waste.

The recovery of energy from mixed municipal waste in high efficiency facilities is considered by Welsh Government to be a vital component of the waste management system in Wales. Such facilities are currently considered to represent the most sustainable outcome for mixed municipal waste.

4.4.4. Co-locating these facilities with heat users is preferential in order to allow utilisation of waste heat from the combustion process. When preparing proposals, developers should give consideration to the location of these facilities and the potential for future user demand and planning authorities should identify any opportunities for co-location in their local development plans.

4.4.5. The proposed ERF is accordingly intended to provide specific benefits including:

- maximising the use of the residual waste resource for the production of energy in the form of electricity and heat;
- acting as a catalyst for the development of additional commercial development as part of a Masterplan for development within the quarry in line with the

aspirations of the emerging Local Development Plan;

- offering a sustainable and efficient alternative to landfill for the waste residues after recycling;
- supplying approximately 13MW of electricity to the National Grid in full condensing mode
- supplying in combination heat and/or electricity to local existing and future industrial/commercial developments
- offering employment for approximately 30 new permanent staff when operational in addition to up to 500 construction related jobs at the peak of the works and on average between 150 and 200 jobs per year over the three-year construction period;
- helping to achieve and possibly exceed local, regional and National targets on landfill diversion;
- boosting the local economy through increased employment opportunities; and
- providing a cost effective, efficient and reliable solution for dealing with non-recyclable residual wastes.

4.5. Construction Phase

4.5.1. Following the granting of planning permission, construction is anticipated to commence on site in early 2020.

4.5.2. The construction phase would incorporate the construction of a screening bund around the southern and western extent of the quarry. Additional land take within the wider quarry area would be temporarily required for the storage of construction materials, plant etc; i.e a "*lay down*" area. It is anticipated that the lay down area required would be approximately 2ha in extent and it is proposed that this would be located to the west of the construction area, with office and welfare accommodation to the south. The temporary use of land for such operations constitutes "*Permitted Development*" under the Town and Country Planning (General Permitted Development) Order 1995 and so would be outside of the application site, but the effects of using the Site will be considered as part of the EIA.

4.5.3. Construction is expected to take place during the hours of 07:00 to 19:00 (Monday to Friday) and 07:00 to 13:00 (Saturday). No construction operations would take place on Sundays or Bank Holidays. Specific activities will require 24/7 working for short durations.

4.5.4. The amount of construction employment generated would vary throughout the period; however, it is anticipated that between 150- 200 construction personnel would be on site at any one time. Peak levels of employment would be associated with the

installation, erection and testing of mechanical, electrical and process plant. Where appropriate, the HZI will source materials locally, to use local services and employ local staff.

4.5.5. On-site office accommodation and welfare facilities will be provided for construction employees.

4.5.6. Construction and Commissioning Method

4.5.6.1. The construction activities will include the deep foundations works, civil and structural works, installation of the process mechanical plant, installation of the electrical and control systems and commissioning of the entire plant. The construction activities will take approximately 36 to 39 months to complete. The number of operatives on site will average 150-200 over the complete construction duration with a peak of approximately 500 during a period of six months mid-way through the construction period.

4.5.6.2. Upon receipt of the planning permission and once any pre-commencement conditions have been satisfied, the construction activities will commence with the erection of a temporary site fence.

4.5.6.3. As the foundations for the new facility are likely to consist of deep piles, the first stage of construction will be to install a granular piling carpet which will be laid across the majority of the Site. The piling carpet will be approximately 400mm in thickness and will be constructed by importing new or recycled granular material.

4.5.6.4. Following the completion of part of the piling carpet the actual piling will commence. The piling is likely to consist of Continuous Flight Auger ("CFA") Piling which is the quietest form of piling and is a fast and very economical technique. It is a cast in-situ process, suited to soft ground where deep casings or use of drilling support fluids might otherwise be needed. Three to five piling rigs will be deployed to construct the plies. The benefit of CFA piles is that they are a non-impact construction and therefore the noise and vibration is significantly less than a driven pile.

4.5.6.5. During the piling operation the construction of the temporary site facilities, prefabrication areas and the site cabins will commence.

4.5.6.6. As the facility will include a deep waste bunker a temporary embedded retaining wall will be constructed around the perimeter of the bunker. The embedded retaining wall will serve a dual purpose to first support the adjacent ground when forming the deep excavation and secondly to reduce any inflow of water into the excavation.

4.5.6.7. The waste bunker will be constructed using a slip form technique, which will require 24 hour construction, 7 days per week for a period of approximately 2 months. To slip form the bunker, special formwork will be constructed around the perimeter of the bunker. The concrete is then continuously pumped in to the formwork and the formwork is hydraulically jacked at a rate of approximately 25mm per hour.

4.5.6.8. Upon completion of the piling activities the remaining concrete foundations of the new plant will be constructed. The foundations will consist of large concrete rafts bearing directly on to the CFA piles. At the same time as constructing the foundations new underground drainage networks will be constructed together with the new roads around the perimeter of the buildings. The underground networks will also include other critical services such as a fire main, potable water, foul water and electric cables.

4.5.6.9. To construct the bunker and foundations towers cranes will be utilised. The cranes will be approximately 60m in height and have a radius of 65m. The final dimensions and size of the crane will be finalised once the detailed design of the plant is complete.

4.5.6.10. Upon completion of the main foundations and bunker the mechanical equipment will be installed. The mechanical equipment will be delivered mainly by normal road transport, however, some exceptional loads will need to be delivered. The mechanical erection phase will require a significant amount of laydown area to be made available to store and pre-fabricate the equipment.

4.5.6.11. When the majority of mechanical equipment has been installed it will be possible to commence the erection of the building steelwork. The building steelwork will be erected over the top of the mechanical equipment using the tower cranes. Metal cladding will be utilised to form the building envelope. The building steelwork and metal cladding will be sequenced to ensure that it is not been erected when works on the mechanical equipment directly under it are still on going.

4.5.6.12. Electrical equipment and the control system will be installed inside the water tight building. The majority of the electrical equipment will be delivered to site in prefabricated modular buildings.

4.5.6.13. Upon completion of the electrical installation the commissioning phase will start. The commissioning phase will consist of two distinct phases - cold and hot commissioning. The cold phase will be undertaken pre energisation of that particular system to ensure that all mechanical and electric items have been correctly installed and are ready to receive power.

4.5.6.14. The hot commissioning phase will include the delivery of waste and the production of steam from the boiler and then electricity via the steam turbine. During this phase the

plant will be fully tested to ensure compliance with the Environmental Permit and any pre-operational conditions will be discharged. The plant will also be optimised during this phase to ensure maximum efficiency is achieved in the operation of the plant.

4.5.6.15. Upon completion of the commissioning the temporary facilities will be demobilised from site and the permanent landscaping will be completed.

4.5.7. Construction Traffic and Access

4.5.7.1. The construction area will be secured with temporary fencing and the principal contractor will set up the initial site accommodation and welfare facilities, including temporary services on the Site. To ensure site security there will be a single point of entry to the Site for all construction personnel.

4.5.7.2. Access to the Site would be from the new access road from the A458, to be constructed in advance of the start of the ERF construction works, in accordance with Planning Permission Ref. P/2015/0439. Parking for construction workers will be provided on-site throughout. The number of HGV movements will vary at different stages of the construction works in response to the activities taking place at any given time, although the maximum traffic levels will not be in excess of those associated with the Facility once operational.

4.5.8. Waste Management and Disposal

4.5.8.1. Construction related waste will be generated during all stages of the construction works. A Site Waste Management Plan ("SWMP") will be prepared, and all relevant contractors will be required to seek to minimise waste arising at source and, where such waste generation is unavoidable, to maximise its recycling and reuse potential. It is anticipated that the SWMP will be a requirement of the planning permission.

4.5.9. Environmental Management

4.5.9.1. Environmental control measures will be imposed to minimise adverse environmental effects during construction and a Construction Environmental Management Plan ("CEMP") will 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.

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

4.6. Development Layout

4.6.1. The proposed ERF will consist of the following principal elements:

- Waste Reception Hall - housing the unloading area, the waste and fuel bunkers. The hall would be approximately 23m in height, dependant on the requirement for tipping by the waste delivery vehicles and connected to the main energy recovery building. Fast acting roller shutter doors would be utilised and the hall would be maintained under negative pressure
- Waste Bunker - the storage facility for feedstock prior to treatment forming an enclosed space under negative pressure to minimise dust and odour release with approximately 5 days storage capability;
- Energy Recovery Hall (including the incinerator, boiler hall and energy generation equipment) - houses the majority of the plant required to generate energy. The main body of the structure will be approximately 40m high. This hall is an enclosed space offering weather protection, noise mitigation and visual screening;
- Flue Gas Treatment Area - this is where the gaseous emissions from the thermal treatment process would be treated prior to release into the atmosphere. This area also contains the consumables silos, fly ash silos, flue gas cleaning equipment needed for the treatment of the emissions from the process and associated emissions monitoring equipment.
- Turbine Building - this is a smaller separate building that is connected to the ERF building via inlet pipework and the air cooled condenser ("ACC") outlet pipework;
- ACC - this is located close to the main Energy Recovery Hall and Turbine building;
- Office/Control Room and Associated Car Parking - all of the ancillary elements of the ERF would be located within an integral building with appropriate parking facilities provided for staff and visitors.

4.6.2. Additional facilities would include:

- flue gas discharge stack at 70m high (measured from ground level so would protrude above the rim of the quarry). This height will be confirmed by detailed modelling so may be subject to change;
- weighbridge (with separate in and out access points);
- fire watertank;
- electricity sub-station;
- Site entrance and circulation roads;
- boundary fencing (2.4m high);
- landscaping and sustainable urban drainage systems ("SuDS");and
- bicycle shelter.

4.6.3. The overall footprint of the proposed ERF would be around 154m long and vary in width from 22m (for the office and workshops) to 50m (for the waste bunker). The layout is shown Drawing BUT-RCA-00-ZZ-DR-A-0202-General Arrangement Plan in Appendix 1.

4.7. Process Overview

4.7.1. As detailed in Section 3.3, it is proposed to use Hitachi Zosen Inova's ("HZIs") thermal energy from waste technology at the plant incorporating a HZI designed moving grate and associated combustion chamber (i.e. a conventional incineration process).

4.7.2. It should be noted that the air extraction system required to keep the waste reception hall under negative pressure will be used as combustion air. Consequently any odours generated in this area will be captured within this system and destroyed within the combustion process.

4.7.3. Residual waste is fed into the combustion chamber by means of a feed hopper/feed chute arrangement where the waste is dried prior to being incinerated at temperatures in excess of 850°C in line with the requirements of the Industrial Emissions Directive ("IED"). Secondary combustion, i.e. oxidation/burnout of unburned gases, takes place in the flame body above the main combustion zone. Two low sulphur gas-oil fuelled auxiliary burners are provided to ensure that a combustion temperature of at least 850°C is maintained at all times. Complete burnout of the incinerator bottom ash ("IBA") formed during the combustion of the waste takes place at the rear end of the grate. The IBA falls into, and is quenched by, a water bath, where it is cooled to a temperature of approximately 80-90°C to make it safe to handle.

4.7.4. A selective non-catalytic reductions ("SNCR") system has been included in the design to minimise oxides of nitrogen ("NO_x") emissions form the combustion process. The SNCR system proposed by HZI still utilises ammonia solution to chemically reduce the NO_x to nitrogen and water.

4.7.5. The heat contained within the flue gases leaving the combustion stage will be recovered by means of a high-efficiency integral water tube boiler.

4.7.6. The power generation plant and auxiliaries include a steam turbine, a power generator, an air condenser and capacity for a district heating system. The turbine will be used to convert the steam energy into kinetic energy and drive a generator to produce electrical power in a highly efficient manner.

4.7.7. After heat recovery, the flue gases pass through the flue gas treatment plant after which a variable speed induced draught ("ID") fan draws the treated flue gas from the flue gas

treatment plant and discharges it to atmosphere via a discharge stack which discharges to atmosphere at a height of 70m. The discharge stack will be equipped with a range of continuous emission monitoring systems ("CEMS") which meet the relevant requirements of the IED. Duplicate CEMS systems will be installed; this will ensure that, in the event of a failure of the duty system, continuous monitoring of the emissions to air will continue using the stand-by system. The CEMS will be provided with an uninterruptable power supply ("UPS") so that they will be able to continue monitoring the emissions to air from the discharge stack in the event of a power interruption to the plant.

4.7.8. The two main process-related wastes that will be produced at the Facility will be incinerator bottom ash ("IBA") and air pollution control ("APC") residues.

4.7.9. The proposed ERF is designed as a single line facility and has the potential to operate in CHP mode to produce electrical power and heat. In full condensing mode (i.e. electrical Power Mode), the Facility can deliver up to 13MWe, whilst in Heat Mode, the Facility can potentially deliver approximately 20MWTh, whilst still producing around 7MWe of electricity. However, it is important to note that the Facility is funded on the basis of power generation, but will be 'heat-ready', and the financial viability of heat supply will play a key role in determining whether the energy is supplied as heat or power.

4.7.10. It is also important to note that the operator is not in control of how a District Heating Network ("DHN") is delivered and which party controls the distribution and management of any heat supplied from the Facility; in this regard, there are a number of other parties involved and all parties will have to work together to deliver any scheme.

4.8. Operating Hours

4.8.1. With the exception of an 'emergency situation' it is proposed that the ERF would generally only accept the delivery of waste and the despatch of materials during normal daytime hours, i.e. 07:00 to 19:00 hours Monday to Friday and 08:00 to 17:00 on Saturdays.

4.8.2. The design of the ERF will provide sufficient internal storage of waste and residues to enable continuous operation over the longer public holiday periods of Christmas and Easter.

4.8.3. The internal processing of materials would operate on a continuous (24 hour) basis; however, waste delivery would be limited to the delivery and despatch hours set out

above. Routine and non-routine maintenance operations within the building(s) would take place as and when required. Routine maintenance operations outside the building(s) would be scheduled to take place during the daytime (delivery) hours and would only extend into the night time and/or weekends should this prove necessary to maintaining the continuity of the process. Any non-routine maintenance and repair operations would be undertaken as and when they arise.

4.9. Employment

4.9.1. There would be a significant number of direct employment opportunities created as a result of the construction of the ERF, it is intended that many of these construction workers would be derived from the locality and that local contractors would be employed in many aspects of the construction/implementation programme. It is anticipated the Development would typically employ some 100-150 civil engineering, management, skilled and semi-skilled workers during the two to three-year construction programme. A number of indirect employment opportunities would also be created in a variety of different trades as a result of the construction and operation phases of the development.

4.9.2. Local businesses would also benefit from the opportunity to supply materials and plant and equipment during the construction/fit out phases of the Development which would represent an investment of around £34,060,000 during the construction phase.

4.9.3. During the operational phase the ERF would directly create some 30 permanent jobs, it is proposed that the workforce for the ERF would be recruited from the local employment market, with training being provided by the technology provider. In terms of indirect employment, the Development would create a need for supplying consumables, road haulage logistics, equipment repair and maintenance and business support services for a period in excess of the ERF design life of at least 25 years.

5. Relevant Waste Management, Planning Law and Policy

5.1. Relevant Waste management and planning law and Policy

5.1.1. There is significant amount of waste management and planning law and policy relevant to the Development. An outline of the relevant law and policy will be included in the background to the Development to be set out in the Waste Planning Statement and summarised in the Environmental Statement. The following law and policy is potentially relevant. Other law and policy may also be included if considered to be relevant at the time of submission of the application.

5.2. European Union Law and policy

5.2.1. The following EU Directives are potentially relevant to the development of the ERF and will be referred to in the Environmental Statement:

- Waste Framework Directive 2008/98/EC;
- Landfill Directive 1999/31/EC;
- Environmental Impact Assessment Directive 2014/52/EU;
- Industrial Emissions Directive 2010/75/EU;
- Ambient Air Quality Directive 2008/50/EC;
- Habitats Directive 1992/43/EEC;
- Birds Directive 2009/47/EC; and
- Public Participation Directive 2003/35/EC.

5.2.2. The key pieces of EU waste legislation are due to be amended and updated in 2018 and reference to the amended legislation which will implement the EU's Circular Economy package will be included if finalised prior to submission of the application.

5.3. Welsh Waste and Planning Policy

5.3.1. The following Welsh law and policy may be referred to in the Environmental Statement:

- Town and Country Planning Act 1990 (as amended)
- Planning and Compulsory Purchase Act 2004;
- Planning (Wales) Act 2015;
- Well-being of Future Generations (Wales) Act 2015;
- Environment (Wales) Act 2016;
- Town and Country Planning (Development Management Procedure) (Wales) Order 2012 (as amended);
- Town and Country Planning (Environmental Impact Assessment) (Wales)

Regulations 2017;

- The Development of National Significance (Wales) Regulations 2016;
- The Development of National Significance (Procedure) (Wales) Order 2016;
- The Developments of National Significance (Specified Criteria and Prescribed Secondary Consents) (Wales) Regulations 2016;
- The Developments of National Significance (Specified Criteria and Prescribed Secondary Consents) (Wales) (Amendment) Regulations 2016;
- Wales Spatial Plan – People, Places, Futures Update 2008
- Planning Policy Wales Edition 9 - November 2016 (or Edition 10 if finalised);
- Technical Advice Note (TAN) 5 - Nature Conservation and Planning;
- Technical Advice Note (TAN) 6 - Planning for Sustainable Rural Communities;
- Technical Advice Note (TAN) 8 - Renewable Energy;
- Technical Advice Note (TAN) 11 - Noise;
- Technical Advice Note (TAN) 12 - Design;
- Technical Advice Note (TAN) 15 - Development and Flood Risk;
- Technical Advice Note (TAN) 18 - Renewable Transport;
- Technical Advice Note (TAN) 21 - Waste;
- Technical Advice Note (TAN) 23 - Economic Development;
- Technical Advice Note (TAN) 24 - The Historic Environment;
- Towards Zero Waste -One Wales: One Planet (2010);
- Towards Zero Waste - One Wales: One Planet - Municipal Sector Plan (2011);
- Towards Zero Waste - One Wales: One Planet - Collections, Infrastructure and Markets Sector Plan (2012);
- Towards Zero Waste - One Wales: One Planet - Food Manufacture, Service and Retail Sector Plan (2014);
- Towards Zero Waste - One Wales: One Planet - Collections, Infrastructure and Markets Sector Plan (2012); Commercial and Industrial Sector Plan (2013);
- Environment Strategy for Wales (2006);
- Energy Wales: A Low Carbon Transition Plan (2012); and
- Noise Action Plan for Wales 2013-2018 (2013).

5.4. Local Planning policy to Consider

5.4.1. As noted in Section 4.3 there is a new Powys Local Development Plan (LDP) for the period 2011 to 2026, which was adopted in April 2018.

5.4.2. The stated Vision for the LDP is that "Powys will be a place of vibrant and resilient communities providing sustainable development and economic opportunities set in a healthy, safe environment, whilst celebrating, protecting, enhancing and sustainably managing its natural resources, native wildlife and habitats, heritage, outstanding landscapes and distinctive characteristics" It includes a number of supporting Themes

and Objectives.

5.4.3. The Plan is significant in that 6 ha of Buttington Quarry including the existing quarry void and the former brickworks site are allocated for B1, B2 and B8 employment development under Policy E1 - Employment Proposals on Allocated Employment Sites. The supporting text also suggests that it may be an appropriate location for the storage and processing of wastes arising from construction and demolition and Policy W1 - Location of Waste Development makes clear that proposals for management of waste which accord with the waste hierarchy will be supported on employment sites identified in Policy E1.

5.4.4. The LDP describes the Site as a brownfield site, partly in employment use, allocated for further expansion for General Industrial Uses. It states that expansion of development in the allocated area is dependent on construction of the proposed new access. The Site is described as having heritage and ecology value, due to its location adjacent to a geological site of special scientific interest ("SSSI"). It states that the design of development must be sympathetic to the SSSI so that the protected area is not significantly affected. It also states that development proposals should be identified through the preparation of a development brief that takes account of all issues including constraints and that project level Habitats Regulations Assessment screening is likely to be required due to the proximity to the Montgomery Canal Special Area of Conservation ("SAC"), due to hydrological connections. Addition, it states that the Site contains significant industrial remains including related features and development so that prior archaeological intervention and possibly post consent works may be required.

5.4.5. The LDP includes a number of other strategic and development management policies that are potentially relevant to the proposal and against which it will accordingly be assessed, particularly those in relation to environmental protection. These include the following:

- The LDP's Vision and Objectives
- Strategic Policy SP2 - Employment Growth
- Strategic Policy SP7 - Safeguarding of Strategic Resources and Assets
- Policy DM2 - The Natural Environment
- Policy DM4 - Landscape
- Policy DM5 - Development and Flood Risk
- Policy DM6 - Flood Prevention Measures and Land Drainage
- Policy DM7 - Dark Skies and External Lighting
- Policy DM8 - Minerals Safeguarding
- Policy DM9 - Existing Mineral Workings
- Policy DM10 - Contaminated and Unstable Land

- Policy DM13 - Design and Resources
- Policy DM14 - Air Quality Management
- Policy DM16 - Protection of Existing Employment Sites
- Policy E1 - Employment Proposals on Allocated Employment Sites
- Policy T1 - Travel, Traffic and Transport Infrastructure
- Policy W1 - Location of Waste Development
- Policy W2 - Waste Management Proposals
- Policy RE1 - Renewable Energy
- Policy M5 - Restoration and Aftercare

6. Key Environmental Aspects - Air Quality

6.1. Overview

6.1.1. Key impacts during the construction phase will include dust and emissions from construction vehicles and dust from construction works.

6.1.2. Once operational, emissions to air will include fugitive emissions from vehicles and point source emissions from the main stack. The latter will be required to comply with the requirements of the Industrial Emissions Directive (IED) (2010/75/EU). An air dispersion modelling study of the releases from the ERF (specifically the main stack) will be undertaken.

6.1.3. The objectives of this study are as follows:

- to determine a suitable height for the main stack (designated A1);
- to determine the maximum ground level concentrations ("GLCs") arising from the emission of pollutants from the A1 stack; the pollutants are assumed to be released from the Installation at the Emission Limit Values ("ELVs") defined in Annex VI of the IED - *Technical provisions relating to waste incineration plants and waste co-incineration plants;*
- to assess the impact of emissions from the facility on existing local air quality in relation to human health at a range of potentially sensitive receptors by comparison with relevant air quality standards ("AQSs"); and
- to predict deposition rates of acids and nutrient nitrogen from the modelled emissions and compare these with relevant Critical Loads and Critical Levels at a range of sensitive habitat sites.

6.1.4. It is considered that there will be no point source emissions of odour associated with the Installation (see Section 4.6.5.). The Installation will be designed and built using the Best Available Techniques ("BAT") thus ensuring that there are no fugitive emissions of odour beyond the Installation boundary. Consequently it is considered that detailed odour modelling will not be required, however, a qualitative odour impact assessment will be undertaken.

6.2. Environmental Assessment Boundaries

6.2.1. Model Output Parameters

6.2.1.1. The Atmospheric Dispersion Modelling System ("ADMS") model calculates the likely pollutant ground level concentrations ("GLCs") at locations within a definable grid system pre-determined by a user. Output grids may be determined in terms of a

Cartesian or Polar co-ordinate system. For the purpose of this study the Cartesian system will be used. For assessing the maximum point of impact, a grid resolution of 4km x 4km will utilised in order to capture values of the predicted pollutant GLCs arising from the model. For assessing the impact of emissions on human health and ecological sites the grid references of each will be included as specified points within the ADMS model (see Sections 6.2.2. and 6.2.3.).

6.2.2. [redacted]

6.2.2.1. In addition to predicting concentrations over a 4km by 4km grid, there are 13 specified receptors that will be considered in the assessment within a 1km radius of the proposed Installation. Details of the specific receptors are provided in Table 3.

Table 3 [redacted]

Ref	Location	Easting	Northing	Distance from Site Centre (m)	Heading (degrees)
H1	House Off A458, Welshpool SY21 8TA, UK	326773	310265	179	28
H2	Heldre Ln, Welshpool SY21 8SX, UK	326783	309854	269	160
H3	House Off Sale Ln, Welshpool SY21 8SY, UK	327026	310357	419	53
H4	House Off Sale Ln, Welshpool SY21 8SY, UK	327129	310072	440	94
H5	Speed Welshpool	326305	309785	501	230
H6	Methodist Church, Buttington, Welshpool SY21 8SZ, UK	327059	310480	525	45
H7	Border Hardcore Offices	326221	309760	583	234
H8	Buttington Trewern Primary School, Welshpool SY21 8TB, UK	327386	310580	842	56
H9	Farm Buildings off A458, Welshpool SY21 8ST, UK	325894	309228	1185	222
H10	Criggion Lane, Trewern, Welshpool SY21 8DX, UK	327796	311358	1671	41

Table: : Sensitive Human Receptors (cont)

Ref	Location	Easting	Northing	Distance from Site Centre (m)	Heading (degrees)
H11	Buttington	325160	308852	1978	231
H12	Buttington Church Welshpool SY21 8HA, UK	324984	308840	2124	233
H13	Trailhead Fine Foods/ Welshpool Livestock Sales A483, Welshpool SY21, UK	324304	308746	2746	240

6.2.3. Potentially Sensitive Ecological Receptors

6.2.3.1. In accordance with EA and NRW guidance the impact of emissions to air on vegetation and ecosystems from the Installation should be assessed for the following sensitive environmental receptors within 10km of the discharge stacks:

- Special Protection Areas ("SPAs") and potential SPAs designated under the EC Birds Directive;
- Special Areas of Conservation ("SACs") and candidate SACs ("cSACs") designated under the EC Habitats Directive ; and
- Ramsar Sites designated under the Convention on Wetlands of International Importance.

6.2.3.2. In addition the impact of emissions to air on vegetation and ecosystems from the installation will be assessed for the following sensitive environmental receptors within 2km of the discharge stacks:

- Sites of Special Scientific Interest ("SSSI") established by the 1981 Wildlife and Countryside Act; and
- Local nature sites (Ancient Woodland ("AW"), Local Wildlife Sites, National Nature Reserves ("NNRs") and Local Nature Reserves ("LNRs").

6.2.3.3. Habitat receptor designations that have been identified within the distance criteria are listed in Table 4. The ecological sites each cover a large area, consequently grid references for the ecological sites have been taken as the point of the ecological site closest to the ERF Stack (A1).

Table 4: Specific Sensitive Habitat Receptors Considered for the Assessment

Ref	Location	Type of Receptor	Easting (X)	Northing (Y)	Distance from Source (m)	Heading (Degrees)
R1	Midland Meres and Mosses	RAMSAR	330001	323850	14137	14
S1	Buttington Brickworks	SSSI	326980	310222	312	68
S2	Montgomery Canal	SSSI	324911	310297	1789	276
SA1	Montgomery Canal	SAC	324911	310297	1789	276
SA2	Granllyn	SAC	322501	311267	4347	285
AN1	AW - 41971	Cat 3 - AW	326627	310039	92	223
AN2	AW - 33254	Cat 1 - AW	326365	310248	355	294
AN3	AW - 33255	Cat 1 - AW	326312	310244	402	290
AN4	AW - 47343	Cat 3 - AW	327442	310141	753	87
AN5	AW - 33238	Cat 1 - AW	326717	309109	997	178
AN6	AW - 26045	Cat 1 - AW	327683	310276	1007	80
AN7	AW - 27762	Cat 1 - AW	327370	309339	1025	138
AN8	AW - 27222	Cat 1 - AW	327761	309658	1161	113
AN9	AW - 28973	Cat 2 - AW	327692	309306	1282	129
AN10	AW - 27086	Cat 1 - AW	326285	308794	1373	197
AN11	AW - 35167	Cat 2 - AW	328187	310137	1497	89
AN12	AW - 27223	Cat 1 - AW	328256	309896	1580	98

6.3. Methodology

6.3.1. Construction Dust Assessment

6.3.1.1. An assessment of construction dust on potentially sensitive receptors will be undertaken in accordance with the Institute of Air Quality Management's ("IAQM's") Guidance on land-use planning and development control: Planning for air quality.

6.3.2. Choice of Model

6.3.2.1. The latest version of ADMS (developed by Cambridge Environmental Research Consultants) will be used in the assessment.

6.3.3. Key Assumptions

6.3.3.1. The study will be undertaken on the basis of a worst-case scenario. Consequently, the following assumptions will be made:

- the release concentrations of the pollutants will be at the permitted Emission Limit Values ("ELVs") on a 24-hourly basis, 365 days of the year; in practice, when the plant is operating, the release concentrations will be below the ELVs, and, for most pollutants, considerably so; furthermore, taking shutdowns for planned maintenance into account, the plant will not operate for 365 days;
- the highest predicted pollutant GLCs for the five years of meteorological data for each averaging period (annual mean, hourly, etc.) have been used;
- concentrations of NO_2 in the emissions have been calculated assuming a long-term 70% NOx to NO_2 conversion rate, and a short-term 35% NOx to NO_2);
- all of the particulate releases will be present as $PM_{2.5}$ and also as PM_{10}; this enables direct comparison with the particle AQSs, which are expressed in terms of $PM_{2.5}$ and PM_{10}; in practice, this will not be the case as some of the particles present will be larger than PM_{10}; and
- maximum predicted GLCs at any location, irrespective of whether a sensitive receptor is characteristic of public exposure, are compared against the relevant AQSs for each pollutant; in addition, the predicted maximum sensitive receptor GLC has also been assessed.

6.3.4. Air Quality Standards for Assessment – Protection of Human Health

6.3.4.1. The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007) details Air Quality Strategy Objectives for a range of pollutants, including a number that are directly relevant to this study, i.e. CO and NO_2. In addition the NRW must ensure that the proposals do not exceed Ambient Air Directive ("AAD") limit values. The term Air Quality Standard ("AQS") is used to refer to any of these values.

6.3.4.2. The various AQSs are intended to be used as guidelines for the protection of human health and the management of local air quality. Consequently all relevant AQSs will be considered.

6.3.5. Air Quality Standards for the Protection of Sensitive Habitat Sites and Ecosystems

6.3.5.1. Critical levels are thresholds of airborne pollutant concentrations above which damage may be sustained to sensitive plants and animals. High concentrations of pollutants in ambient air directly can cause harm to leaves and needles of forests and other plant

communities. Oxidised nitrogen can have both a toxic effect on vegetation and an impact on nutrient nitrogen. The 2008 Air Quality Directive set limit values for the protection of vegetation and ecosystems and these have been adopted by the Air Quality Strategy, but are not currently set in Regulations. The current objectives will be used in the assessment.

6.3.5.2. Critical Loads are defined as *"a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge"*[1]. Critical loads for nutrient nitrogen are set under the Convention on Long-Range Transboundary Air Pollution based on empirical evidence, mainly observations from experiments and gradient studies. Critical loads[2] are assigned to habitat classes of the European Nature Information System[3] in units of kgN/ha/yr.

6.3.5.3. Exceedance of critical loads for nitrogen deposition can result in significant terrestrial and freshwater impacts due to changes in species composition, reduction in species richness, increase in nitrate leaching, increases in plant production, changes in algal productivity and increases in the rate of succession[4].Exceedance of the critical loads for acid deposition can result in significant terrestrial and freshwater impacts due to leaching and subsequent increase in availability of potentially toxic metal ions.

6.3.5.4. Site specific critical loads for nutrient nitrogen deposition and acid deposition respectively will be obtained from the Air Pollution Information System ("APIS") website (for SAC's) or directly from the SSSI citation. Where a site has numerous habitat features, that feature with the lowest Lower Critical Load, and lowest Upper Critical Load will be used in the assessment.

6.3.6. Deposition Parameters

6.3.6.1. Deposition of nitrogen and acids at designated habitats sites will be included in the assessment. This will focus on sites within 10km of the main stack (A1). The pollutant deposition rates will be used as detailed in the Air Quality Technical Advisory Group's Guidane Note 06 ("AQTAG06).

6.3.6.2. For acidification impacts, the deposition of oxides of nitrogen, ammonia, sulphur dioxide and hydrogen chloride will be considered. For nutrient nitrogen, the deposition of the oxides of nitrogen and ammonia will be included.

(1) From http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm
(2) From http://www.apis.ac.uk/overview/issues/overview_Cloadslevels.htm
(3) See http://eunis.eea.europa.eu/ for details
(4) From http://www.apis.ac.uk/overview/issues/overview_Cloadslevels.htm#_Toc279788052

6.3.7. Stack Emissions Parameters

6.3.7.1. The stack emission parameters used in the study will be listed, namely:

- stack Height (m);
- stack Centre Co-ordinates;
- stack Exit Diameter (m);
- stack Gas Discharge Temperature (^{o}C);
- stack Gas Discharge Velocity (actual) (m/s); and
- normalised Volumetric Flowrate (Nm^3/s).

6.3.7.2. The emission limit values ("ELVs") assumed for each are presented in Table 5. These are the assumed daily ELVs used for the main modelling assessment.

Table 5: Pollutant Emission Rates (all in g/s)

Pollutant	ELV[(a)(c)] (mg/Nm^3)
Nitrogen dioxide	200
Sulphur dioxide	50
Carbon monoxide	50
Particulate matter[(b)] as PM_{10} and $PM_{2.5}$	10
VOCs (as benzene)	10
Hydrogen chloride	10
Hydrogen fluoride	1
Cadmium/thallium	0.05
Mercury	0.05
Group 3 Metals Sb, As,Pb, Cr, Co, Cu, Mn, Ni, V	0.5
Ammonia	10
PAH (as benzo[a]pyrene)	0.001[(d)]
Polychlorinated biphenyls	0.00001[(d)]
Dioxins and Furans	0.0000001

Notes to Table 5

(a) Concentrations are at reference conditions i.e. 273K, 1 atmosphere, 11% oxygen, dry.
(b) It has been assumed that all particulate matter could be present as PM_{10} and/or $PM_{2.5}$
(c) Unless stated otherwise, pollutant ELVs are as stated in the IED, unless otherwise indicated.
(d) No IED ELV assigned. Emission concentration indicated provided by HZI.

6.3.8. Meteorological Data

6.3.8.1. Further to advice from the Met Office it is considered that modelling will be undertaken using data from Shawbury for 2013 – 2017 as this is the closest site to the ERF.

6.3.8.2. It should be noted that this location is in excess of 30km north east of the ERF. However, feedback from an earlier public consultation indicated that local residents have concerns around plume grounding on Long Mountain. Numerical Weather Predication ("NWP") data is available from the Met Office which would provide modelled site specific weather conditions. It is therefore suggested that modelling be initially undertaken using data from an observed meteorological station (in accordance with NRW/EA guidance) and sensitivity analysis be then undertaken using the a years' worth of NWP data based on the worst case observed met data year.

6.3.9. Building Parameters

6.3.9.1. The building parameters utilised for the study will be detailed and a visual representation will be provided.

6.3.10. Terrain Data

6.3.10.1. ADMS has a terrain pre-processing capability, which calculates the required boundary layer parameters from a variety of data. Terrain data will be used which will be of sufficient size to encompass the output area (4km x 4km). Depending on the initial modelling it may be required to use two terrain files, a smaller one to encompass the output area, and a large one to encompass all sensitive receptors. This will ensure that the complex terrain around the proposed Installation is fully assessed on the maximum point of ground level concentration.

6.3.10.2. It should also be noted that the terrain file will be manipulated to ensure that the above ordnance datum ("AOD") levels of the base of the existing quarry are consistent with the final built levels. A visualisation of the terrain will be provided.

6.3.11. Roughness Length

6.3.11.1. The surface nature of the terrain is defined in terms of Roughness Length (Z_o). The roughness length is dependent on the type of terrain and its physical properties. The ADMS model gives values to various types of terrain, for example, agricultural areas are classed as 0.3m, parkland and open suburbia is classed as 0.5m and cities and woodlands are classed as 1.0m. Due to the agricultural terrain and small villages surrounding the facility a roughness length of 0.3m is considered appropriate. However a sensitivity analysis will be undertaken on the worst case met year.

6.3.12. Assessment of Significance of Impact Guidelines

6.3.12.1. The EA online guidance (which NRW state should be used) will be used for the purposes of significance assessment, and this guidance details the guidelines upon which the assessment of the significance of impact can be established. In the first instance, it indicates that process contributions ("PCs") can be considered insignificant if:

- the long-term PC is <1% of the long-term environmental standard; and
- the short-term PC is <10% of the short-term environmental standard.

6.3.12.2. Where a PC exceeds the above criteria then the impact is deemed 'potentially significant', and further assessment has to be undertaken. The next step of the assessment takes account of the existing background concentrations of the pollutant of interest, and EA online guidance indicates that environmental standards are unlikely to be exceeded provided:

- the long-term PEC is <70% of the long-term environmental standard; and
- the short-term PC is <20% of the short-term standard minus twice the long-term background).

(where the long-term PEC - predicted environmental concentration - is the sum of the long-term PC and the long-term pollutant background concentration).

6.3.12.3. Where there are local nature sites within the specified distances process contributions ("PCs") can be considered insignificant if:

- the long-term PC is <100% of the long-term environmental standard; and
- the short-term PC is <100% of the short-term environmental standard.

6.3.12.4. However, it is important to note that for the Group 3 metals there is an additional guideline indicated in the EA Guidance for Group 3 Metals (see below) that states that the environmental standard is unlikely to be exceeded if:

- the long-term and short-term PEC is <100% of the long-term and short-term environmental standard (as appropriate)

(where the short-term PEC is the sum of the short-term PC and twice the long-term pollutant background concentration).

6.3.12.5. For trace metals, Annex VI of the IED assigns ELVs for three groups. Group 1 comprises cadmium ("Cd)" and thallium ("Tl"), Group 2 comprises mercury ("Hg") and Group 3 comprises antimony ("Sb"), arsenic ("As"), chromium ("Cr"), cobalt ("Co"), copper ("Cu"), manganese ("Mn"), lead ("Pb"), nickel ("Ni") and vanadium ("V"). The ELVs are the total for the combined emissions, and it would not be reasonable to assume that each metal emits at the maximum ELV for the group. In this regard, the Environment Agency ("EA") has provided guidance on the steps required for assessing the impact of such metal emissions, namely *Releases from Waste Incinerators* - (V4).

6.3.12.6. Step 1 of the guidance is to assume that all emissions are at the maximum ELV for the group. For example, all of the Group 3 metals would be assumed to be emitted at a concentration of 0.5mg/Nm^3. For Step 1 it is assumed that hexavalent chromium ("CrVI") is 20% of total Cr. This is based on information on background concentrations provided by the Expert Panel on Air Quality Standards ("EPAQS") (*Guidelines for metals and metalloids in ambient air for the protection of human health*, May 2009).

6.3.12.7. Where the release is considered to be potentially significant, Step 2 of the guidance allows the applicant to use the maximum emissions data listed in Appendix A of the guidance to revise predictions, and consider each pollutant as a percentage of the Group 3 ELVs.

6.3.12.8. As deposition of nutrient nitrogen and acidity targets vary depending on location the APIS site-relevant critical load tool will be used to inform the standard that PCs and PECs need to be compared with. These will be detailed in the final assessment.

6.3.13. NO_x to NO_2 conversion Rates

6.3.13.1. EA online guidance (again approved for use by NRW) states that emissions of NO_x should be recorded as NO_2 as follows:

- for the long-term PCs and PECs, assume 100% of the emissions of NO_x convert to NO_2; and
- for the short-term PCs and PECs assume 50% of the emissions of NO_x convert to NO_2.

6.3.13.2. However, further to detailed discussion with the EA and NRW on previous studies, a long-term 70% NO to NO_2 conversion rate, and a short-term 35% NO to NO_2 as required by guidance on NO_x and NO_2 Conversion Ratios as referenced in AQTAG06 *Technical guidance on detailed modelling approach for an appropriate assessment* (April 2010) should be used in all detailed modelling assessments. The conversion rates of 100% and 50% should only be used for initial screening assessments.

6.4. Existing Conditions – Background Air Quality

6.4.1. Nitrogen Dioxide (NO_2)

6.4.1.1. It is understood that PCC undertake NO_2 diffusion tube monitoring. However, no further information appears to be available. As part of this scoping request it is requested that Powys CC could provide any air quality monitoring data that may be relevant.

6.4.1.2. Diffusion tube monitoring was undertaken by SLR consulting from 26th August 2015 to 30th September 2015 at five locations around the ERF. This data will be review to ascertain its suitability for use as background data.

6.4.1.3. In the absence of actual data (for example if PCC consider the 2015 data too aged) the Department for the Environment, Food and Rural Affairs ("DEFRA") mapped data will be used.

6.4.2. Oxides of Nitrogen (NO_x)

6.4.2.1. As there is no suitable measured data for NO_x the Departments DEFRA mapped data will be used.

6.4.3. Sulphur Dioxide

6.4.3.1. The 2001 DEFRA mapped SO_2 concentration for the area surrounding the proposed Installation will be used. Year adjustments are not considered to be required, as it is considered that, away from specific locations near industrial sources or areas of high domestic coal burning, that SO_2 background concentrations would change very little, i.e. the factor would be close to 1[5].

[5] Defra - Air Pollution Background Concentration Maps: A User Guide for Local Authorities June 2014

6.4.4. Particulate Matter

6.4.4.1. As there is no suitable measured data for PM_{10} or $PM_{2.5}$ DEFRA mapped data will be used.

6.4.5. Volatile Organic Compounds (as Benzene)

6.4.5.1. 2001 DEFRA mapped benzene concentration for the area surrounding the proposed facility will be used and will be multiplied by the year adjustment factor.

6.4.6. Trace Metals

6.4.6.1. Monitoring of trace elements has been undertaken by DEFRA since 1976. Currently, monitoring of twelve metals is carried out at locations throughout the UK, predominantly in urban locations. In addition, concentrations of As, Cd, Hg, and Ni are monitored at a further ten rural locations. The closest location to the application site is the rural site at Cwmystwyth. The mean concentrations measured in 2017 will be used for the assessment.

6.4.6.2. For CrVI, it will be assumed that the background concentration is 20% of the total Cr concentration (as indicated in the EPAQS report *Guidelines for metals and metalloids in ambient air for the protection of human health*, May 2009).

6.4.6.3. Antimony and mercury are no longer routinely measured, however, older data (2013) is available from Cwmystwyth and will be used.

6.4.6.4. There is no data available for thallium thus in the absence of data the background Has been assumed to be zero.

6.4.7. Polyaromatic Hydrocarbons (PAH) as Benzo[a]pyrene)

6.4.7.1. Ambient monitoring of benzo[a]pyrene ("B[a]P") is carried out as part of the DEFRA PAH Network at a number of locations around the UK.The closest sites to the Installation is Ruardean. This is a rural background station and is considered to be representative of air quality in the vicinity of the site and receptors.

6.4.8. Carbon Monoxide (CO)

6.4.8.1. 2001 DEFRA mapped CO concentrations for the area surrounding the proposed Installation will be used, multiplied by the relevant year adjustment factor.

6.4.9. Ammonia (NH_3)

6.4.9.1. Gaseous ammonia (NH_3) is measured monthly at 85 sites across the UK. The monitoring provides a baseline in the reduced nitrogen species (NH_3 + NH_4^+), which is necessary for examining responses to changes in the agricultural sector and to verify compliance with targets set by international agreements.

6.4.9.2. There are two monitoring stations, one to the north and one to the south of the ERF. Both are rural background stations, and both have data for 2017. Consequently the station with the highest background will be used to be representative of background air quality in the vicinity of the Installation.

6.4.10. Hydrogen Fluoride (HF)

6.4.10.1. Monitoring of ambient levels of HF is not currently carried out in the UK. A modelling study has suggested a natural background concentration of 0.5µg/m^3 with an elevated background of 3µg/m^3 where there are local anthropogenic emission sources [(6)]. To ensure a worst case scenario is assessed the higher of these two values will be used.

6.4.11. Hydrogen Chloride (HCl)

6.4.11.1. Ambient monitoring of HCl is carried out as part of UK Acid Gases and Aerosols Monitoring Network (AGANet) at a number of locations around the UK. The closest monitoring site is at Cwmystwyth. The average annual mean HCl concentration measured in 2015 (latest data available) will be used and is assumed to provide a reasonable estimate of the background concentration at the Installation.

6.4.12. Dioxins and Furans (PCDD/Fs)

6.4.12.1. Monitoring of PCDD/Fs is currently carried out by DEFRA at six locations in the UK (Hazelrigg, High Muffles, London, Manchester, Weybourne and Auchencorth Moss). Of these six locations, four are rural locations. The latest available data is from 2010.To ensure a worst case scenario assessment the highest value from these four sites will be used.

6.4.13. Polychlorinated Biphenyls ("PCBs")

6.4.13.1. Monitoring of PCBs is currently carried out by DEFRA at six locations in the UK (Hazelrigg, High Muffles, London, Manchester, Weybourne and Auchencorth Moss). Of these six locations, four are rural locations. The latest available data is from 2010.

(6) EPAQS (February 2006), Guidelines for Halogen and Hydrogen Halides in Ambient Air for Protecting Human Health Against Acute Irritancy Effects

6.4.13.2. To ensure a worst case scenario assessment the highest value from these four sites will be used.

6.5. Existing Conditions – Specified Ecological Sites

6.5.1. Habitat Site Specific Baseline Concentrations

6.5.1.1. Site specific baseline concentrations of oxides of nitrogen ("NO_x"),sulphur dioxide ("SO_2") and ammonia ("NH_3"),will be obtained from APIS. Background concentrations for each ecological receptor will been obtained at the grid square of the ecological site closest to the Installation.

6.5.2. Nutrient Nitrogen and Acid Deposition

6.5.2.1. Site specific baseline nutrient nitrogen and acid deposition rates will be obtained from APIS. Again, the specific deposition rates for each ecological receptor will be obtained at the grid square of the ecological site closest to the Installation.

6.6. Points for Clarification

6.6.1. Based on the information provided in Sections 6.1 – 6.5 its respectfully requested that the following points be addressed in the response to this scoping request:

- confirmation that the method for assessing construction dust is acceptable;
- provide any background air quality data or confirm that proposed background data is acceptable;
- confirmation that SLR diffusion tube data from 2015 can be considered;
- confirmation that no other potentially sensitive human receptors are required;
- confirmation that no other potentially sensitive ecological receptors are required;
- confirmation that the approach to assessing potentially sensitive ecological sites is acceptable;
- confirmation that the location of the meteorological site is suitable.;
- confirmation that the NOx to NO_2 conversion rates are acceptable;
- confirmation that the ELVs are acceptable, specifically for PAHs and PCBs;
- confirmation that the assessment criteria is acceptable; and
- confirmation that the approach to the terrain affects is acceptable.

7. Key Environmental Aspects - Health Impact Assessment

7.1. Overview

7.1.1. Health Impact Assessment ("HIA") is a means to assess, in an objective and systematic process, both potential positive and negative impacts of a proposal on health and well-being. The assessment process views health in its broadest sense and utilises the framework that has developed around the concept of the wider determinants of health. HIA is underpinned by the core principals of transparency, ethical, equitable, robust, participatory, sustainable and democratic (Wales Health Impact Assessment and Support Unit "WHIASU").

7.2. Environmental Assessment Boundaries

7.2.1. The environment, in terms of HIA, is more holistic in context than would perhaps be considered when thinking of the traditional use of the word 'environment'. Through the HIA process environment is considered in its entirety, meaning that all aspects of human life and that of the natural systems within which we exist can be considered and given due regard appropriate to the level of assessment being performed.

7.2.2. Taking this more holistic view of the 'environment' ensures that artificially set boundaries do not hamper or constrain an assessment of a proposal and the potential impacts on the health and well-being of vulnerable and disadvantages groups are identified.

7.3. Methodology

7.3.1. The Wales Health Impact Assessment Support Unit ("WHIASU") have developed a tool kit and guidance documents to assist the development of an HIA and to identify what type of HIA should be performed. These resources will be utilised to ensure that an appropriate and robust assessment is performed taking in to consideration the nature and scale of the proposed development. Whilst there is no prescriptive method of performing an HIA, the various tools and guidance will be utilised to ensure an holistic and encompassing assessment is performed

7.3.2. An important aspect will be cross referencing to the Well-Being of Future Generations goals and objectives to ensure that opportunities to contribute towards them are taken, and to develop mitigation where necessary.

7.3.3. The initial stage of an HIA is a Screening exercise that identifies the need for an HIA and records the key aspects of what an HIA will need to take in to consideration. The Screening exercise and associated record sheet are shown in Appendix 3.

7.4. Existing Conditions

7.4.1. Information and data relating to the existing environmental and health conditions in the locality will need to be collated. Much of this will be done as part of the other assessments required under EIA and Habitats regulations.

7.4.2. There may be certain data or information that will not be required for other assessments, such as 'Multiple Indices of Depravation', which will need to be collated in order to perform an appropriate HIA. Likewise there may be 'local knowledge' that is not captured in any formal way that could be gathered through participatory workshops, should the Scoping Assessment identify the need.

7.5. Points for Clarification

7.5.1. Based on the information provided in Sections 7.1 – 7.4 it is requested that the following points be addressed in the response to this scoping request:

- are there any specific local issues in respect of health or wellbeing that need to be given consideration;
- are there specific local stakeholders that should be requested to participate in the HIA process; and
- are there any other specific areas of concern, or potential opportunities, from the proposed development that should be included in the HIA process.

8. Key Environmental Aspects - Transportation, Traffic and Highways

8.1. Overview

8.1.1. Access to/egress from the Development proposal would be via the recently approved new access junction to the north east of the existing site access junction.

8.1.2. From a transport perspective, key impacts during the construction phase would be the effect of construction vehicle movements on highway capacity and safety on the local road network.

8.1.3. Once operational, the key impacts of the Development will be the effect of operational vehicle movements on highway capacity and safety on the local road network

8.1.4. The objectives of this study are as follows:

- to assess the effect of the construction and operational development traffic on the local road network from a highway capacity and safety perspective; and
- to undertake a qualitative assessment of the impact of the proposal on the local pedestrian, cycle and public transport networks.

8.1.5. It is considered that the construction and operational traffic would at worst only be likely to have a moderate impact on the operation of the local road network. Consequently it is considered that junction capacity assessments would not be required, however, a link capacity assessment would be undertaken.

8.2. Environmental Assessment Boundaries

8.2.1. The study area of the transport investigations is proposed to be the A458 from a point 500m north east of the existing site access junction to and inclusive of its roundabout junction with the A483.

8.2.2. Within this study area the proportional impact of the construction and development traffic movements on the A458 would be assessed as would the latest available 3 year period of Personal Injury Accident ("PIA") data. In addition, a qualitative assessment of the impact of the Development on the local pedestrian, cycle and public transport networks would be undertaken.

8.3. Methodology

8.3.1. A Transport Assessment would be prepared in accordance with the relevant aspects of Technical Advice Note 18: Transport (March 2007) and chapter 8 of Planning Policy Wales Edition 9 - November 2016 (or Edition 10 if finalised).

8.3.2. The proportional increase in traffic levels on the A458 as a result of the development traffic would be calculated.

8.3.3. The following significance criteria are considered relevant in respect of considering the impact of the development traffic flows within the study area and are provided in Table 6.

Table 6: Significance Criterial

Impact Magnitude				
Subject Area	Impact Significance			
	Major	Moderate	Minor	Negligible
Vehicular traffic from proposed development	Considerable impact (by extent, duration or magnitude) or more than local significance or in breach of recognised acceptability, legislation, policy or standards (greater than 60 % change).	Limited impact (by extent, duration or magnitude) which may be considered significant (30 % to 60 % change).	Slight, very short or highly localised impact of no significant consequences (10 % to 30 % change).	The bearing of the impact is too small to be measured meaningfully (0 to 10%).
Construction related traffic	Construction traffic flows greater than development traffic flows.	Construction traffic flows greater than 100 HGVs per day on major road network, or greater than 25 HGVs per day on minor roads.	Construction traffic flows less than 100 HGVs per day on major road network, or greater than 25 HGVs on minor roads.	Construction traffic flows less than 25 HGVs per day on all roads.

8.3.4. In addition to the above significance rating the nature / type and duration of the impacts will be assessed using the following criteria provided in Table 7.

Table 7: Impact Nature or Type

Impact Nature or Type	Definition
Beneficial	An impact that is considered to represent an improvement on the baseline or introduces a positive change.
Adverse	An impact that is considered to represent an adverse change from the baseline, or introduces a new undesirable factor.
Direct impact	Impacts that result from a direct interaction between a planned project activity and the receiving environment/receptors.
Indirect impact	Impacts that result from other activities that are encouraged to happen as a consequence of the Project.

8.4. Existing Conditions

8.4.1. The following will be undertaken in order to confirm existing conditions:

- a review of baseline conditions, including the layout of the local road network, the site access arrangements, the haul route arrangements and confirmation of the existing pedestrian, cyclist and public transport networks;
- review of July 2016 Automatic Traffic Count data for the A458 from a point between the existing site access and the roundabout junction with the A483;
- review of the latest available 3 year period of Personal Injury Accident data for the A458 from a point 500m north east of the existing site access junction to and inclusive of its roundabout junction with the A483; and
- consideration of historic, existing and future traffic levels associated with the site.

8.5. Points for Clarification

8.5.1. Based on the information set out in Sections 8.1 – 8.4 it is requested that the following points be addressed in the response to this scoping request:

- confirmation that the recently approved site access junction is considered acceptable to serve the Development;
- confirmation that the proposed extent of the study area is acceptable;
- confirmation that there is no committed development traffic that should be considered in this assessment; and
- confirmation that provided that at worst moderate impacts only are expected that junction capacity assessments are not required.

9. Key Environmental Aspects - Landscape and Visual Impact

9.1. Overview

9.1.1. Key impacts during the construction phase relate to the proposed screening bund around the southern and western extent of the quarry, storage of construction materials, plant etc. for a temporary duration and the construction of the stack and buildings relating to the ERF.

9.1.2. Once operational, the main impacts concern the visibility of the stack and buildings associated with the ERF for a period of at least 25 years, following which, thessite will be restored.

9.1.3. The Landscape and Visual Impact Assessment ("LVIA") will review and assess separately the matters relating to the effects on landscape character and the effects upon visual amenity.

9.1.4. All relevant national and local landscape policies and documents will be considered with a summary provided in Chapter 6: Planning Policy of the ES.

9.1.5. A Conceptual Masterplan will be prepared by Bright & Associates and will form part of the LVIA. Currently, this is represented by Drawing No. BT1021-D1: Proposed Locations for Representative Viewpoints in Appendix 1.

9.2. Environmental Assessment Boundaries

9.2.1. The study area to be adopted for the LVIA will effectively comprise all areas within and near to the mapped Zone of Visual influence ("ZVI") demonstrated by Drawing No. BT1021-D1 in Appendix 1.

9.2.2. The ZVI has been established using computer based analysis and is based on the visibility of the stack at 160mAOD (i.e. the quarry base at 90mAOD, plus 70m for the stack). Consequently, the total search distance is 15km from the Development, although the methodology reduces the visual impact assessment to up to 10km.

9.3. Methodology

9.3.1. Guidance and Best Practice

9.3.1.1. The LVIA will be undertaken in accordance with The Guidelines for Landscape and Visual Impact Assessment (Third Edition), published in April 2013 by the Landscape Institute and Institute of Environmental Management and Assessment.

9.3.1.2. It will also make reference to the following sources:

- Landscape Advice Note 01/11 Photography and Photomontage in Landscape and Visual Impact Assessment, Landscape Institute, (2011);
- An Approach to Landscape Character Assessment, Natural England (2014); and
- Visual representation of development proposals, Technical Guidance Note 02/17, Landscape Institute (2017).

9.3.1.3. Further to the above, direction will be taken from information provided by LANDMAP, including methodologies and guidance notes and the Adopted Powys Local Development Plan 2011 – 2026 (April 2018) with reference to Policy DM4: Landscape.

9.3.2. Potentially Sensitive Landscape Receptors

9.3.2.1. The LVIA will consider effects on landscape character, cultural (heritage) designations and their settings.

9.3.2.2. The baseline will determine the current status of the landscape character. Given the location of the Site close to the Wales-England border and extent of the proposed study area, National Landscape Character Areas are classified by NRW and National Character Areas are categorised by Natural England ("NE"). At a more detailed scale, information is provided by NRW through LANDMAP.

9.3.2.3. The Powys Landscape Character Assessment Study (2008) prepared by John Campion Associates Ltd. for Powys County Council and Shropshire Landscape Typology (2006) (Shropshire Council) will also be referred to.

9.3.2.4. Landscape and cultural heritage designations with the defined study area which contribute to a sense of place and/or signify an amenity value for receptors such as footpath users and visitors, will be reviewed for the LVIA.

9.3.3. Potentially Sensitive Human Receptors

9.3.3.1. The LVIA will consider effects on human (visual) receptors. It will assess the primary viewpoints within a 10km distance, thereby, refining the 15km study area.

9.3.3.2. For the visual impact assessment, representative viewpoint locations will be identified to assist the understanding and context of the existing amenity and changes due to the proposed development.

9.3.3.3. It is proposed to include 20 representative viewpoints which are identified on Drawing No. BT1021-D1: Proposed Locations for Representative Viewpoints in Appendix 1 and summarised in the Table 8. The table provides details of the distance and direction from the Site Centre, together with an explanation of why the viewpoint location has been selected.

Table 8: Proposed Locations for Representative Viewpoints

Proposed Location Number	Distance from Site Centre (c.km)	Direction from the Site Centre	Description of Location/Reason for the Proposed Viewpoint Being Chosen
1	0.4	SW	From Heldre Lane near Whitehouse Farm. Chosen due to the vicinity of the Site, open vista and proximity to a residential property. Receptors would be road users and residents at the farmstead
2	0.4	SE	From Heldre Lane, demonstrating a general view from a public road. Receptors would be road users.
3	0.7	SE	From a public footpath off Heldre Lane. Chosen due to the proximity to the Site, the elevated viewpoint location and direct views to the Site. Receptors would be footpath users.
4	0.9	E	From near Upper Heldre, representing potential views from residential properties (a house and adjacent bungalow). Receptors will comprise residents and road users.

Table8: Proposed Locations for Representative Viewpoints (cont)

Proposed Location Number	Distance from Site Centre (c.km)	Direction from the Site Centre	Description of Location/Reason for the Proposed Viewpoint Being Chosen
5	1.3	S	From a public footpath south-east of Gelli. Chosen due to its close proximity and given that the route incorporates prominent views towards the Site. Receptors would be footpath users.
6	1.4	SE	From a public footpath south of Upper Heldre. Chosen due to its prominent location and north-western aspect towards the Site and the open hill side. Receptors would be footpath users.
7	1.7	E	From a public footpath near Peny-Bank. The viewpoint location would permit an exploration of mid distance views for footpath users and also inform potential views from nearby residential properties. Receptors would comprise footpath users and residents (NB. The latter would be representative).
8	1.6	N	From the residential area of Trewern. In addition, it would also be in the vicinity of the Maesfron (Grade II) Register of Parks and Gardens of Special Historic Interest in Wales (CADW) and its associated setting. It is proposed that the viewpoint location should be from main road or side road, to best illustrate the southerly amenity. Receptors would comprise residents.
9	2.3	NE	From an area of Winnington Green, comprising both public footpath and roadside views. A section of the Sustrans National Route No.81 (cycleway) uses the nearby road. Receptors would be footpath users and may include road users or residents dependent on the location of the photograph.

Table8: Proposed Locations for Representative Viewpoints (cont)

Proposed Location Number	Distance from Site Centre (c.km)	Direction from the Site Centre	Description of Location/Reason for the Proposed Viewpoint Being Chosen
10	2.1	W	From a section of the A483 and Offa's Dyke Path National Trail, west of the Site. The latter links to the Severn Way long distance footpath close by. Chosen due to the significance of the National Trail/long distance footpath routes and given the extent of flat ground between the viewpoint location and the Site. Receptors would be footpath users and road users.
11	2.2	NW	From a public footpath near Crowthers Coppice and adjacent to residential properties, illustrating wider views over the Severn Valley. Receptors would be footpath users and residents.
12	4.59	NE	From Cefn y Castell Hill Fort and chosen due to the site's significance as a Scheduled Ancient Monument (CADW) and its prominent location at c.367mAOD. Receptors would be footpath users.
13	5.49	NW	From a road and public footpaths at Burgedin. Chosen due to its prominent location and south-easterly aspect towards the Site. In addition, residential properties may receive views towards the Site. Receptors would be footpath users, road users and may include residents if the photograph is taken near residential properties.
14	6.40	NW	From north of Arddleen, chosen to represent the typical amenity towards the Site, near a church and public road. Receptors would be footpath users and may include road users if the photograph is taken near the road.

Table8: Proposed Locations for Representative Viewpoints (cont)

Proposed Location Number	Distance from Site Centre (c.km)	Direction from the Site Centre	Description of Location/Reason for the Proposed Viewpoint Being Chosen
15	3.78	SW	From a residential area of Welshpool. Chosen due to its prominent location and far reaching views but limited amenity in regards to the Site with views being better directed to the east. Receptors would be residents.
16	4.8	SW	Comprising a secondary view from a residential area of Welshpool exploring potential visibility near to a footpath/beacon. In addition, areas north of Red Bank (road) have been categorised for housing allocation as Site Ref P57 HA3 Land at Red Bank, Welshpool (149 units) in the Adopted Powys Local Development Plan 2011 – 2026 (April 2018). Receptors would include footpath users and residents. Both receptor groups being representative.
17	6.5	SW	From Powis Castle and Garden. Chosen due to the site's significance as a National Trust property and prominent location. The Site also includes a Scheduled Ancient Monument (CADW). Receptors would be visitors to Powys Castle.
18	9.1	SW	From the trig point at Y Golfa, accessed by footpath users on the Glyndwr's Way National Trail. Presenting an elevated and prominent view over the Severn Valley with the Site as backdrop. Receptors would be footpath users.
19	8.9	SW	From a section of road near Llwynderw. Chosen due to its prominent location and north-easterly aspect towards the Site. In addition, residential properties nearby may receive views towards the Site. Receptors would be road users and may include residents if the photograph is taken near residential properties.

Table8: Proposed Locations for Representative Viewpoints (cont)

Proposed Location Number	Distance from Site Centre (c.km)	Direction from the Site Centre	Description of Location/Reason for the Proposed Viewpoint Being Chosen
20	7.0	N	From Rhos (near Llandrinio) and Offa's Dyke Path National Trail. The view is representative of the low lying valley form and long distance views south, towards the Site with only limited visibility, but enables a representative view. Receptors would be footpath users and may include residents if the photograph is taken near the road.

9.3.4. Photomontage

9.3.4.1. Photomontages will be included to enable assessment from selected viewpoint locations. It is proposed that photomontage will be used for approximately eight key local viewpoints and two more distant viewpoints to enable understanding of the visual context of the stack. These will present 'before' and 'after' views, namely, the existing view (before) and the Development within the view (after).

9.3.4.2. The LVIA will consider the proposed development and the resulting effects. In particular, it will give consideration to the stack position and height as well as building heights in terms of the evaluation and magnitude of the effect through the ZVI mapping as shown on Drawing No. BT1021D1 in Appendix 1.

9.3.5. Potential Impacts and Mitigation Measures

9.3.5.1. The LVIA will set out the landscape screening proposals that will form an integral part of the design of the proposed development and the assessment evaluation will take such aspects into account.

9.3.5.2. Mitigation measures will primarily relate to the layout of the Development, extensive screen bund and tree planting together with a review of the quarry restoration where it applies to the Red Line area shown on Drawing No. BT1021-D1 in Appendix 1

9.3.5.3. Any residual landscape and visual impacts, following mitigation, will also be assessed.

9.3.6. Concept Masterplan

9.3.6.1. A Concept Masterplan will be prepared. This will take into account the broader site uses. It is envisaged that this will encompass the following:

- proposed areas of scattered scrub and woodland planting;
- restored clay slopes to allow the natural colonisation of grassland habitat, with scattered scrub;
- former quarrying areas can be used for industrial purposes in future, in addition, there is the potential for logistics, business and specialist horticulture uses; and
- the area associated with the Buttington Brickworks SSSI will remain undeveloped and it is suggested that an interpretation board and access is provided.

9.4. Existing Conditions

9.4.1. The baseline situation for the LVIA will consider the current land use and context of the Site, given that the immediate vicinity consists of a consented quarry and further quarrying will take place under an extant consent.

9.4.2. Of note is the Adopted Powys Local Development Plan 2011 – 2026 (April 2018), with the majority of the Site categorised as Site Allocation Ref. No. P59 EA1 under Policy E1 Employment Proposals on Allocated Employment Sites (Site Name: Buttington Quarry). It is also stated that the Quarry is '*Suitable for waste uses through Policy W1[Location of Waste Development]*'

9.5. Points for Clarification

9.5.1. Based on the information provided in Sections 9.1 to 9.4, it is requested that the following points be address in the response to this scoping request:

- confirmation that no other potentially sensitive landscape receptors are required; and
- confirmation that no other potentially sensitive visual receptors are required.

10. Key Environmental Aspects - Ecology

10.1. Overview

10.1.1. The main ecological considerations of the Development are the potential effects on designated sites as a result of gaseous emissions from the thermal treatment process during the operational phase of the development, loss of Open Mosaic Habitat ("OMH")[7] of previously developed land, and displacement of bats due to changes in lighting levels.

10.1.2. Desk study and survey work to inform the ecological assessment for the Site is ongoing. Survey work has included an extended Phase 1 habitat survey, environmental DNA surveys for great crested newts, and breeding bird surveys. Bat survey work, involving both walked transects and the deployment of static data loggers, began in May 2018 and will continue until September 2018.

10.1.3. The work will inform the Ecological Impact Assessment ("EcIA") for the site, which will be conducted in line with industry standard Chartered Institute of Ecology and Environmental Management ("CIEEM") guidance. Although impacts on protected sites and habitats will be fully considered within the EcIA, a separate Habitats Regulations Assessment ("HRA") report will be produced that will focus on impacts of aerial deposition on European Sites ("SACs") within 10 km of the main stack[8]. The assessment of the likely impacts of aerial deposition on habitats will be informed by the findings of air quality modelling.

10.1.4. It is anticipated at this stage that habitat loss and associated effects on protected species will be small-scale. There are opportunities to deliver a positive outcome for biodiversity that ensures legislative compliance and is in line with policy drivers.

10.2. Environmental Assessment Boundaries

10.2.1. The ecological assessment will consider potential effects of aerial deposition on Natura 2000 sites (SACs and SPAs) and Ramsar Sites (Wetlands of International Importance) within 10 km of the Site, and on other statutory and non-statutory designated sites and areas of Ancient Woodland within a 2 km perimeter area. These assessment area boundaries follow the rationale set out in the air quality section of this document.

[7] This is a habitat of principal importance for the conservation of biodiversity in Wales (in accordance with the provisions of Section 7 of the Environment Wales Act 2016). It is typically characterised by a patchwork of bare, previously disturbed ground and vegetated areas which can be in the process of changing from one vegetation type to another. The previous disturbance is often industrial, such as mining, although the habitat can include old quarries or building sites, areas of spoil from old coal mines, disused railway lines and urban brownfield land).

[8] This is in accordance with NRW guidance. A more detailed rationale is set out in the air quality section.

10.2.2. The search area for biological records applied during the desk study will extend to 2 km from the Site boundary. This is in accordance with industry standard (CIEEM, 2016) guidance, and should allow relevant contextual information to be collated. The level to which impacts (other than aerial deposition) on biodiversity are likely to extend beyond the Site boundary will depend on the sensitivity and importance of the habitats within the Development footprint, their degree of connectivity, and the evidence that they are of importance to protected or priority species. It is considered likely, at this stage, that the zone of influence of the Development will be relatively small.

10.3. Methodology

10.3.1. Desk Study

10.3.1.1. The scope of survey and assessment work has been informed by desk study. This has included:

- study of open source aerial photography and Ordnance Survey mapping to determine the ecological context of the site/its connectivity in terms of the wider landscape;
- a review of the positions and qualifying features of statutory sites of nature conservation importance in relation to the site boundary.
- a data request to the Powys Biodiversity Information Service ("BIS") for biological records and information on non-statutory designated sites of nature conservation importance within 2 km of the site.
- a review of the proximity of the Site to ancient woodland (based on NRW and BIS data); and
- a review of previous ecological survey data collected by SLR Consulting in connection with the ERF.

10.3.2. Extended Phase 1 Habitat Survey

10.3.2.1. An extended Phase 1 habitat survey was completed of the Site and a 50 m perimeter area in summer 2018 in accordance with industry standard (JNCC, 2010) methods. Habitats present were mapped, a botanical species list compiled, and signs of protected and notable species (and the potential for them to occur) noted.

10.3.3. Great Crested Newt Survey

10.3.3.1. Environmental DNA (eDNA) survey for great crested newt *Triturus cristatus* was completed at two ponds within the site boundary in June 2018 in accordance with Freshwater Habitats Trust (2015) guidance. Samples were analysed by Sure Screen

Consulting.

10.3.3.2. These ponds had previously been subject to eDNA survey (data collected by SLR Consulting and analysis again by Sure Screen Consulting) in 2015.

10.3.3.3. A further pond (a shallow depression) identified in 2018 was unsuitable for eDNA survey due to its depth and limited extent. The only plant species present was common reedmace. The pond was subject to systematic torch searching in June 2018.

10.3.4. Bat Surveys

10.3.4.1. Walked bat activity surveys and static detector deployments commenced in May 2018 and are due to continue up to and including October 2018. This survey effort is in accordance with industry standard guidance for a medium sensitivity site (Collins, 2016). The Site is considered to be of medium sensitivity as the footprint of the development has very little potential to support bats, while the wider site and adjoining habitats have good foraging potential, and there are also local opportunities for roosting (principally in off-site semi-natural woodland).

10.3.4.2. The route of the transect and the locations of the three static detectors used at the site have been designed / selected to collect data from the footprint of the Development and semi-natural habitats within the wider Site boundary (including woodland, scrub and grassland). Static detectors have been deployed to collect data for a period of five consecutive nights each month.

10.3.4.3. Bat survey undertaken in July and August 2015 involved two walked transects. These were predominantly through semi-natural habitats to the south of the Development area.

10.3.5. Breeding Bird Survey

10.3.5.1. Walkover breeding bird surveys have been completed in May, June and early July 2018, and have covered the entire Site boundary. All points have been approached to within 50m, and all species seen and heard have been recorded using standard British Trust for Ornithology two-letter species codes and activity symbols. Particular attention has been given to the quarry pools and faces to determine whether any breeding waders, wildfowl or raptors occur on the site.

10.3.6. Ecological Assessment

10.3.6.1. The approach to ecological impact assessment ("EcIA") will be based on Chartered Institute of Ecology and Environmental Management (CIEEM, 2016) guidance.

10.3.6.2. The ecological features that could be impacted by the proposed ERF will be established through consultation (scoping and follow up correspondence), desk study and field survey. Those features that are considered to be important, and potentially affected by the project, will be subject to detailed impact assessment.

10.3.6.3. The assessment will consider the likely impacts of construction and operation of the ERF on these important features in the absence of mitigation, and in combination with other proposed developments. Relevant mitigation, compensation and enhancement measures will then be identified, as relevant, and any significant residual effects identified.

10.3.6.4. The EcIA will conclude by assessing whether there are legal and / or biodiversity policy implications associated with the development. This will include reference to The Conservation of Habitats and Species Regulations 2017, the Wildlife and Countryside Act 1981 (as amended), the Environment Wales Act (2016) and Technical Advice Note 5: Nature Conservation and Planning.

10.3.6.5. It is anticipated that a separate report will be produced to specifically address the requirements of the Conservation of Habitats and Species Regulations 2017. This will consider the potential for effects of aerial deposition on SACs within 10 km of the flue stack of the proposed ERF.

10.4. Existing Conditions

10.4.1. Protected Sites

10.4.1.1. There are two SACs within 10 km of the main stack at the site. These are the Montgomery Canal SAC, which is designated due to the occurrence of floating water-plantain *Luronium natans*, and Granllyn SAC, which supports the largest population of great crested newts *Triturus cristatus*, in Powys. The respective SACs are approximately 1,800 m and 4,350 m from the proposed stack.

10.4.1.2. Two SSSIs are present within 2 km of the main stack. These are Buttington Brickworks SSSI, which was notified for its geological interest (and is not considered further here) and the Montgomery Canal SSSI. In addition to the internationally important floating water-plantain population, the Montgomery Canal is of special scientific interest for its aquatic, emergent and marginal plant communities, individual rare plants and associated invertebrate assemblage. It is approximately 1,800 m from the proposed stack (sharing a common boundary with the SAC in this location).

10.4.1.3. No additional non-statutory sites of nature conservation interest have been identified as a result of the data search.

10.4.2. Habitats

10.4.2.1. The development area in the floor of the quarry is mainly bare ground. Scattered short-lived annual and ruderal plant species are present around the fringes of the quarry, and reedmace *Typha latifolia* occurs in the pools. The access track to the Development is also bare ground (compacted quarried material).

10.4.2.2. Within the southern part of the site there is a network of tracks through remnant areas of semi-improved neutral grassland (pasture), ruderal habitats and scattered scrub. Fragments of hedgerows are present, but these are not linked to a wider hedgerow network due to a network of tracks and areas of former quarrying activity.

10.4.2.3. Woodland is present to the north-west of the Site (a small area extends into the Site but is outside the Development footprint). The nearer areas of woodland to the development site are dominated by conifers, with semi-natural broadleaved woodland further to the west. The woodland is a mixture of plantation on an ancient woodland site and restored ancient woodland. A strong linear habitat feature extends along the line of a dismantled railway between the woodland and the A453 approximately 2.5 km to the north; it is dominated by scrub and developing woodland and is likely to provide a commuting / dispersal corridor through the area for various species. Otherwise, the landscape around the Site is dominated by mixed farmland.

10.4.3. Great Crested Newt

10.4.3.1. No records of great crested newt were returned by BIS for the 2 km perimeter search area around the Site. Study of aerial photographs and maps has not resulted in any ponds being identified within 500m of it (other than those within the Site).

10.4.3.2. The 2018 eDNA surveys and the 2015 eDNA surveys of the on-site ponds both returned negative results for great [redacted], while the torching of the additional shallow pool identified in 2018 found palmate [redacted]

10.4.4. Bat Surveys

10.4.4.1. Bat records returned by BIS indicated that common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, Daubenton's bat *Myotis daubentonii*, lesser horseshoe bat *Rhinolophus hipposideros*, noctule *Nyctalus noctula* and Natterer's bat *Myotis nattereri* have been recorded within the area. No records were returned for the Site, albeit brown long-eared bat has been noted within the western part of the quarry.

10.4.4.2. Bat surveys to date have recorded very few bats using the Site, but a diverse bat community (that reflects the results of the data search) using the semi-natural habitats in the southern part of the site and the woodland to the north-west. There are no roosting opportunities for bats within the development area; the quarry lacks suitable cracks and cavities. There are a few trees within the wider site boundary that have some potential to support bat roosts, but greater opportunities are present in the western part of the off-site woodland (mature trees with natural cavities).

10.4.4.3. The limited work completed in 2015 returned broadly similar results. A record of Leisler's bat *Nyctalus leisleri* obtained during the work is the only record of the species on site to date.

10.4.5. Breeding Bird Surveys

10.4.5.1. Ornithological data from BIS indicates that barn owl *Tyto alba* occurs in the wider area, and that a range of declining farmland and suburban / urban passerines species have been recorded within 2 km of the Site.

10.4.5.2. Bird surveys completed in 2018 did not identify any breeding raptors or waterbirds within the development area or the wider Site boundary. The mudstone faces of the quarry have very few shelves or ledges that could accommodate nests. The on-site pools are small, the open ground within the quarry is limited in extent and overlooked (providing potential predator perches); and, a mixed roost of Corvids (crow species) is present close to the Site, with these birds apparently using pools within the quarry for drinking. All of these factors are likely to discourage open-ground nesting species.

10.4.5.3. The bird community associated with the semi-natural habitats within the site (but outwith the development area) does not include any specially protected species. A small number of species of principal importance for the conservation of biodiversity in Wales (with reference to Section 7 of the Environment Wales Act 2016) were recorded during the work, and are likely to breed.

10.4.6. Other species

10.4.6.1. The extended Phase 1 survey found that reptile habitat was present within the Site boundary but is largely outwith the Development area. It is therefore considered that a working method statement will be required as part of a Construction Environmental Management Plan to ensure legislative compliance with regard to reptiles, but that no survey work is necessary to inform the planning application.

10.4.6.2. [redacted] are known to be present, from both BIS data and the extended Phase 1 survey, in woodland to the north of the site. No evidence was found of badgers setts within the

footprint of the development. [redacted]

10.4.6.3. Suitable habitat for other protected and priority species such as otter *Lutra lutra*, water vole *Arvicola amphibius* and hazel dormouse *Muscardinus avellanarius* is not present in the development footprint. [redacted] *Erinaceus europaeus* records were returned by BIS for the data search area.

10.5. Points for Clarification

10.5.1. Protected Sites

10.5.1.1. The main ecological consideration for the Development will be potential effects on protected sites and priority species as a result of the deposition of aerial pollutants. The outputs of air quality modelling will be used to determine the nature and scale of predicted effects on these sites and features, and to determine whether they are likely to be significant.

10.5.1.2. In addition to the assessment completed in the EcIA, a separate report to inform an assessment of impacts on the Montgomery Canal and Granllyn SACs will be required (in accordance with the Conservation of Habitats and Species Regulations 2017); a Habitats Regulations Assessment ("HRA") report.

10.5.1.3. Do consultees agree with the scope of the EcIA and HRA (with regard to aerial deposition)?

10.5.2. Habitats and Species

10.5.2.1. The Site area is of low ecological value; the wider site boundary and adjacent land supports a range of semi-natural habitats that are of greater value, but which are unlikely to be affected by the proposals.

10.5.2.2. The main impact of the development on / near site habitats will be the loss of OMH on previously developed land, which occurs around the edges of the quarry. While there is no indication from the Phase 1 survey that the OMH on site is particularly botanically diverse, this is nevertheless a habitat of principal importance for the conservation of biodiversity in Wales (with regard to Section 7 of the Environment Act Wales, 2016). The reduction in the extent of OMH should therefore be compensated by a commitment to safeguard and enhance the remaining resource and achieve local conservation gain (in accordance with Planning Policy Wales, Edition 9 – November 2016 (or Edition 10 if finalised).

10.5.2.3. The main potential protected species issue that will need to be considered in the EcIA will be impacts on bats through changes in lighting regime during both the construction and operational phases of the development. It will be necessary to provide a lighting plan that demonstrates light spill beyond the Site is very limited to mitigate lighting effects on bats.

10.5.2.4. It is reasonable to assume that great crested newts are not present on site, and that effects on the species will not need to be considered in detail in the EcIA.

10.5.2.5. It is possible that the on-site ponds have a function as drinking water resources for locally-breeding birds and for mammals, such as [redacted] and h[redacted], and the potential impact of their loss will need to be considered in this context. Potential issues with regard to legislative compliance (as opposed to significant impacts in EIA terms) concerning badgers and reptiles can be addressed through a pre-construction check and / or working method statements.

10.5.2.6. Impacts on other species will not require detailed assessment in the EcIA.

10.5.2.7. Do consultees agree with the proposed scope of the EcIA and the preliminary conclusions drawn within the Request for a Scoping Direction.

11. Key Environmental Aspects - Water Environment

11.1. Overview

11.1.1. The key potential impacts of the construction phase to the water environment are contamination of surface water runoff with suspended solids and fuel/oil. It is understood that the base of the quarry is at an elevation below the local groundwater level and the bedrock geology is of very low permeability, therefore the potential risks to groundwater quality are considered negligible due to the absence of a pathway.

11.1.2. Once operational, the key potential impact of the proposed development is associated with increased surface water runoff rates/volumes and resultant increased flood risk downstream.

11.1.3. A surface water management plan would be prepared to ensure appropriate management of surface water runoff during the entire lifetime of the development. The surface water management plan would incorporate the use of sustainable drainage systems ("SuDS") to manage and treat runoff as close to source as possible, in accordance with The SuDS Manual 2015.

11.1.4. It is considered that there will be no significant impacts of the proposed development on groundwater quality or flow although these will be assessed qualitatively.

11.1.5. Due to the nature of the proposed development and the low risk to groundwater and surface water quality, following implementation of the proposed surface water management plan, it is assumed that the requirement for a Water Framework Directive Assessment ("WaFD) would be screened out. However, clarification is sought from Natural Resources Wales on this issue.

11.2. Environmental Assessment Boundaries

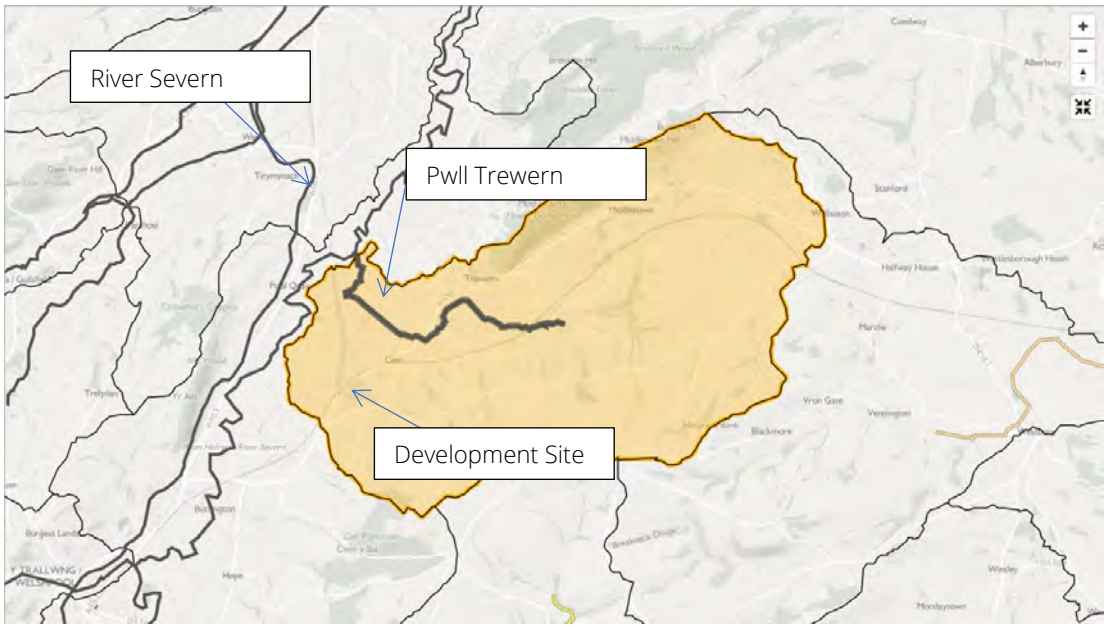
11.2.1. The study area for the water environment will extend to a 1km radius from the Development site boundary. However, the assessment will include water bodies outside of this area if appropriate, based on professional judgement of their value and connectivity to the Site, as outlined below.

11.2.2. Surface Water Bodies

11.2.2.1. The Environment Agency's Catchment Data Explorer indicates that the site lies within the surface water catchment area of Pwll Trewern, a tributary of the River Severn. The surface water bodies that will be assessed for potential effects from the Development are:

- Pwll Trewern – an ordinary watercourse (not classified as a main river) which discharges to the River Severn near Watery Lane, Trewern, approximately 2km north of the Site. Pwll Trewern rises as a number of springs / tributary watercourses on Heldre Hill to the east of the site. Pwll Trewern is classified as a Water Framework Directive (WaFD) surface water body and will be considered within the WaFD Assessment screening exercise. The alignment of Pwll Trewern and catchment area are shown in Figure 2.

Figure 2: Pwll Trewern Catchment



- A minor, unnamed tributary of Pwll Trewern rises on Heldre Hill and flows adjacent to the southern boundary of the Site. It is understood that surface water runoff from the Site currently discharges to this watercourse, which continues to flow in a westerly direction beneath the A458 and railway line, discharging to Main Ditch, a tributary of Pwll Trewern.

11.2.2.2. It is noted that the low-lying land to the west of the A458, within the floodplain of the River Severn, is within the boundary of Powysland Internal Drainage District ("IDD"); the Site is not shown to be within an IDD area.

11.2.2.3. Pwll Trewern discharges to the River Severn within the Camlad to Trederwen stretch of the River Severn, which is a defined WaFD surface water body. However, it is proposed that the River Severn would not be included within the WaFD Assessment screening, or wider environmental assessment due to its distance from the Site (3km downstream),

dilution potential and the inclusion of upstream tributary watercourses within the assessment. If the assessment demonstrates that the risks to tributary watercourses are acceptable, it can be assumed that the risks to the downstream River Severn would also be acceptable.

11.2.2.4. No other surface water bodies have been identified for assessment.

11.2.3. Groundwater

11.2.3.1. The Environment Agency's Catchment Data Explorer indicates that the Site lies within the catchment area of the WaFD Severn Uplands Lower Palaeozoic Groundwater Body. This groundwater body will therefore be included within the WaFD Assessment screening.

11.2.3.2. The geology beneath the Site comprises Quaternary Superficial Till, Alluvium and Glaciofluvial Fan Deposits, which have been removed by quarrying exposing Lower Palaeozoic, Silurian bedrock (predominantly mudstones).

11.2.3.3. The aquifer potential of the local geology will be investigated and assessed but the presence of low permeability mudstones within the quarry void suggests negligible groundwater flow and storage potential.

11.2.3.4. No other groundwater bodies have been identified for assessment.

11.2.4. Flood Risk and Surface Water Management

11.2.4.1. The assessment of flood risk and surface water management will be limited to the Site and the immediate upstream catchment area that naturally contributes surface water runoff to the Site.

11.3. Methodology

11.3.1. Groundwater Risk Assessment – Groundwater Quality

11.3.1.1. The potential risks to groundwater quality during the construction phase are associated with infiltration of potentially contaminated surface water runoff including suspended solids and fuels/oils. During the operational phase, the potential risks to groundwater quality are associated with spills or leaks of fuels/oils.

11.3.1.2. However, it is understood that the existing quarry extends below the regional groundwater table; this will be confirmed during the Site walkover and baseline data collection. If the Site is below local groundwater levels, with inflow towards the site, the potential risks to groundwater quality are negligible due to the absence of a pathway.

11.3.1.3. A qualitative risk assessment would be undertaken using a standard source-pathway-receptor approach with consideration of aquifer characteristics, pathway (based on groundwater levels), receptors (including private and licensed groundwater abstractions) and proposed mitigation measures.

11.3.1.4. As part of this Scoping Report it is requested that Powys County Council provides details (location, source of water and use) of all private water supplies located within a 2km radius of the Site boundary. It is also requested that Natural Resources Wales provides details (location and licence details) of all licensed groundwater and surface water abstractions within a 2km radius of the development site boundary.

11.3.1.5. It is proposed that appropriate management of surface water drainage will mitigate any potential risks to groundwater receptors.

11.3.2. Groundwater Risk Assessment – Groundwater Flow Regime and Quantity

11.3.2.1. It is understood that the existing quarry extends below the regional groundwater table, with limited groundwater ingress due to the low permeability geology.

11.3.2.2. A qualitative risk assessment will be undertaken of the potential impacts of any below ground development on the local groundwater flow regime. Groundwater inflows would be assessed and incorporated within the site's surface water management plan.

11.3.3. Flood Consequences Assessment

11.3.3.1. Review of the Development Advice Map ("DAM") produced by NRW for land use planning purposes confirms that the entire Site is located within Flood Zone A. Flood Zone A is defined as land "*considered to be at little or no risk of fluvial or coastal/tidal flooding.*"

11.3.3.2. Technical Advice Note (TAN) 15[9] states that, in terms of flood risk, new development should be directed towards suitable land within Zone A. Based on the Site's location within Flood Zone A, it is inferred that a Flood Consequences Assessment is not required for the Development.

11.3.4. Risk of Flooding from Other Sources

11.3.4.1. All potential sources of flood risk to the Site would be considered including: fluvial, tidal, surface water, reservoir and groundwater. Review of NRW's online Flood Risk Map Viewer confirms that the Site is at little or no risk of flooding from fluvial, tidal and reservoir sources. However, the Flood Risk Map Viewer identifies areas within and

[9] Welsh Assembly Government, July 2004, Technical Advice Note 15: Development and Flood Risk.

surrounding the Site that are at risk of flooding from surface water (due to the accumulation of precipitation and/or surface water runoff). The areas at risk of surface water flooding are limited to small pockets of land within the quarry footprint (defined as low flood risk) and the alignment of the minor, unnamed watercourse to the south of the Site which crosses the site access road (defined as low to high flood risk).

11.3.4.2. It is proposed that the risk of flooding from surface water would be fully considered in the development of the site's Surface Water Management Plan ("SWMP"). The SWMP would be developed with regard to Policy DM6 of the Powys Local Development Plan (2011-2026), which states:

"In areas identified at risk of flooding (fluvial, tidal, surface water and groundwater) or where a watercourse has insufficient channel capacity, opportunities to improve existing flood risk by using Sustainable Drainage Systems (SuDS), wetlands or other agreed and appropriate measures are investigated and implemented wherever possible".

11.3.5. Surface Water Management Plan

11.3.5.1. A SWMP will be prepared for the proposed development to ensure appropriate management of surface water runoff during the construction and operational phases. The principal aim of the SWMP would be to ensure surface water runoff (clean and potentially contaminated) is managed to prevent unacceptable flood risk to the Development, to prevent any increase in flood risk off-site and to ensure the protection of local surface water quality.

11.3.5.2. The SWMP would be developed with due regard to Policy DM6 of the Powys Local Development Plan (2011-2026), PCC Local Flood Risk Management Strategy[10] and PPW Chapter 13[11].

11.3.5.3. The SWMP will incorporate sustainable drainage systems (SuDS) designed with regard to current Welsh non-statutory standards[12] and CIRIA's The SuDS Manual[13].

11.3.5.4. It is understood that surface water runoff within the existing quarry currently drains in a south-westerly direction via interconnected drains, ponds and culverts adjacent to the Site access road and discharges to a minor watercourse to the south of the Site; this

[10] Powys County Council, April 2014, Local Flood Risk Management Strategy (2013 – 2017).
[11] Welsh Government, Planning Policy Wales, Chapter 13 – Minimising and Managing Environmental Risks and Pollution.
[12] Welsh Government, 2017, recommended non-statutory standards for sustainable drainage (SuDS) in Wales – designing, constructing, operating and maintaining surface water drainage systems.
[13] CIRIA, 2015, The SuDS Manual, C753-V6.

would be confirmed by a detailed site walkover. It is assumed that the SWMP for the Development would also outfall to this surface watercourse. If appropriate the existing outfall would be utilised; if a new outfall location and/or structure is required, Land Drainage Consent could be required and PCC would be consulted.

11.3.5.5. The potential to reuse surface water runoff within the development and the potential to discharge surface water runoff via infiltration to ground would be investigated.

11.3.5.6. The SWMP would be designed in accordance with the SuDS Manual using the industry standard MicroDrainage Source Control software module and HR Wallingford's Tools for the Design and Evaluation of SuDS.

11.3.5.7. For previously developed sites the SuDS Manual recommends that post development runoff rates and volumes should be reduced to the greenfield rates wherever possible and this approach would be followed for the Development.

11.3.5.8. The SuDS Manual states:

"Where the site has been developed previously (i.e. redevelopment sites), there should always be an aspiration to manage runoff to represent greenfield characteristics. This will help reduce any receiving watercourse flood risk (both now and under future climatic change scenarios), thus contributing to more sustainable development. However, it is recognised that redevelopment sites tend to be more constrained in terms of space and infiltration may be more restricted, so drainage approving bodies (in conjunction with the environmental regulator) may agree that reductions to an agreed proportion of the previously developed rates/volumes are acceptable."

11.3.5.9. Greenfield runoff rates would be calculated using FEH ReFH2, the most up-to-date version of the Flood Estimation Handbook (FEH) rainfall-runoff approach to flood estimation.

11.3.5.10. The SWMP would be designed to manage events up to and including the 100 year (1% annual probability) event, with allowance for climate change, to ensure no increased off-site flood risk. For rainfall events with a return-period in excess of 30 years, surface flooding of open spaces such as landscaped areas or car parks could occur for short periods. The SWMP would aim to achieve post-development peak runoff rates and volumes that are attenuated to pre-development rates and volumes for the 1 in 1 year, 1 in 30 year and 1 in 100 year events, in accordance with current guidance.

11.3.6. Climate Change Allowances

11.3.6.1. Appropriate allowance for climate change would be incorporated within the SWMP design, based on the design life of the development. Peak rainfall intensity is predicted to increase as a result of climate change. The Environment Agency has published climate change allowances for peak rainfall intensity for England[14] and it is proposed that these allowances be applied to the SWMP, in the absence of recommended allowances for Wales.

11.3.7. Potentially Contaminated Surface Water Runoff

11.3.7.1. Potentially contaminated surface water runoff (due to suspended solids loading and/or fuels/oils) would be discharged via appropriately designed silt traps / interceptors. Pollution prevention measures would be incorporated within the SWMP and designed in accordance with relevant Pollution Prevention Guidelines (and replacement Guidance for Pollution Prevention) including:

- GPP2 – Above Ground Oil Storage Tanks
- PPG3 – Use and Design of Oil Separators in Surface Water Drainage Systems
- GPP5 – Works and Maintenance in or near Water
- PPG6 – Working at Construction and Demolition Sites

11.3.7.2. All incoming wastes will be deposited, stored and managed undercover within the waste bunker, in a completely sealed system. Therefore, there is no potential pathway for leachate from incoming wastes to impact groundwater or surface water. Consequently, with this potential risk screened out, it will not be included for further assessment.

11.3.7.3. Oils would be stored on site in accordance with the Control of Pollution (Oil Storage) (Wales) Regulations 2016 and the requirements of the Site's Environmental Permit.

11.3.8. Water Framework Directive ("WaFD") Assessment

11.3.8.1. The Site is located within the catchment area of the following WaFD water bodies as defined within the River Severn River Basin Management Plan:

- Pwll Trewern surface water body; and
- Severn Uplands Lower Palaeozoic groundwater body

11.3.8.2. Consideration of whether the Development has the potential to impact upon these WaFD water bodies will be made.

[14] Environment Agency, February 2016, Flood Risk Assessments: climate change allowances

11.3.8.3. A staged approach to the WaFD assessment process is proposed, in accordance with the Planning Inspectorate's guidance[15]. Surface water runoff from the Site discharges to a minor ordinary watercourse which discharges to Pwll Trewern (the WFD surface water body) approximately 2km downstream of the site. Due to the inherent low risks posed by the Development to the local groundwater and surface water bodies it is assumed that any potential risks would be screened out and no further assessment would be required.

11.3.8.4. As part of this scoping report the views of Natural Resources Wales are requested on the need, or otherwise, for a specific WFD assessment and the appropriate scope / methodology of a WFD assessment if one is required.

11.4. Existing Conditions

11.4.1. The current baseline hydrogeological and hydrological conditions of the Site and study area would be determined via a detailed desk study exercise, data requests to NRW and PCC and a site walkover.

11.4.2. Desk Study and Data Review

11.4.2.1. The desk study exercise would include review of all relevant published mapping, reports and baseline water environment data. Relevant available site specific information including site investigation reports, groundwater monitoring data and geological reports would be reviewed.

11.4.2.2. As set out in Section 11.5 water environment data are politely requested from NRW and PCC to support the baseline information.

11.4.3. Site Walkover

11.4.3.1. A detailed walkover of the Site and surrounding land (where accessible via public highways/footpaths) will be undertaken by an experienced hydrologist/hydrogeologist. The aims of the walkover include: to identify the local surface water drainage network, potential outfall location/arrangements for the SWMP, constraints for the Site's surface water management and to review the quarry groundwater inflows/management.

[15] The Planning Inspectorate, July 2017, Advice Note 18: The Water Framework Directive. Version 1.

11.5. Points for Clarification

11.5.1. Based the information provided in Sections 11.1 – 11.4 above, it is requested that the following points be addressed in the response to this scoping request:

- confirmation that no other surface water bodies should be included as receptors for assessment;
- confirmation that no other groundwater bodies should be included as receptors for assessment;
- confirmation that no Flood Consequences Assessment is required. The current risks from surface water flooding would be considered and addressed within the proposed surface water management plan and drainage design;
- confirmation that the proposed design standards for the Surface Water Management Plan are appropriate (including the methodology for greenfield runoff calculations and the design standard for the drainage system);
- confirmation that no quantitative assessment of the potential risks from the proposed development to groundwater or surface water quality is required;
- confirmation that it is appropriate to use the Environment Agency published climate change allowances for peak rainfall intensity. Alternatively, please provide climate change allowances for peak rainfall intensity that are appropriate for the development site;
- Powys County Council: please provide details (including location, source of water, final use and classification) of all private water supplies located within a 2km radius of the development site boundary;
- Natural Resources Wales: please provide details (location and full licence details) of all licensed groundwater and surface water abstractions within a 2km radius of the development site boundary. Please also provide details of any groundwater level, groundwater quality, surface water quality and surface water flow data for monitoring points within a 2km radius of the site (please include location and details of each monitoring point). Please provide rainfall data for the closest NRW monitoring station; and
- Natural Resources Wales: please provide confirmation that the requirement for a Water Framework Directive (WaFD) Assessment can be screened out. Alternatively, please confirm the appropriate scope/methodology of the WFD Assessment if one is required.

12. Key Environmental Aspects - Archaeology and Cultural Heritage

12.1. Overview

12.1.1. The Archaeology and Cultural Heritage Assessment will evaluate the known and potential archaeological and historic resource within the Site and its surroundings (i.e. the study area). This will be placed in the local, regional and national context, and assessed against national criteria.

12.2. Environmental Assessment Boundaries

12.2.1. The archaeological study area will comprise the Site and a radius of 1 km from its boundary. All historic assets listed on the Clwyd Powys Archaeological Trust's Historic Environment Record ("CPAT HER") will be described and mapped.

12.2.2. All designated historic assets (Scheduled Monuments, World Heritage Sites, Listed Buildings, Conservation Areas, Historic Landscape Areas, Registered Parks and Gardens, and Battlefields) will be discussed and mapped within a radius of 5 km from the Site boundary.

12.2.3. Historic map regression will be undertaken to understand the development of the historic landscape and place-names, as well as other information on the cultural heritage of the area; this would be analysed to help with understanding the heritage significance of the heritage assets and their settings. The collation and assessment of this information would enable a robust impact assessment to be made, and an appropriate level of mitigation designed for any potential impacts.

12.2.4. National and local legislation and planning policy would be summarised and discussed in relation to archaeology and heritage; and the assessment undertaken to ensure compliance with relevant law and policies. This will include the following:

- Planning Policy Wales (Edition 8 – November 2016 (or Edition 10 is finalised) (Welsh Assembly), particularly Chapter 6, entitled 'The Historic Environment';
- Technical Advice Note (TAN) 24: The Historic Environment (Welsh Assembly 2017);
- Conservation Principles for the Sustainable Management of the Historic Environment in Wales (Cadw 2011);
- Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists [CIfA] 2014); and
- Powys Local Development Plan (2011-2026).

12.2.5. As appropriate, other methodological approaches and guidance documented by Historic England will also be used the supplement the available guidance for Wales. This includes the following:

- Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment (Historic England 2015); and
- Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (second edition, Historic England 2017).

12.2.6. Consultation will be undertaken with the Conservation Officer fromPCC and representatives of Cadw to ensure a robust approach to the assessment.

12.3. Methodology

12.3.1. The aim of the assessment is to identify, as far as is reasonably possible, the nature of the archaeological and cultural heritage resource within the site and its surroundings (i.e. the study area), to assess their significance and to make appropriate recommendations for the future treatment of any heritage assets or their settings which may be affected.

12.3.2. All heritage assets identified will be categorised in terms of their sensitivity in accordance with guidelines set out in the Design Manual for Roads and Bridges, Volume II, Section 3, Part 2 (2007).

12.3.3. The assessment will identify and evaluate the nature and likelihood of the impacts of the Development, in both the short and long term, on archaeological and cultural heritage features against clearly defined criteria. Significance will be assigned to impacts relative to the sensitivity of the resource and the magnitude of impact in accordance with best practice.

12.3.4. Archaeological resources are susceptible to a range of impacts during development. These relate to works associated with site preparation as well as construction related activities, including:

- demolition and site clearance activities that disturb archaeological remains;
- excavation that extends into archaeological sequences, for example deep foundations or basements resulting in the removal of the resource;
- piling activities resulting in disturbance and fragmentation of the archaeological resource; and
- dewatering activities resulting in desiccation of waterlogged remains and deposits.

12.3.5. The implications, if any, of these actions will be discussed and significance criteria allocated to any identified impact.

12.3.6. In terms of the effects on cultural heritage, the effects of the Development can be direct, such as loss or damage to heritage features, or indirect, including the effect on the setting of a designated heritage asset (i.e. Listed Building, World Heritage Site, Scheduled Monument, Conservation Area, Historic Landscape Area, Battlefield or Registered Park and Garden). This component of the assessment will be cross referenced with the national and local legislation and planning policy for setting assessments and the Landscape and Visual Assessment; the approach to which is set out in Section 9 of this report. Any such impacts will be discussed, and significance criteria applied.

12.3.7. Once impacts have been identified, how they can be avoided through design will be explored as a priority. Where these are possible, designed-in mitigation measures will be clearly identified and incorporated into the parameters plans.

12.3.8. If impacts cannot be avoided through design, then alternative strategies would be proposed for securing through planning conditions. The residual impacts following the implementation of these measures will then be defined and significance criteria applied.

12.3.9. A separate Cumulative Impacts section is presented (Section 17). This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the surroundings of the Site.

12.4. Existing Conditions

12.4.1. The CPAT HER has been consulted in relation to all designated heritage assets and non-designated archaeological assets; the results of which are currently awaited.

12.4.2. Previous information available for the site and a radius of 2 km from its boundary indicate that there are 31 Post-Medieval monuments (most of which relate to houses, farmsteads, agricultural buildings and industrial structures [such as corn mills, water mills, etc.]). A Medieval abbey is also recorded.

12.4.3. Several sites of unknown date, postulated to be enclosures, are recorded beyond the boundary of the site.

12.4.4. Two multi-period archaeological monuments are also recorded (a corn mill and a village).

12.4.5. Online information indicates that there are no World Heritage Sites, Historic Landscape Areas, Conservation Areas, Registered Parks and Gardens and Battlefields within 5 km of the site.

12.4.6. There are ten Scheduled Monuments within 5 km of the site.

12.4.7. Two Grade II* Listed Buildings are recorded on the CAPT HER within 2 km of the site (Trewen Hall and Grotto at Measfron).

12.4.8. Eighteen Grade II Listed Buildings are also recorded within 2 km on the CAPT HER.

12.4.9. As stated above in Section 12.2, a new HER data search has been requested for all designated heritage assets (Scheduled Monuments, World Heritage Sites, Listed Buildings, Conservation Areas, Historic Landscape Areas, Registered Parks and Gardens, and Battlefields) within a radius of 5 km and non-designated archaeological assets within a radius of 1 km; the results of which will be discussed and mapped as part of the Archaeology and Cultural Heritage Assessment.

12.5. Points for Clarification

12.5.1. Based on the information provided above, it is requested that the following points be addressed in the response to this scoping request:

- confirmation that no other consultation is required; and
- confirmation that the assessment boundaries and proposed methodology are appropriate.

13. Key Environmental Aspect - Site Condition

13.1. Overview

13.1.1. This chapter will detail the condition of the Site at the time of submission of the planning application for the Development. The chapter will be written with consideration to the Application Site Condition Report ("ASCR") template provided in the NRW Horizontal Guidance Note H5 (*Version 5, Dated October 2014*). The ASCR will be submitted with the Environmental Permit application shortly after the planning application has been submitted.

13.1.2. The aim of the Site Condition Chapter will to describe the condition of the land and groundwater at the Site and, in particular, to identify any substance in, on, or under the land that may present a pollution risk.

13.1.3. The chapter will give information on the physical attributes and vulnerability of the Site; it will assist in understanding its environmental setting, and the nature, extent and behaviour of any contaminants that may be present; local hydrology, hydrogeology, geology and general setting will be taken into account. It will also set out the current condition of the Site and take into account any pollution incidents that may have occurred at the Site and details of any measures put into place to mitigate the effects of any such incidents.

13.2. Environmental Assessment Boundaries

13.2.1. For the purposes of this chapter, this assessment boundary will be limited to the Development area, in terms of the immediate underlying ground conditions. This is shown on drawing BUT-RCA-00-ZZ-DR-A-0202-General Arrangement Plan in Appendix 1.

13.2.2. However, there may be the potential, during the construction phase for impacts associated with groundworks to be observed off site. Consequently, potentially sensitive human receptors within a 1km radius, and ecological receptors within 2km of the Site will be considered. These are provided in Table 9 and 10 respectively.

Table 9: Identified Potentially Sensitive Receptors within 1km of the Site

Ref	Location	Easting	Northing	Distance from Site Centre (m)	Heading (degrees)
H1	House Off A458, Welshpool SY21 8TA, UK	326773	310265	179	28
H2	Heldre Ln, Welshpool SY21 8SX, UK	326783	309854	269	160
H3	House Off Sale Ln, Welshpool SY21 8SY, UK	327026	310357	419	53
H4	House Off Sale Ln, Welshpool SY21 8SY, UK	327129	310072	440	94
H5	Speed Welshpool	326305	309785	501	230
H6	Methodist Church, Buttington, Welshpool SY21 8SZ, UK	327059	310480	525	45
H7	Border Hardcore Offices	326221	309760	583	234
H8	Buttington Trewern Primary School, Welshpool SY21 8TB, UK	327386	310580	842	56

Table 10: Specific Sensitive Habitat Receptors Considered for the Assessment

Ref	Location	Type of Receptor	Easting (X)	Northing (Y)	Distance from Source (m)	Heading (Degrees)
S1	Buttington Brickworks	SSSI	326980	310222	312	68
S2	Montgomery Canal	SSSI/SAC	324911	310297	1789	276

13.3. Methodology

13.3.1. A desk based assessment will be undertaken to assess the condition of the land within the Site. This will describe the current environmental condition of the land and groundwater at/under the site; it will include/address:

- a reconnaissance of the Site and immediate surrounding area;
- a review of historical use of the Site and surrounding area; this will include a review of available documentation, including historic Ordnance Survey ("OS") maps, Site planning records and associated documentation;

- a review of existing environmental consents, licences, permits and other relevant designations for the Site and surrounding area;
- an assessment of the environmental setting of the site; this will include:
  - a review of available geological, hydrogeological and hydrological data for the Site and surrounding area, including BGS geological maps and memoirs, hydrogeological maps, groundwater vulnerability maps, BGS borehole data, Coal Authority mining report and any relevant intrusive investigation reports;
  - determination of the location of any Habitats Directive sites, SSSIs and other relevant sensitive environmental designations within the vicinity of the Site;
  - a review of available records of any land pollution incidents on, or in the vicinity of, the Site;
  - a review of any existing site investigation and assessment reports;
  - an assessment of proposed Site operations, which will address/review the proposed Site layout and drainage arrangements, the infrastructure of the Site; any proposed pollution prevention measures at the Site, a qualitative risk assessment of the likelihood of significant pollution arising from the Site's activities, based on the source-pathway-receptor approach, and using the methodology detailed in the Environment Agency's online guidance, in particular, this will address accident and amenity risks posed by the Site's activities both in the construction and operational phases.

13.4. Existing Conditions

13.4.1. The Site extends to approximately 8 Hectares of the total 18 Hectares of the former quarry site. The Site is located within the quarry, and will be accessed via the new quarry access (which has planning permission and will be constructed prior to the commencement of construction work on the Development) and internal road network.

13.4.2. The Site slopes to the south, west and north from a high point at its eastern end (from approximately 89m AOD to 107m AOD). The quarry will be worked and the Site prepared to a flat level of 90m AOD as part of the existing quarry activities. These preparatory works will not be included in the planning application for the ERF. Consequently, the baseline will therefore be considered to be a level, fully prepared site.

13.4.3. Glaciofluvial Fan Deposits (sand and gravel) are present in the southern/south eastern areas of the Site extending to land to the south/south east; Devensian Till deposits are present in the south western area of the Site and Head deposits (clay, silt, sand and gravel) are present to the north east and extend just into the eastern area of the Site.

The permeability of the superficial deposits is described as very low (Till) to very high (Fan Deposits) with flows within the higher permeability deposits being intergranular.

13.4.4. Buttington Quarry is excavated within the Cefn Formation, comprising sandstones and mudstones of the Silurian Period, and Stone House Shale Formation of the Ordivician Period. Strata are steeply dipping towards the southeast within the quarry, resulting in a narrow band of the high-quality brick making material being exposed at surface.

13.4.5. Buttington Quarry was originally operated to produce mudstone and clay for use at the neighbouring brickworks. Since closure of the brickworks the Site has been worked to produce a medium quality general aggregate from more competent slate/shale horizons on the northern flank of the Site.

13.4.6. The permeability of the mudstone deposits is described as low.

13.4.7. There is no indication of mining activity under the Site.

13.4.8. A full site history will be provided within the chapter, however, in summary, the Site was progressively developed as a quarry from the nineteenth century with mineral extraction commencing in the western area and extending east over time. Adjacent land uses comprise the brickworks adjacent to the existing Site entrance/access road, and a malthouse adjacent to the southern boundary of the Site. Other land uses appear to have comprised farming related uses, with residential to the north and south.

13.5. Points for Clarification

13.5.1. Based on the information provided above, it is requested that the following points be address in the response to this scoping request:

- it is considered that this chapter will contain a desk based assessment only. Should further works be identified (i.e. intrusive investigation) it is requested that they be secured via a planning condition.

14. Key Environmental Aspects - Socio Economic

14.1. Overview

14.1.1. The Socio-Economic Assessment will evaluate the socioeconomic impacts of both the construction and the operational phases of the development including the effects on tourism and recreational receptors.

14.1.2. These effects may occur as a result of direct interaction between the Development and socio-economic, tourism or recreational characteristics and features of the area (e.g. creation of employment during the construction phase or severance along a Public Right of Way (PRoW) or indirectly via employment opportunities generated as a result of increased local spending of wages earned by the construction and operational workforce.

14.1.3. The majority of socio-economic effects are likely to be experienced during the construction phase. Many of these are likely to be beneficial effects for the local economy, including increased employment opportunities and spend on local services. Additionally, there may be temporary restrictions on PRoW movements and potential secondary effects arising from disruption to neighbouring businesses including tourism businesses.

14.2. Environmental Assessment Boundaries

14.2.1. The study area will be separated into two categories for the purposes of this assessment comprising a:

- ider Study Area ("WSA"); and
- Local Study Area ("LSA").

14.2.2. Wider Study Area (WSA)

14.2.2.1. The WSA is the study area within which socio-economic effects are most likely to occur. This area of study is required for certain receptor groups because the majority of the business and labour market effects that may occur would be experienced by population and business centres. The WSA area is primarily set at the area of the administrative county of Powys but is however, extended nationally where relevant.

14.2.3. Local Study Area (LSA)

14.2.3.1. This is primarily defined as the planning application boundary plus an offset of 5km around the boundary. This area is the focus for the assessment of direct and indirect impacts on tourism and recreational assets including Public Rights of Way (PRoW) and accommodation businesses.

14.3. Methodology

14.3.1. Guidance

14.3.1.1. National guidance on appropriate assessment of potential effects of development on socio-economics, tourism and recreation is limited but the following legislation is considered relevant in this regard:

- Planning Policy Wales (Edition 9, November 2016 or Edition 10 if Finalised);
- TAN 8: Planning for Renewable Energy;
- TAN 16: Sport, Recreation and Open Space;
- TAN 21: Waste;
- TAN 23: Economic Development;
- Measuring the economic impact of an intervention or investment (Office for National Statistics 2010); and
- Green Book (HM Treasury 2003, updated July 2011).

14.3.2. Approach

14.3.2.1. The socio-economic, land use and recreation assessment will be presented in two parts, focusing on the construction phase aspects of the proposed development and the longer term economic effects once the development is built and operational for both of the study areas identified.

14.3.3. Assessment of the Likely Economic Effect of the Proposed Development

14.3.3.1. This part of the assessment will comprise a quantitative assessment of the likely direct, indirect and induced effects of the project on the WSA in terms of investment, employment, additional Gross Value Added ("GVA") and contribution to the labour market.

14.3.3.2. Construction phase job creation and investment will be assessed through the use of employment estimates provided by Broad Energy and the construction elements categories within which these jobs will fall.

14.3.3.3. The assessment will address the potential effects of the proposed development to the labour market and the local supply chain and economic output of GVA. The estimates for construction GVA will be calculated using the latest regional estimates for the average yield of GVA per worker for the construction and civil engineering sector in Wales obtained from the Office of National Statistics.

15.3.3.4. A quantitative assessment will be produced which includes direct, indirect and induced effects of the proposed development. The significance of the likely socio-economic effects of the development during construction based on the magnitude of the impacts and the sensitivity of the receptor groups will be assessed.

15.3.3.5. With regard to the operational phase, the direct impact of job creation and indirect and induced job effects will be considered.

15.3.3.6. The assessment will provide an estimate of the contribution of the proposed development to GVA and the labour market within the WSA. The significance of the likely socio-economic effects of the development during the operational phase based on the magnitude of the impacts and the sensitivity of the receptor groups will be assessed.

14.3.4. Assessment of effects of the proposed development on land use and recreation within the LSA

14.3.4.1. It is considered that the proposed development will have direct effects on the existing use of the proposed site and may have indirect effects on the use, or planned use, of land in the vicinity for other types of development.

14.3.4.2. This part of the socio-economic assessment will comprise of a qualitative assessment of the effects of the proposal on tourism and recreation receptors within the LAI including tourism-related businesses and Public Rights of Way. Any effects due to replacing the existing use of the application site with the proposed development or preventing a development or use on a neighbouring site from continuing will also be assessed.

14.3.5. Sensitivity of Socio-economic, Recreation and Land Use Receptors

14.3.5.1. There are no published standards that define receptor sensitivity relating to socio-economic assessment. As a general rule the sensitivity of each receptor or receptor group is based on its importance or scale and the ability of the baseline to absorb or be influenced by the identified effects. In assigning receptor sensitivity, consideration will be given to the following:

1. the importance of the receptor e.g. local, regional, national, international;
2. the availability of comparable alternatives;

3. the ease at which the resource could be replaced;
4. the capacity of the resource to recover or adapt to identified impacts over a period of time; and
5. the level of usage and nature of users (e.g. sensitive groups e.g. such as people with disabilities).

14.3.5.2. The level of effect of an impact on socio-economic, tourism and recreational and other land use receptors will initially be assessed by combining the magnitude of the impact and the sensitivity of the receptor. The assessment will consider the effects of the proposed development itself including the generation of employment for permanent staff; the generation of construction employment including civil engineering, management, skilled and semi-skilled workers; the generation of economic benefit for local businesses for the supply of materials and plant and equipment during the construction/fit out phases of the development; and the generation and export of low carbon energy.

14.3.5.3. The impact of any other major development proposals which could occur in combination with the Development will be considered to determine their cumulative employment and additionality effects.

14.3.6. Mitigation

14.3.6.1. The assessment will then consider any mitigation proposed to minimise the impact of the Development during both the Construction Phase and the Operational Phase.

14.3.7. Residual Effects (Construction and Operation)

14.3.7.1. The significant of any residual effects once mitigation measures have been incorporated will be assessed.

14.3.8. Summary of Effects

14.3.8.1. The effect of the magnitude of the impacts on socio economics, land use and recreation and tourism of both the construction phase and the operational phase and the mitigation measures proposed will then be summarised.

14.4. Existing Conditions

14.4.1. The assessment will set out the existing baseline conditions relevant to the socio-economic assessment. A review of baseline conditions will be undertaken for the WSA covering the following areas:

1. Population and demographic: summarising the principal characteristics of the human population of the WSA, covering:
    - Resident population: current levels and recent trends in the normally resident population of the WSA; and
    - Working Age Population (WAP): current levels and recent trends in the WAP (aged 16-64) of the WSA.
2. Structure of employment: summarising the sectoral composition of the employment base of the WSA, covering:
    - employment trends – employees: the number and type of jobs found in the WSA.
3. Sectoral analysis: providing an analysis of employment found in the WSA by broad business sector, focussing on sectors of relevance to the proposed development – construction and distribution.
4. Current labour market performance: providing an analysis of the performance of the labour market within the WSA, covering:
    - Participation levels and trends: the extent to which residents of the WSA are economically active (i.e. either in employment or actively seeking work).
    - Occupational structure: the breakdown of working residents' employment by occupational type.
5. Tourism economy: a summary of the importance of the tourism economy to the area.

14.4.2. For the LSA, the baseline conditions with comprise a description of tourism and recreational features ('assets'), including PRoWs and long-distance routes, and a description of any neighbouring tourism features and businesses including accommodation businesses.

14.5. Points for Clarification

14.5.1. Based on the information provided above, it is requested that the following points be addressed in the response to this scoping request:

- confirmation of whether any consultation is required; and
- confirmation that the assessment boundaries and proposed methodology are appropriate.

15. Key Environmental Aspects - Noise

15.1. Overview

15.1.1. The noise chapter of the ES will present an assessment of the potential noise impacts of the Development on neighbouring noise sensitive receptors during both the construction and operational phases.

15.1.2. The assessment will include:

- description of the existing sound environment;
- outline of the likely evolution of the future baseline sound levels;
- identification of those aspects of the Proposed Development that may cause noise effects;
- predictions of noise levels during the operation phase upon the nearest Noise Sensitive Receptors (NSRs);
- details of potential cumulative effects where noise from other potential developments may also affect the same NSRs; and
- likely residual significant effects taking account of proposed mitigation.

15.1.3. The Site would be designed to comply with BAT to enable compliance with Environmental Permit guidance on noise and vibration.

15.2. Environmental Assessment Boundaries

15.2.1. An assessment of the location of the nearest sensitive receptors ("NSRs") will be carried out to determine where the greatest impact would occur relative to Site generated noise. The NSRs to the Site generally relate to isolated residential properties in proximity to the Site boundary and access road.

15.2.2. The possible (likely) environmental noise effects of the Proposed Development are as follows:

- noise associated with the construction works;
- operational noise associated with the various components of the Proposed Development;
- increase in road traffic noise; and
- potential cumulative operational noise associated with nearby developments that are consented but not yet operational.

15.2.3. Liaison with the Environmental Health Officer at PCC is currently being undertaken to agree the location of sensitive receptors relative to the Site, representative noise monitoring positions and noise criteria and assessment methodology.

15.2.4. The impact assessment will be undertaken with reference to the following standards and guidance:

- BS4142: 2014 'Method for rating industrial noise affecting mixed residential and industrial areas';
- BS8233:2014 'Guidance on sound insulation and noise reduction for buildings';
- World Health Organisation ("WHO") Guidelines for Community Noise: April 1999;
- World Health Organisation 'Night Noise Guidelines for Europe': 2009
- The Institute of Acoustics ("IOA") and the Institute of Environmental Management and Assessment ("IEMA") Joint Working Party draft 'Guidelines for Noise Impact Assessment';
- Environment Agency Horizontal H3 Guidance for Noise;
- Planning Guidance (Wales) Technical Advice Note ("TAN") 11, Noise – October 1997;
- BS5228-1: 2009+A1:2014 `Code of practice for noise control on construction and open sites'.
- Design Manual for Roads and Bridges: Volume 11 - 2011;
- BS 7445-1:2003 'Description and measurement of environmental noise. Guide to quantities and procedures';

15.3. Methodology

15.3.1. Monitoring

15.3.1.1. A baseline sound survey will be undertaken at locations agreed with the PCC Environmental Health Officer ("EHO"). The NSRs to the Site are as follows:

- Green Farm;
- Whitehouse Farm;
- Sale Farm;
- Cefn Farm;
- Whitehouse Farm;
- York House; and
- Brookside.

15.3.1.2. Sound monitoring surveys will be undertaken at up to four of the nearest sensitive receptors to identify the representative background sound levels around the Site. The monitoring locations would be subject to agreement with the relevant landowners. The monitoring positions would be agreed with the EHO by inspection or provision of details showing exact site location.

15.3.1.3. Baseline data would be measured in accordance with guidance found within BS4142: 2014 and BS7445: 2003. It is proposed to undertake fixed sound monitoring at appropriate accessible secure positions over weekday and weekend periods to

determine representative background sound levels in accordance with BS4142: 2014.

15.3.1.4. Monitoring would be carried out during morning, afternoon, evening and night-time periods at the sensitive receptors involving sequential readings at each location during suitable weather conditions. A weather station would be set up at one location for the duration of the survey to ensure measured data is valid.

15.3.2. Modelling

15.3.2.1. Information on the proposed site layout, building materials, detail of the likely plant list and any available information from HZI on plant noise levels or research into library data would be reviewed. Where appropriate, empirical noise level data would be referred to as obtained from similar plant operating in the UK.

15.3.2.2. Following the review of the proposed site layout and data available on plant noise levels, noise prediction calculations would be undertaken of the effect of the plant in operation. This will consist of producing a noise model with using computer-based noise modelling software for the operation of the facility (likely to be CADNA), which models noise to ISO9613-2 with appropriate model settings. This would include the cumulative effect of the operation of all plant on site. The predicted noise levels would assist in establishing the likely highest impact at the nearest sensitive receptor positions.

15.3.3. Assessment

15.3.3.1. Noise would also be assessed for the construction phase of the development. Information on noise sources likely to be used at site will be derived from the construction phase description and library data. An assessment of the highest likely noise levels will be provided based on the methodology provided within BS BS5228-1: 2009+A1:2014 `Code of Practice for noise and vibration control on construction and open sites'.

15.3.3.2. The results of the baseline sound monitoring will be analysed and assessed against the modelled noise impacts. The main noise sources on Site would be assessed in terms of their contribution to noise radiating from the Site at nearest sensitive receptors and results compared with relevant impact criteria.

15.3.3.3. Where appropriate, noise control measures will be considered to ensure that noise levels are within relevant noise criteria guidance. An example of a noise control strategy would be detailed taking BAT into consideration.

15.3.3.4. Noise arising from road traffic will be determined from the traffic figures provided in the Transport Assessment in accordance with the methodologies provided within 'Calculation of Road Traffic Noise' and the Design Manual for Roads and Bridges 2011.

15.3.3.5. The assessment of effects both with incorporated mitigation and any additional mitigation measures will be provided as impacts and residual impacts relating these to established semantic tables which reference appropriate standards and guidance for noise. These will include, where appropriate, an assessment against baseline and/or change in residual noise levels.

15.3.3.6. The assessment of any cumulative effects likely to arise from permitted or proposed Development in the area that may potentially have impacts on NSRs would be considered.

15.4. Existing Conditions

15.4.1. For Site facility construction or operational noise impacts reference would be made to the established representative baseline sound levels as described above in section 15.3.1. to 15.3.4.

15.4.2. For any effects from road traffic impacts, reference and calculation of existing baseline traffic volumes will be made to determine any significant change in road traffic noise in accordance with the calculation methodology found within Calculation of Road Traffic Noise ("CRTN"): 1988 and DMRB impact assessment tables.

15.4.3. Any potential effects on future baseline sound levels due to committed development in the area around NSRs will be considered.

15.5. Points for Clarification

15.5.1. Based on the information provided above, it is requested that the following points be addressed in the response to this scoping request:

- in view of the separation distance from the facility and plant to NSRs, does PCC agree that vibration can be scoped out of the assessment from a construction and/or operational perspective;
- following provision of baseline sound survey results at NSRs, it is requested that PCC enter into discussion with the Acoustic Consultant with the intention of agreeing on a noise limit in relation to BS4142: 2014 relative to background or an appropriate absolute limit where baseline background levels are shown to be very low and therefore compliance with sleep disturbance at night is then the overriding sensitive factor to protect residential amenity; and
- provide any further comments on the proposed methodology or scope that requires additional consideration in PCC's opinion.

16. Key Environmental Aspects - Geotechnical and Materials Management

16.1. Overview

16.1.1. The site is currently an operational quarry. However, it is proposed that the new ERF will be constructed within the exiting quarry. This will require some stabilisation of the quarry floor to create a level plateau for construction.

16.1.2. The quarry will have been re-profiled and stabilised following geotechnical investigation and assessment using Geo5 software. This will comprise drilling of a series of boreholes to determine the underlying geology and to obtain geotechnical data and parameters.

16.1.3. The stabilisation of quarry faces and slopes will have been designed to ensure long term stability. Materials excavated out during re-profiling of the development area will have been classified in accordance with Technical Guidance WM3: Waste Classification – Guidance on the classification and assessment of waste.

16.1.4. Excavated materials will have been re-used on site or removed from site in accordance with a materials management plan taking in to account the proposed construction and landscaping scheme.

16.1.5. Following re-modelling of development area the site will be considered to have achieved baseline conditions. Consequently this planning application and EIA will not take account of any preparatory works that will be undertaken as these are considered to be encompassed within the restoration scheme of the existing planning permissions.

16.1.6. It is not anticipated that there will be any changes to baseline conditions during and post construction works.

16.2. Environmental Assessment Boundaries

16.2.1. The study area will include the direct Development area in the base of the quarry and surrounding quarry walls.

16.2.2. The area will be further defined by that that has been investigated and stabilised and levelled to prepare the site for development.

16.3. Methodology

16.3.1. Baseline conditions of the prepared Site will be clarified by reference to data acquired prior to and during geotechnical investigation and geotechnical construction works within the development area of the quarry.

16.3.2. Data to be reviewed will include:

- history of the Site and surrounding area
- hydrology and hydrogeology
- Site geology by reference to the geological map and borehole logs
- Site groundwater monitoring data
- laboratory test data for quarry materials
- Geo5 slope modelling conclusions
- details of quarry face and slope stabilisation works completed.

16.3.3. Where and how excavated materials have been used will be considered.

16.4. Existing Conditions

16.4.1. The baseline conditions will comprise a fully prepared and levelled site with stabilised quarry faces and slopes.

16.4.2. The ground conditions and underlying geology will have been determined both within the quarry and the immediate surrounding area.

16.4.3. Possible behaviour of remodelled quarry faces and slopes will have already been predicted and measures put in place to counteract any future movement or instability.

16.4.4. Baseline conditions are unlikely to change during and following construction.

16.5. Points for Clarification

16.5.1. Based on the information set out in Sections 16.1 – 16.4 it is respectfully requested that the following points be addressed in the response to this scoping request:

- confirmation of acceptance of the baseline conditions (i.e. the site is fully prepared and ready for development).

17. Cumulative Impacts

17.1. Overview

17.1.1. This Chapter of the ES will provide an assessment of the likely significant cumulative effects of the Development during its construction and operation.

17.1.2. The EIA regulations require that a description of the likely significant effects of the development on the environment should be included in the ES, including cumulative effects. There is no set definition of a cumulative effect, however, a commonly accepted definition is: *"Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project"* (EC, 1999).

17.2. Environmental Assessment Boundaries

17.2.1. The type of developments to be considered in the cumulative assessment are those that have been granted planning permission, are not yet operational, or have yet to be constructed.

17.2.2. The assessment will only consider developments of one hectare or more in size (land take or floor space), or developments that have been subject to EIA. Developments that are in the planning system, but not yet approved will only be considered if specifically requested by PINs, or PCC.

17.2.3. The cumulative effect of existing developments comprise the existing baseline for the EIA and such would be assessed within each chapter.

17.2.4. A 5km search area will be used to identify projects to be included in the cumulative effects assessment. Developments beyond 5km are unlikely to give rise to significant cumulative effects. For some of the KEAs, the effects are more localised, e.g. Site Condition, consequently it may be necessary to exclude some developments where cumulative impacts are unlikely to occur.

17.3. Methodology

17.3.1. In assessing any potential cumulative effects should be assessed reference will be made to the following guidance:

- Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (EC, 1999)
- Cumulative Effects Assessment Practitioners Guide (Canadian Environmental Assessment Agency, 1999);
- Guidelines for Environmental Impact Assessment (IEMA, 2006); and

- Environmental Impact Assessment: A guide to good practice and procedures – A consultation paper (DCLG, 2006).

17.3.2. The assessment of cumulative effects will be undertaken as follows:

1. Identification of potential developments which, together with the Development, could give rise to cumulative or in-combination effects based on the assessment boundaries identified in Section 17.2;
2. Further information will be obtained on each development in terms of scale, type and nature from the relevant Local Planning Authority (PCC or Shropshire Council). It is anticipated that this information will be sourced from publically available information, i.e. planning applications and supporting information; if environmental information is not available, reasonable assumptions will be made on the likely significant environmental effects of the Development based on professional experience;
3. The likelihood of significant cumulative effects (of the construction and operational phases of the project will be assessed for each KEA
    - Air Quality;
    - Health Impact Assessment;
    - Transportation, Traffic and Highway;
    - Landscape and Visual Impact;
    - Ecology;
    - Water Environment;
    - Archaeology and Heritage;
    - Site Condition;
    - Socio-Economics;
    - Noise and Vibration; and
    - Geotechnical and Materials Management.
4. If the initial assessment identifies that there is no potential for likely significant cumulative environmental effects to occur, then no further assessment will be undertaken.
5. If the initial assessment concludes that cumulative effects are likely, then the development is carried forward for more detailed assessment within the specific KEA it relates to.
6. Further detailed assessment of likely significant cumulative environmental effects will then be undertaken using a methodology relevant to the KEA under consideration.

17.4. Existing Conditions

17.4.1. For the avoidance of doubt it should be recognised that the baseline position against which this EIA has been undertaken assumes that:

- the application site is fully prepared site – i.e. is level to 90mAOD and works associated with slop stabilisation have been completed;
- the access road to the development has been constructed (Planning Permission Ref. P/2015/0439)
- the area is designated as employment land under the current LDP;

17.4.2. Consequently, this Chapter will not take these developments into consideration as they form part of the baseline for the purposes of this Environmental Impact Assessment.

17.5. Points for Clarification

17.5.1. Based the information provided above, it is requested that the following points be addressed in the response to this scoping request:

- if there are developments that are in the planning system, but not yet approved it is requested that a list of such developments, requiring cumulative assessment be provided.

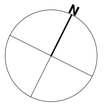
Appendix 1

Drawings

ECL Ref: ECL.001.01.02/RFS

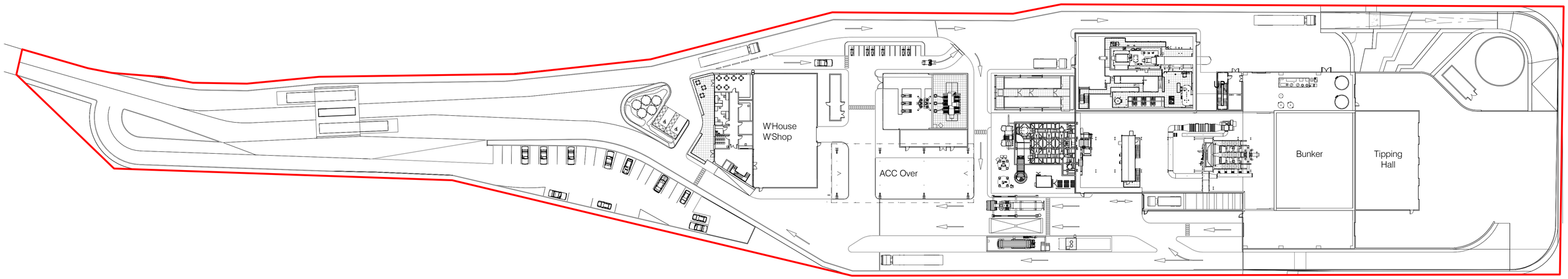
Issue: 1
August 2018

Stack Centre:
E = 326842.830 m
N = 310114.688 m



Drawn by :		Date :		Scale :	1 : 500 @ A1	
Status	Preliminary	Presentation	Tender	Construction	Last Issue	
Date :						
Approved by :						

Revision		Date	Drawn	Approved
P1	First Issue	01.06.17	MDO	MDO
P2	Entrance area amended, amenity building developed, contours omitted, scale adjusted.	05.06.17	MDO	DJS
P3	ACC relocated, adjacent building and layout adjusted to suit.	02.08.17	MDO	DJS
P4	External hard surfaces and landscape added.	07.06.18	MDO	DJS



1 General Arrangement Site Plan
1 : 500

Client :
Broad Energy

Project :
Buttington Quarry EfW

Project No. : 3411-01
Drawing No. : 0202

Drawing Title :
BUT-RCA-00-ZZ-DR-A-0202-General_Arrangement_Plan S1 P4

[Project Code] [Originator] [Volume Div.] [Level Div.] [File Type] [Role] [File Number] [File Description] [Suitability.] [Rev.]

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Graphical Scale 1:1250

N

0 5 10 15 20 30 40 50 60 70 80 90 100 110 120 130 140 150m

Drawn by : MDO		Date : 06.08.18		Scale : 1 : 1250 @ A1			
Status	Preliminary	Presentation	Tender	Construction	Last Issue		
Date :	06.08.18						
Approved by :	MDO						
Revision				Date	Drawn	Approved	
P1 First Issue				06.08.18	MDO	DJS	

Lower Cefn
Level Crossing
Cefn Cottage
Cefn Cottage
Path (um)
Well
Well
Well
Drain
Pond
Pond
MP 16
81.7m
81.5m
SALE LANE
FB
Sale Farm
Issues
Issues
CG
Track
Track
Pond
Pond
Well
Path (um)
A 468
82.2m
82.2m
MP 31
82.5m
Lillcroft
LC
78.0m
78.0m
Brookside
Brookside
Buttington Quarry
Clv
Brick Works
Station View
Dalvene
Dalvene
York House
York House
Mulberry Cottage
Mulberry Cottage
Wynford
Drain
Birthdir
Cattle Grid
HELDRE LANE
109.1m
109.1m
Whitehouse Farm
Whitehouse Farm
Track
Track
Track
Green Farm
Green Farm
100.0m
100.0m
Sinks
110.6m
MP

Client :
Broad Energy

Project :
Buttington Quarry EfW

Nelly Andrew

Project No. : 3411-01
Drawing No. : 0203
Drawing Title : BUT-RCA-00-ZZ-DR-A-0203-Overall_Arrangement_Plan S1 P1
[Project Code] [Originator] [Volume Div.] [Level Div.] [File Type] [Role] [File Number] [File Description] [Suitability.] [Rev.]

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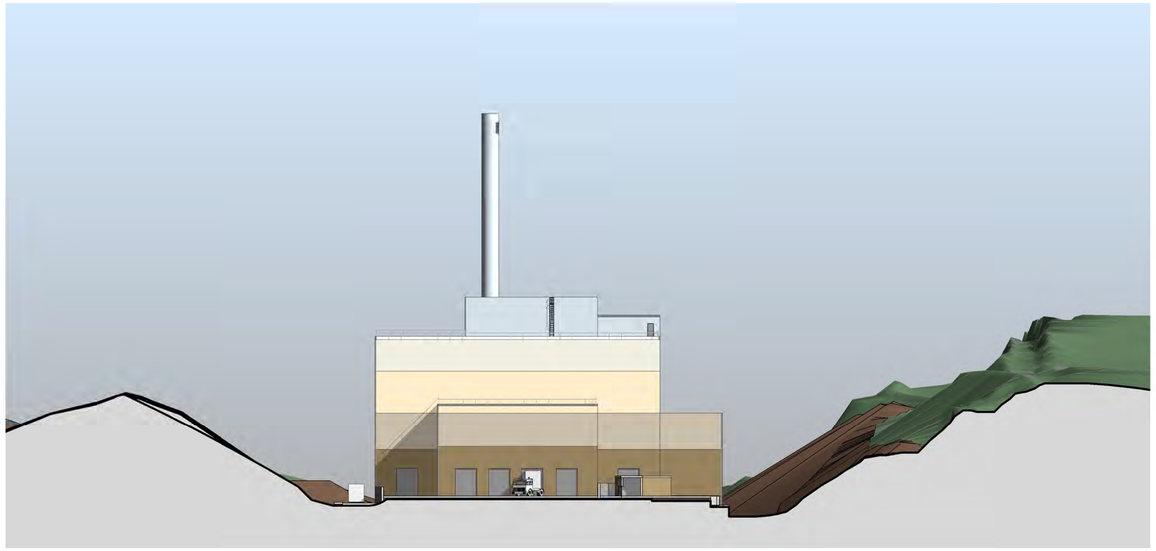
1 **Overall_Site_Plan**
1 : 1250



1 North East Elevation
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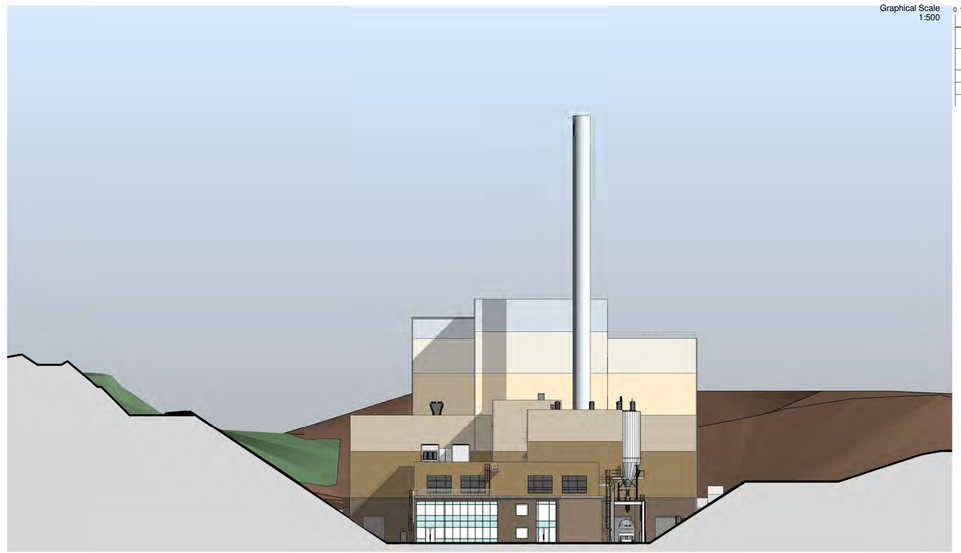


2 South West Elevation
1 : 500

3 North West Elevation
1 : 500

4 South East Elevation
1 : 500

Graphical Scale
1:500

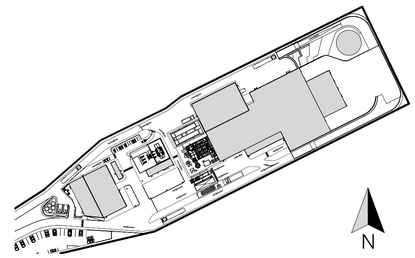
0 1 2 3 4 5 10 15 20 25 30 35 40 45 50 55 60m

Drawn by : MDO			Date : 04.04.2017		Scale : As indicated @ A1		
Status	Preliminary	Presentation	Tender	Construction	Last Issue		
Date :	04.04.17						
Approved by :	MDO						

Revision		Date	Drawn	Approved
P1	First Issue	04.04.17	MDO	MDO
P2	Building envelope developed follwing HZI layouts.	12.05.17	NS	MDO
P3	Envelope adjusted to suit design discussions.	01.06.17	MDO	MDO
P4	Main EfW stair modelled	09.06.17	MDO	DJS
P5	ACC moved to above workshop.	15.06.17	MDO	DJS
P6	ACC relocated, adjacent building and layout adjusted to suit.	02.08.17	MDO	DJS
P7	Topography amended, external landscape and fewatures added, stack reduced to +70m, enclosure to FGT added.	07.06.18	MDO	DJS

Colours selected are from Colourcoat HPS200 Ultra.

RAL 070 40 10	
RAL 080 50 20	
RAL 080 70 10	
RAL 1015	
RAL 9002	
RAL 240 80 50	



Client :
Broad Energy

Project :
Buttington Quarry EfW

Project No. : 3411-01
Drawing No. : 0210

Drawing Title :
BUT-RCA-00-ZZ-DR-A-0210-Elevations S1 P7

[Project Code] [Originator] [Volume Div.] [Level Div.] [File Type] [Role] [File Number] [File Description] [Suitability.] [Rev.]

Sheffield Studio | 3 Vincent House | Solly Street | Sheffield | S1 4BB | 0114 273 7050
www.racecottam.com

RACE COTTAM ASSOCIATES

NORTH

2km

5km

10km

15km

Key

- Planning Application Boundary (the Site)
- Distance Markers (5km)
- English-Welsh Border
- Study Area (defined as 1km offset from ZVI)
- Principal area of stack visibility
- Proposed locations for representative viewpoints (1)
- National Trust Property
- Long distance footpaths

0m 100m 200m 300m 400m 500m

Client: **BROAD ENERGY (WALES) LTD**

Project: Buttington Quarry
Landscape and Visual Impact Assessment

Title: Proposed Locations for Representative Viewpoints

CAD Ref:	Version:	Drawn by:	Plot size: A1	Issue Date:
BT1021-D1v3	3	RB	Scale: Plan 1:60,000	January 2017

bright & associates
Ian [redacted]

Drawing: **BT1021-D1**

Appendix 2

PCC Scoping Opinion Response

ECL Ref: ECL.001.01.02/RFS

Issue: 1
August 2018

Mr Chris Lowden
Technical Director
Environmental & Social Impact Assessment
SLR Consulting Limited
Aspect House
Aspect Business Park
Bennerley Road
Nottingham, NG6 8WR

Sue Bolter
Pennaeth Adfywio, Eiddo a Chomisiynu / Head of Regeneration, Property & Commissioning

The Gwalia
Ithon Road
Llandrindod Wells
Powys
LD1 6AA

Our ref: SC/2017/00002
Your ref: 407.05577.00001

[redacted]

Dear Sir,

Town & Country Planning (Environmental Impact Assessment) (Wales) Regulations 2016 – Regulation 13: Scoping Opinion
Proposal: Energy Recovery Facility
Location: Buttington Quarry, Buttington, Welshpool, Pows, SY21 8SZ

Thank you for your correspondence of 6th February 2017 requesting the Council's Scoping Opinion for the above proposal. Please find enclosed the Council's Scoping Opinion for the proposal described.

In adopting this Scoping Opinion the County Council has taken into account its consultation responses and considered the specific characteristics of the proposal, the type of development and the environmental features likely to be affected by the development. The application should be assessed and referred to within the environmental statement when the planning application is submitted.

This Scoping Opinion seeks to ensure that any environmental statement submitted with respect to a planning application for the development proposal described in the scoping request includes information that is reasonably required to assess the environmental effects, and allow a determination to take place. The statement must address the baseline conditions, likely significant impacts, the probability of effects and the proposed mitigation measures. The information provided should be that which is necessary to demonstrate the risks, likelihood of occurrence, likelihood of any significant impact and an outline of the main

alternatives studied by the applicant. Please note that further information may still be required once the statement has been submitted.

The Council broadly agrees that the scoping report addresses the main issues for consideration with the key points being:

- The Proposed Development
- Transportation, Traffic and Highways
- Air Quality including Human Health Impact Assessment
- Noise and Vibration
- Landscape Character and Visual Impact Assessment
- Ecological Impact Assessment and Protected Sites
- Water Environment
- Archaeology and Cultural Heritage
- Planning and Sustainability

Notwithstanding the main issues as noted within the Scoping Report, the Council also considers that the following key points should also be addressed within the ES:

- Exporting Energy and Heat
- Nuisance
- Contaminated Land
- Geotechnical
- Materials Management and the development of the ERF
- Socio-Economic
- Cumulative Impact
- Alternatives

The following will consider the content of the Scoping Report as submitted and will outline the matters which require modification, augmentation or clarification as part of any subsequent planning application and environmental statement.

Proposed Development

The environmental statement should include a description of the development, the site, in terms of location, physical features, land use and should identify sensitive receptors within the locality. It should also include a description of surroundings and proposed development together with likely hours of operation of the construction phase of the development, consideration will need to be given to the disposal/treatment of IBA which will be produced as part of the ERF Process. Consideration should be taken of the proposed decommissioning and subsequent site restoration once the facility is no longer required. This should also include proposed hours of operation of decommissioning, a restoration

scheme to ensure safety of benches and that the site does not become derelict once the facility is no longer required.

Transportation, Traffic and Highways

The Authority is in broad agreement with the contents of the Scoping report in relation to highway and transport issues.

Air Quality including Human Health Impact Assessment

The Authority is in broad agreement with the contents of the Scoping report. It is also considered that results from the air quality modelling and assessments should be used to undertake a Health Impact Assessment as advocated within TAN 21 to ensure that human health issues are not overlooked (suggest that early dialogue is undertaken with the Wales Health Impact Assessment Support Unit). As well as the consideration of potential human receptors, the air quality assessment should also consider the effect on National Air Quality Objectives.
Information and results should be used to determine the proposed effects on protected sites. This will assist the planning authority in carrying out an appropriate assessment under Regulations 61 and 62 of the Habitats Regulations 2010.
An odour impact assessment will be required as Buttington / Trewern and individual properties are in close proximity to the proposal.

Noise and Vibration

The Authority is in broad agreement with the contents of the Scoping report and a suitable noise and vibration assessment should be undertaken for both the construction and operational phases of the development, and to also include night time operational noise. It is recommended that a baseline noise survey is undertaken to establish current ambient noise levels and predicted noise and vibration levels at sensitive receptors. Locations should be agreed in consultation with Powys Council Public Protection Department.

Landscape Character and Visual Impact Assessment

The Authority is in broad agreement with the contents of the Scoping report in relation to the landscape and visual amenity. In addition to the viewpoints suggested in section 7.1.1 it is suggested that additional viewpoints from Brieddon Forest, Scheduled Ancient Monuments MG081 and MG021 with further viewpoints along public footpaths that are within close proximity to the site (refer to plan reference attached to the PROW officers comments) are taken. With the exception of the stack, the site may be more visible from south western viewpoints with glimpsed views along the A483 and it is suggested that further viewpoints are selected from this direction. The assessment should also consider the visual impact of the plume arising from the stack and the incremental visual impact of possible 24 hour

lighting on site including any lighting on the stack.

In relation to “Potential Impacts and Mitigation” it is noted that mitigation will be focused on the layout of the facility, the site’s bunding and planting together with a review of the quarry restoration where it applies to the red line area. Landscaping and restoration should be considered for the Buttington site as a whole and how the proposal ties in with the restoration concept for the quarry. The LVIA will need to consider the magnitude of effect and it is encouraged that pre application advice is sought on the design and colour of the proposed structures together with the landscaping and restoration proposal and selection of viewpoints that would be subject to the photomontages.

Ecological Impact Assessment and protected sites

As noted within the Scoping report, there are various protected sites within 5km of the site. The proposal may have implications for those which are European designated sites. Therefore, as part of any planning application submitted, the local authority will need to carry out a test of likely significant effects under regulation 61 of the Conservation of Habitats and Species Regulations 2010 (as amended). This will be done in consultation with NRW. If the assessment concludes there is likely to be a significant effect upon the conservation status of these sites, the Local authority will need to carry out an appropriate assessment under the Regulations.

As a competent authority for the purposes of the 2010 Regulations, the local planning authority must not normally agree to any plan or project unless sure beyond reasonable scientific doubt that it would not adversely affect the integrity of a European designated site (SAC, SPA or Ramsar site). Therefore, the information contained within the environmental statement will need to be of a sufficient detail to enable this assessment to be carried out. With regard to the planning regime, permission can only be granted if it can be demonstrated that there is no likely significant effect on the designated features. Under the precautionary principle if there is an element of doubt then permission cannot be granted.

Buttington Brickworks SSSI is a Geological SSSI – the ES should consider the SSSIs list of Potentially Damaging Operations and the potential to damage the site and it’s designated features; this will identify appropriate Reasonable Avoidance Measures and mitigation if required.

Any planning application and environmental assessment should provide information regarding the emissions from the proposed unit and the impacts of deposition of emissions on sensitive nature conservation sites including both statutory designated sites and non-statutory designated sites i.e. Local wildlife sites, Ancient woodland.

The ES will need to consider the impact of the proposal on protected species and demonstrate that the proposal will not impact on the favourable conservation status of European and Nationally protected species. It is important to note that surveys following

National guidelines at the appropriate time of year will be required for any protected or priority species that are found or have potential to be present. These surveys would need to be carried out prior to determination of the planning application. Mitigation and compensation strategies will be required for any impacts upon protected species and loss of habitat.

The applicant should be mindful that in accordance with Powys County Council's duty under Part 1 Section 6 of the Environment (Wales) Act 2016, TAN 5, UDP policies and biodiversity IDBG, as part of the planning process Powys LPA need to ensure that there is no net loss of biodiversity or unacceptable damage to a biodiversity feature.

Water Environment

The Authority is in broad agreement with the contents of the Scoping report in relation to the water environment. Sufficient information relating to the management and containment of potential polluted water should be included in the application. The proposed development will be in the bottom of the existing quarry and the drainage strategy should include details of any dewatering pumping that is required to maintain a water table below the quarry void especially during the winter months or during / as a consequence of heavy rainfall. It should be noted that any groundwater abstraction over 20 m^3 a day will require a Water Resource Licence from NRW to abstract the groundwater.

Archaeology and Cultural Heritage

The methodology proposed in the scoping report is appropriate with a 2km search zone proposed for Listed Buildings (refer to comments received from Powys Built Heritage Conservation Officer). However, in accordance with SCHEDULE 4 l of The Town and Country Planning (Development Management Procedure) (Wales) (Amendment) Order 2016 the search zone for scheduled monuments should be extended to 5km to take into account all such designated monuments from which the development will be visible.

For onsite archaeology a systematic walkover survey of the whole application area will be required to confirm the presence and level of preservation of currently recorded sites and to locate any previously unrecorded archaeological sites. The survey will then form an assessment demonstrating the current extent, nature, potential impact and suggested mitigation for the above site.

If Historic England guidance is to be adopted in the assessment's preparation, it is suggested that the assessment considers the relevant policies contained within Planning Policy Wales. CADW have prepared guidance on Managing Change " the setting of historic assets " that was recently out for public consultation and currently not yet adopted. However, the guidance may be useful in the consideration of this application.

Key Planning Policy

The ES should include an assessment of policy which includes consideration of waste, energy and mineral policies (sterilization). In undertaking a comprehensive assessment this should avoid the need to resubmit the same information under the guise of a Waste Planning Assessment as required by TAN 21 and should also include evidence of compliance with the R1 Formula. Therefore the chapter should cover what is required as part of a Waste Planning Assessment in being appropriate and proportionate to the nature, size and scale of the development proposed and should provide all of the information necessary for the local planning authority to make a decision on the application. Proposals for developments falling under disposal and recovery operations should explain in the Waste Planning Assessment, set out in Annex B, where the proposal fits within the waste hierarchy and why it represents the best overall environmental outcome.

Any environmental statement should take account of revisions and new guidance, policy or legislation which may be published. The Scoping submission refers to Planning Policy Wales edition 8, this should be amended to edition 9. Powys' Local Development Plan is in the Examination in Public Stage with hearings commencing on the 28th March. The weight to be attached to the LDP is limited at the moment because there is no certainty of the Inspector's Report (in line with PPW).

The following issues /matters have not been included within the scoping document as separate chapters, but should be included within the ES

Exporting energy and heat

Details of the infrastructure which would be required to export energy to grid and surplus heat to potential end users should be included as part of the application / ES.

Nuisance (litter, lighting, birds, flies and vermin)

Brushed upon in section 2.6 of the Scoping Report, an assessments of debris, litter, pests (birds, rats, flies) and lighting, including that associated with vehicular traffic and the immediate local access to the site should be undertaken. Although it is stated that these matters would be regulated under the Environmental Permitting regime, they are nevertheless, material planning considerations (refer to section Environmental Permit below). Ideally, the development should not be releasing dust or litter, however, failures and human error must be factored in, as a number of surrounding industrial processes are highly reliant on high volume air intakes for cooling and air conditioning, and are at risk of choking and blockages, therefore proactive design and control features and means of mitigating dust and litter beyond the site should be built into the assessment. Bird control and the potential to attract scavenging birds must also be considered. The issue of flyblown waste needs to be considered as the operator may not have control of the waste being delivered to the site and

have no control of the length of time this waste will have been stored in bulking stations by waste and bulking companies. Controls and measures to mitigate against this shall need to be included in the assessment.

Contamination / Land Quality

There is no reference within the Scoping report to the contaminative historic uses of the site and potential impacts that may arise. It is recommended that discussions are commenced with the Council's Contaminated Land Officer on how potential land contamination issues are to be investigated, assessed and mitigated as part of the ES.

Geotechnical assessment

The Buttington quarry void is an extremely narrow site with the quarry floor no more than approximately 20 – 25 metres abutted by steeply graded slopes. It appears from the indicative drawings and sections submitted, substantial amount of material including soils, overburden, clay and rock are to be excavated as part of the proposal. Because of land stability (brick clay sites are susceptible to land slippage), confinement of area, health and safety, the protection of the SSSI on site and potential other geological issue it is considered that a geotechnical assessment of the site will be required demonstrating and mitigating possible effects throughout the lifetime of the project.

Materials management and the development of the ERF

It is acknowledged that "proposed construction phase" is referred to within the proposed development as described within part 2 of the Scoping Report. It may be beneficial for this element be a standalone chapter within the ES to assess how the proposal is to be built, what is to happen with excavations on site, what is the material balance associated with the proposal, full details of pollution prevention and incident response plan, the timing associated with different elements of the work and how this would be tied to a Materials Management Plan, Construction Environmental Management Plan and Waste Management Plan.

Socio Economic

This is touched upon within section 2.7 of the Scoping Report. Consideration of the potential socio-economic effects associated with the development and operation of the proposal is to be considered as part of the ES. This should include details of employment across all phases of development together with indirect employment and economic development that could potentially be developed through distribution, deliveries, use of waste heat and utilisation of bottom ash etc. This should be balanced against baseline conditions and possible social elements and other economic factors that may arise as a consequence.

Cumulative Impact

It is agreed that the consideration of cumulative impact is an integral part of the EIA process and it is not fully understood how it will be considered on a "qualitative" basis rather than also quantitatively. It should be noted that there are other developments on site and in the local area that should be considered cumulatively with this project and will need to be assessed. This will assist the planning authority in carrying out an appropriate assessment under Regulations 61 and 62 of the Habitats Regulations 2010.

Alternatives

Again this is referred to within section 2 of the Scoping Report under the heading Proposed Development and it is agreed that it is an important part of the EIA process. It is noted that as a result of case law certain aspects of alternatives including technology and other sites are to be considered as part of the Planning Statement with other considerations covered within the D&S. However, as stated previously and within the Duplication and Repetition section, for consistency and to avoid confusion and repetition, it is urged that alternatives are discussed comprehensively within the ES with referencing as to relevance to the EIA process and to wider application requirements.

Other considerations and advice in preparing both ES and planning application

Environmental Permit

It is noted that it is your intention to twin track both planning and environmental permit applications. It is stated within section 1.4 of the scoping report that Welsh Government's advice is to avoid unnecessary / unnecessary duplication of control, something the LPA and NRW will strive to achieve. However the EIA process will be subject to both regime applications. As the ES sets out the results of the EIA process; for consistency of decision, the avoidance of doubt and possible legal challenge, it is trusted that both ES's where there are both permitting and planning considerations; that those chapters will be identical in content and format.

Duplication and Repetition

Generally some applications that require the submission of Environmental Statements have contained superfluous information relating to issues that are irrelevant or of little importance to the proposed development. Competent Authorities, consultees and the public should not have to deal with large volumes of material and repetition which is irrelevant to the decision making process.

It is noted within your scoping application that the application is to contain a Planning Statement, Waste Planning Assessment and Environmental Statement. From the information submitted, it appears that these documents will contain overlapping information. To avoid repetition, it is strongly suggested that certain statements and assessments that are required as part of the planning application are amalgamated within the contents of the Environmental Statement with clear referencing stating where to discover the necessary information and what information relates to the different elements of the application. In doing so, it is trusted that this is clearly stated within the contents of the ES.

Regulation 15

For the purposes of the requirements of Regulation 15 of the above regulations, the following bodies/individuals were consulted as part of this Scoping Request and are aware that you are intending to submit a planning application which is to be accompanied by an environmental statement. Responses to the consultation are enclosed (No correspondence received from consultees labelled with a *).

Powys County Council Internal Consultees:-

*Ecologist; Rachel Probert - [redacted]k *(Informal e-mails between both officers in drawing up the ecological advice)*
*Highways; - Simon Crew - [redacted] *(telephone conversation stating that they would not be issuing a response as the highway is a Trunk Road)*
Built Heritage; Debra [redacted]
Planning Policy; Pet
Rights of Way; Calu
Public Protection; Da
Contaminated Land; Antho
*Drainage; Graham Astley

External Consultees

Natural Resources Wales; Geraint Bla [redacted]

Clwyd and Powys Archeological Trust; Mark Wal [redacted]
CADW; Nichola Davie [redacted]
*Welsh Wate
*Public Healt

For clarity It is encouraged that prior to submission, pre application discussions are undertaken through the formal process.

I trust that the North Wales Minerals and Waste Planning Service and Powys County Council's position is explained above and please do not hesitate in contacting should you wish to discuss any issue further.

Yours faithfully,

Robin Wynne Williams
Senior Planning Officer (Minerals and Waste)

Ar ran Gwasanaeth Cynllunio Mwynau a Gwastraff Gogledd Cymru /
On behalf of the North Wales Minerals and Waste Planning Service

Enc.

Appendix 3

Health Impact Assessment Screening Record Sheet

ECL Ref: ECL.001.01.02/RFS

Issue: 1
August 2018

Screening Record Sheet	Determinants of Health		Vulnerable Groups / Distribution
	Lifestyles		
	(Positive) +	(Negative) -	
Diet			
Physical Activity			
Use of Alcohol, Cigarettes, Non-Prescribed Drugs			
Sexual Activity			
Other Risk-Taking Activity			
Others?			
	Social and Community Influences on Health		
	(Positive) +	(Negative) -	
Family Organisation & Roles			
Citizen Power & Influences			
Social Support & Social Networks			
Neighbourliness			
Sense of Belonging			
Local Pride			
Divisions in Community			
Social Isolation			
Peer Pressure			
Community Identity			
Cultural & Spiritual Ethos			
Racism			
Other Social Exclusion			
Others?			

Screening Record Sheet	Determinants of Health		Vulnerable Groups / Distribution
	Living / Environmental Conditions Affecting Health		
	(Positive) +	(Negative) -	
Built Environment			
Neighbourhood Design			
Housing			
Indoor Environment			
Noise			
Air & Water Quality			
Attractiveness of Area			
Green Space			
Community Safety			
Smell / Odour			
Waste Disposal			
Road Hazards			
Injury Hazards			
Quality & Safety of Play Area			
Others?			
	Economic Conditions Affecting Health		
	(Positive) +	(Negative) -	
Unemployment			
Income			
Economic Inactivity			
Type of Employment			
Workplace Conditions			
Others?			

Screening Record Sheet	Determinants of Health		Vulnerable Groups / Distribution
	Access and Quality of Services		
	(Positive) +	**(Negative) -**	
Medical Services Other Caring Services Careers Advice Shops & Commercial Services Public Amenities Transport Including Parking Education & Training Information Technology Others?			
	Macro-Economic, Environmental and Sustainability Factors		
	(Positive) +	**(Negative) -**	
Government Policies Gross Domestic Product Economic Development Biological Diversity Climate Others?			

The above lists of areas of discussion and consideration are not definitive and can be expanded / amended depending on local circumstances, concerns or considerations.

Some information will be obtained through elements of the EIA, such as Transport Statement, Air Quality Assessment and other environmental assessments. Health based information will be obtained through the Wales Indices of Multiple Deprivation (WIMD) and via the Wales Health Observatory datasets.

Particular local concerns or opportunities will try to be gathered through the local public consultation and engagement process and requesting participation from local residents, councillors, businesses, and relevant local authority departments. Wider stakeholder engagement may be required either as part of the Screening exercise, or through the formal HIA process.

Your
Multi
Disciplinary
Consultancy