

CHAPTER 3 – NEED AND ALTERNATIVES

3.1.	Introduction	3-3
3.2.	Market Need	3-6
3.3.	Alternative Sites	3-7
3.4.	Alternative Combustion Technology	3-8
3.5.	Stack Height	3-14
3.6.	Design	3-15
3.7.	Great Crested Newt Habitat Creation	3-15
3.8.	References	3-16

List of Tables

Table 3-1:	Summary of Combustion Technologies	3-8
Table 3-2:	Global Warming Potential for Combustion Options	3-11
Table 3-3:	Estimated Waste Streams for Combustion Options	3-12
Table 3-4:	Relative Operating Costs Combustion Options	3-13
Table 3-5:	Comparison of Combustion Options	3-13

List of Figures

Figure 3-1:	Reduction in Actual Max GLC with Increasing Stack Height	3-14
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List of Appendices

Technical Appendix 3-1: Market Appraisal Report
 Technical Appendix 3-2: Alternative Sites Assessment

List of Acronyms

BAT	Best Available Techniques
Broad Energy Development	Broad Energy (Wales) Limited All activities within the red line planning boundary (see Drawing ECL-BQ-001 in Technical Appendix TA1-1)
Development Site	The physical site on which the Development is to be located as defined by the red line planning boundary (see Drawing ECL-BQ-001 in Technical Appendix TA1-1)
DNS	Development of National Significance
EA	Environment Agency
ERF	Energy Recovery Facility
GLC	Ground Level Concentrations
HZI	Hitachi Zosen Inova
IED	Industrial Emissions Directive
Installation	Buttington Energy Recovery Facility
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
NRW	Natural Resources Wales

List of Acronyms (cont)

RDF	Refuse Derived Fuel
MSW	Municipal Solid Waste
MRF	Materials Recovery Facility
POCP	Photochemical Ozone Creation Potential
CO ₂	Carbon dioxide
N ₂ O	Nitrous oxide
GWP	Global Warming Potential
MWh	Mega watt hour
SEPA	Scottish Environment Protection Agency

List of Amendments

- Sections 3.2.-3.5. have been added to collate the wider vision from the Buttington Area and the need for the ERF.

3. NEEDS AND ALTERNATIVES

3.1. Introduction

- 3.1.1. This Chapter sets out a description of the reasonable alternatives studied by Broad Energy (Wales) Limited as the applicant which are relevant to the proposed Development and its specific characteristics together with an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects. The need for the Development is relevant to the consideration of alternatives in particular and so this is set out initially.
- 3.1.2. The need for the Development in terms of waste arisings is set out and explored in detail in the Waste Planning Statement produced by Carter Jonas, report reference CJ.J0036928Butt, submitted with this DNS Application together with the full Market Appraisal Report which is included as Technical Appendix 3-1.
- 3.1.3. The position in relation to need is summarised below for the purposes of this ES and, in particular, the consideration of alternative sites and technologies by Broad Energy for the Development. The Development is primarily intended to meet the needs of Powys and that through this location it is also well placed to meet the needs of nearby Counties within Wales and those located close to the border in England. Consequently, the alternative sites assessment has focussed on Powys only.
- 3.1.4. The need for the development, and the potential benefits to the local area are discussed in each individual Chapter of this ES, however, for ease of reference these have been collated and are provided in this Chapter.

3.2. Overall Vision for the Quarry

- 3.2.1. Buttington Brickworks and Quarry dates back to 1895 and has been a local employer for over a century from the extraction of raw mineral's to the manufacturing of the "Buttington" brick, the supply of decorative aggregates and most recently supporting local businesses after developing the former brickworks into an industrial business park.
- 3.2.2. The Buttington Brickworks and associated quarry was included within the 2018 Powys Local Development Plan ("LDP") and was designated for much needed employment use within Powys.
- 3.2.3. It is widely acknowledged by Welsh Government and accepted that there is an employment gap within Powys which has seen students leaving education and moving out of the county resulting in a negative impact for the local economy. Powys County Council ("PCC") are encouraging existing and new businesses to invest in operations to ensure that there are opportunities for the younger generation to stay and develop their skills within the county.
- 3.2.4. Broad's proposals to develop an Energy Recovery Facility ("ERF") within the quarry will not only address the need to drive non-recyclable materials away from landfill and generate renewable electricity and heat, but most importantly, it is anticipated

that this anchor facility will open up the development of the wider business park for prospective businesses to build and develop their operations. The ERF will be able to provide sustainable energy, provided as either heat or power, as an economic and environmentally friendly incentive to ensure they can remain competitive in the wider national and international markets.

- 3.2.5. Businesses located within the wider development will be offered subsidised electricity (via a private wire) and heat as an incentive to develop sustainable employment opportunities within the business park.
- 3.2.6. Broad believes that through the development of the proposed master plan (see Chapter 4, Technical Appendix 4-1) the business park could provide an estimated 100 new jobs in spin out industries which could be a significant boost to the local economy.
- 3.2.7. As part of the energy recovery facility, it is the intention to provide an ongoing apprenticeship scheme to provide on-site learning and education across multiple disciplines, there will also be an on-site learning centre, within the main office building, which can be used by education facilities to further learn about air quality monitoring, energy recovery technology, the process of energy generation and the wider circular economy.
- 3.2.8. It is hoped that all vehicle movements transporting waste material in and the removal of all residual material out of the facility will, when technology advances, be managed by a fleet of electrically driven lorries which will help to significantly reduce the emissions on the road network.
- 3.2.9. Discussions have also been held with the quarry owners that, as part of the wider development within the business park, a series of charging stations are planned to be constructed to accommodate both commercial and public motorists supporting the drive to move all vehicles away from fossil fuels to electric in line with the government objectives.

3.3. Why an Energy from Waste Scheme?

- 3.3.1. The Market Appraisal Report (See Technical Appendix 3-1) undertaken indicates that Wales generates an estimated 1.55 million tonnes of waste per year and is recognised as being one of the best recycling nations in Europe. Within the 2 hours catchment area of the Buttington ERF, which lies on the Wales/England border, there is a total of 2.66 million tonnes of waste. Existing treatment capacity in the same area is only around 2 million tonnes leaving a capacity gap of 0.6 million tonnes (see Section 3.6). Surplus waste is therefore either being sent to landfill or being sent outside of the catchment area for treatment or disposal.
- 3.3.2. It is understood that the existing landfill capacity within Wales will be used within the next decade, there are a number of treatment facilities planned for the country, however there will still be a gap of 600,000 tonnes left each year which needs to be dealt with – over 3.5 times the capacity of the Buttington ERF.

- 3.3.3. The facility in Buttington will play a pivotal role in addressing material across Mid-Wales and across the borders by diverting up to a maximum 167,000 tonnes of material away from landfill facilities and converting it into low carbon energy.
- 3.3.4. It is important to note that this is a merchant facility whereby there is no reliance of a council contract, non-recyclable material has been sourced through a mixture of large scale and independent waste management companies to support the lifecycle of the proposed facility. Heads of terms have been agreed for the majority of the required waste for the ERF. However, Broad would welcome the opportunity to work with the waste procurement team at Powys County Council to look at their strategic objectives to move non-recyclable material away from landfill. It is anticipated that the ERF could help towards Powys meeting recycling objectives and Broad would therefore prioritise any waste that could be sourced from Council contracts.

3.4. Towards Zero Waste In Wales

- 3.4.1. The Welsh Government's Towards Zero Waste 2010-2050ⁱ waste management strategy demonstrates its desire to phase out residual waste from landfilling by 2025 to make Wales a zero waste nation by 2050. The Welsh Government has acknowledged that Energy from Waste ("EFW"), in combination with recycling, has a key role to play in reducing Wales's reliance on landfill, stating that by 2025 *"residual waste will be phased out of landfill to high energy efficiency Energy from Waste Plants"*.
- 3.4.2. The proposed Buttington ERF will play a part in the Welsh Government's strategy to reduce landfill reliance as it is hoped that the ERF will be operational by 2025 (subject to planning and permitting) therefore helping to divert residual waste from landfill, achieve higher levels of commercial waste recycling and increase generation of low carbon energy in Wales. The Buttington ERF will be a recovery – R1 class – operation and will provide in interim solution for waste management whilst other recycling technologies are being developed. It is hoped that the Buttington ERF will be the cornerstone development at the Business Park that will encourage other recovery operations to co-locate and work together to develop further recycling solutions that will take Wales towards its Zero Waste objective.
- 3.4.3. Broad Energy (Wales) Limited is not only focused on ERF technology but also is an independent developer of renewable energy projects across multiple applications including: Biomass, Energy from Waste, Solar PV and most recently, Battery Storage.
- 3.4.4. The team at Broad has forged close working relationships with industry leaders in the renewable energy market sector (Low Carbon and HZI), enabling the company to facilitate opportunities for businesses looking to develop sustainable energy infrastructure.

3.5. Key Deliverables

- 3.5.1. Should the Buttington ERF obtain planning permission, Broad Energy (Wales) Limited hopes to deliver:
- a recovery facility which will significantly reduce the amount of residual waste sent to landfill and increase low carbon energy available to the National Grid by generating around 12.8 megawatts net of low carbon and renewable energy

through the thermal treatment of up to 167,000 tonnes per year of non-hazardous, non-recyclable, household, residual, commercial and industrial waste. Energy generated will be exported to the National Grid to help provide greater security to supplies;

- a cornerstone development that will enable the wider Buttington Quarry Business Park to develop and provide heat to supply local agricultural industry, businesses, and new developments;
- a local jobs fair, giving those who currently live and work in the area an opportunity to learn more about the employment positions which may be available together with a Local Employment Plan which will actively target local employment and local supply of materials;
- a construction project that expected to generate up to 300 jobs throughout the 3 year build;
- an operational facility that will directly employ 30 permanent staff and generate further employment in supply chain opportunities such as maintenance and materials supply;
- an apprenticeship scheme providing onsite learning;
- an on-site education centre for local school children to learn about recovery and recycling; and
- an electric vehicle charging station within the wider quarry (which would be subject to a separate planning application).

3.6. Market Need

- 3.6.1. An assessment of the waste arising within the Development catchment has been undertaken. The catchment area initially considered was generally defined as a 2 hour drive from the Development Site. However, given the rural nature of large parts of Powys, and west and south west Wales, it was considered that waste arising from these areas would in fact travel far further than a simple 2 hour drive time. Consequently, in addition to Powys, the catchment area considered for the purposes of the ES and Waste Planning Statement included Welsh counties to the north (Isle of Anglesey, Gwynedd, Conwy, Denbighshire, Flintshire, Wrexham), and south west (Ceredigion).
- 3.6.2. Given the Development's close proximity to the English Border, the 2 hour catchment area also included English Counties such as Herefordshire, Shropshire, Cheshire and other West Midlands Counties.
- 3.6.3. Therefore, within the catchment area, there is a total of 2,660,000 to 2,720,000 tonnes per annum of waste arising.
- 3.6.4. Within the catchment area there are other competing energy recovery facilities, with the total treatment capacity within the catchment area of 2,020,000 to 2,030,000 tonnes per annum.
- 3.6.5. Therefore, within the catchment area of the Buttington ERF there is a surplus of 640,000 to 690,000 tonnes of residual municipal waste, and commercial and industrial waste. This is over 3.5 times more than the capacity of the ERF, therefore clearly demonstrates a need for such a facility.

- 3.6.6. It should also be noted that due to the rural nature of Wales, and the lack of motorway infrastructure within West and Mid Wales, there is potential for residual waste to travel from counties such as Carmarthenshire and Pembrokeshire, particularly as there are no ERF/EFW facilities within these counties. Therefore, the waste available within a wider catchment is likely to be higher. However, waste arisings from these counties has not been considered at this time. The full Market Appraisal Report may be found as Technical Appendix 3-1.

3.7. Alternative Sites

- 3.7.1. A long-term, more sustainable, low-carbon solution is needed for the management of residual waste generated within Powys County, and the wider catchment area of the Buttington ERF.
- 3.7.2. In choosing a suitable location for ERF in line with the requirements of national and local planning policies, a broad search was undertaken for land safeguarded, or allocated for, waste or employment use. Given the industrial nature of quarry related activities, mineral sites were also included.
- 3.7.3. The sites were identified from a list of locations in the Powys LDP. In all, 61 locations were considered – 30 safeguarded for employment, 15 for employment 15 mineral sites and 1 non-hazardous landfill.
- 3.7.4. Of these 34 sites were omitted from detailed consideration, many of which would not provide the 5-6 hectares of land necessary to accommodate an ERF and associated ancillary areas.
- 3.7.5. Fifteen sites were assessed in more detail taking into account factors such as land area, proximity to the primary road network, current level of use/activity, key ‘high-level’ environmental designations, ownerships and published information relating to the availability of land for sale or long-term lease.
- 3.7.6. Following detailed assessment Buttington Quarry was identified as the most preferable site. It is located on a major arterial route, unaffected by any planning or unmitigable environmental constraints and benefits from a 6 Ha LDP employment allocation, which incorporates a deep quarry void. Most of the land is in single freehold ownership and is available for the duration of the operational life of the facility. The former brickworks buildings are occupied for commercial activities and there is scope to provide heat and electricity as part of wider plans to create a sustainable business park. The Development in this location would also bring forward the early restoration of part of the quarry.
- 3.7.7. The full Alternatives Sites Assessment, undertaken by Carter Jonas, is provided as Technical Appendix 3-2.

3.8. Alternative Combustion Technology

Summary

- 3.8.1. Broad Energy has chosen moving grate incineration as the most appropriate combustion technology for the Buttington Energy Recovery Facility (“ERF”). 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.
- 3.8.2. As mentioned in Chapter 1, HZI have developed eleven similar facilities in the UK and Ireland over the last 10 year which provide a total waste processing capacity of 3.8 million tonnes per year.

Combustion Techniques – Initial Screening

- 3.8.3. When considering the type of furnace for the Installation reference has been made to the Environment Agency’s Guidance note EPR 5.01 (which is acceptable to NRW)ⁱⁱ. Table 2.1, of the EA’s guidance has been reproduced below as Table 3-1 and provides a summary of the combustion technologies. The type of waste to be combusted at the Installation is non-recyclable residual commercial, industrial and municipal waste. Consequently, based on the classifications in the EA’s guidance note, this waste would be classed as refuse derived fuel (“RDF”) or municipal.
- 3.8.4. It should be noted that for the purposes of the alternative combustion technologies, an annual throughput of 150,000 tonnes per annum has been used as this is the likely throughput accounting for maintenance and down time.

Table 3-1: Summary of Combustion Technologies

Combustion Technologies	Waste Type					
	Chemical	Clinical	RDF ¹	Municipal	Sewage Sludge	Animal Carcass
Fixed hearth						UK
Fixed stepped hearth		UK		UK		
Moving grate		UK	UK	UK		
Pulsed hearth	S ³	UK		S		S
Rotary kiln	UK	UK	S	S	S	UK
Fluidised Bed ²			S	UK	UK	
Liquid injection	UK				S	
Semi pyrolytic	UK	UK	S	S		S
Gasification ²	UK	UK	S	S	S	S
Pyrolysis ²	UK	UK	UK	UK	S	S
Cyclonic combustors						
Gas incinerators	UK					
Drum incinerators	UK					

Notes to Table

1. RDF may be combusted in a variety of plant providing that the plant is designed to receive fuels of similar physical, chemical and combusting characteristics.
 2. May be suitable only for selected/pre-treated waste fractions
 3. For mainly solid chemical wastes
- UK = known to have been used in the UK
S = technology is suitable or likely to be

3.8.5. The Table 3-1 indicates that a number of technologies that are, or are potentially, suitable for the combustion of municipal waste and RDF, namely:

- fixed stepped hearth;
- moving grate;
- pulsed hearth;
- rotary kiln;
- fluidised bed;
- semi pyrolytic;
- gasification; and
- and pyrolysis.

Of these:

- fixed stepped hearth has not been considered further as it is not suitable for the combustion of a variable waste stream such as municipal solid waste (“MSW”);
- 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 Industrial Emissions Directive (“IED”) might not be achievable;
- semi pyrolytic is more of a control method rather than a specific configuration, concept can be applied to various designs;
- 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, in addition to significantly increasing capital and operating costs; also, whilst both pyrolysis and gasification systems, which both generate a synthetic gas (“syngas”), can theoretically take advantage of gas engines or gas turbines which generate electricity more efficiently than a standard steam turbine cycle, the losses associated with making the syngas, and the additional electricity consumption required mean that the overall efficiency is no higher than for a combustion plant, and can be lower; this means that a combustion plant will be more beneficial in terms of climate change.

3.8.6. Gasification was originally proposed for an earlier scheme – a 9MW, 100,000tpa facility for the Development Site for which a scoping opinion was sought from Powys County Council. However, on further exploration of the technology, similar projects had experienced varying degrees of efficiency and had had difficulties during commissioning. In addition, gasification technology relies heavily on a homogeneous waste source, which therefore requires pre-processing prior to combustion. This additional processing not only requires additional power but also produces further residues which would either need further treatment or disposal elsewhere. This therefore presents a less efficient solution both in environmental and economic terms. Consequently, it was considered that more robust and proven technology would be more appropriate for the Development Site.

3.8.7. Accordingly, only the following techniques have been considered in the revised assessment:

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

Moving Grate

3.8.8. Moving grates are the leading technology in the UK and Europe for the combustion of raw and residual MSW. The moving grate comprises inclined fixed or moving bars (or rollers) which moves the waste from the feed inlet to the residue discharge. The grate movement turns and mixes the waste along its surface to ensure that all waste is exposed to the combustion process.

Rotary Kiln

3.8.9. Combustion in a rotary - or oscillating - kiln is a two-stage process consisting of a kiln - the primary combustion chamber - and a separate secondary combustion chamber. The rotation of the kiln moves the waste with a tumbling action which exposes fresh waste to heat and oxygen. Rotary kilns can operate at higher temperatures than other systems due to the absence of exposed metal surfaces, and can, therefore, be used to process hazardous, clinical and industrial wastes in addition to MSW. The use of rotary kilns can lead to increased numbers of fine particles emitted due to the disturbance caused by the tumbling action of the waste.

Fluidised Beds

3.8.10. Fluidised beds are designed for the combustion of relatively homogeneous waste. For residual MSW, the waste would need to be pre-treated before feeding to the fluidised bed, which would require a larger building and also lead to additional energy consumption; the necessary pre-treatment can also result in higher quantities of rejected material. Where MSW is treated at a material recycling facility ("MRF"), the residues from the MRF may already be suitable for feeding to the fluidised bed.

Emissions to Air

3.8.11. The emissions to atmosphere would not be really affected by the choice of technology. Whichever technology is chosen, emissions to air must comply with the requirements of the IED.

3.8.12. Emissions of oxides of nitrogen (NO_x) from the three different designs of combustion technology would be different, all three options would require abatement to achieve the necessary IED ELVs. Typically, unabated NO_x releases are as follows:

- 320-380mg/ Nm^3 from a moving grate;
- 250-300mg/ Nm^3 from a fluidised bed; and
- 300-350mg/ Nm^3 from a rotary kiln.

Deposition to Land

- 3.8.13. After the necessary abatement, deposition from atmospheric emissions to land would essentially be the same for all three designs.

Emissions to Water

- 3.8.14. There are no emissions to water from any of the systems.

Photochemical Ozone Creation Potential

- 3.8.15. There would be no change to the photochemical ozone creation potential for any of the systems.

Global Warming Potential

- 3.8.16. The direct emissions of greenhouse gases are the same for each option, as the CO₂ and nitrous oxide (N₂O) emission concentrations will be unchanged. However, there are differences in energy consumption and energy production, given that:
- a fluidised plant has a higher parasitic load than a moving grate system due to the waste shredding, sand system and fly ash separation systems required; and
 - a rotary kiln generates less power than a moving grate system, but has a similar parasitic load.
- 3.8.17. This means that the reduction in greenhouse gas emissions due to the displacement of power generated by other power stations would be different in each case.
- 3.8.18. In order to calculate the global warming potential ("GWP"), the quantity of CO₂, which has a GWP of 1ⁱⁱⁱ, emitted per MWh of electricity consumed has to be calculated. To calculate the quantity of CO₂ emitted for the actual - i.e. delivered - energy consumption, an emission factor of 0.166tonnesⁱ, of CO₂ per MWh is used. However, the actual energy consumption has to be converted to the equivalent primary energy equivalent; a conversion factor of 2.4ⁱⁱ is used for this. This accounts for transmission losses in the grid. Accordingly, 1x0.166x2.4 tonnes of CO₂ is generated per MWh of primary energy is used, which equates to 0.3984t/MWh. Table 3-2 details the GWP associated with each of the combustion options considered.

Table 3-2: Global Warming Potential for Combustion Options

Parameter	Units	Combustion Option ¹		
		Moving Grate	Fluidised Bed	Rotary Kiln
Power generated	MWh/annum	117,698	83,113	72,427
Parasitic load	MWh/annum	16,578	18,047	12,032
Power for export	MWh/annum	101,120	65,066	60,396
CO ₂ saving	t CO ₂ /annum	40,286	25,922	24,062

Note to Table

1. All options are based on a throughput of 150,000 tonnes per annum which is the actual anticipated throughput allowing for maintenance and downtime.

- 3.8.19. It can be seen from the data in Table 3-2, that the amount of power available for export is highest with the moving grate option, so displacement from the grid is higher and consequently there are greater CO₂ savings compared to the fluidised bed and kiln option,

Raw Materials

- 3.8.20. Of the three combustion options, the only additional raw material required is sand. This is only in the case of the fluidised bed as the sand is needed to provide continuous attrition of the waste material. It is estimated that around 1800 tonnes per annum of sand would be required for a 150,000 tpa fluidised bed combustion plant.
- 3.8.21. It should be noted that there are no raw materials relating to either the moving grate option or the rotary kiln options.

Waste Streams

- 3.8.22. The three operations produce four or five solid waste streams, as follows:
- it is assumed that most ferrous and non-ferrous metals would have been removed from the waste stream therefore any remaining metal disposal/recycling costs would be identical for all three options and so are not considered further;
 - the bottom ash production for the moving grates and kilns is the same, but lower for fluidised beds; bottom ash would be re-used in the construction market and for building aggregate, it is classed as a non-hazardous material;
 - fluidised beds have much greater carry-over of fine particles and so produce an additional fly ash stream, which is removed in a cyclone before the acid gas abatement reaction is added; this separate fly ash stream could be usable for building aggregate, but this is not certain and it is possible that it will need to be sent to a hazardous landfill facility for disposal;
 - all three options produce APC residues; the fluidised bed option would generate less than the other two options, because more of the fly ash has already been removed from the gas stream.
- 3.8.23. Estimated figures are shown in Table 3-3 below. Note that the relative costs are based on the total disposal costs for the lowest cost option.

Table 3-3: Estimated Waste Streams for Combustion Options

Waste	Units	Combustion Option		
		Moving Grate	Fluidised Bed	Rotary Kiln
Bottom Ash	tonnes/annum	36,887	11,794	36,887
Fly Ash	tonnes/annum	0	25,884	0
APC Residues	tonnes/annum	4,875	3,245	4,195
Relative Disposal Cost ¹	-	1.09	3.84	1.00

Note to table

1. Actual costs cannot be provided due to commercial confidentiality, consequently costs have been compared as a multiplier of the lowest cost option. Landfill tax is excluded.

- 3.8.24. Based on the figures in Table 3-3, the relative costs for the disposal of the waste streams arising from the moving grate and rotary kiln options are similar (although the rotary kiln relative cost is slightly lower), whilst that for the fluidised bed is 3.84 times higher.

Relative Operating Costs

- 3.8.25. Capital costs are not readily available for the three different options. It is expected that a fluidised bed unit would be up to 5% more expensive due to the additional waste preparation equipment, sand dosing and recycling equipment and fly ash separation which would outweigh savings from reduced bottom ash quantities. Economies of scale might outweigh this for much larger plants.
- 3.8.26. Relative operating costs have been estimated in Table 3-4. In order for direct comparisons to be made, the costs are presented as annualised costs, with the capital investment and financing costs spread over a twenty-five year lifetime, with a discount rate of 9%, using the approach detailed in Module 5 of SEPA's Horizontal Guidance Note H1^{iv} (used in the absence of any other suitable NRW guidance). This does not allow for increased maintenance costs associated with the fluidised bed or the rotary kiln options. Note that the relative costs are based on the relative reagent cost for a fluidised bed - the lowest cost - being 1 in order to give an indication of the relative magnitudes of each cost. For reasons of confidentiality, actual costs are not provided, and capital costs are also excluded.

Table 3-4: Relative Operating Costs Combustion Options

Parameter	Combustion Option		
	Moving Grate	Fluidised Bed	Rotary Kiln
Relative Reagents Cost	0	1	0
Relative Residue Disposal Cost	17.84	63.14	16.42
Relative Cost of Parasitic Load	29.93	32.59	21.72
Relative Total Annualised Cost	47.77	96.73	38.15

Summary of Assessment

- 3.8.27. Table 3-5 compares the three options for the parameters considered above.

Table 3-5: Comparison of Combustion Options

Parameter	Combustion Options		
	Moving Grate	Fluidised Bed	Rotary Kiln
CO ₂ Savings	34,311 t CO ₂ /annum	25,922 t CO ₂ /annum	24,062 t CO ₂ /annum
Relative Total Annualised Cost	47.77	96.73	38.15

- 3.8.28. It is evident from the data in Table 3-5 the costs of running a fluidised bed combustion plant is more than twice that of a rotary kiln. The assessment also does not allow for the fact that the fluidised beds using residual MSW have a record of poor reliability. Experience in the UK of fluidised bed combustion of MSW has been limited. A small number of plants

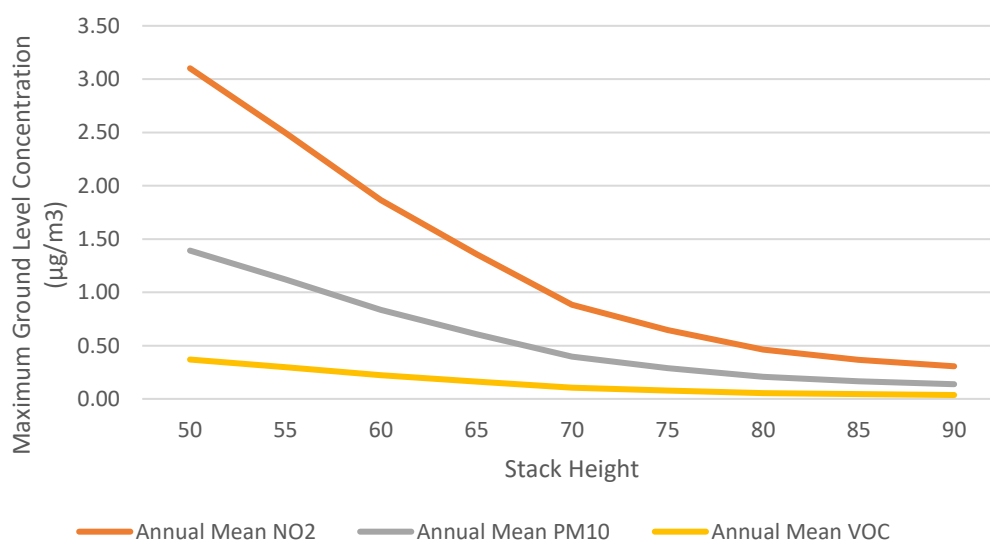
are operational, but all have had significant operational problems. It is not considered that they can be regarded as a reliable technology for MSW treatment.

- 3.8.29. The rotary kiln system is less efficient, evidenced by the lower power output, which has an impact on global warming potential. In addition, whilst the relative annualised operating cost for the rotary kiln is marginally lower than for the moving grate, the capital cost is likely to be higher for a rotary kiln since more streams are required.
- 3.8.30. Consequently, it is considered that the moving grate design represents the best available technology ("BAT") for this Installation.

3.9. Stack Height

- 3.9.1. Following confirmation of the technology type, a stack height assessment was undertaken to determine the optimum height for releases to air. The full assessment is provided in Technical Appendix 6-1, discussed in Chapter 6 – Air Quality and summarised as follows.
- 3.9.2. The optimum height is a height at which increasing the stack any further would not provide any further material environmental benefit. The modelling study showed that as the stack height increased the ground level concentrations of the various pollutants decreased. The results of the stack height screening assessment demonstrated that there is an environmental benefit of stack heights 60m and above.
- 3.9.2.1. On further assessment data, there is a significant drop in process contributions from 60 to 65m (27% reduction) and from 65 to 70m (a further 25% reduction). The reduction in process contributions is then not as pronounced from 70m upwards. This can be seen in Figure 3-1 for selected pollutants (nitrogen dioxide ("NO₂"), particulate matter (PM₁₀) and volatile organic compounds ("VOC") (these are the pollutants with the highest process contributions relative to the air quality standards).

Figure 3-1: Reduction in Actual Max GLC with Increasing Stack Height



- 3.9.2.2. Based on the above graph, a stack height of 70m is proposed. At this height, most pollutants have process contributions which are less than 1% of the air quality standards ("AQS"), are considered not significant. For those pollutants which are greater than 1% of the AQS (NO₂ and VOC), the predicted environmental concentrations ("PECs") are calculated. The PEC is the sum of the PCs plus the existing background concentrations of the various pollutants. The PECs of annual mean NO₂ and VOC are classed as having a negligible impact on the environment. Consequently, it is considered that as the PCs are substantially lower than National Air Quality Objectives, the impact of the ERF on air quality satisfies the requirements of National Air Quality Policies.

3.10. Design

- 3.10.1. A full description of the design evolution and the alternative appearances of the ERF are fully discussed in the Design and Access Statement submitted with the DNS application. The mass of the main building has been designed to be an efficient use of space and reflects the minimum space requirements of the process equipment within the building. The boiler hall at 46m is the highest element, with other areas having a reduced internal height requirement, consequently, have been designed to sit within the quarry void in a stepped manner to soften the profile.
- 3.10.2. Various options for the cladding and building materials were considered, including the use of building materials that reflect the quarry or a colour palette that allows the building to blend into the landscape with either fibre cement board cladding or metal sheet cladding.
- 3.10.3. In summary, it was concluded that a design whereby the building elevations are integrated into the landscape provided a reduced visual impact given the rural setting of the ERF.

3.11. Great Crested Newt Habitat Creation

- 3.11.1. Great Crested Newt ("GCN") surveys were undertaken in 2015 and 2018 and returned negative results (see ES Chapter 10 – Section 10.3.45). On this basis, it was considered that removal of the two settlement lagoons to allow the development of the surface water attenuation pond, and the construction of the Development access would not have any impact on GCN. However, following update GCN surveys in 2020, a positive result was obtained for CGN from the northern of the two lagoons. Subsequently, torch searches resulted in a maximum count of one individual; no indication of a breeding population was recorded. Colonisation is likely to have resulted due to the temporary cessation of management (dredging / scraping) of the ponds by the quarry operator.
- 3.11.2. Due to the physical constraints of the quarry void, if the ponds were to be retained the Development access road would have to pass in close proximity to them. This would substantially increase the risk of road mortality of GCN. In addition their turbidity (they receive silt), steep-sided profiles and limited submergent and emergent vegetation are likely to limit the productivity and size of newt populations, and if they are de-silted in winter, in line with their normal management, they will become unfavourable again. The best solution for the newt population is to create and manage ponds elsewhere on site and there is no satisfactory alternative.

- 3.11.3. The proposed new newt ponds, which will be subject to a management plan and monitoring (as a condition of the European Protected Species Licence), will considerably enhance the potential of the site to support GCN in the medium and long term, and will increase the resilience of the species to decline / extinction at the local level.

3.12. References

ⁱ <https://gov.wales/sites/default/files/publications/2019-05/towards-zero-waste-our-waste-strategy.pdf>

ⁱⁱ Sector Guidance Note EPR 5.01 – The Incineration of Waste – Environment Agency, March 2009

ⁱⁱⁱ Obtained from <https://www.gov.uk/guidance/assess-the-impact-of-air-emissions-on-global-warming#greenhouse-gases-impact-of-your-emissions>

^{iv} SEPA Horizontal Guidance Note H1 – Environmental Assessment for BAT

Technical Appendix 3-1

Market Appraisal Report

The following summarises an extensive Market Appraisal in support of the Case of Need argument for the Development of National Significance application relating to a proposed Energy Recovery Facility (“ERF”) to be developed at Buttington Quarry near Welshpool, Powys by Broad Energy (Wales) Limited.

1. SUMMARY:

The Buttington facility has a planned treatment capacity of 167,000 tonnes per annum (tpa) and will accept and treat residual (post recycling) waste from both municipal (“MSW”) and commercial and industrial (“C & I”) sources generated within a known catchment. It will add to the continued diversion from landfill in line with strategic objectives as well as providing a renewable energy source for export into the local power network.

The Catchment Area for the market analysis has been based on the Residual Waste arisings in Local Authorities within an expanded approximate 2 hour drivetime from Buttington Quarry and extends across 8 Welsh Local Authorities from Ceredigion in the South West to Flintshire in the North West of Wales. Due to the proximity of the site to the border, the catchment extends into certain English Counties including some of the of West Midlands Metropolitan Local Authorities.

Three scenarios have been developed (Incremental Change, Median and Policy Intervention) to reflect associated projections for Residual Waste in Wales and the recent DEFRA waste strategy in England. The Incremental Change scenario assumes the most limited increase in recycling and hence yields the greatest projected tonnage of Residual Waste whilst the Policy Intervention scenario reflects the most conservative scenario.

In total across the Catchment Area, it is estimated in the Median scenario there will be **2,600,000 – 2,800,000 tonnes per annum (pa) of Residual Waste – both Local Authority Collected Waste and C&I Waste.**

In the Catchment area there is around 1,550,000 tonnes per annum of Energy from Waste (“EfW”) capacity which is currently in operation or construction. A significant number of these facilities are located within the West Midlands area and these plants are extensively linked to long term contractual arrangements, usually developed under Private Finance Initiative (“PFI”) or Public Private Partnerships (“PPP”) arrangements. There is also additional EfW capacity being developed on the northern fringe of the Catchment Area and whilst these are located in the NW region of England, their potential ability to secure waste from the West Midlands area cannot be ignored. It has therefore been estimated that these EfWs could partially influence the Catchment Area and provide a further 350,000 tonnes per annum of capacity – making a total **EfW competitor capacity of around 1,900,000 tonnes** per annum.

With this additional influence is a future projection, the analysis considers that in the Median scenario in the Catchment Area, after allowing for modest tonnages to mechanical and biological treatment (“MBT”) facilities and co-incineration facilities, **there will be a capacity gap of around 600,000 tonnes** per annum – **nearly 4 times the proposed capacity of Buttington Quarry EfW.**

The Buttington ERF has been designed to a capacity of 167,000 tonnes per annum, and able to accept the usual range of residual waste types as is typical of an EfW using the HZI technology, the chosen operating plant partner for the project.

Data Sources:

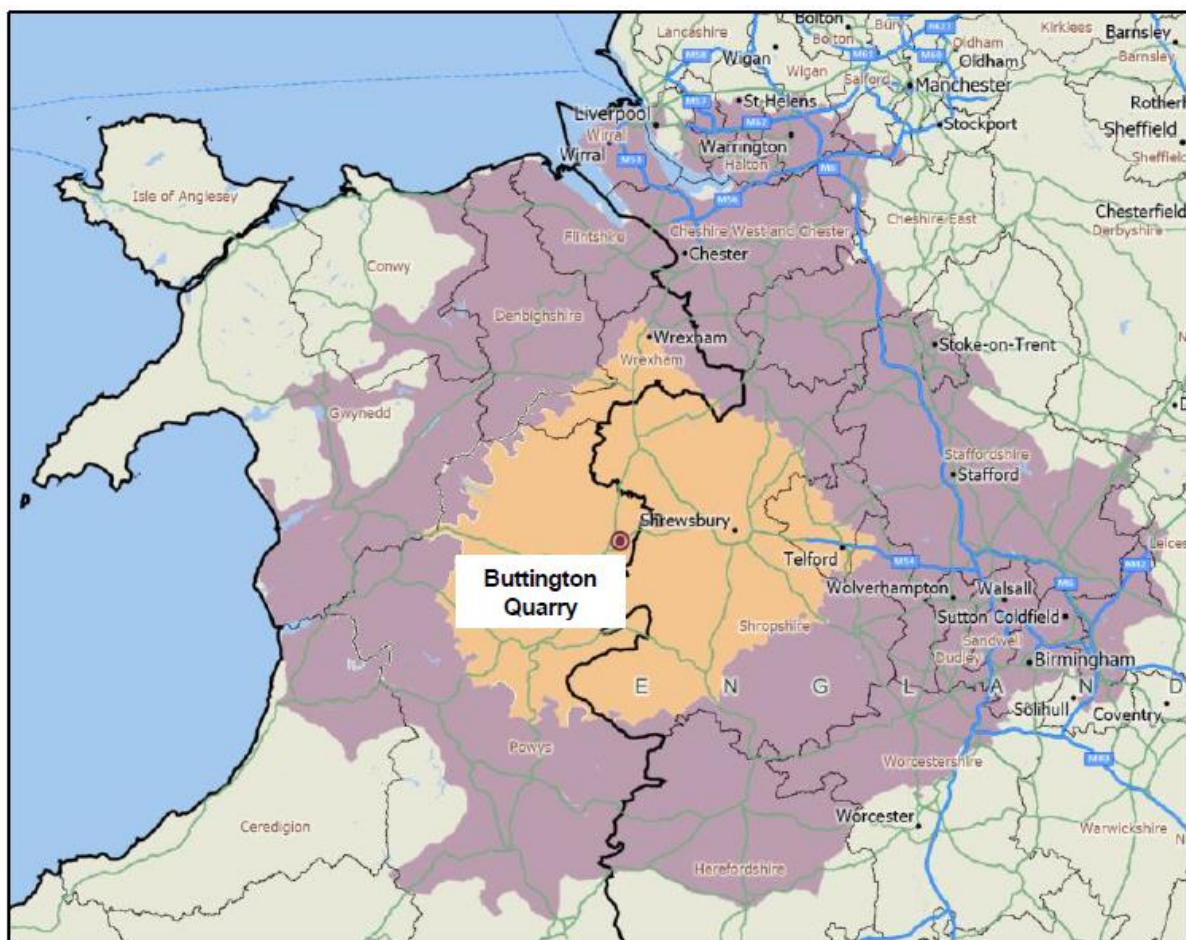
This review has been prepared using a number of data sources including:

- DEFRA's 2017-18 Annual Municipal Waste Management statistics and equivalents for the devolved regions;
- Local Authority municipal waste data – StatsWales;
- NRW Waste Permit Returns Data Interrogator 2018;
- EA's Waste Data Interrogator 2017 ("WDI Data");
- EfW Annual Returns for 2018; and
- Various internet searches.

2. THE CATCHMENT

Defining the Catchment Area for an ERF/EfW of the proposed scale of Buttington ERF, previous projects have considered residual waste generated within a 2 hour drive time (one way) of the target facility. Figure 1 below shows the distances from Buttington Quarry based on 1 (orange) and 2 hour (purple) drive times using an industry specific software package.

Figure 1 – One and Two hour travel times for Buttington Quarry

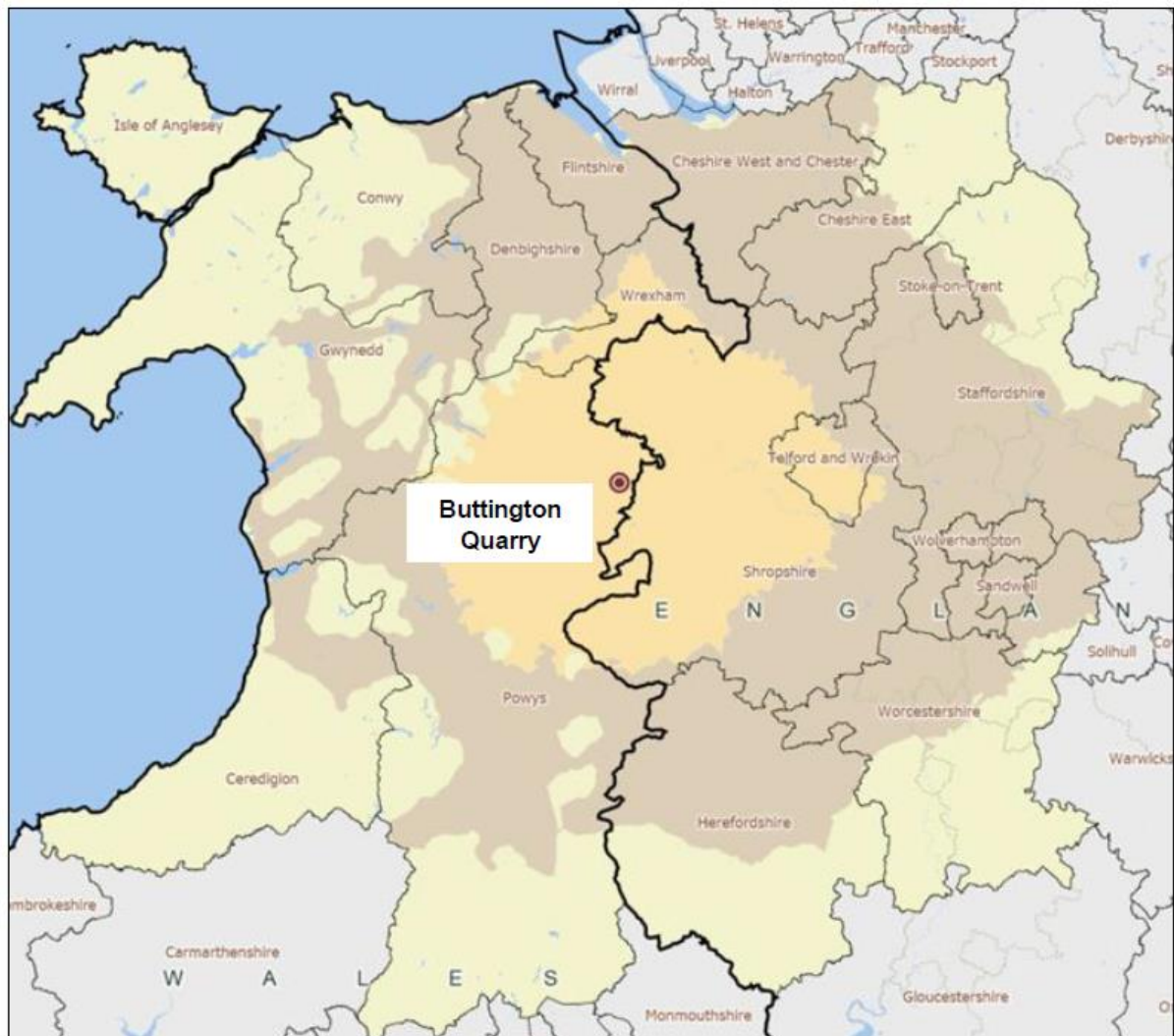


However, it is recognised that it is logical that the travel time should extend to cover the entire boundary of Local Authority jurisdictions and so a slightly extended catchment has been developed for the scheme that avoids the complexity of separating out waste generation from within Authorities that are partially covered by the two hour travel time. In reality, in today's waste sector,

waste materials often travel well outside of the two hour travel time and for the last few years the UK has relied heavily on exporting residual waste to mainland Europe.

On that basis, the total catchment for the Buttington site can be shown in Figure 2 below and this area has been used as the basis for the market assessment. Whilst this generates a slight increase in waste generation within the catchment, it also introduces additional competitor activity so is seen as a reasonable balance on which to determine the market capacity. It is also considered that due to the rural nature of Wales, and the lack of motorway infrastructure within West and Mid Wales, there is potential for residual waste to travel from counties such as Carmarthenshire and Pembrokeshire, particularly as there are no ERF/EFW facilities within these counties. However, waste arisings from these counties has not been considered at this time.

Figure 2 – Buttington Quarry Catchment Area



3. LOCAL AUTHORITY WASTE

There are 21 local authorities covered by the Catchment Area which are provided in Table 1.

Table 1: Local Authorities within the Buttington Quarry Catchment Area.

Local Authority	Region	Local Authority	Region
Isle of Anglesey	Wales	Dudley MBC	West Midlands
Gwynedd	Wales	Herefordshire	West Midlands
Conwy	Wales	Sandwell MBC	West Midlands
Denbighshire	Wales	Shropshire	West Midlands
Flintshire	Wales	Staffordshire	West Midlands
Wrexham	Wales	Stoke on Trent City Council	West Midlands
Powys	Wales	Telford and Wrekin Council	West Midlands
Ceredigion	Wales	Walsall MBC	West Midlands
Cheshire West and Chester	North West	Worcestershire	West Midlands
Cheshire East	North West	Wolverhampton MBC	West Midlands
Birmingham City Council	West Midlands		

In the context of this review, “Residual Waste” is the generally accepted term to describe solid, non-hazardous, combustible residual waste (i.e. waste remaining after recycling) capable of being thermally processed alongside residual Household Waste. In this context, commercial and industrial (“C&I”) waste which meets this definition is sometimes described as “municipal-like” residual C&I waste, but for simplicity, is described in this review as “C&I Waste”.

The Residual Waste definition includes unprocessed Residual Waste, Refuse Derived Fuel (“RDF”) and Solid Recovered Fuel (“SRF”) as the boundaries between these different presentations of Residual Waste are largely a function of the prevailing market conditions; if it is more economic to process Residual Waste into an RDF then this is what the market will generally do. Local Authority Collected Waste (“LACW”) comprises Household Waste for which it is a legal obligation for Local Authorities to collect together with other C&I Wastes, streets waste etc collected by Local Authorities.

Scenarios

In Wales waste policy is much more developed – as this has always been a point of differentiation from England. It is recognised that the ‘per capita’ funding for recycling in Wales is of a level which it is almost impossible to see as being deliverable for England. As a result, whilst Wales currently enjoy significantly higher LACW recycling rates than those in England, it also does not set the benchmark for future recycling performance in England. For simplicity, the report also applies the three scenarios to Wales, although the recycling performance under each scenario has been set in the context of existing recycling rates in Wales, adjusted to ensure consistency in the way in which the recycling rate has been calculated between Wales and England. These scenarios are used in this report to project forward the tonnages of Residual Waste in the Catchment Area.

The Government's waste and resources strategy for England ("Our Waste, Our Resources: A Strategy for England") means that it is necessary to consider a range of potential outcomes with respect to the implementation of this strategy, and its effects on Residual Waste tonnages. In particular it has become increasingly clear that the practical challenges in materially increasing recycling rates in England is going to be a challenge. Three scenarios have been developed for England which set the boundary of the expected outcome for the market:

- Incremental Change – a scenario in which modest, incremental improvements in recycling and resource efficiency are seen, driven by a combination of social attitudes and relatively "light touch" legislative change;
- Median – a scenario in which the key elements of the Strategy (and corresponding policies for the devolved regions) are eventually delivered, but beyond which there is limited progress. This report assumes this scenario to be a P50 projection – i.e. there is a 50% chance that future Residual Waste tonnages are higher than this figure, and a 50% chance that they will be lower;
- Policy Intervention – in which there is legislative and fiscal support for sustained action on recycling and prevention to deliver recycling performance in line with northern European experience, but such action falls short of the necessarily radical changes needed for a step change towards EU's Circular Economy targets. In general, this is a scenario which would be suitable for investor consideration.

In Wales waste policy is much more developed – as this has always been a point of differentiation from England. It is recognised that the 'per capita' funding for recycling in Wales is of a level which it is almost impossible to see as being deliverable for England. As a result, whilst Wales currently enjoy significantly higher LACW recycling rates than those in England, it also does not set the benchmark for future recycling performance in England. For simplicity, the report also applies the three scenarios to Wales, although the recycling performance under each scenario has been set in the context of existing recycling rates in Wales, adjusted to ensure consistency in the way in which the recycling rate has been calculated between Wales and England. These scenarios are used in this report to project forward the tonnages of Residual Waste in the Catchment Area.

Residual Waste Market Drivers

This report has projected forward, by Local Authority, the tonnages of Residual Waste from both the LACW and C&I Waste streams based upon the modelling assumptions briefly set out below.

Projections of Residual Household Waste

It can be considered that the principal drivers for Household Waste arisings are the number of households and the effects of "resource efficiency" on the arisings of waste per household. Examples of resource efficiency include light-weighting of packaging. Less frequent Residual Waste collections, plastic bag tax etc. Across the UK as a whole over the last 5 years these "resource efficiency" effects for Household Waste have been around 0.5%pa.

The modelling therefore uses Office of National Statistics ("ONS") and Stats Wales data for the projected number of households, with future Household Waste arisings being calculated by multiplying the number of households by the expected arisings per household, and with the future arisings per household reflecting the resource efficiency assumptions in Table 2. Some increased "resource efficiency" will continue to reduce waste arisings per household – in time it seems reasonable to assume that such improvements will become more difficult to achieve and the effects of "resource efficiency" become increasingly less significant.

Table 2: Household Waste Assumptions used in projections – Catchment Area

		Policy Intervention	Median	Incremental Change
Arising	Average Growth in # Households		0.50%	
	Resource Efficiency to 2025	-0.67%	-0.42%	-0.23%
	Net Growth to 2035	-0.17%	0.09%	0.27%
Recycling	2025 Rate - England	50.1%	48.4%	45.0%
	2035 Rate - England	55.2%	50.1%	47.8%
	2025 - Wales	60.5%	59.7%	58.6%
	2025 - Wales	63.0%	61.7%	59.1%

As Table 2 also shows, across all scenarios recycling rates in Wales are modelled to be 8-12% higher than those in England (at present they are 15% higher albeit on a slightly different calculation basis). The modelling assumes that, for Local Authorities in England their future recycling performance will be relative to their 2017/18 recycling performance - after allowing for the current level of separate Food Waste collection and division into four different “rurality” definitions – i.e. after adjusting for new Food Waste collections lower performing Local Authorities will remain low performing. For Wales where there is already a comprehensive Food Waste collection so the modelling simply assumes the performance of each Local Authority will be relative to their 2017/18 recycling performance.

Projections of Residual C&I Waste

A broadly similar approach has been adopted in projecting C&I Waste arisings as that taken for LACW, namely consideration of the principle drivers and then an assessment of the effects of resource efficiency. DEFRA identifies Gross Value Added (“GVA”) as the principle driver for future C&I Waste arisings. However, as projections are not generally available as raw data in the public domain, this report has used GDP growth for Services as a proxy for GVA. Medium term projections for GDP are compiled by HM Treasury and for Services have been increased by 15% to reflect the historically higher average GDP growth when compared with Manufacturing or Construction. In the period beyond Treasury projections, based on a range of sources, a long term projection for the UK of 2.0% growth in Services GDP has been applied.

Table 3: C&I Waste Assumptions used in projections

		Policy Intervention	Median	Incremental Change
Arising	GDP Growth		2.17%	
	Resource Efficiency	-1.25%	-1.00%	-1.00%
	Net Growth to 2035	0.92%	1.17%	1.17%
Recycling	2020 Recycling Rate	60.9%	60.9%	60.9%
	2025 Recycling Rate	64.0%	62.5%	62.7%
	2030 Recycling Rate	67.0%	65.0%	64.1%
	2035 Recycling Rate	70.0%	67.5%	65.0%

In terms of the “resource efficiency” effects, in the Incremental Change and Median scenarios a figure of 1.0%pa has been used in line with recent assessments of the average for the UK over the last 5 years whilst in the Policy Intervention scenario a more conservative 1.25% has been assumed.

4. RESIDUAL LOCAL AUTHORITY COLLECTED WASTE (“LACW”)

Residual LACW Projections

The focus of this section is upon the 21 Local Authorities identified in Figure 3 which lie within the Catchment Area.

In Table 4 the tonnages of Residual LACW are projected forward as per the waste growth and recycling rate assumptions set out in Section 1.

Table 4: Projected Residual LACW in the Catchment Area

Million Tonnes pa	2017	2020	2025	2030	2035
Incremental Change	1.69	1.71	1.67	1.66	1.65
Median		1.69	1.51	1.50	1.49
Policy Intervention		1.68	1.41	1.37	1.31

The fall in Residual LACW in 2020-2025 period reflects the projected impact on the recycling rate for LACW arising in England as a result of the measures proposed in the strategy which will are not planned to be effective until 2023. It has been assumed in this report that in general all Residual LACW is suitable for processing in an ERF/EfW – as local authorities with limited landfill access are increasingly finding ways to process Residual LACW (e.g. shredding) to help ensure that the maximum tonnage is recovered at an ERF/EfW rather than disposed to landfill.

Availability of Residual LACW

The overview analysis in Table 4 does not reflect the geography of the Catchment Area nor the contract status of individual Local Authorities in the Catchment Area. Table 5 shows the tonnage of Residual LACW for each Local Authority in the Catchment Area in the Median scenario and its contractual status. This highlights that the only potential sources of Residual LACW for Buttington Quarry EfW are:

- Powys – around 15,000-20,000 tonnes per annum – there is no long term solution in place although they have made themselves potentially available for a potential South West Wales procurement exercise;
- Ceredigion – around 15,000-20,000 tonnes per annum;
- Cheshire East and Cheshire West/Chester – although in both cases (see Section 4.1) there are likely to be more geographically convenient ERF/EfW solutions than the Buttington ERF.

Table 5 also highlights EfW capacity in the Catchment Area as discussed further in Section 4.

Table 5: Residual LA Contract Status within the catchment

Authority	Residual MSW ktpa			Destination	EFW Capacity ktpa	Expiry Date	Available LACW	
	2017	2025	2035				2025	2035
Wrexham	38	36	36	Ferrybridge		2032	018	36
Powys	21	18	17	Various/Export		2021*	19	17
Ceredigion	18	19	18	Various/Export		2022	0	18
Shropshire	72	70	69	Battlefields EFW	96	2035	0	0
Telford and Wrekin	45	39	39			2037	0	0
Sandwell	86	85	87	Four Ashes EFW	337	2037	0	0
Walsall	71	59	58			2035	0	0
Staffordshire	217	174	166			2035	0	0
Stoke	78	76	75	Hanford EFW	181	2025	0	0
Wolverhampton	77	75	75	Wolverhampton EFW	109	2023	0	0
Dudley	91	78	76	Dudley EFW	93	2023	0	0
Birmingham	382	347	355	Tyseley EFW	355	2024	0	0
North Wales Partnership	125	121	117	Parc Adfer EFW	190	2035	0	0
Hereford/Worcester	216	179	175	Hartlebury EFW	200	2030	0	0
Cheshire West/Chester	67	64	61	Runcorn EFW		2023	64	61
Cheshire East	86	65	65	Ferrybridge		2022	65	65
Total	1692	1506	1490		1562			

Residual LACW Into and Out of the Catchment Area

As Table 5 shows, Residual LACW from several Local Authorities in the Catchment Area is contracted either to export or to Ferrybridge EfW which lies outside the Catchment Area (see Section 4). In projecting the availability of Residual Waste in the Catchment Area, it is therefore necessary to consider these movements of contracted Residual LACW into and out of the Catchment Area. In the context of Buttington Quarry EfW Catchment Area, these movements are relatively modest – as Table 6 shows below.

Table 6: Net movements of Residual LACW into and out of the Catchment Area

MT	2017	2020	2025	2030	2035
Incremental Change	-0.05	-0.06	0.01	0.00	-0.01
Median		-0.06	0.01	0.01	-0.01
Policy Intervention		-0.06	0.01	0.01	-0.01

5. RESIDUAL COMMERCIAL AND INDUSTRIAL (“C&I”) WASTE

Approach

Data on C&I Waste market is far less readily available than that for LACW and that which does exist relates, in large part, to the UK as a whole. As a result, this report looks to validate, at a regional level, the Market Analysis Model used for this assessment and then deduct Residual LACW in order to provide an estimate of Residual C&I Waste tonnages and then allocate these tonnages using NOMIS employment data.

Residual C&I Waste Projections

As per Table 7, it is estimated that in 2017 there was 1,150,000 tonnes per annum of Residual municipal-like C&I Waste across the Catchment Area suitable for processing at an ERF/EfW. As Table 7 also shows, in 2017 it is estimated that 137,000 tpa of this was very local Residual C&I Waste whilst 694,000 tpa was Residual C&I Waste arising within the 1 to 2 hour Catchment Area.

Table 7: Residual C & I Waste within the catchment

Ktpa	Local Authority	Residual C & I	Sub Total
Circa 1 hour travel time	Powys	11	137
	Shropshire	62	
	Wrexham	15	
	Telford and Wrekin	48	
Within 1-2 hour travel time	Denbighshire	11	279
	Cheshire West and Chester	61	
	Flintshire	25	
	Staffordshire	183	
Metropolitan West Midlands (Within 2 hours travel time)	Wolverhampton	41	415
	Dudley	54	
	Walsall	56	
	Sandwell	67	
	Birmingham	196	
Edge of the 2 hour travel time	Herefordshire	37	323
	Cheshire East	70	
	Stoke	56	
	Worcestershire	129	
	Conwy	9	
	Gwynedd	8	
	Ceredigion	7	
	Isle of Anglesey	6	
TOTAL		1153	

Table 8 provides the projections for C&I Waste under the three scenarios for the Catchment Area in millions of tonnes per annum.

Table 8: C&I Waste Projections

MTPA	2017	2020	2025	2030	2035
Incremental Change	1.15	1.19	1.20	1.23	1.27
Median		1.19	1.21	1.20	1.18
Policy Intervention		1.18	1.14	1.09	1.04

Total Residual Waste Projections

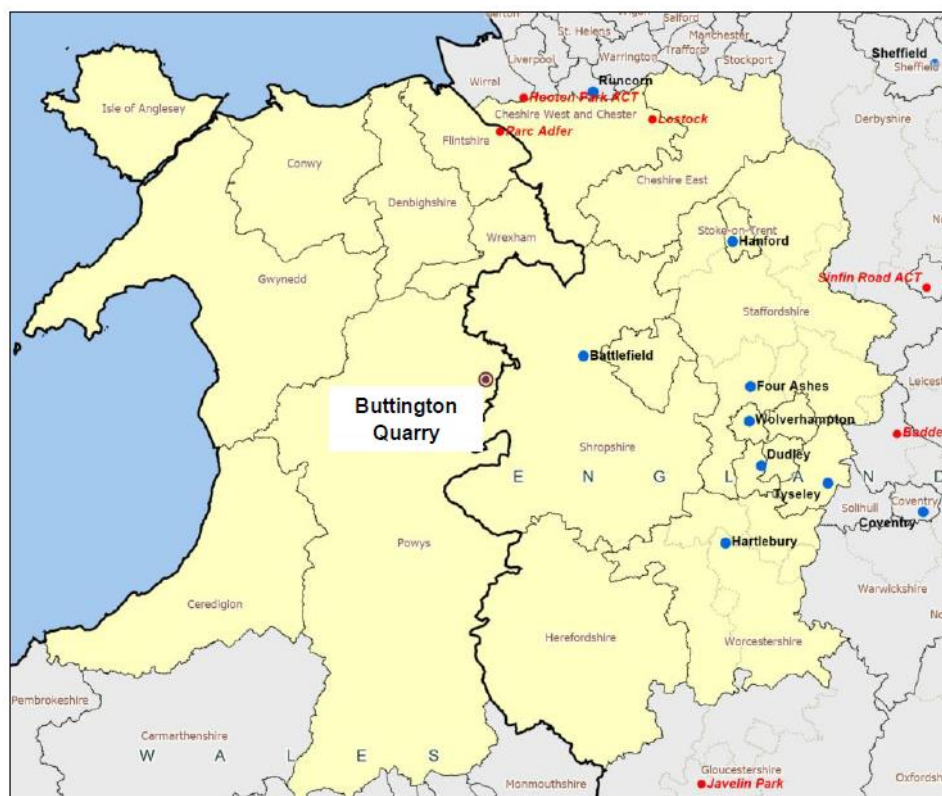
The total Residual Waste within the Catchment Area is therefore the sum of the Residual LACW, Table 5, the net movements of Residual LACW, Table 6 and the Residual C&I Waste, Table 8. This is shown in Table 9 below in millions of tonnes per annum.

Table 9: Total Residual Waste

MT	2017	2020	2025	2030	2035
Incremental Change	2.80	2.83	2.88	2.89	2.91
Median		2.82	2.72	2.70	2.66
Policy Intervention		2.80	2.57	2.47	2.34

6. COMPETITION AND PROJECTED SUPPLY / DEMAND MARKET BALANCE

In the context of this Report, “certain” ERF/EfW competition represents those ERF/EfWs which are currently either in operation, in construction or for which construction is imminent. At present, excluding Lostock EfW (see below) there are 8 Certain ERF/EfWs in the Catchment Area. These are shown on Figure 3 with a combined capacity of 1,560,000 tonnes per annum and are listed in Table 5. The nearest ERF/EfW to Buttington is the 96,000tpa Battlefield EfW, which is almost fully contracted with Residual LACW from Shropshire and Telford & Wrekin. The remaining 7 ERF/EfWs in the Catchment Area are located to the periphery of the Catchment Area and largely serve Residual LACW contracts within their immediate catchment.

Figure 3: Certain ERF/EFWs

However, this analysis excludes developments to the north of the Catchment Area – including the 600,000 tpa Lostock EfW. Significantly, whilst Lostock (which is just starting site preparation works) has a long term contract from FCC, in reality FCC will need to source Residual Waste for Lostock EfW during the construction period – it currently has very little Residual Waste under its existing control which is not already committed on a long term basis.

Also on the northern boundary of the Catchment Area are the 900,000tpa Runcorn EfW (of which around half is filled with Residual LACW from Greater Manchester and the rest is effectively “merchant” capacity and the 240,000tpa Hooton Park ACT which has no long term underlying contracts. There are several other ERF/EfW projects in the pipeline, including 400,000tpa Protos EfW and possible ERF/EfWs in Lancashire being developed by Suez and Veolia but clearly these are somewhat further afield from the catchment being assessed by this report. However, it is prudent to include some capacity within the Buttington market for these larger facilities and therefore around 350,000tpa has been included as potential competition for the Buttington facility.

Overall, therefore, the total Competitive Capacity can be taken as $1,560,000t + 350,000t = 1,910,000t$.

Mechanical Biological Treatment (“MBT”) in the Catchment Area

There are two MBT plants within this Catchment Area (Wrexham and ReNescience) and these are expected to have a minimal impact on the final tonnages of Residual Waste requiring treatment.

Co-Incineration in the Catchment Area

It is estimated that 50,000-80,000tpa of Solid Recovered Fuel (“SRF”), primarily from a variety of local sources, is sent to UK cement kilns from the Catchment Area.

RDF Exports

These are excluded from the direct competitive analysis on the basis that any new ERF/EfW will need to be competitive with RDF exports.

Catchment Area Balance

Table 10 shows the projected “balance” for the Catchment Area between Residual Waste and the capacity available to treat it.

In the Median scenario, the analysis suggests that there is around 640,000-690,000t of Residual Waste potentially available in the Catchment Area over the period 2025-2035 suggesting nearly 4 times as much Residual Waste as the proposed capacity of the Buttington ERF.

Table 10: Projected Balance of Residual Waste

MT		2020	2025	2030	2035
Total residual Waste in Catchment	Incremental Change	2.83	2.88	2.89	2.91
	Median	2.82	2.72	2.70	2.66
	Policy Intervention	2.80	2.57	2.47	2.34
Capacity	Certain EFW	1.79	1.91	1.91	1.91
	MBT Diversion	0.04	0.04	0.04	0.03
	Co Incineration	0.05	0.08	0.08	0.08
	TOTAL CAPACITY	1.88	2.03	2.03	2.02
Catchment Area Balance (Capacity Gap)	Incremental Change	0.95	0.85	0.87	0.89
	Median	0.94	0.69	0.67	0.64
	Policy Intervention	0.91	0.54	0.44	0.33

Technical Appendix 3-2

Alternative Sites Assessment



BUTTINGTON ENERGY RECOVERY FACILITY

ALTERNATIVE SITES ASSESSMENT

ENVIRONMENTAL STATEMENT Chapter 3: Need and Alternatives Technical Appendix 3.2

**CJ Ref: J0036928/Butt/ES/Chap3/TA 3.2
August 2020
ISSUE: 1**

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Contents

1.	INTRODUCTION	3
1.1.	Background	3
1.2.	Requirement for Alternative Site Assessment.....	3
1.3.	Structure of the Report.....	3
2.	PROJECT CONTEXT AND POLICY REVIEW	4
2.1.	Introduction	4
2.2.	Spatial Context	4
2.3.	Policy Context	5
3.	SITE SELECTION METHODOLOGY	8
4.	RESULTS	10
5.	CONCLUSIONS	11

Drawings

Drawing No. J0036928-20-01a	Alternative Sites Assessment – Composite Location Plan
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Appendices

Appendix 1	Sites Omitted from Further Assessment
Appendix 2	Scoring Criteria
Appendix 3	Further Assessment Results
Appendix 4	Further Assessment Analysis

Acronyms

2017 Regulations	The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017
AQMA	Air Quality Management Area
CHP	Combined Heat and Power
EIA	Environmental Impact Assessment
ERF	Energy Recovery Facility
ES	Environmental Statement
HGV	Heavy Goods Vehicle
LDP	Local Development Plan
LNR	Local Nature Reserve
MOD	Ministry of Defence
NNR	National Nature Reserve

NRW	Natural Resources Wales
PCC	Powys County Council
PPW	Planning Policy Wales - Edition 10, December 2018
RCV	Refuse Collection Vehicle
SAC	Special Area of Conservation
SAM	Scheduled Ancient Monument
SPA	Special Protection Area
SSSI	Sites of Special Scientific Interest
TAN 21	Technical Advice Note 21: Waste

1. INTRODUCTION

1.1. Background

- 1.1.1. This Alternative Sites Assessment has been prepared by Carter Jonas on behalf of Broad Energy (Wales) Ltd ('Broad Energy') as part of the Environmental Impact Assessment ('EIA') undertaken in respect of the proposed Energy Recovery Facility ('ERF') Facility on land at Buttington Quarry, Welshpool, Powys, SY21 8SZ.
- 1.1.2. The clear local and regional need for high efficiency energy recovery facilities to divert residual waste away from landfill is considered elsewhere within the Waste Planning Assessment and other ES chapters.
- 1.1.3. Instead, this report demonstrates Broad Energy's commitment to the Buttington Quarry site by detailing the logic and methodology which led to its selection. By its nature, this assessment needs to take account of planning policy, economic viability, the availability of land, and 'high-level' amenity and environment constraints.

1.2. Requirement for Alternative Site Assessment

- 1.2.1. The need to undertake a review of alternative options is set out in Regulation 18(3) (d) of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (the '2017 Regulations'); which requires that an Environmental Statement includes '*...a description of the reasonable alternatives studied by the developer...and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment*'.
- 1.2.2. That description must consider (*inter alia*) the '*...development design, technology, location, size and scale of the alternatives*'. This report considers alternative locations only.
- 1.2.3. The regulations are reiterated in Section 6.3 of the Planning Inspectorate's Scoping Direction dated October 2018, which states that:

'The reasons behind the selection of the chosen option should also be provided in the ES, including where environmental effects have informed the choices made...The information provided should be that which is necessary to demonstrate the risks, likelihood of occurrence, likelihood of significant impact and an outline of the main alternatives studied by the applicant'.

1.3. Structure of the Report

- 1.3.1. There is no standard or adopted procedure for an alternative site assessment. As such, this report has been prepared based on Carter Jonas' experience of site assessments and the broad assessment principles and criteria contained within national and local planning policy.
- 1.3.2. **Section 2** summarises the spatial context for development within Powys and the local and national policy background.

- 1.3.3. **Section 3** describes the site selection methodology, including bases for omission, justification of selection criteria, and the use of a '*scoring matrix*' for more detailed assessment.
- 1.3.4. For sites considered in greater detail, **Section 4** summarises the results of each assessment using a concise '*pro-forma*' assessment template.
- 1.3.5. A 'Composite Location Plan', showing the location of the 15 sites which have undergone further assessment is shown at Drawing No. J0036928-20-01a.
- 1.3.6. **Section 5** draws conclusions from the previous sections and provides an opinion of the most suitable site for the project to progress.

2. PROJECT CONTEXT AND POLICY REVIEW

2.1. Introduction

- 2.1.1. This section reviews the spatial and policy context to the proposed ERF development; its relationship with the County it is set to serve and the background to the site selection process discussed within latter sections.
- 2.1.2. It is first important to set the spatial and environmental context in which waste planning policies are to be applied:

2.2. Spatial Context

- 2.2.1. Powys is described as '*...the green heart of Wales*'. Comprising over 500,000ha; it is the largest county in Wales and the second largest in the UK. It directly adjoins a total of thirteen counties: including the English counties of Shropshire and Herefordshire.
- 2.2.2. Following its establishment in 1957, Powys' incorporates approximately 66% of the Brecon Beacons National Park by area. These areas remain within Powys County Council's ('PCC') administrative boundary; but are excluded from its Local Development Plan ('LDP') (see Policy Context).
- 2.2.3. Whilst suitably designed facilities are not precluded from such areas; Para 8.2 of TAN21 (See Policy Context) states that waste management '*...facilities should not have an adverse impact on areas or sites designated for local, national or international protection...*' including (*inter alia*) '*National Parks*'. As such, the Brecon Beacons National Park has also been excluded from the site search.
- 2.2.4. Where they can be identified, we have also excluded areas of the Defence Training Estate; notably the circa 15,000ha Sennybridge training area immediately to the north of the Brecon Beacons. We understand that this area comprises approximately 12,500ha of Ministry of Defence ('MOD') Freehold and a roughly 2,500 ha area leased from National Resources Wales.

2.3. Policy Context

Planning Policy Wales

- 2.3.2. Planning Policy Wales (*'PPW'*) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (*'TAN'*), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the *'national planning policy framework'* for Wales.
- 2.3.3. With the exception of a reference to minimising adverse environmental and amenity impacts and to the *'Proximity Principle'* (i.e. that waste should in general be treated and disposed of close to where it was produced); PPW makes no comment as to the location of potential waste sites.

Technical Advice Note 21 (TAN21): Waste

- 2.3.4. Chapter 3 of *'TAN21: Waste'* provides a series of spatial criteria for use in locating new sites for waste uses. Whilst there is no requirement for local authorities to repeat the TAN criteria verbatim within their own development plans; they should have regard to them when formulating policy.
- 2.3.5. Spatial criteria include:
- Industrial areas, especially those containing heavy or specialised industrial uses;
 - Active or worked-out quarries;
 - Degraded, contaminated or derelict land;
 - Existing or redundant sites or buildings;
 - Sites previously or currently occupied by other types of waste management facilities;
 - Sites where the nature of existing and proposed neighbouring land uses facilitates the location of waste management infrastructure and there are opportunities for co-locating waste management / resource recovery / reprocessing / re-manufacturing facilities to form environmental technology clusters; and
 - On farms where the output will be used on the farm.
- 2.3.6. Site-specific factors which might benefit or detract from the suitability of a particular site are also included below:
- Site infrastructure (including electricity grid connections for energy from waste facilities) is present;
 - There are existing or proposed transport infrastructure links – including opportunities for integrated multi-modal road, train, canal and sea connections; and
 - There is a need for sites for smaller-scale community-based reuse and recycling activities.
- 2.3.7. In addition, Annex C of TAN 21 includes detailed planning considerations which both applicants and planning authorities must have reference to whilst preparing and determining applications for waste management proposals, namely:
- Ensuring prudent use of land and resources;
 - Minimising greenhouse gas emissions;
 - Minimising adverse effects on air quality and quantity;
 - To protect and enhance the landscape, townscape and cultural heritage of Wales;
 - Minimising adverse effects on water quality;

- Avoid increasing the risk of flooding;
- Protecting biodiversity;
- Providing employment opportunities and support long-term jobs and skills;
- Minimising adverse effects on residential property;
- Minimising the increased cost of waste management;
- Protecting local amenity;
- Minimising adverse effects on public health and to avoid increasing health inequalities; and
- Minimising local transport impacts.

Adopted Powys Local Development Plan (2011 – 2026)

- 2.3.8. Powys' LDP recognises that many waste management facilities are akin to general industrial or B2 uses and, therefore, via Policy W1, directs proposals to existing and suitable allocated B2 sites, as well as existing waste management uses, identified under policies E1¹ and E4². Not all sites identified will be suitable for all types of waste management facility. Existing and allocated sites within the flood plain, for example, will be unsuitable for recovery facilities.
- 2.3.9. The LDP clarifies that a large proportion of the land listed under Policy E4 will accommodate expansion space for indigenous occupiers. The employment land that is genuinely available within these sites is therefore limited as the majority of the land will provide flexibility for existing users (Para 4.4.12).
- 2.3.10. Allocated employment sites identified under Policy E1 will complement existing employment sites in providing a continuous supply of appropriate employment land across the Plan area to accommodate expansion in the economy, to replace and upgrade the existing supply of premises where needed, and to ensure choice and range across types, settings and locations.
- 2.3.11. These sites are grouped into categories that reflect the nature of the site and the potential future uses:

Prestige Sites: Strategically located sites offering regionally important medium to large scale employment opportunities for primarily B1 Uses (such as offices, research and development centres for products and processes and light industry) and characterised by a high-quality environment.

High Quality Sites: Smaller sites of regional significance offering small to medium sized employment opportunities for B1, B2 and B8 Uses in high quality surroundings that are well positioned in relation to the County's main road and transport infrastructure.

Local Sites: Sites for B1, B2 and B8 Uses providing a varied industrial and / or employment setting with minimised visual impact (for example, screening) yet located within close proximity to the main road and transport infrastructure as well as centres of population. These sites primarily serve a local market and may include local office developments.

Mixed Use Sites: Sites where employment led mixed use proposals are supported in order to stimulate private sector investment and development.

¹ Employment Proposals on Allocated Employment Sites

² Safeguarded Employment Sites

- 2.3.12. Whilst some sites listed under Policy E1 are clearly appropriate for a waste management use from a planning policy perspective (i.e. Policy W1); their '*highest and best use*' remains a broader B1, B2 and B8 employment use. This is particularly pertinent for the '*prestige sites*' which have the potential to provide much wider economic / employment benefits than could be derived from any potential waste management facility.
- 2.3.13. Policy W2 states that development proposals for waste management facilities should be located where the highway network is suitable for use by HGVs (with reference to the '*proximity principle*'), they are of an appropriate nature and scale; and that there should be no adverse hydrological, ecological, heritage or landscape impacts.
- 2.3.14. Proposals involving the production of waste heat (i.e. Combined Heat and Power / CHP) need to identify the user and provision must be made for restoration and aftercare of the site upon their cessation.

3. SITE SELECTION METHODOLOGY

- 3.1.1. A long-term, more sustainable, low carbon solution is needed for the management of residual waste generated within the administrative area of PCC; much of which is currently disposed of via landfill.
- 3.1.2. A sites search within this extensive area has, by necessity, focused on those sites that have been subject to some form of consideration within the development plan process or are relatively high profile and potentially available for development.
- 3.1.3. In choosing a suitable location for the proposed ERF, a comprehensive search was undertaken for land safeguarded, or allocated for, waste or employment use within the administrative area of PCC (Policies E1, E4 and W1). That search was undertaken in line with the requirements of the national and local planning policies detailed at Section 2.
- 3.1.4. Whilst pre-existing and allocated sites have been given due consideration; it is recognised that the proposed ERF is *'sui generis'* in planning terms and may not directly satisfy the broader criteria which may have been used in the allocation of employment sites.
- 3.1.5. Given the industrial nature of quarry related activities, mineral sites have also been included in accordance with Policy M1 of the Powys LDP and para 3.27 of TAN21 and para 3.5.1 of Planning Policy Wales.
- 3.1.6. Page 8 of Planning Policy Wales states that *'...non-hazardous landfills may not be able to accommodate built development without significant investment and long-term monitoring'*. Where former landfill sites have been identified, these factors have been considered.
- 3.1.7. Powy's LDP, which was in draft form during the early stages of the proposal, was adopted in April 2018. The sites were identified from a list of locations in the LDP.
- 3.1.8. In all, 61 locations were considered – 30 areas safeguarded for employment, 15 sites allocated for employment, 15 identified for minerals use, and one currently used for non-hazardous landfill.
- 3.1.9. The initial review focussed on those sites that had a gross area of at least 5-6 hectares (ha); the area required for the type of ERF and ancillary infrastructure proposed. Of the original 61 sites; 34 were omitted from detailed consideration primarily due to size limitations or because the land has been put to a new use, those sites are listed at Appendix 1.
- 3.1.10. The remaining fifteen sites were assessed in more detail using a scoring matrix taking into account factors such as land area, proximity to the primary (trunk) road network, current level of use/activity, key *'high-level'* environmental designations, and published information relating to the availability of land for sale or long-term lease.
- 3.1.11. The principles of this system have been based on the application determination criteria set out in Annex C of TAN 21, reviewed above. The system applies a scoring mechanism to the following considerations:
- Existing Use;
 - Proximity to Road Network;
 - Proximity to Housing;

- Landscape and Visual Impact;
- Ecology;
- Water Environment; and
- Heritage.

- 3.3.12. This exercise was designed to identify ‘*high-level*’ constraints which might arise further into any future environmental assessment or consultation exercise. The results of the scoring matrix must be viewed in the context of other factors such as the availability of land, need, and the colocation of the wider waste management infrastructure within Powys. It is important to note that no sites have been discounted based on these constraints.
- 3.1.13. A detailed review of the scoring matrix, including the relative weighting of each criterion is shown at Appendix 2.
- 3.1.14. Air quality is noted as a material planning consideration with Annex C of TAN21. Its importance is reiterated within Section 6.7 of PPW and national air quality objectives are set within the Air Quality (Wales) Regulations 2002 (as amended).
- 3.1.15. Policy DM14 of the LDP states that ‘*...air quality within Powys is good in general...*’ with the exception of one designated Air Quality Management Area (‘AQMA’) at New Road, Newtown. That AQMA was established on the 15th February 2008.
- 3.1.16. AQMA’s are declared where national air quality objectives (in this case relating to Nitrogen dioxide levels) are not likely to be achieved. The Newtown AQMA was revoked on the 15th March 2017; and as at the date of this assessment no AQMA’s exist within Powys.
- 3.1.17. DM14 goes onto to state that development proposals ‘*...will need to demonstrate that measures can be taken to overcome any significant adverse risk...*’. Industrial emissions from ERF facilities in the UK (in addition to associated vehicle emissions) are strictly regulated under (*inter alia*) the Industrial Emissions Directive and The Environmental Permitting Regulations 2010 (as amended). Air quality impacts are also considered throughout the planning process; from the EIA stage (See ES Chapter 6) through to ongoing enforcement.
- 3.1.18. Air quality assessment is subject to site specific factors including baseline / background emission levels, topography, weather conditions, and cumulative impacts from neighbouring properties. High-level assessment of sites is therefore unlikely to provide any meaningful results.
- 3.1.19. In recognition of the above, a decision was made not to omit individual sites from the selection process on the basis of air quality impacts. In any event, it is likely that air quality impacts have indirectly been considered within the criteria listed above; notably ‘*proximity to road network*’.
- 3.1.20. Where allocated sites (partially or in their entirety) have been considered, distances to designations / potential receptors have been measured from the LDP allocation boundary on the basis that the allocated areas would be the most likely location for the ERF facility within the wider employment area.

- 3.1.21. It should be noted that where distances to environmental, heritage and landscape receptors have been measured; only the nearest receptor has been recorded, regardless of sensitivity, size or potential mitigation requirements. This approach is considered commensurate with the requirement for the assessment of *'reasonable'* alternatives under the 2017 Regulations.
- 3.1.22. The transport network serving Central Wales is of varying standard. The county's rural nature and topography mean that it is reliant upon strategic trunk roads. Consequently, there is a necessary reliance on transportation of waste by road and the LDP acknowledges that the diverse, rural nature of Powys will inevitably lead to some forms of waste management needing to be located outside existing settlements (Para 9.11).
- 3.1.23. Due weight has therefore been given to the proximity of potential sites to Powys' strategic transport network; notably the A470, A483, A458 and A44.
- 3.1.24. By their nature, the 2017 Regulations are concerned with the environmental impacts of the proposed development (see Section 2). It follows that any alternative site selection process is primarily guided by the environmental impact of those *'reasonable'* alternatives. However, for an alternative to be *'reasonable'*, it must also be deliverable from a land ownership and tenure perspective.
- 3.1.25. Using both publicly available information and proprietary agency software (i.e. CoStar); a review of each site was undertaken in order to ascertain its availability (either the whole or in part) on either a Freehold or Long-Leasehold basis, assuming a 30-year design life for the ERF.
- 3.1.26. Larger, multi-occupier commercial developments (i.e. business parks and industrial estates) are often subject to complex ownership structures including (inter alia): leasehold interests of varying length, whole and partial sub-lets, sale and leaseback agreements and ground rents.
- 3.1.27. The densest sites contain more than 20 Freehold and Leasehold titles within the 5-6ha area required for the proposed ERF facility. Such a large number of stakeholders would be likely to make any potential land assembly exercise (without the benefit of compulsory purchase powers) uneconomic.
- 3.1.28. The speculative acquisition of a larger, Freehold, multi-let parcel with a low WAULT (weighted average unexpired lease term) would likely be hampered by the security of tenure provisions available to tenants under Part II of the Landlord and Tenant Act 1954
- 3.1.29. In a scenario where acquisition by private treaty was achievable or financially viable; the resultant job losses would be contrary to the spirit of Policy E4 and its predecessors.

4. RESULTS

- 4.3.1. A summary of the results of the Further Assessment can be found at Appendix 3.
- 4.1.2. Further assessment 'templates' showing the suitability characteristics and scoring matrix results are shown at Appendix 4.

5. CONCLUSIONS

- 5.3.1. This Alternative Sites Assessment Report is included at Appendix 3.2 of Environmental Statement Chapter 3 – Need and Alternatives. It describes the assessment approach, the reasons for omitting sites and includes the results of the more detailed consideration of the remaining locations, each with a summary conclusion on suitability.
- 5.1.2. The exercise shows Buttington Quarry to be the most preferable site. It is located on a major arterial route, unaffected by any planning or unmitigable environmental constraints and benefits from a 6-ha LDP employment allocation which incorporates a deep quarry void. The site benefits from an employment allocation and is suitable for waste use under Policy W1 of the Powys Local Development Plan. Most of the land is in single freehold ownership and is available for the design life of the facility. The former brickworks buildings are occupied for commercial activities and there is scope to provide heat and electricity as part of wider plans to create a sustainable business park. The proposal in this location would also bring forward the early restoration of part of the existing quarry.

Drawings

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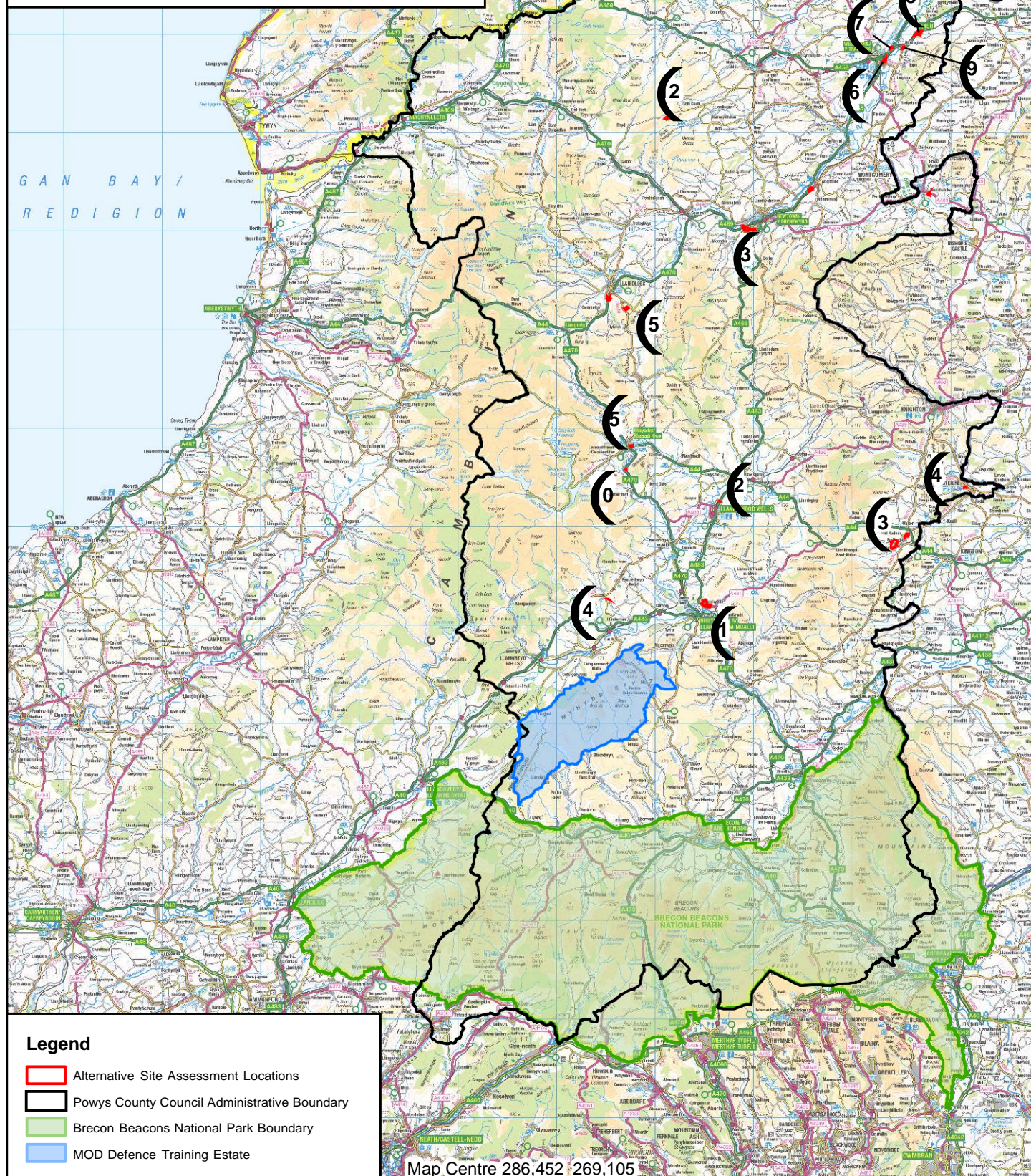
Client: **Broad Energy (Wales) Limited**

Project: **Buttington ERF**

Title: **Alternative Sites Assessment
- Composite Location Plan**

Scale: 1:550000@A4 Date: 02 September 2020

Drawn by: JJH Dwg no: **J0036928-20-01a**



APPENDIX 1**Sites Omitted from Further Assessment**

SITES OMITTED FROM FURTHER ASSESSMENT

POWYS LDP POLICY E4 Safeguarded Employment Sites	
Builth Wells and Llanelwedd Irfon Enterprise Park	(LDP Ref: P08 ES1) Site is too small, within residential area and majority of site is occupied. Not suitable for waste use under LDP Policy W1.
Knighton Knighton Enterprise Park	(LDP Ref: P24 ES1) Site is too small, between existing residential area and LDP Housing Allocation and majority of site is occupied. Not suitable for waste use under LDP Policy W1.
Llandrindod Wells Ddole Road Industrial Estate	(LDP Ref: P28 ES1) Large industrial estate, but majority of site is occupied.
Machynlleth Dyfi Eco Park Treowain Enterprise Park	(LDP Ref: P42 ES1) Site is too small and majority of site is occupied. (LDP Ref: P42 ES2) Too small and majority of site is occupied.
Newtown Dyffryn Enterprise Park Vastre Enterprise Park St. Giles Technology Park	(LDP Ref: P48 ES1) Site is too small and majority of site is occupied. (LDP Ref: P48 ES3) Large industrial estate, but majority of site is occupied. (LDP Ref: P48 ES4) Site is too small and majority of site is occupied. Not suitable for waste use under LDP Policy W1.
Llanidloes Parc Hafren Parc Business Derwen Fawr	(LDP Ref: P35 ES1) Two separate areas, total area is too small and majority of site is occupied. (LDP Ref: P35 ES2) Site is too small and majority of site is occupied.
Presteigne Presteigne Industrial Estate	(LDP Ref: P51 ES1) Site is too small and majority of site is occupied.

Rhayader East Street Enterprise Park	(LDP Ref: P52 ES1) Site is too small, abuts residential area and majority of site is occupied. Not suitable for waste use under LDP Policy W1
Three Cocks Three Cocks Industrial Estate Javel Industrial Estate	(LDP Ref: P53 ES1 & 2) Neighbouring sites which abut residential area. Together they could potentially provide sufficient land, but majority of site is occupied.
Llanfyllin LLanfyllin industrial Estate	(LDP Ref: P32 ES1) Three separate areas, total area is too small and majority of site is occupied.
Four Crosses Four Crosses	(LDP Ref: P18 ES1) Site is too small, within residential area and majority of site is occupied.
Ystradgynlais Cae'r-bont Enterprise Park Ynyscedwyn Industrial Estate Ystradgynlais Workshops Gurnos Industrial Estate Woodland Business Park	(LDP Ref: P58 ES1) Site is too small and majority of site is occupied. (LDP Ref: P58 ES2 and 3) Development would require the entire site which abuts residential area and majority of site is occupied. Workshops (P58 ES3) occupy the central part of the site and not suitable for waste development under LDP Policy W1. (LDP Ref: P58 ES4) Site is too small and majority of site occupied. (LDP Ref P58 ES5) Potentially sufficient land but abuts residential area, would require loss of established green infrastructure and majority of site occupied.

POWYS LDP POLICY E1 Employment Proposals on Allocated Employment Sites	
Abermule Business Park Montgomery, SY15 6ND	(LDP Ref: P02 EA1) LDP Allocation 2.6ha - 'High Quality or Local Employment'. Allocated area is too small and not connected with any adjacent land in existing employment use.
Churchstoke Montgomery, SY15 6AR	(LDP Ref: P12 EA1) LDP Allocation 1.28ha - 'Local Employment'. Allocated area is too small and not connected with any adjacent land in existing employment use.
Four Crosses Four Crosses, SY22 6ST	(LDP Ref: P18 EA1) LDP Allocation 0.5ha - 'Local Employment'. Allocated area is too small even if assume availability of entire area of adjacent land in existing employment use.
Woodlands Business Park Ystradgynlais, SA9 1JW	(LDP Ref: P58 EA1) LDP Allocation - 2.31ha - 'High Quality Employment'. Allocated area is too small even if assume availability of entire area of adjacent land in existing employment use.
Parc Business Derwen Fawr Llanidloes, SY18 6EB	(LDP Ref: P35 EA1) LDP Allocation 1.2ha - 'High Quality Employment'. Allocated area is too small even if assume availability of entire area of adjacent land in existing employment use.
Parc Hafren Llanidloes, SY18 6RB	(LDP Ref: P35 EA2/P35 EC1) LDP Allocation 1.7ha - 'Local Employment'. Allocated area is too small even if assume availability of entire area of adjacent land in existing employment use.
Treowain Enterprise Park Machynlleth, SY20 8EG	(LDP Ref: P42 EA1) LDP Allocation 1.7ha - 'High Quality Employment'. Potentially sufficient land together with adjacent existing employment site, but majority of the site is occupied.

POWYS LDP POLICY M1 Minerals Operations in Powys County	
Tredomen/Llangorse (Sandstone) Old Red Sandstone Quarry, Llandefaelog-tre'r-graig, Talgarth (E: 311770 N: 230436) A K Jones/Llangorse Quarry.	Site is too small. Active - Mineral extraction ends 20 September 2026. Producing building stone/wall stone used in National Park.
Little Wernwilla (Sandstone) Gladestry, Kington (E: 321740 N: 253 239) R Mills.	Site is too small. (Mineral extraction to end 2018)
Middletown (Hard Rock) Welshpool, Powys (E:329905 N:312868) Border Hardcore and Rockery Stone.	Site is too small. Active. Mineral extraction ends 2062, ROMP Review Aug 2030. Raised topography and no employment allocation
Berwyn Granite (Pen-y-Parc and Pen-y-Graig) (Hard Rock) Llangynog, Powys, Wales (E: 304765 N: 327174 and E: 305226 N: 325635) Powis Estate.	"Revolution Bike Park" covering over 40ha of woodland, over 300m vertical descent with ongoing expansion of trail network.
Garreg (Hard Rock) Trewern, Buttington, Welshpool, Powys (E: 328738 N: 311946) Powis Estate/Hanson.	Site is too small. Dormant quarry. Raised topography and within heavily wooded hillside.
Caerfagu (Sand and Gravel) Nantmel, Llandrindod Wells, Powys (E: 304464 N: 265299) Caerfagu Products. Sand and Gravel	Minerals site – suspended. Caerfagu Products Ltd – Timber Merchants and Garden Machinery and Tools. Abbatoir (Planning Permission P/2007/1003. Decision August 2018).

Appendix 2

Scoring Criteria

Assessment Criteria	TAN 21 - Key Overarching Objective	Score	Information Sources
Existing Use			
<p>The principle of sustainability within the land-use planning system places an emphasis on the use of '<i>brownfield</i>' land to meet requirements for new development.</p> <p>Para 3.51 of PPW and para 17 of Powys' Adopted LDP emphasise that new development should be preferentially located on previously developed (or brownfield) land over greenfield sites. The definition of previously developed land is included at Section 3 of PPW.</p> <p>Consequently, the scoring mechanism has been heavily weighted in favour of '<i>brownfield sites</i>'.</p> <p>The approach applied in this site search is such that many of the sites identified as part of the initial document trawl are undeveloped; but benefit from an allocation under the Adopted LDP.</p> <p>In accordance with Section 3 of PPW; these areas have been considered greenfield (regardless of their LDP allocation) if development has yet to commence. In addition, the selection process also recognises areas that have previously (either whole or in part) been subject to minerals and/or waste development. Whilst these areas cannot (in accordance with the definition</p>	1, 4, 9, 11	<ul style="list-style-type: none"> • Greenfield land: 0 points • '<i>Beigefield</i>' land: 2 points • Brownfield land: 4 points 	<ul style="list-style-type: none"> • Section 3 – Planning Policy Wales; • Powys Adopted LDP

<p>of under Section 3 of PPW) be classified as <i>'brownfield'</i>; neither would it be appropriate to consider them <i>'greenfield'</i>.</p> <p>Para 3.27 of TAN 21 states that new waste management facilities might be preferentially located at <i>'active or worked out quarries'</i>.</p> <p>These intermediate sites (specifically former quarries and waste management facilities) have been recognised using an intermediate category known as <i>'beigefield'</i> land.</p>			
Proximity to Road Network			
<p>Powys is characterised by low-density rural expanses, meaning that the road network is the only appropriate method for the transportation of waste.</p> <p>Para 14.7 of TAN 21 explicitly states that <i>'planning permission should be refused if the existing road network is unsuitable...'</i>.</p> <p>It follows that any proposed ERF development site should therefore be well-served by the road network; proximal to high-capacity, arterial routes.</p> <p>The scoring mechanism has therefore been adapted to recognise the two main road classifications recognised at Figure 4 of Powys' Adopted LDP; namely <i>'Trunk Roads'</i> and <i>'Other Trunk Roads'</i>. Both classifications are considered an 'A' road in terms of the UK road classification system.</p> <p>A site is considered accessible from a particular road classification if it is located within 500m of it. Sites situated more than 500m from a Trunk Road are scored appropriately.</p>	2, 3, 4, 9, 11, 13	<ul style="list-style-type: none"> • Site 501m or more from any 'A' roads: 0 points • Site 500m or less from Other 'A' road: 2 points • Site 500m or less from Trunk 'A' road: 3 points 	<p>Section 2 of Powys' Adopted LDP</p> <p><u>Trunk 'A' Roads:</u></p> <ul style="list-style-type: none"> • A470: Mallwyd to Brecon; • A483: Llanymynech to Lanwrtyd Wells; and • A40: Trecastle to Glangrwyney. <p><u>Other 'A' Roads:</u></p> <ul style="list-style-type: none"> • A458: Trewern to Cwm-Cewydd;

<p>This criterion also indirectly recognises the effects of indirect emissions from waste management facilities in the form of HGV / vehicle emissions.</p>			<ul style="list-style-type: none"> • A44: Old Radnor to Rhyader; • A489: Talerddig to Caersws; and • A438: Bronydd to Bronllys.
Proximity to Housing			
<p>The proximity of residential dwellings to proposed waste management facilities may be considered as either a benefit (i.e. access to waste treatment capacity) or a constraint (i.e. potential impacts upon residential amenity).</p> <p>For the latter, it is important to understand where the proposed facility sits in the wider waste management network. For example, the location of a domestic waste transfer station or material recycling facility near to a large residential development may be considered beneficial; reducing the distance which refuse collection vehicles (RCVs) need to travel following collection of municipal solid waste (i.e. the proximity principle & Policy W2 No. 1) and potential providing employment to local residents.</p> <p>In the case of the proposed ERF development; waste must first be sorted, processed and recycled at off-site 'satellite' facilities in order to give rise to a recoverable residual waste stream.</p> <p>Whilst it is important that such facilities are located strategically with reference to the wider waste management infrastructure; direct benefits to</p>	<p>8, 9, 10, 11, 12</p>	<ul style="list-style-type: none"> • Site boundary within 0 -250 metres of housing: 0 points • Site boundary within 251 - 500 metres of housing: 1 point • Site boundary within 501 - 750 metres of housing: 2 points • Site boundary within 751 – 1,000 metres of housing: 3 points • Site boundary greater than 1,000 metres from housing: 4 points 	<ul style="list-style-type: none"> • Policy W2 – Adopted Powys LDP; • The Waste Framework Directive (the 'Proximity Principle'); • Section 3 - Planning Policy Wales

<p>nearby properties are likely outweighed by impacts upon residential amenity.</p> <p>Policy W2 No.3 of Powys' adopted LDP and Annex C of TAN21 reiterate the importance of residential amenity constraints upon potential waste management facilities.</p> <p>Consequently, '<i>proximity to housing</i>' (within reason) has been considered a constraint (as opposed to a benefit) during the site selection process.</p> <p>Nearby residential development has been considered on the basis of its proximity, regardless of the number or density of housing. In each case, measurements were taken from the site boundary to the curtilage of the nearest dwelling.</p> <p>It is recognised that some of the sites considered are of a large enough scale that the potential ERF footprint could be moved further away from receptors in order to mitigate against any potential impacts. That scenario has not been considered as part of this exercise.</p>			
Landscape and Visual Impact			
Site Levels			
<p>Section 15 of Annex C of TAN21 states that proposed waste management facilities '<i>...should take advantage of existing topography so as to reduce the visual impact...</i>'; whilst also stating that potential landscape and visual impacts are dependent upon the site's '<i>existing landform and nature of [the] existing landscape</i>'.</p>	4,9, 11	<ul style="list-style-type: none"> • Site of raised or level topography: 0 points • Site of depressed topography (suitable to mitigate against the proposal's principal visual effects): 3 points. 	<ul style="list-style-type: none"> • Annex C – TAN 21; • Para 3.27 – TAN 21; • Point 6, Policy W2 – Powys Adopted LDP

<p>As stated previously, para 3.27 of TAN 21 states that new waste management facilities might be preferentially located at <i>'active or worked out quarries'</i>.</p> <p>It follows that existing mineral sites, unrestored sites or those subject to a low-level restoration have the potential to provide considerable visual amenity benefits when compared to a site with a level topography.</p> <p>Therefore, this Alternative Sites Assessment places greater weight upon the ability of the site to mitigate against principal visual effects by virtue of a depressed topography (whether or not due to a history of mineral extraction).</p> <p>Conversely, sites with a prominent / raised topography have been scored relatively poorly.</p>			
Proximity to Landscape Receptors			
<p>Protecting and enhancing '...the landscape, townscape & cultural heritage of Wales' is listed as a key overarching objective at Annex C of TAN 21. Para 15.1 of that document reiterates the fact that landscape impacts are a material planning consideration.</p> <p>Para 1.35 of PWW states that in certain instances, the Welsh Ministers may 'call in' planning applications where a proposal raises planning issues of more than local importance. Proposals that are <i>'likely to significantly affect sites of... landscape importance'</i> are listed as a scenario where this might be appropriate.</p> <p>The following receptors have been considered as part of this Alternative Sites Assessment:</p> <ul style="list-style-type: none"> • National Park; 	4, 11	<ul style="list-style-type: none"> • Site less than 500m from a landscape receptor: 0 points • Site 501 to 1,000m from a landscape receptor: 1 point • Site 1,001m to 1,500m from a landscape receptor: 2 points • Site 1,501m to 2,000m from a landscape receptor: 3 points • Site 2,001m or more from a landscape receptor: 4 points 	<ul style="list-style-type: none"> • Natural Resources Wales • Welsh Government • CADW (Welsh Government Historic Environment Service) • Powys Adopted LDP – Proposals Maps • http://lle.gov.wales

<ul style="list-style-type: none"> • Registered Historic Landscape; • Historic Park and Garden Boundary; • Historic Park and Garden Essential Setting; and • National Trails - Glyndwr's Way and Offa's Dyke. <p>Receptors have been considered on the basis of their proximity; regardless of their size or sensitivity. In each case, measurements were taken from the site boundary to the edge of the designation.</p> <p>It is recognised that some of the sites considered are of a large enough scale that the potential ERF footprint could be moved further away from receptors in order to mitigate against any potential impacts. That scenario has not been considered as part of this exercise.</p>			
Ecology			
<p>Para 8.2 of Annex C, TAN 21 states that proposed waste management facilities should not have an adverse impact on areas or sites designated for local, national or international protection.</p> <p>The issue of proximity of a potential site to a possible ecological receptor is significant in terms of the sensitivity of the site and its surroundings. Powys is subject to a range of statutory and non-statutory designations.</p> <p>For the purposes of allocating initial suitability, the scoring system has allocated points according to the proximity of the site boundary to the nearest feature as listed below.</p>	7,11	<ul style="list-style-type: none"> • Site less than 500m from statutory nature conservation site: 0 points • Site 501 to 1,000m from statutory nature conservation site: 1 point • Site 1,001m to 1,500m from statutory nature conservation site: 2 points • Site 1,501m to 2,000m from statutory nature conservation site: 3 points 	<ul style="list-style-type: none"> • Natural Resources Wales; • http://lle.gov.wales

<p>Nearby ecological receptors have been considered on the basis of their proximity; regardless of its size or sensitivity. In each case, measurements were taken from the site boundary to the edge of the designation.</p> <p>The following receptors were considered:</p> <ul style="list-style-type: none"> • SAC (and any candidate sites); • SPA; • National Nature Reserve; • Local Nature Reserve; and • SSSI. <p>It is recognised that some of the sites considered are of a large enough scale that the potential ERF footprint could be moved further away from receptors in order to mitigate against any potential impacts. That scenario has not been considered as part of this exercise.</p> <p>Where possible, efforts have been made to differentiate non-ecological SSSIs.</p>		<ul style="list-style-type: none"> • Site 2,001m or more from statutory nature conservation site: 4 points 	
Water Environment			
<p>The issue of flood risk is a high-profile consideration that must be taken into account at the outset of the selection process.</p> <p>The scoring system, based on the NRW's Development Advice Maps (2017), reflects the potential for flooding at each site.</p>	5, 6, 9, 11	<ul style="list-style-type: none"> • Sites within Zone C1: 0 point • Sites within Zone C2: 1 point • Sites within Zone B: 2 points • Sites within Zone A: 3 points 	<ul style="list-style-type: none"> • Long Term Flood Risk Maps – Natural Resources Wales • http://lle.gov.wales

Heritage			
<p>Protecting and enhancing ‘...the landscape, townscape & cultural heritage of Wales’ is listed as a key overarching objective at Annex C of TAN 21.</p> <p>Para 8.2 goes on to state that proposed waste management facilities should not have an adverse impact on areas or sites designated for local, national or international protection.</p> <p>For the purposes of allocating initial suitability, the scoring system has allocated points according to the proximity of the site boundary to the nearest heritage receptor as listed below:</p> <ul style="list-style-type: none"> • Scheduled Ancient Monuments; • Conservation Areas; and • Registered Parks and Gardens. <p>Receptors have been considered on the basis of their proximity; regardless of their size or sensitivity. In each case, measurements were taken from the site boundary to the edge of the designation.</p> <p>It is recognised that some of the sites considered are of a large enough scale that the potential ERF footprint could be moved further away from receptors in order to mitigate against any potential impacts. That scenario has not been considered as part of this exercise.</p>	4	<ul style="list-style-type: none"> • Site less than 500m from a landscape receptor: 0 points • Site 501 to 1000m from a landscape receptor: 1 point • Site 1001m to 1500m from a landscape receptor: 2 points • Site 1,501m to 2,000m from a landscape receptor: 3 points • Site 2,001m or more from a landscape receptor: 4 points 	<ul style="list-style-type: none"> • http://lle.gov.wales • CADW (Welsh Government Historic Environment Service) • Powys Adopted LDP – Proposals Maps

Appendix 3

Further Assessment Results

RESULTS OF FURTHER ASSESSMENT			
SITE NO.	SITE NAME	ASSESSMENT SUMMARY AND SITE AVAILABILITY	Suitable for ERF YES/NO
1	Wyeside (including Llanelwedd Quarry)	<ul style="list-style-type: none"> • Direct access onto Primary Road Network. • SSSI adjacent. Close to SAC. Otherwise no key environment designations within 1km. • Active quarry adjacent. Employment allocation only 1.2ha and is for 'High Quality Employment'. Not suitable for waste use under LDP Policy W1. • No information to suggest available for purchase or long-term lease. 	NO
2	Heart of Wales Business Park	<ul style="list-style-type: none"> • Direct access onto Primary Road Network. • Abuts outskirts of Llandrindod Wells and housing allocation. Within 1km of Castell Collen. Otherwise no key environment designations within 1km. • Employment allocation occupies only 3.9ha and is for 'Prestige Employment'. • No information to suggest available for purchase or long-term lease. 	NO
3	Llanidloes Road	<ul style="list-style-type: none"> • Direct access onto Primary Road Network • Abuts outskirts of Milford/Newtown. No key environment designations within 1km. • Employment allocation occupies only 3.9ha and is for 'High Quality Employment', adjacent to college and residential area. • No information to suggest available for purchase or long-term lease. 	NO
4	Broadaxe Business Park	<ul style="list-style-type: none"> • No direct access onto Primary Road Network (approx. 8.5km). • Abuts outskirts of Presteigne. • Several key designations within 1km. • Employment allocation occupies only 2.4 ha and is approx. 50% occupied. • No information to suggest available for purchase or long-term lease. 	NO
5	Brynberth Enterprise Park	<ul style="list-style-type: none"> • Direct access onto Primary Road Network. • Within 1km of several key environmental designations. • Employment allocation occupies only 3.7ha and the existing employment land is currently occupied. • No information to suggest available for purchase or long-term lease. 	NO

6	Severn Farm Enterprise Park	<ul style="list-style-type: none"> • Direct access onto Primary Road Network. • Key environmental designations within 1km. • Employment allocation is extensive but insufficient land area available. • No information to suggest available for purchase or long-term lease 	NO
7	Buttington Cross Enterprise Park	<ul style="list-style-type: none"> • Direct access onto Primary Road Network. • Key environmental designations adjacent/within 1km. • Employment allocation occupies only 1.5ha, is for 'Prestige Employment' and not suitable for waste under Policy W1. • No information to suggest available for purchase or long-term lease. 	NO
8	Buttington Quarry	<ul style="list-style-type: none"> • Direct access onto Primary Road Network (Trunk Road). • No key environmental designations within 1km. • 'Local Employment' allocation is extensive with sufficient land area available and voidspace suitable for accommodating facility. Suitable for waste use under LDP Policy W1. Low output from quarry. • Site available for long-term lease. 	YES
9	Offa's Dyke Business Park	<ul style="list-style-type: none"> • Direct access onto Primary Road Network. • Within 1km of SSSI and SAC. Otherwise no key environmental designations within 1km. • Employment allocation occupies 7.3 Ha is allocated for 'Prestige Employment' and not suitable for waste use under Policy W1. Site is largely occupied. • No information to suggest available for purchase or long-term lease. 	NO
10	Cerrig Gwynion Quarry	<ul style="list-style-type: none"> • Direct access onto Primary Road Network. • SAC and SSSI nearby. • No employment allocation. Site dormant, potential legacy issues. No employment allocation. • No information to suggest available for purchase or long-term lease. 	NO
11	Criggion Quarry	<ul style="list-style-type: none"> • No direct access onto Primary Road Network (approx. 7km). • Key environmental designations in or within 1km. • Active high-output quarry. Range of products: Hard Rock and Asphalt. • No information to suggest available for purchase or long-term lease. 	NO

12	Tan- y - Foel Quarry	<ul style="list-style-type: none"> No direct access onto Primary Network (approx. 8km). No key environmental designations within 1km. Active Quarry. Range of products: Strategically important High PSV; RMC; Waste Transfer (recycling C, D&E waste). No information to suggest available for sale or long-term lease. 	NO
13	Gore Quarry (North) and Dolyhir/Strinds (South)	<ul style="list-style-type: none"> Direct/good access onto Primary Road Network. SSSI in or within 0.5km of quarries. Other key environmental designations within 1km Active Quarry - High Output. Gore: Sandstone (High PSV). Dolyhir: Range of products: Hard Rock. Pre-cast Concrete. Asphalt. RMC. Contracting. No information to suggest available for sale or long-term lease. 	NO
14	Cribarth Quarry	<ul style="list-style-type: none"> No direct or close access onto Primary Road Network (approx. 4km). SAC & SSSI within 0.5km of site, otherwise no key environmental designations close by. Quarry closed. Partially water-filled void. Potential legacy issues. No employment allocation. No information to suggest available for purchase or long-term lease. 	NO
15	Bryn Posteg Landfill	<ul style="list-style-type: none"> No direct access onto Primary Road Network (approx. 2.5km). No key environmental designations within 1km. For built development, would require significant investment and monitoring Active landfill/ disposal capacity. Application pending - regularise and retain over-tipped material and additional landfilling operations. AD facility permitted on part of site. No information to suggest available for purchase or long-term lease 	NO

Appendix 4

Further Assessment Analysis

SITE 1

Site Name	WYESIDE (INCLUDING LLANELWEDD QUARRY)	
Town/Postcode	BUILTH WELLS	LD2 3UB

PLANNING/OWNERSHIP/AVAILABILITY

Allocated for Employment Use/Quarry

Total Land Area	Approx. 5 Ha (Employment).
Safeguarding	Employment: B1, B2, B8 (LDP Policy E4, Ref: P08 ES2). Minerals PP to 21 Feb 2042. ROMP Review N/A. Safeguarding (Cat 1).
LDP Allocation	'High Quality Employment' (LDP Policy E1, Ref: P08 EA1).
LDP Allocation Area	1.2 Ha.
Suitable for Waste Use	No.
Ownership	Quarry: Hanson UK (Leasehold) Employment: WG Freehold (Allocated employment); Multiple private freehold ownerships (Existing employment). Powys CC (Access).
Occupation	Quarry: Hanson UK. Employment area: Majority of site occupied.
Availability (30-year life)	Not available for purchase or long-term lease.

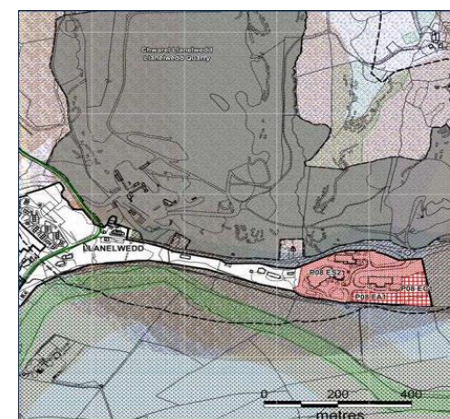
ENVIRONMENTAL CONSIDERATIONS

Score (Max 29)

Status	'Brownfield'.	4
Access	Direct access onto A481.	2
Housing	Within 250m of isolated properties and Llanelwedd.	0
Landscape	1.8km from Historic Park and Garden (Cefn Dyris). 15km from historic landscape (Elan Valley and Middle Wye Valley). Level topography (employment area). Raised topography (hillside quarry).	4 0
Nature	Allocated area adjacent to SSSI (Llanelwedd Rocks) and within 100m of SAC. and SSSI (River Wye (Upper Wye) Afon Gwy (Gwy Uchaf)).	0
Flood Risk	Low flood risk (Zone A).	3
Heritage	Just over 1km from SAM (Builth Castle).	2



Image © 2020 CNES / Airbus



Powys Adopted LDP Proposals Map (Inset P08C)

SUMMARY AND SITE SUITABILITY

- Direct access onto Primary Road Network.
- SSSI adjacent. Close to SAC. Otherwise no key environment designations within 1km.
- Active quarry adjacent. Employment allocation only 1.2ha and is for 'High Quality Employment'. Not suitable for waste use under LDP Policy W1.
- No information to suggest available for purchase or long-term lease.

NOT SUITABLE

SITE 2

Site Name	HEART OF WALES BUSINESS PARK	
Town/Postcode	LLANDINDROD WELLS	LD1 5AB

PLANNING/OWNERSHIP/AVAILABILITY

Allocated for Employment Use

Total Land Area	Approx. 8.5 Ha.
Safeguarding	Employment: B1, B2 and B8 Development (LDP Policy E4, Ref: P28 ES2).
LDP Allocation	'Prestige Employment' (LDP Policy E1, Ref P28 EA1).
LDP Allocation Area	3.9 Ha.
Suitable for Waste Use	No.
Ownership	Allocated employment: approx. 50/50, WG/unregistered. Existing employment: Freehold (public), mixed leasehold.
Occupation	Allocated area vacant. Existing employment site largely occupied.
Availability (30-year life)	Not available for purchase or long-term lease.

ENVIRONMENTAL CONSIDERATIONS

Score (Max 29)

Status	Predominantly greenfield.	0
Access	Direct access onto A483(T).	3
Housing	Within 250m of residential areas of Llandrindod Wells.	0
Landscape	11km from historic landscape (Elan Valley) Level topography.	4 0
Nature	370m from SSSI (River Ithon) and SAC (River Wye/Afon Gwy).	0
Flood Risk	Low flood risk (Zone A).	3
Heritage	700m from SAM (Castell Collen) and 1.1km from CA (Llandrindod Wells).	1

11



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.



Powys Adopted LDP Proposals Map (Inset P28A)

SUMMARY AND SITE SUITABILITY

- Direct access onto Primary Road Network
 - Abuts outskirts of Llandrindod Wells and housing allocation. Within 1km of Castell Collen. Otherwise no key environment designations within 1km
 - Employment allocation only 3.9ha and is for 'Prestige Employment'. Not suitable for waste use under LDP Policy W1.
 - No information to suggest available for purchase or long-term lease
- NOT SUITABLE**

SITE 3

Site Name	LLANIDLOES ROAD	
Town/Postcode	NEWTOWN	SY16 4LE

PLANNING/OWNERSHIP/AVAILABILITY

Allocated for Employment Use

Total Land Area	Approx. 55 Ha.
Safeguarding	Employment: B1, B2 and B8 Development (LDP Policy E4, Ref: P48 ES2).
LDP Allocation	'High Quality Employment' (LDP Policy E1, Ref: P48 EA1).
LDP Allocation Area	2.0 Ha.
Suitable for Waste Use	Yes (LDP Policy W1).
Ownership	Single freehold ownership.
Occupation	Vacant.
Availability (30-year life)	Not available for purchase or long-term lease.

ENVIRONMENTAL CONSIDERATIONS

Score (Max 29)

Status	Greenfield.	0
Access	Direct Access onto A489.	2
Housing	Adjacent to Milford/Newtown.	0
Landscape	2.5km from historic landscape (Caersws Basin). 5.1km from Park and Garden (Gregynog Hall/Cefn Gwifed) Level topography.	4 0
Nature	1.7km from SSSI (Mochdre Dingles).	3
Flood Risk	Low flood risk (Zone A > 70% of site). Western part Zone C2.	3
Heritage	1.8km from CA (Newtown Centre) and SAM (Newtown Hall Castle Mound).	3

15



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.



Powys Adopted LDP Proposals Map (Inset P48B)

SUMMARY AND SITE SUITABILITY

- Direct access onto Primary Road Network.
- Abuts outskirts of Milford/Newtown. No key environment designations within 1km.
- Employment allocation occupies only 2ha and is for 'High Quality Employment', adjacent to college and residential area.
- No information to suggest available for purchase or long-term lease.

NOT SUITABLE

SITE 4

Site Name	BROADAXE BUSINESS PARK	
Town/Postcode	PRESTEIGNE	LD8 2UF

PLANNING/OWNERSHIP/AVAILABILITY

Allocated for Employment Use

Total Land Area	Approx. 12 Ha.
Safeguarding	Employment: B1, B2 and B8 Development (LDP Policy E4, Ref: P51 ES1 & 2.)
LDP Allocation	'Local Employment' (LDP Policy E1, Ref P51 EA1).
LDP Allocation Area	2.4 Ha.
Suitable for Waste Use	Yes (LDP Policy W1).
Ownership	Allocated employment: Predominantly under WG Freehold and let to private companies/individuals. Existing employment: multiple freeholds under private ownership.
Occupation	Part occupied/part vacant.
Availability (30-year life)	Not available for purchase or long-term lease.

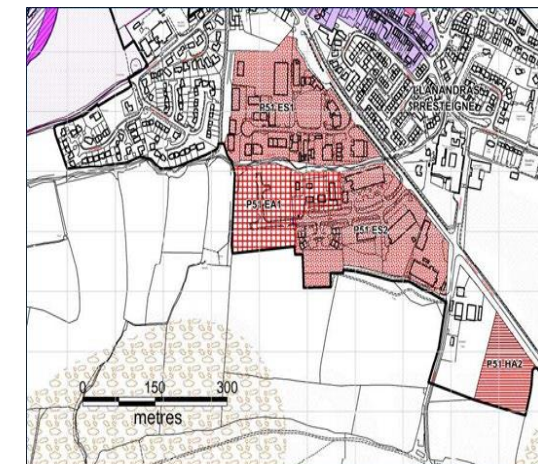
ENVIRONMENTAL CONSIDERATIONS

Score (Max 29)

Status	Greenfield.	0
Access	>500m from A44.	0
Housing	Within 250m of Presteigne town.	0
Landscape	85m from historic park and garden park boundary and essential setting (associated with Silia House and Silia Cottage). Level topography.	0 0
Nature	440m from SSSI (River Lugg).	1
Flood Risk	Low flood risk (Zone A).	3
Heritage	250m from CA (Presteigne). 380m from SAM (Warden Mound and Bailey Castle).	0



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Powys Adopted LDP Proposals Map (Inset P51B)

SUMMARY AND SITE SUITABILITY

- No direct access onto Primary Road Network (approx. 8.5km)
 - Abuts outskirts of Presteigne.
 - Several key designations within 1km.
 - Employment allocation occupies only 2.4 ha and is approx.50% occupied.
 - No information to suggest available for purchase or long-term lease
- NOT SUITABLE**

SITE 5

Site Name	BRYNBERTH ENTERPRISE PARK	
Town/Postcode	RHAYADAR	LD6 5EN

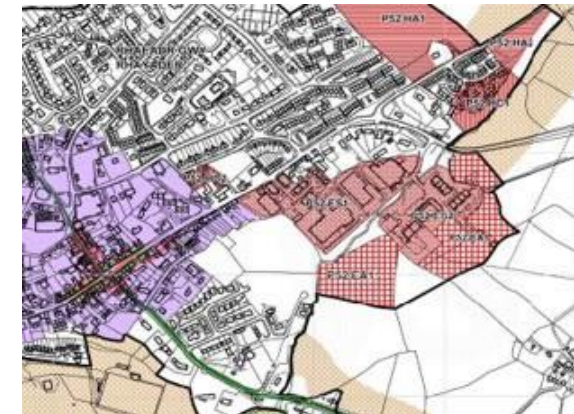
PLANNING/OWNERSHIP/AVAILABILITY

Allocated for Employment Use

Total Land Area	Approx. 10 Ha.
Safeguarding	Employment: B1, B2 & B8 Development (LDP Policy E4, Ref: P52 ES1 & 2).
LDP Allocation	'Local Employment' (LDP Policy E1, Ref P52 EA1).
LDP Allocation Area	3.7 Ha - Two plots separated by existing employment allocation.
Suitable for Waste Use	Yes (LDP Policy W1).
Ownership	Allocated employment: Predominantly WG freehold. Remaining unregistered. Existing employment: Predominantly multiple private freehold.
Occupation	Allocated Area: Vacant.
Availability (30-year life)	Not available for purchase or long-term lease.



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.



Powys Adopted LDP Proposals Map (Inset P52)

ENVIRONMENTAL CONSIDERATIONS

Score (Max 29)

Status	Greenfield.	0
Access	Direct access onto A44.	3
Housing	Within 250m of Rhayader.	0
Landscape	800m from historic park and garden and essential setting (The Dderw). Level topography.	1 0
Nature	240m from SAC (River Wye) and 760m from SSSI (New House Meadow).	0
Flood Risk	Low flood risk (90% Zone A). Zone C2 along Rhyd-hir-Brook which dissects business park.	3
Heritage	150m from CA (Rhayader) and 650m from SAM (Rhayader Castle remains).	0

7

SUMMARY AND SITE SUITABILITY

- Direct access onto Primary Road Network
- Within 1km of several key environmental designations
- Employment allocation occupies only 3.7ha and the existing employment land is currently occupied.
- No information to suggest available for purchase or long-term lease.

NOT SUITABLE

SITE 6

Site Name	SEVERN FARM ENTERPRISE PARK	
Town/Postcode	WELSHPOOL	SY21 7DF

PLANNING/OWNERSHIP/AVAILABILITY

Allocated for Employment Use

Total Land Area	Approx. 40 Ha.
Planning Use Class	Employment: B1, B2 and B8 Development (LDP Policy E4, Ref: P57 ES1 & 2).
LDP Allocation	None.
LDP Allocation Area	None.
Suitable for Waste Use	Yes (LDP Policy W1).
Ownership	Multiple private freehold ownerships across site and some leasehold ownerships.
Occupation	Predominantly occupied.
Availability (30-year life)	Not available for purchase or long-term lease.

ENVIRONMENTAL CONSIDERATIONS

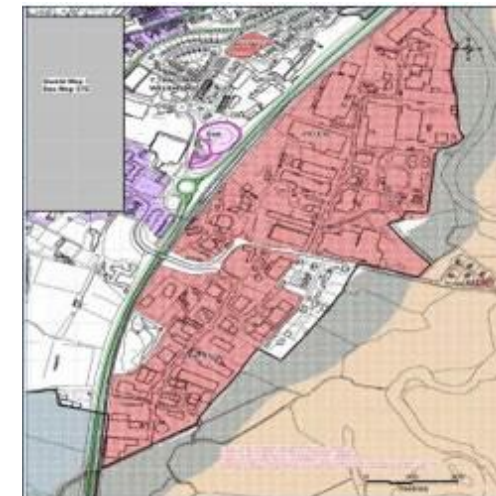
Score (Max 29)

Status	Brownfield.	4
Access	Direct access onto A483(T).	3
Housing	Within 250m of Welshpool.	0
Landscape	600m from registered park and garden and essential setting (Powis Castle and Garden). 3km from historic landscape (Vale of Montgomery). Level topography.	1 0
Nature	100m from SAC and SSSI (Montgomery Canal).	0
Flood Risk	Low Flood Risk (Zone A. >90%). Eastern extremity Zone C2 along River Severn.	3
Heritage	30m from SAM (Domen Castell) and CA (Welshpool).	0

11



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.



Powys Adopted LDP Proposals Map (Inset P57C)

SUMMARY AND SITE AVAILABILITY

- Direct access onto Primary Road Network.
- Key environmental designations within 1km.
- Employment allocation is extensive but insufficient land area available.
- No information to suggest available for purchase or long-term lease.

NOT SUITABLE

SITE 7

Site Name	BUTTINGTON CROSS ENTERPRISE PARK	
Town/Postcode	WELSHPOOL	SY21 8SL

PLANNING/OWNERSHIP/AVAILABILITY

Allocated for Employment Use

Total Land Area	Approx. 15 Ha.
Safeguarding	Employment: B1, B2 and B8 Development (LDP Policy E4, Ref: P57 ES3).
LDP Allocation	'Prestige Employment' (LDP Policy E1, Ref: P57 EC1).
LDP Allocation Area	1.5 Ha.
Suitable for Waste Use	No.
Ownership	Multiple private ownership across site.
Occupation	Allocated and existing employment: Occupied
Availability (30-year life)	Not available for purchase or long-term lease

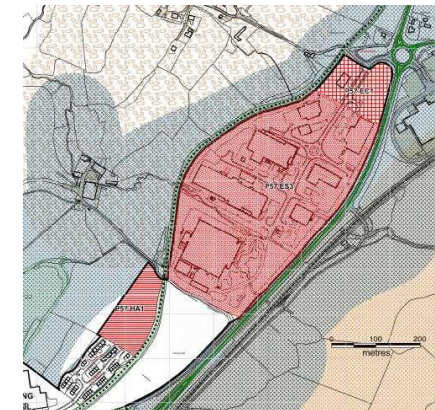
ENVIRONMENTAL CONSIDERATIONS

Score (Max 29)

Status	Brownfield.	4
Access	Direct access onto A483(T) and A458.	3
Housing	Within 250m of isolated properties. 900m from Welshpool.	0
Landscape	1.6km from registered park and garden and essential setting Within 2.5km of registered park and garden and essential setting (Powis Castle and Garden). 5.5km from historic landscape (Vale of Montgomery) Level topography.	3 0
Nature	Adjacent to SAC and SSSI (Montgomery Canal).	0
Flood Risk	Low Flood Risk (Zone A >90%). Very small area Zone B extends into south of site	3
Heritage	850m from SAM (Offa's Dyke: South of School House).	2



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.



Powys Adopted LDP Proposals Map (Inset P57D)

SUMMARY AND SITE AVAILABILITY

- Direct access onto Primary Road Network.
- No key environmental designations adjacent/within 1km.
- Employment allocation occupies only 1.5ha, is for 'Prestige Employment' and not suitable for waste use under Policy W1.
- No information to suggest available for purchase or long-term lease.

NOT SUITABLE

SITE 8

Site Name	BUTTINGTON QUARRY	
Town/Postcode	WELSHPOOL	SY21 8SZ

PLANNING/OWNERSHIP/AVAILABILITY

Allocated for Employment Use

Total Land Area	Approx. 15 Ha.
Safeguarding	Employment: B1, B2, B8 Development. Quarry (LDP Policy M1. Safeguarding (Cat 1 & Cat 2 [Slate])).
LDP Allocation	'Local Employment' (LDP Policy E1, Ref: P59 EA1).
LDP Allocation Area	6.0 Ha.
Suitable for Waste Use	Yes (LDP Policy W1).
Ownership	Majority of site held in single freehold ownership.
Occupation	Quarry: Active (low output). Allocated employment: part occupied.
Availability (30-year life)	Available for long-term lease.

ENVIRONMENTAL CONSIDERATIONS

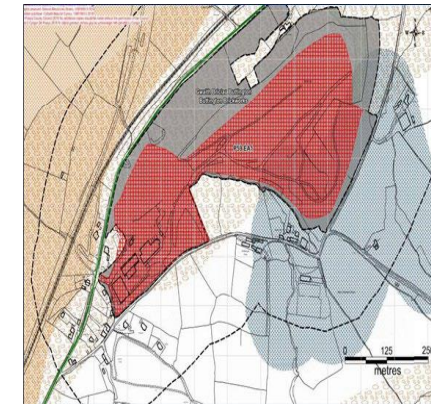
Score (Max 29)

Status	'Brownfield' and 'Beigefield'.	4
Access	Direct Access onto A458 (T).	3
Housing	Within 250m of Cefn, Buttington.	0
Landscape	1.5km from historic park and garden and essential setting (Maesfron). 'Depressed' topography (void).	2 3
Nature	1.3km from SAC and SSSI (Montgomery Canal). (Geological SSSI [Buttington Brickworks] within site boundary).	2
Flood Risk	Low Flood Risk (Zone A >90% of site). SW corner of site Zone C2.	3
Heritage	1.2 km from SAM (Strata Marcella Abbey) and 1.6Km of SAM (Offa's Dyke: South of School House). 3.5km from CA (Welshpool).	2

MAX. 19



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.



Powys Adopted LDP Proposals Map (Inset P59)

SUMMARY AND SITE SUITABILITY

- Direct access onto Primary Road Network (Trunk Road).
- No key environmental designations within 1km.
- 'Local Employment' allocation is extensive with sufficient land area and voidspace suitable for accommodating facility. Suitable for waste use under LDP Policy W1. Low output from quarry.
- Site available for long-term lease.

SUITABLE

SITE 9

Site Name	OFFAS'S DYKE BUSINESS PARK	
Town/Postcode	WELSHPOOL	SY21 8JF

PLANNING/OWNERSHIP/AVAILABILITY

Allocated for Employment Use

Total Land Area	Approx. 13 Ha.
Safeguarding	Employment: B1, B2, B8 (LDP Policy E4, Ref: P60 ES1).
LDP Allocation	'Prestige' Employment (LDP Policy E1, Ref: P60 EC1).
LDP Allocation Area	7.3 Ha.
Suitable for Waste Use	No.
Ownership	Mixed WG and private freehold ownerships.
Occupation	Majority of allocated and existing employment area is occupied.
Availability (30-year life)	Not available for purchase or long-term lease.

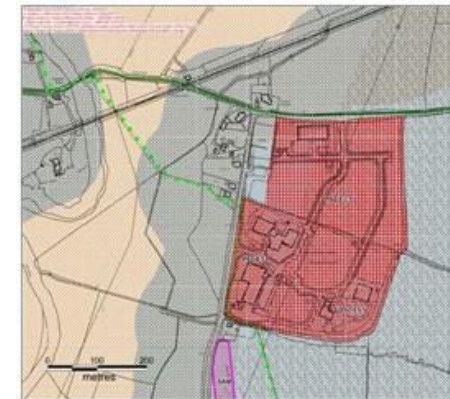
ENVIRONMENTAL CONSIDERATIONS

Score (Max 29)

Status	Greenfield.	0
Access	Direct Access onto A458 (T).	3
Housing	Within 250m of Buttington Village.	0
Landscape	2.5km from registered park and garden and essential setting Over 5km from registered park and garden and essential setting (Powis Castle and Garden) and historic landscape (Vale of Montgomery). Level Topography.	4 0
Nature	860m from SAC and SSSI (Montgomery Canal).	1
Flood Risk	Low flood risk (Zone A >90% of site). SW corner of site Zone C2	3
Heritage	Within 50m of SAM (Offa's Dyke: South of School House) 2km from CA (Welshpool)	0



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.



Powys Adopted LDP Proposals Map (Inset P60)

SUMMARY AND SITE AVAILABILITY

- Direct access onto Primary Road Network.
- Within 1km of SSSI and SAC. Otherwise no key environmental designations within 1km. Glyndwr's Way Path National Trail runs along part of boundary.
- Employment allocation occupies 7.3Ha, allocated for 'Prestige Employment' and not suitable for waste use under Policy W1. Site is largely occupied.
- No information to suggest available for purchase or long-term lease.

NOT SUITABLE

SITE 10

Site Name	CERRIG GWYNION QUARRY	
Town/Grid Ref:	RHAYADER	E:297109 N:265756

PLANNING/OWNERSHIP/AVAILABILITY

Minerals Use (Sandstone)

Total Land Area	Approx. 8 Ha.
Safeguarding	Minerals Operations (LDP Policy M1). PP to 2042. ROMP Review 29 November 2029.
LDP Allocation	Ongoing minerals use including extensions (LDP Policy M1).
Suitable for Waste Use	C, D&E recycling operations in connection with active mineral site.
Ownership	Freehold held by Tarmac Ltd.
Occupation	Inactive – dormant.
Availability (30-year life)	Not available for purchase or long-term lease.

ENVIRONMENTAL CONSIDERATIONS

Score (Max 29)

Status	'Beigefield'.	2
Access	Direct Access onto A470(T).	3
Housing	Within 250m of isolated properties.	0
Landscape	1.75km from Historic Landscape (Elan Valley). 2km from historic park and garden and essential setting (The Dderw). Raised topography (hillside quarry).	3 0
Nature	50m from SAC and SSSI (River Wye/Afon Gwy). 200m from SPA (Elenydd – Mallaen) and SSI (Carn Gafallt).	0
Flood Risk	Low Flood Risk (Zone A).	3
Heritage	1.73km from CA (Rhayader) and 2km from SAM (Rhayader Castle).	3

14

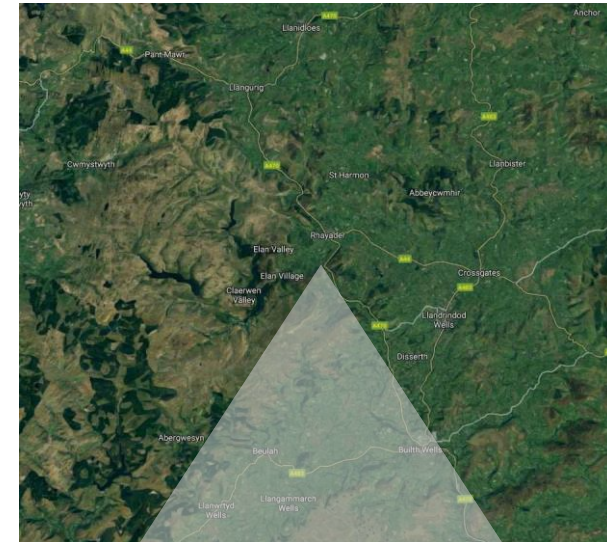


Image © 2020 CNES / Airbus



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

SUMMARY AND SITE SUITABILITY

- Direct access onto Primary Road Network.
- SAC and SSSI nearby.
- No employment allocation. Site dormant, potential legacy issues. No employment allocation.
- No information to suggest available for purchase or long-term lease.

NOT SUITABLE

SITE 11

Site Name	CRIGGION QUARRY	
Town/Grid Ref:	CRIGGION	E:328933 N:314505

PLANNING/OWNERSHIP/AVAILABILITY

Minerals Use (Hard Rock)

Total Land Area	Approx. 40 Ha.
Safeguarding	Minerals Operations (LDP Policy M1) Planning permission until 2042. ROMP Review 31 January 2027. Safeguarding (Cat 1 & 2).
LDP Allocation	Ongoing minerals use including extensions (LDP Policy M1).
Suitable for Waste Use	C, D&E recycling operations in connection with active mineral site.
Ownership	Majority of site in single private freehold ownership. Long lease (Hanson UK).
Occupation	Active: Hanson UK.
Availability (30-year life)	Not available for purchase or long-term lease.

ENVIRONMENTAL CONSIDERATIONS

Score (Max 29)

Status	'Beigefield'.	2
Access	More than 500m from A Road.	0
Housing	Within 250m of isolated properties.	0
Landscape	2.5km from historic park and garden and essential setting (Maesfron). 12 km from Historic Landscape (Vale of Montgomery). 700m from Offa's Dyke Path.	4
	Raised topography (hillside quarry)	0
Nature	SSSI (Breidden Hill) covers majority of quarry. 1km from SSSI (Moel y Gofa). 2.6km from SAC and SSSI (Montgomery Canal).	0
Flood Risk	Low flood risk (Zone A). Small part (access) Zone B & C2.	3
Heritage	SAM abuts (Breidden Hillfort.)	0



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

SUMMARY AND SITE SUITABILITY

- No direct access onto Primary Road Network (approx. 7km).
- Key environmental designations in or within 1km.
- Active high-output quarry. Range of products: Hard Rock and Asphalt.
- No information to suggest available for purchase or long-term lease.

NOT SUITABLE

SITE 12

Site Name	TAN-Y-FOEL QUARRY	
Town/Grid Ref:	CEFN COCH	E:301228 N:301467

PLANNING/OWNERSHIP/AVAILABILITY

Minerals Use (Sandstone)

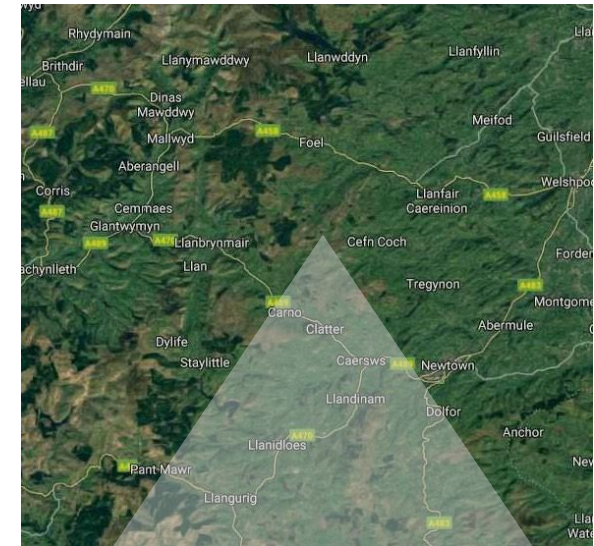
Total Land Area	Approx. 23 Ha.
Safeguarding	Minerals Operations (LDP Policy M1). Pp 31 December 2063. ROMP Review 16 September 2028.
LDP Allocation	Ongoing minerals use including extensions (LDP Policy M1).
Suitable for Waste Use	C, D&E recycling operations in connection with active mineral site.
Ownership	Freehold held by H V Bowen & Sons (Holdings) Ltd and Breedon.
Occupation	Active: Breedon UK (JV Breedon/H V Bowen & Sons - 2014).
Availability (30-year life)	Not available for purchase or long-term lease.

ENVIRONMENTAL CONSIDERATIONS

Score (Max 29)

Status	'Beigefield'.	2
Access	More than 500m from 'A' Road.	0
Housing	Within 250m of isolated properties.	0
Landscape	6.3km from Historic Landscape (Caersws Basin) and 7km from Historic Park and Garden (Gregynog). Level topography/worked terraces/void.	4 0
Nature	3.9km from SSSI (Llyn Mawr); 7.2km from NNR and SSSI (Gregynog).	4
Flood Risk	Low flood risk (Zone A).	3
Heritage	1.6km from SAM (Y Capel Stone Circle).	3

16



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

SUMMARY AND SITE SUITABILITY

- No direct access onto Primary Network (approx. 8km).
- No key environmental designations within 1km.
- Active Quarry. Range of products: Strategically important High PSV; RMC; Waste Transfer (recycling C, D&E waste).
- No information to suggest available for sale or long-term lease

NOT SUITABLE

SITE 13

Site Name	GORE QUARRY (NORTH) & DOLYHIR/STRINDS (SOUTH) QUARRIES	
Town/Grid Ref:	PRESTEIGNE	Dolyhir E:324233 N:258235; Gore E:325466 N:259109

PLANNING/OWNERSHIP/AVAILABILITY

Minerals Use (Sandstone & Limestone)

Total Land Area	Approx. 90 Ha.
Safeguarding	Minerals Operations (LDP Policy M1). PP to 21 February 2042. ROMP Review 31 March 2024 & 20 March 2027. Safeguarding (Cat 1 & 2).
LDP Allocation	Ongoing minerals use including extensions (LDP Policy M1).
Suitable for Waste Use	C, D&E recycling operations in connection with active mineral site.
Ownership	Freehold held by Tarmac Ltd. Breedon Lease (RMC Plant).
Occupation	Active (Tarmac). Breedon (RMC Plant).
Availability (30-year life)	Not available for sale/long-term lease.

ENVIRONMENTAL CONSIDERATIONS

Score (Max 29)

Status	'Beigefield'.	2/2
Access	Gore direct access onto A44. Dolyhir more than 500m from A44.	2/0
Housing	Within 250m of isolated properties.	0/0
Landscape	Gore: 760m and Dolyhir: 415m from historic park and garden & essential setting (Harpton Court Garden) Raised topography (hillside quarry)/void	1/0 3/3
Nature	Gore: 355m from SSSI (Dolyhir Quarry). 1.4km from NNR (Stanner Rocks). Dolyhir: within SSSI (Dolyhir Quarry).	0/0
Flood Risk	Gore: Low flood risk (Zone A). Dolyhir: Majority low flood risk (Zone A). Part C2 (Gilwern Brook) around access into site.	3/3
Heritage	Gore: 100m and Dolyhir: 520m from SAM (Old Radnor Castle)	0/1

11/9



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

SUMMARY AND SITE AVAILABILITY

- Direct/good access onto Primary Road Network.
- SSSI in or within 0.5km of quarries. Other key environmental designations within 1km.
- Active Quarry - High Output.
- Gore: Sandstone (High PSV). Dolyhir: Range of products: Hard Rock. Pre-cast Concrete. Asphalt. RMC. Contracting.
- No information to suggest available for sale or long-term lease.

NOT SUITABLE

SITE 14

Site Name	CRIBARTH QUARRY
Town/Grid Ref:	LLANAFANFAWR E:295230; N:252602

PLANNING/OWNERSHIP/AVAILABILITY

Minerals Use (Sandstone)

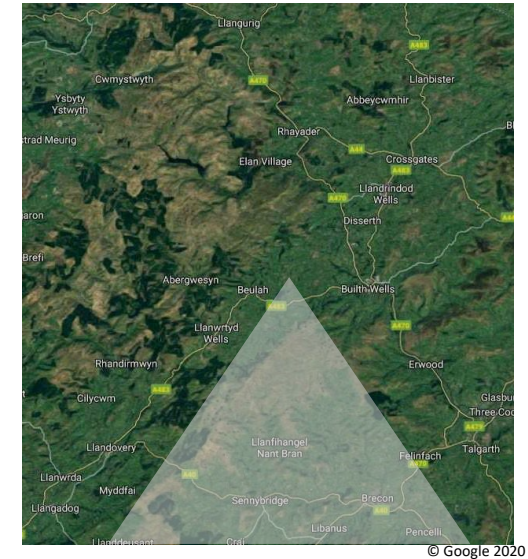
Total Land Area	Approx. 13 Ha.
Safeguarding	Minerals Operations (LDP Policy M1). PP to 20 May 2023. Safeguarding (Cat 1).
LDP Allocation	Ongoing minerals use including extensions (LDP Policy M1).
Suitable for Waste Use	C, D&E recycling operations in connection with active mineral site.
Ownership	Freehold held by private individual. Leasehold (Aggregate Industries).
Occupation	Closed.
Availability (30-year life)	Not available for purchase or long-term lease.

ENVIRONMENTAL CONSIDERATIONS

Score (Max 29)

Status	'Beigefield'.	2
Access	More than 500m from A483.	0
Housing	Within 250m of isolated properties.	0
Landscape	8.5km from Historic Park and Garden (Cefn Dyr). 8km from historic landscape (Elan Valley). Raised topography (hillside quarry), with deep, narrow partially water-filled void.	4 0
Nature	250m from SAC (River Wye) and SSSI (Avon Irfon).	0
Flood Risk	Low flood risk (Zone A).	3
Heritage	1.6km from SAM (Tynewydd Roman Road).	3

12



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

SUMMARY AND SUITABILITY

- No direct or close access onto Primary Road Network (approx. 4km).
- SAC & SSSI within 0.5km of site, otherwise no key environmental designations close by.
- Quarry closed. Partially water-filled void. Potential legacy issues. No employment allocation.
- No information to suggest available for purchase or long-term lease.

NOT SUITABLE

SITE 15

Site Name	BRYN POSTEG	
Town/Grid Ref:	LLANIDLOES	E:297064 N:282127

PLANNING/OWNERSHIP/AVAILABILITY

Non-hazardous Landfill

Total Land Area	Approx. 20 Ha.
LDP Allocation	None.
Suitable for Waste Use	Existing Waste Use (Non-hazardous landfill). No planning conditions restricting duration of landfilling.
Ownership	Freehold held by Potter's Waste Management Ltd.
Occupation	Active (Potter's Waste Management) – Application pending.
Availability (30-year life)	Not available for purchase or long-term lease.

ENVIRONMENTAL CONSIDERATIONS

Score (Max 29)

Status	'Beigefield'.	2
Access	More than 500m from A470.	0
Housing	Within 250m of isolated properties.	0
Landscape	1.6km from historic landscape (Clywedog Valley). Site level/raised (no void).	3 0
Nature	2.25km from SSSI (Coed Craig-Iar).	4
Flood Risk	Low flood risk (Zone A).	3
Heritage	1.9km from CA (Cwmbelan).4.3km from SAM (Rhyd Yr Onen Mound and BaileyCastle)	3

15



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

SUMMARY AND SITE SUITABILITY

- No direct access onto Primary Road Network (approx. 2.5km).
 - No key environmental designations within 1km.
 - For built development, would require significant investment and monitoring
 - Active landfill/ disposal capacity – application pending. AD facility permitted on part of site.
 - No information to suggest available for purchase or long-term lease
- NOT SUITABLE**

