SITE SELECTION REPORT

Land North of Bronwylfa Road

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Prepared for:

Innova Renewables Developments

Prepared by:

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1 Introduction

1.1.1 This Site Selection Report has been prepared by Stantec on behalf of Innova Renewables Developments ('the applicant') in relation to the proposed development for the Installation and operation of an Energy Storage System (ESS) including energy storage units, substation, site access, cable connection, landscaping and ancillary infrastructure ('the proposed development') at Land north of Bronwylfa Road, Rhostyllen, Wrexham ('the site') located in Wrexham County Borough Council ('WCBC').

1.1.2 The purpose of this Site Selection Report is to assess a defined study area (2.5km from the Legacy National Grid Substation) to identify physical and planning policy constraints in order to find a suitable location for the proposed development. In identifying potential sites, we have undertaken a two-stage approach. Firstly, a desk-based screening exercise was undertaken to establish sites that appear to have some potential for development (i.e., those sites which are not subject to statutory designations). Any sites identified by this process (i.e., which avoid statutory designations) are then studied more closely as part of the second stage assessment for their merits against various environmental, planning, and technical criteria in order to find a suitable location for the proposed development.

1.1.3 This approach has been found to be acceptable by Local Planning Authorities and Planning and Environments Decisions Wales (PEDW) in previous cases for similar developments elsewhere.

1.2 Development Proposals

1.2.1 It is understood that the proposed development will comprise energy storage units and associated infrastructure, likely in the region of a gross site area of circa 13.6 acres / 5.5 ha. It will have a potential generating electrical output of circa 400MW.

1.2.2 The grid connection will be at Legacy National Grid Substation ('Legacy Substation'), Wrexham and accordingly a 2.5km search area around the substation has been used as the basic search area for the purpose of this report (beyond which a grid connection is generally regarded as being unviable to deliver due to the distance involved to connect to the substation).

1.3 Structure of the Report

1.3.1 Following this introductory section, this report is organised as follows:

- **Section two** explains the need for energy storage solutions at a national, regional, and local level;
- **Section three** sets out the planning policy context of the search area;
- **Section four** describes the methodology for conducting the site selection analysis, outlining the parameters of the analysis and their rationale;
- **Section five** presents the study's findings; and
- **Section six** provides a summary and conclusions of the site selection analysis including a description of sites capable of accommodating the proposed development and justification for the selected site.

2 The Need for Energy Storage

2.1.1 The following section provides an overview of the national, regional, and local energy context that is of relevance to the proposed development of the site for an ESS.

2.2 National Energy Context – UK Energy Storage

2.2.1 The UK generates electricity in several ways including coal, gas, nuclear, and renewable resources. The electricity system is balanced in real-time, and so matching demand (led by consumer behaviour) with supply can be particularly challenging, especially when the generation is intermittent, such as the case with renewables.

2.2.2 The UK Government is committed to a rapid transition towards a zero-carbon economy; a significant expansion in low carbon (especially wind) electricity generation is a key part of the government's energy strategy. The British Energy Security Strategy, published in April 2022, reinforces this further.

2.2.3 Consequences of this expansion include:

- Changes to the daily electricity demand and supply patterns;
- An increasingly volatile generation mix; and
- Greater issues with geographical concentration of generation.

2.2.4 Transmission network constraints occur when network infrastructure limits the ability of the network to transmit all the available power to where it is needed. This is uneconomic and therefore both consumer costs and the carbon intensity of electricity increase. Constraints can take different forms, including thermal, voltage and stability.

2.2.5 The pace of transformation to renewable energy to address the climate change challenge is occurring faster than the ability of the network to handle such peaks in supply. Costs of transmission network constraints have been increasing significantly in recent years and National Grid ESO (who move high-voltage electricity around the country) have increased their

expectations of future power flows across key network boundaries in their latest Electricity Ten Year Statement (National Grid ESO, 2021).

2.2.6 New network infrastructure and Pathfinder projects will go some way to limiting the increase in constrained volumes, but constraints will be a feature of the future energy system (it is not cost effective to design a transmission system that caters for all possible power flows), and the market is currently failing to deliver solutions that will provide alternatives to curtailing renewable energy when constraints do bite.

2.2.7 This is one of the most pressing issues for the electricity system over the next five years, as it is already a problem and is set to worsen significantly over the next five years.

2.2.8 Electricity Market Reform (EMR) is a UK government policy designed to:

- Incentivise investment in secure, low-carbon electricity;
- Improve the security of the UK's electricity supply; and
- Improve affordability for consumers.

2.2.9 The UK’s electricity grid has historically relied on large, centralised power plants. However, old coal power plants are in the process of reducing capacity and closing as they no longer meet the required environmental and performance standards. Existing nuclear power plants are reaching the end of their design lives, while the delivery of new nuclear plants has been beset by delays. In parallel, there is the requirement to deliver a greater amount of renewable energy but these technologies (e.g., wind and solar generation) are intermittent, only generating when weather conditions allow. These different factors mean that demand and supply are more challenging to match.

2.2.10 Through the Energy Act 2023, the Capacity Market mechanism was introduced to ensure security of electricity supply. The Capacity Market aims to balance the difference between demand and supply and bring forward investment in new generation projects and innovative technologies, in parallel with maximising the utilisation of the existing generation capacity.

2.2.11 Large-scale energy storage can help to reduce the cost of constraints and the amount of renewable energy curtailed by charging up using excess wind energy when constraints do occur, but intervention is necessary to incentivise investment in appropriate assets.

2.2.12 Exclusively incentivising co-location of storage with renewable developments as part of future subsidy schemes is understood to be unrealistic, as many of the renewable projects that contribute to constraints are operational or have already been awarded contracts, and as such the system does not allow for storage assets to be built in the most cost-effective locations.

2.2.13 ESS's are therefore crucial to maximising the efficiency of existing and future renewable electricity generation and to meet the Government's objective of maintaining a reliable electricity supply. Facilities have the ability to respond rapidly to the short-term variations related to local demand and fluctuations in the output from renewable energy sources. The almost instantaneous response provided by these facilities means they can operate at full power within less than a second.

2.2.14 The proposal would perform a crucial function in helping to manage fluctuations in electricity demand and, importantly, make a significant contribution to the urgent need for more renewable energy, the supply of which is intermittent. There are many benefits directly associated with this relating to energy security, reliability, cost efficiency, the transformation to a decarbonised economy and climate change, and other wider environmental benefits, including reduced pollution and improved air quality.

2.3 Regional Energy Context – Wales Energy Storage

2.3.1 The promotion of energy efficiency is devolved to Wales; however, Welsh Government does not have the power to regulate on energy efficiency. Welsh Government has committed to continue to work with UK Government in respect of regulatory measures and will also pressure UK Government to frame their energy efficiency measures for the benefit of the people, economy, and environment of Wales. Despite their limited powers, Welsh Government is determined to realise their ambition to maximise the potential impact of energy efficiency actions. In 2016, Welsh Government developed a new strategy for the next 10 years (2016-2026) for energy efficiency in Wales. The vision for a more energy efficient Wales by 2025 is:

"We want to ensure that Wales is in the best possible position to realise its full energy efficiency potential and become a major exporter of energy efficiency technology and know-how."

2.3.2 The Welsh Government declared a climate emergency in 2019 and set a target to reduce 95% of greenhouse gas emissions by 2050 relative to 1990. To achieve this target, the energy market is undergoing major transformation both within Wales and further afield with a move to smarter, more connected energy systems, that integrate energy generation, storage, and energy efficiency measures.

2.3.3 The electricity network faces exceptional challenges to meet the Welsh Government target for Wales to meet the equivalent of 70% of its electricity demand from Welsh renewable electricity sources by 2030. This will be assisted by the creation of additional Grid capacity to maximise the efficiency of the existing network and maintain a reliable supply of electricity.

2.3.4 Future Wales: The National Plan 2040 recognises that the as a result of the UK's energy system undergoing significant change, energy generation and delivery is becoming more distributed in the communities and regions where the energy is used. The boundaries between systems are also becoming blurred, with energy being converted into (and stored) different forms to address a range of needs. Future Wales states that there is also a need to consider large-scale energy storage as part of the energy system to provide grid balancing.

2.4 Sub-Regional Energy Context – North Wales Energy Storage

2.4.1 Future Wales sets out that Welsh Government wishes to see energy generation storage and management play a role in supporting the regional economy in North Wales.

2.4.2 The North Wales Energy Strategy in 2021 (published by Welsh Government) sets out that the vision for North Wales is:

"Delivering maximum local economic, social, ecological and wellbeing benefits from transitioning to a net zero economy and becoming a net exporter of low carbon electricity through cross-border and regional cooperation."

2.4.3 In terms of energy storage, the strategy notes that no large-scale batteries have been installed in North Wales to date. However, the deployment of electricity storage, alongside flexibility (such as demand side response provision or the creation of local energy markets), could support the decarbonisation of energy generation in North Wales by enabling more renewables to connect to the network in constrained areas and supporting the business case of investing in renewables.

2.4.4 Over the last decade a number of power stations in the West Midlands have closed alongside an increase in new energy generating development means that power is already flowing towards West Midlands through North Wales which has the capability to overload the network. In addition, there is an anticipated major growth in generation capacity in North Wales, mostly as a result of offshore wind in the Irish Sea. The intermittency of renewables means that the power flows across the transmission network will be very volatile, at times of high winds the network will experience large power flows from North Wales to the rest of Wales and England, and at times of low wind and high solar the network will experience power flows from England to North Wales.

2.4.5 Traditional thermal power stations have large rotating masses which provide inertia and therefore stability to the electricity system. Most renewable generators use inverters with no moving parts and therefore do not provide inertia. As the proportion of electricity generated by renewables increases the stability of the network will decrease creating volatile swings in frequency and voltage on the network. The local network is quite isolated with transmission lines only connecting to the east; the more isolated the network the more susceptible it can be to sudden changes in electricity generation or demand. The use of the energy storage can provide important system stability services (frequency response, voltage support) to ensure the stability of the North Wales electricity network. The use of energy storage can also ensure the energy demands of North Wales can be always met, this will be particularly important if there is a fault or maintenance work on any of the three transmission circuits supplying North Wales.

2.4.6 Wrexham generally and the area surrounding the Legacy Substation are strategically positioned on one of the main transmission routes between North Wales and the Midlands, and, although reinforcements are planned to prevent overloading the network, energy storage at this strategic location can reduce the requirement for upgrades or additional 400kV overhead circuits to enable increased power flows from renewables. Therefore, energy storage capacity in this location will

not only avoid curtailment of existing and future wind expansion but provide grid stability to North Wales.

2.5 Local Energy Context – Legacy Substation

2.5.1 Legacy Substation is at the edge of the B9 boundary constraints as defined in the Electricity Ten Year Statement (ETYS), this makes it a key point on the network where energy storage can play a crucial role in balancing demand and supply, enabling the maximum amount of renewable energy to be installed in the shortest possible time. For all future energy scenarios, the expected power flows across the B9 boundary quickly increase above the capacity of existing infrastructure, meaning more transmission infrastructure will be required. This suggests a strong need for upgrades to the transmission network in this area to manage the increasing power flows. The increased power flows are due to the decommissioning of fossil fuel power stations in the midlands and a significant increase in wind generation in northern Wales and Scotland. An ESS at Legacy Substation can help alleviate constraints on the network, reduce the need for upgraded or new 400kV circuits and contribute to allowing 50GW of offshore wind by 2030.

2.5.2 The intermittency of renewables means that the power flows across the network will be very volatile, at times of high winds the network will experience large power flows from North to South, and at times of low wind and high solar the network will experience large power flows from South to North. Traditional thermal power stations have large rotating masses which provide inertia and therefore stability to the electricity system. The majority of renewable generators use inverters with no moving parts and therefore do not provide inertia. As the proportion of electricity generated by renewables increases, the stability of the network will decrease creating volatile swings in frequency and voltage on the network. Because of the location of the Legacy Substation, the circuits around it will be subject to large swings in power flows, and therefore large fluctuations in voltage, due to changes in the intermittent renewable energy. The proposed development at the site will be able to provide significant reactive power, which supports the voltage of the network, and other stability services such as dynamic regulation to help enable a 100% renewable energy electricity network.

2.5.3 Energy storage is becoming a key technology to achieve Net-Zero and therefore more energy storage needs to be connected to the electricity grid as soon as possible. In the Future Energy Scenarios, the NGESO indicated that the UK will need more than 25GW of energy storage by 2050, and the UK is currently behind schedule on the amount of energy storage required to enable a net-zero future. The slower the build out of energy storage the more it will cost to balance the network, increasing cost to bill payers. The 400MW ESS being proposed would add a significant amount of energy storage available to the Electricity System Operator (ESO).

2.5.4 The applicant is able to connect to the Legacy Substation in 2026 with minimal works required at the substation itself. The ease of connection makes the Legacy Substation a better option for a connection to the National Grid, other substations the applicant has enquired about require significant upgrade works which involve extending the substation and installing a large amount of additional electrical infrastructure. Not only would this have a visual impact on the local area it would also increase the cost to National Grid and therefore the electricity bill payer.

2.6 UK Transmission Storage Opportunity

2.6.1 Further to the detail around the need for such developments it is also important to understand the limited opportunity to deliver such projects across the UK that results in the ability to secure connections and progress viable developments in specific locations.

2.6.2 Innova Renewables are the most active participant in the development of UK transmission connected energy projects. The business employs planning specialists, engineering and construction departments including grid engineers. Together with a dedicated business development department the business has spent several years screening National Grid Electricity Transmission (NGET) assets to filter and identify locations suitable.

2.6.3 NGET operate c.300 substations in the UK (Eng & Wales). Included within this number are substations of different voltages in the same geographic location, which results in approximately 220 locational opportunities to access a NG substation connection. These are distributed throughout the UK with many being sited in locations unsuitable for development. When discounting these constrained areas there are only 118 NG locations in principle that survive an

initial filtering process, screening out of major designations and land constraints; National Parks, AONBs, Flood Zone 3, highly urban environments.

2.6.4 Remaining substations are then subject to a more detailed review around land, technical and planning viability (This is detailed in the stage assessment below). The key tenet that any such project must be able to viably connect to such an asset and is required to be sufficiently close to allow a 400kV cable route connection defines the search/study area. This is discussed in more detail in Section 4.

2.6.5 The conclusion from such work is that identifying possible connection locations that could host development sites that are deemed to be viable from both a technical and planning perspective are rare. When viewed in the context of the need for significant energy storage and policy support for such developments, the ability to deploy a project requires the understanding that there are very limited opportunities to do so across the UK as a whole.

3 Legislative and Planning Policy Context

3.1.1 The following section provides an overview of legislative and planning policy context that is of relevance to the proposed development of the site for an ESS. An understanding of the wider legislative and planning policy context will be a key aspect of identifying a suitable site for the proposed development together with the subsequent consenting strategy and planning justification for any planning application that may be progressed.

3.1.2 Due to the nature of the proposal, with planning decisions for electricity storage of any size generally consented by the relevant Local Planning Authority, it will be consented under the Town and Country Planning Act 1990 (TCPA) (as amended) regime. Therefore, although this section of the report sets out the national energy context, the planning policy context focuses on the Council's Development Plan.

3.2 Legislation

Energy Act 2023

3.2.1 The Energy Act 2023 received Royal Assent on 26th October 2023. The Act forms the biggest piece of energy legislation in the UK's history, laying the foundations for an energy system fit for the future. The Act will deliver a more efficient energy system in the long-term, helping to keep energy costs low. It will do this by increasing competition in Great Britain's onshore electricity networks, through a new tender process – reducing costs for network operation and development. This new model is expected to save consumers up to £1 billion off their energy bills by 2050.

3.2.2 Part 6 of the Act – Market Reform and Consumer Protection, highlights the importance of Electricity Storage for both reducing carbon emissions as well as reducing costs to end users.

The Well-Being of Future Generations (Wales) Act 2015

3.2.3 The Well-being of Future Generations Act requires public bodies in Wales to think about the long-term impact of their decisions to work better with people, communities, and each other to prevent persistent problems such as climate change.

3.2.4 The Act puts in place seven well-being goals which makes it clear for how public bodies must work to achieve all of the goals, not just one or two.

- A Prosperous Wales.
- A Resilient Wales.
- A More Equal Wales.
- A Healthier Wales.
- A Wales of Cohesive Communities.
- A Wales of Vibrant Culture and Thriving Welsh Language.
- A Globally Responsible Wales.

3.2.5 The Act continuously refers to 'Sustainable Development', any reference to a public body doing something "in accordance with the sustainable development principle" means that the body (in this case the Local Planning Authority WCBC) must act in a manner which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs.

3.2.6 In 'How to measure a nation's progress?'[1] the 12th National Indicator for progress is the Capacity (in MW) of renewable energy equipment installed each year. Whilst the Act doesn't specifically refer to Energy Storage, it highlights the importance of Wales's commitment to achieve net zero emissions no later than 2050. This 12th indicator is made up of four of the wellbeing goals for a more prosperous, resilient, cohesive, and globally responsible Wales.

3.3 Development Plan

3.3.1 Future Wales is Wales's national development framework (hereafter referred to as 'Future Wales'), setting the direction for development in Wales to 2040. It is a development plan with a strategy for

[1] Welsh Government. 2016. national-indicators-for-wales.pdf (gov.wales)

addressing key national priorities through the planning system, including sustaining, and developing a vibrant economy, and achieving decarbonisation and climate resilience.

3.3.2 Future Wales was published on the 24th of February 2021 and is the highest tier of development plan. Future Wales is one of a number of documents concerned with infrastructure and development in Wales.

3.3.3 Future Wales recognises the challenges climate change poses and recognises the significant impacts on the wellbeing of both current and future generations. Future Wales sets out that increasing temperatures and extreme weather events caused by climate change are putting pressure on infrastructure and the built environment, which all contribute to social and economic resilience. Future Wales:

- Supports a low carbon economy and the decarbonisation of industry, and the growth of sustainable and renewable energy; and
- Supports infrastructure development, including transport, energy, and digital communications.

3.3.4 Policy 17 of Future Wales refers to 'renewable and low carbon energy and associated infrastructure'. Policy 17 confirms that the Welsh Government strongly supports the principle of developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs and that in determining planning applications for renewable and low carbon energy development, decision-makers must give significant weight to the need to meet Wales' international commitments and target to generate 70% of consumed electricity by renewable means in 2030 in order to combat the climate emergency.

3.3.5 Future Wales also notes that it is vital the North of Wales (see Figure 2-1 below) plays its role in decarbonising society and supports the realisation of renewable energy, stating that there is strong potential for wind, marine and solar energy generation and Strategic and Local Development Plans should provide a framework for generation and associated infrastructure. The Welsh Government also wishes to see energy generation, storage and management play a role in supporting the regional economy in the North. Local ownership and distribution are important for ensuring

communities in proximity to renewable energy development benefit from it and that our future energy system better serves Wales.

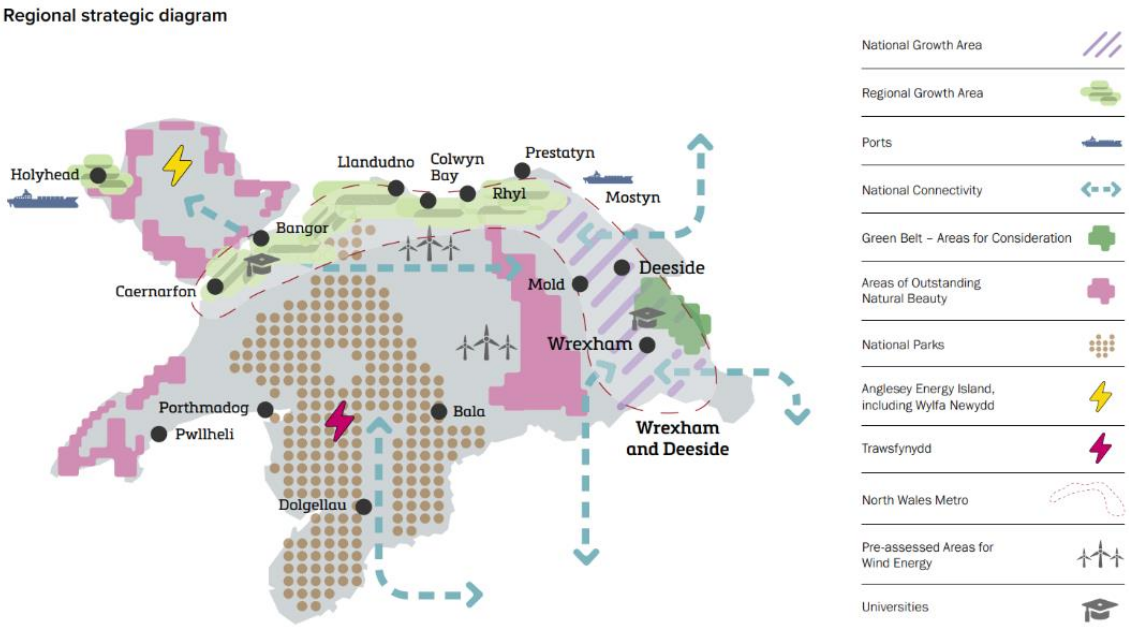

Figure 2-1: Regional Strategic Diagram – North Wales

3.4 Material Considerations

Planning Policy Wales Edition 11 (February 2021)

3.4.1 Edition 11 of PPW was published on the same day as Future Wales, 24th February 2021. PPW sets out the land use planning policies of the Welsh Government. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental, and cultural well – being of Wales, as required by the Planning (Wales) Act 2015, the Well – being of Future Generations (Wales) Act 2015 and other key legislation.

3.4.2 Paragraph 3.30 (Climate Change, Decarbonisation, and the Sustainable Management of Natural Resources) of PPW sets out that the Welsh Government declared a climate emergency in 2019, in order to co-ordinate action nationally and locally to help combat the threats of climate change. It further sets out that the planning system plays a key role in tackling the climate emergency through the decarbonisation of the energy system and the sustainable management of natural resources.

3.4.3 Paragraph 5.7.1 of PPW sets out that low carbon electricity must become the main source of energy in Wales. Renewable electricity will be used to provide both heating and transport in addition to power. This paragraph further emphasises that the future energy supply mix will depend on a range of established and emerging low carbon technologies.

3.4.4 Paragraph 5.7.6 sets out that the planning system should secure an appropriate mix of energy provision, which maximises benefits to our economy and communities whilst minimising potential environmental and social impacts. Paragraph 5.7.7 presents that the benefits of renewable and low carbon energy, as part of the overall commitment to tackle the climate emergency and increase energy security, is of paramount importance. The continued extraction of fossil fuels will hinder progress towards achieving overall commitments to tackling climate change. The planning system should:

- Integrate development with the provision of additional electricity grid network infrastructure;
- Optimise energy storage;
- Facilitate the integration of sustainable building design principles in new development;
- Optimise the location of new developments to allow for efficient use of resources;
- Maximise renewable and low carbon energy generation;
- Maximise the use of local energy sources, such as heat networks;
- Minimise the carbon impact of other energy generation; and
- Move away from the extraction of energy minerals, the burning of which is carbon intensive.

3.5 Local Planning Policy

Wrexham Unitary Development Plan

3.5.1 WCBC adopted the Unitary Development Plan (UDP) 1996 - 2011 on February 14, 2005. The plan covers the administrative area of Wrexham County Borough Council. It supersedes previous

adopted development plans (the Wrexham Maelor Local Plan: Forward to 2001, the Glyndwr District Local Plan, and the Clwyd Structure Plan: First Alteration).

3.5.2 WCBC declared a Climate Emergency in September 2019. The Council has stated that it will 'commit to make Wrexham County Borough a net carbon free council by 2030'.

3.5.3 The following policies within the adopted UDP are deemed relevant and appropriate to the proposed development:

- **Policy PS2** - Development must not materially detrimentally affect countryside, landscape/townscape character, open space, or the quality of the natural environment.

- **Policy PS3** - Development should use previously developed brownfield land comprising vacant, derelict, or underused land in preference to the use of greenfield land, wherever possible, particularly so where greenfield land is of ecological, landscape or amenity value, or comprises agricultural land of grades 1, 2 or 3a quality.

- **Policy PS12** - Proposals for the generation of energy from renewable sources will be supported provided that the wider environmental benefits are not outweighed by any detrimental impacts of the proposed development (including any electricity transmission facilities needed) on the landscape, public safety, and the local environment.

- **Policy EC1** - Within Green Barriers, development will only be granted planning permission if it is for agriculture, forestry, essential facilities for outdoor sport and recreation, cemeteries and other uses of land which maintain the openness of the Green Barrier and do not conflict with the purpose of including land within it.

- **Policy EC2** - Development on agricultural land of grades 1, 2 or 3a will only be permitted if it does not lead to the irreversible loss of that land.

- **Policy EC5** - Within Special Landscape Areas, priority will be given to the conservation and enhancement of the landscape. Development, other than for agriculture, small-scale farm-based and other rural enterprises, and essential operational development by utility service providers, will be strictly controlled. Development will be required to conform to a high standard

of design and landscaping, and special attention will be paid to minimising its visual impact both from nearby and distant viewpoints.

- **Policy EC7** - Within, and in close proximity to, conservation areas, the priority will be to preserve and/ or enhance those buildings, structures, streets, trees, open spaces, archaeological remains, views, and other elements which contribute to the unique character of the area. New buildings and alterations or additions to existing buildings in conservation areas, whether listed as of special architectural or historic interest or not, must reflect the design and character of the area as a whole and the form, scale, detailing and materials of existing buildings.

- **Policy EC11** - Development which would adversely affect the site or setting of a Scheduled Ancient Monument or archaeological site of national significance will not be permitted. Development that directly affects non-scheduled sites of archaeological importance will only be permitted if an archaeological investigation has been carried out to determine the nature, extent and significance of the remains, and this investigation indicates that in-situ preservation is not justified, and a programme of excavation and recording has been agreed. Development will also be carefully controlled to ensure that the setting of non-scheduled sites of archaeological importance is not harmed where appropriate.

- **Policy EC12** - Development (including the raising of land) within defined flood plains will only be permitted if it:

  a) would not be subject to an unacceptable risk of flooding on-site; and/or

  b) does not result in an unacceptable risk of flooding on or off-site; and/or

  c) does not adversely affect flood management or maintenance schemes.

- **Policy CLF6** - The existing pattern of public rights of way will be protected, maintained, and improved and any potential new routes will be identified and safeguarded.

4 Methodology

4.1.1 This section sets out the methodology for identifying potential sites to accommodate the proposed development. On the basis that the proposed development comprises a gross site area of circa 13.6 acres / 5.5 ha, we have assumed a site area of between 15 and 20 acres in order to undertake a robust search. The existing Legacy Substation will provide the point of connection to the Grid and therefore the initial task was to identify the size of the study area using the substation as the central point.

4.2 Definition of the Study Area

4.2.1 No national or local guidance is available which provides clarification regarding the extent of assessment areas in which alternative sites should be assessed. Professional judgement regarding the commercial and technical requirements of a viable and deliverable ESS has therefore been applied to determine a suitable study area.

4.2.2 The land surrounding the Legacy Substation includes various land uses and is a large area that, subject to further study, appears to have some basic potential for the development of an ESS.

4.2.3 As a general rule, the feasibility of achieving a technically and commercially feasible connection route diminishes with distance from the point of connection. This is due to the additional costs of cables, their installation, greater third-party landowner negotiations, environmental management, and mitigation. Accordingly, the ideal site should lie within 3km to the point of connection, as beyond this the costs starts to become prohibitive. If no suitable land can be identified within that area, the search can be extended to 5km where an exceptionally uncomplicated connection route can be identified.

4.2.4 Using the Legacy Substation as the point of connection to the Grid, the immediate vicinity is largely characterised by agricultural land whereas the wider area features notable constraints which would not permit the delivery of an ESS. To the west (approximately 2.75km) of the Legacy Substation lies an Area of Outstanding Natural Beauty (ANOB), to the east (approximately 1.6km) is the A483

running from north to south, and to the south are the residential settlements of Rhosllanerchrugog (approximately 1.5km) and Johnstown (approximately 1.8km).

4.2.5 Taking these wider area constraints into consideration, it has been determined that (for the purpose of this assessment) the study area to determine the potential suitability of sites to accommodate this development is land within 2.5km of the Legacy Substation (on the basis that a 3km search area would only include urban areas or constrained AONB beyond the 2.5km boundary incorporated into this study).

4.2.6 The study area as defined is shown in **Appendix 1** 'Study Area Plan'.

4.3 Availability

4.3.1 Delivery of a site which has been identified as possessing potential for the delivery of an ESS is dependent upon the existence of a willing landowner to agree to the alternative proposed use.

4.3.2 The identification of a site within single ownership is typically the most efficient and effective means to progress a site for an ESS.

4.3.3 The applicant has engaged with landowners within the study area to ascertain willingness to progress with an ESS.

4.4 Deliverability

4.4.1 Consideration as to whether a site could realistically be developed for an ESS is provided in the assessment. This includes consideration of the commercial / economic viability of such a development and physical factors to determine if an ESS could technically function at that location.

4.4.2 These considerations include:

- Availability – whether there is an established economically advantageous / valued use or potential use meaning that it is unlikely that the site would be made available for an ESS or evidence of direct landowner engagement. Whether a site is within single or multiple

ownership also effects the likelihood of a potential alternative site being available, with sites in single ownership preferable to those in multiple ownership;

- Land Use – whether neighbouring land use is likely to conflict with Energy Storage development, i.e., concentrations of urban/residential development;
- Topography – land with acceptable a degree of slope for Energy Storage (flat sites are preferable for the proposed development);
- Other physical constraints – i.e., land features breaking up the site/reducing useable footprint, restricted access etc.

4.5 Environmental and Planning Designations (Ecology, Landscape and Cultural Heritage)

4.5.1 Given the importance of sites which are designated for ecology, landscape and cultural heritage, we do not consider potential sites which contain or lie entirely within such a designation to be suitable for an ESS.

4.5.2 The following statutory designations are afforded protection in national and local policy and their presence at a site would therefore likely mean an ESS would not be acceptable:

Ecology

1) Ramsar sites – international value/UN designation;
2) Site of Special Scientific Interest (SSSI)–national designation;
3) Special Protection Areas (SPA's);
4) Special Areas of Conservation (SAC's); and
5) National Nature Reserve – national value.

The statutory ecological designations within the 2.5km study area are shown in **Appendix 2** 'Ecology / Biodiversity'.

Landscape

6) National Parks – national designation;
7) Areas of Outstanding Natural Beauty (AONB) – national designation; and
8) Country Park – local value.

The statutory landscape designations within the 2.5km study area are shown in **Appendix 3** 'Landscape'. It should be noted that Clwydian Range and Dee Valley AONB located to the west of the Legacy Substation has been the subject of recent consultation (9th October to 27th November 2023) to be designated as a new National Park. This designation would carry greater weight than the existing AONB designation.

Heritage

9) World Heritage Sites (WHS) – international designation;
10) Scheduled Monument (SM) – national designation;
11) Listed Building/Conservation Area – national designation;
12) Registered Park or Garden – national value;
13) Battlefields – national value; and
14) Ancient Woodland – national value.

The statutory heritage designations within the 2.5km study area are shown in **Appendix 3** 'Landscape' and **Appendix 4** 'Built Heritage'.

Planning

15) Open Access Land /Registered Common Land – national value;

4.6 Existing Land Use

4.6.1 PPW states that previously developed land (also referred to as brownfield) should, wherever possible, be used in preference to greenfield sites where it is suitable for development. However, PPW also recognises that not all previously developed land is suitable for development.

4.6.2 Given that the land surrounding the Legacy Substation is predominately greenfield land, it is likely that greenfield land will need to be released to facilitate the proposed development. However, should any unconstrained, previously developed land be identified within the study area, its suitability to deliver an ESS will be assessed.

4.6.3 Industrial land or commercial premises in sufficient proximity to Legacy substation were not of the scale required to host the ESS facility. Additionally, the use of industrial land would potentially remove local employment opportunities, and given the limited activity on site would not generate any further employment opportunities during the operational phase.

4.6.4 Utilising a previously developed or industrial site would also bring the development closer to communities and people, the amenity impacts of the proposal in a more populated area would have more significant impacts due the number of additional residential and commercial receptors.

4.7 Local Plan Designations

4.7.1 The adopted UDP designations present within the study area are 'Green Barrier' (Policy EC1) and 'Special Landscape Area' (Policy EC5). The extent of the designations on the 2.5km study area are shown in **Appendix 3** 'Landscape'. These do not represent a fundamental constraint to delivering the proposed development however should be taken into consideration when reviewing potential site locations.

4.8 Agricultural Land Classification

4.8.1 PPW states that agricultural land of grades 1, 2 and 3a of the Agricultural Land Classification system (ALC) is Best and Most Versatile and should be conserved as a finite resource for the future, however it can be developed if there is an overriding need for the development and land in lower agricultural land is unavailable.

4.8.2 Agricultural land quality is classified according to the Agricultural Land Classification (ALC) System, prepared by the Welsh Government:

1) Grade 1 – Excellent Quality

2) Grade 2 – Very Good Quality
3) Grade 3A – Good Quality
4) Grade 3B – Moderate Quality
5) Grade 4 – Poor Quality
6) Grade 5 – Very Poor Quality

4.8.3 The Welsh Government's Predictive Agricultural Land Classification (ALC) Map, which is based on the principles of the Agricultural Land Classification System of England and Wales. However, it should be noted however that the Welsh Government's Guidance Note on the Predictive ALCM (November 2017) states that: "The map is a modelled prediction and not definitive".

4.8.4 Despite the possible inaccuracies with the data source, as the only feasible method for acquiring such data, a review of the ALC maps has therefore been undertaken to identify 'poorer quality land' within the study area i.e., identified as being all Grade 3B, Grade 4 or Grade 5 land.

4.8.5 The quality of agricultural land (as shown on the Predictive ALCM) within the 2.5km study area is shown in **Appendix 5** 'Agricultural Land'.

4.9 Flood Risk

4.9.1 A revised TAN15 was due to be implemented in 2023, although will no likely be implemented in 2024. This will be supported by the new Flood Map for Planning, which includes climate change information to show how this will affect flood risk extents over the next century. It shows the potential extent of flooding assuming no defences are in place.

4.9.2 The Flood Map for Planning has no official status until it is formally implemented through planning policy (expected in 2024). However, it represents the best available information we have on flood risk and Natural Resources Wales will continue to use this to inform planning advice.

4.9.3 Areas identified as Flood Zone 1 have a low risk of flooding and therefore flood risk is not considered a constraint to development. Areas identified as Flood Zone 2 and Flood Zone 3 have an increased chance of flooding and therefore can represent a constraint to development, subject to further assessment.

4.9.4 The floodplains within the 2.5km study area are shown at **Appendix 6** 'Flood Risk'.

4.10 Public Rights of Way

4.10.1 Public Rights of Way (PRoW) do not represent a fundamental constraint to development as these can usually be avoided and often even enhanced by development. However, when multiple PRoW cross a potential development site, it can prove challenging to ensure the proposed development avoids blocking them.

4.10.2 PRoW are more common in the countryside therefore we have sought to identify where these are located within the 2.5km study area (see **Appendix 7** 'Public Rights of Way').

5 Study Findings

5.1.1 Following the identification of all constraints within the defined 2.5km study area, the first stage of the assessment was to identify broad locations that could accommodate a 15–20-acre site for the proposed development. To identify these broad locations, any area subject to statutory designations was considered unsuitable to accommodate the proposed development and therefore excluded from the next stage of assessment. The statutory designations included the following:

- Area of Outstanding Natural Beauty;
- Site of Specific Scientific Interest;
- Special Area of Conservation;
- Conservation Area;
- Listed Buildings;
- Ancient Woodland;
- Scheduled Monument;
- Floodplain; and
- Urban Areas (including existing singular/clusters of residential dwellings).

5.1.2 Considering the above, the remaining areas of the study area not subject to statutory designations were further investigated to identify broad locations which could accommodate the proposed development. This resulted in 29 broad locations ranging from 15 acres to 20 acres (as shown in **Appendix 8** 'Potential Site Locations').

5.1.3 The second stage of the assessment sought to assess the 29 broad locations in further detail in relation to the following criteria:

- **Access** – to identify potential access routes that could serve the construction and operational phase of the proposed development and whether any Public Rights of Way cross the site.

- **Landscape** – to identify any landscape constraints (i.e., Green Barrier, Special Landscape Area) and whether the proposed development would impact on the setting of the site's landscape (i.e., the setting of the ANOB).

- **Biodiversity** – to identify whether the site is subject to or within close proximity of any biodiversity constraints including protected species (i.e., Great Created Newt habitats).

- **Heritage** – to identify whether the site is subject to or within close proximity of any designated heritage assets (i.e., Conservation Area, Listed Buildings, Scheduled Monument).

- **Agricultural Land** – to identify the agricultural land quality of the site (in accordance with the Predictive ALCM).

- **Topography** – to identify the general topography of the site as sloping or steep which would be less suitable for the proposed development. This is due to the need to access both sides of the ESS and a sloping/steep gradient would likely require substantial engineering works to develop the site and consequently more land and access roads to be able to do so.

- **Local Amenity** – to identify whether the site includes any sensitive uses (i.e., residential properties) which would be within close proximity (c.200m) of the proposed development. This is due to the noise emitted from an ESS that would potentially impact upon residential amenity standards of properties within c.200m.

- **Cable Connection** – to identify the distance from the site to the Legacy Substation and whether the cable would need to cross any waterbodies (i.e., rivers) or main roads (i.e., the A483). This would not necessarily prevent the site from accommodating the proposed development but would likely result in additional costs for diverting the cables which would likely impact on viability / delivery.

- **Commercial / Economic Viability** – to confirm whether the site is commercially viable to deliver the proposed development (i.e., willing neighbouring landowners, number of landowners, increased abnormal costs etc.)

5.1.4 Following the assessment of each location in relation to the above criteria, all 29 locations were scored using a RAG rating system. The rationale behind the RAG rating system is as follows:

- Red – the location performs poorly against the above criteria and is therefore considered unsuitable for the proposed development.
- Amber – the location performs well against some of the criteria above and therefore might potentially be suitable for the proposed development, subject to further investigation.
- Green – the location performs well against most of the criteria above and is therefore considered suitable for the proposed development.

5.1.5 The results of the RAG rating system are as follows:

- Red: 17 locations;
- Amber: 9 locations; and
- Green: 3 locations.

5.1.6 Table 1 (as shown at **Appendix 9** 'Table of Findings') sets out the detailed assessment of each broad location in accordance with the above criteria and confirms the location's RAG rating.

5.1.7 The assessment identified nine broad locations which scored as 'amber' demonstrating that they performed against some of the criteria but did not meet the criteria to progress to the detailed stage. These are as follows:

- Location 1;
- Location 3;
- Location 4;

- Location 5;
- Location 6;
- Location 7;
- Location 14;
- Location 17; and
- Location 23.

5.1.8 The three locations identified as ‘green’ are therefore considered in principle to be more suitable for the proposed development and this includes Locations 13, 15, and 22. These progressed to the refined assessment stage including a site visit. Each sites proforma has been completed and is attached at Appendix 10. These demonstrate that Location 13 presents the most suitable location within the identified Search Area within which to locate this project.

6 Summary and Conclusions

6.1.1 This Site Selection Report has been prepared by Stantec on behalf of Innova Renewables Developments in relation to the proposed development of a 400MW ESS comprising a containerised energy storage solution, including associated ancillary infrastructure, at Land north of Bronwylfa Road, located in WCBC.

6.1.2 The assessment has sought to identify a suitable site between 15 and 20 acres within a 2.5km study area from the Legacy Substation to accommodate the proposed development.

6.1.3 An initial filter of the study area to exclude any land subject to statutory designations was undertaken as the first stage of assessment. The remaining land within the study area was then assessed to identify broad locations that could accommodate the proposed development. This resulted in identifying 29 broad locations that ranged between 15 and 20 acres.

6.1.4 The second stage of the assessment sought to review all 29 broad locations against a set of criteria. Based on the performance of the location against these criteria, each location was scored using a RAG rating system. This assessment concluded that 17 locations were scored as ‘red’ (performed poorly against the criteria so unsuitable for the proposed development); 9 locations were scored as ‘amber’ (performed well against some criteria so potentially suitable for the proposed development subject to further investigation); and 3 scored ‘green’ (performed well against most criteria so suitable for the proposed development).

6.1.5 The ‘green’ locations, being Locations 13, 15 and 22, were considered optimum to accommodate the proposed development and will be assessed in more detail by the client and project team to identify the most suitable site for the proposed development. Locations 15 and 22 were ruled out as they were in closer proximity to residential receptors and additionally the distance and complexity of the cable route paths would not present a viable connection opportunity.

6.1.6 A 400kV cable is required to connect the ESS to the Legacy Substation. The installation of a 400kV cable is expensive and complex, requires trenching works, therefore, to minimise the impact of the project on the local community and make the project financially viable, the applicant has placed the site as close to Legacy Substation as possible.

Summary and Conclusions

6.1.7 The report provides the decision-maker with an understanding as to why the Applicant has selected the site of the proposed development. The Applicant has demonstrated through a review of alternative sites, that in order to deliver an ESS project of this scale there are no sites which are considered more suitable, which importantly could utilise the available grid connection.

Appendix 1 – Study Area Plan

The scaling of this drawing cannot be assured

Revision	Date	Drn	Ckd
-	-	-	-

N

LEGEND

- Substation
- 2.5km Study Area
- Contours (10m)

Project
Land at Legacy Substation, Wrexham

Drawing Title
Contours

Date	Scale	Drawn by	Check by
24.11.22	1:25,000@A3	KT	CH

Project No	Drawing No	Revision
34262	BL-M-10	-

0 200 400 600 800 1000m

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Appendix 2 – Ecology / Biodiversity

The scaling of this drawing cannot be assured

Revision	Date	Drn	Ckd
-	-	-	-

N

LEGEND

- Substation
- 2.5km Study Area
- SSSI
- Special Area of Conservation
- GCN habitat areas

Project
Land at Legacy Substation, Wrexham

Drawing Title
Ecology/Biodiversity

Date	Scale	Drawn by	Check by
24.11.22	1:25,000@A3	KT	CH

Project No	Drawing No	Revision
34262	BL-M-05	A

0 200 400 600 800 1000m

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Appendix 3 – Landscape

The scaling of this drawing cannot be assured

Revision	Date	Drn	Ckd
-	-	-	-

N

LEGEND

- Substation
- 2.5km Study Area
- Special Landscape Area
- Green Barrier
- Traditional Orchard
- AONB
- Country Parks

Project
Land at Legacy Substation, Wrexham

Drawing Title
Landscape

Date	Scale	Drawn by	Check by
24.11.22	1:25,000@A3	KT	CH

Project No	Drawing No	Revision
34262	BL-M-06	A

0 200 400 600 800 1000m

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Appendix 4 – Built Heritage

The scaling of this drawing cannot be assured

Revision	Date	Drn	Ckd
-	-	-	-

N

LEGEND

- Substation
- 2.5km Study Area
- Scheduled Monument
- Listed building
- Conservation Area

Project
Land at Legacy Substation, Wrexham

Drawing Title
Built Heritage

Date	Scale	Drawn by	Check by
24.11.22	1:25,000@A3	KT	CH

Project No	Drawing No	Revision
34262	BL-M-04	A

0 200 400 600 800 1000m

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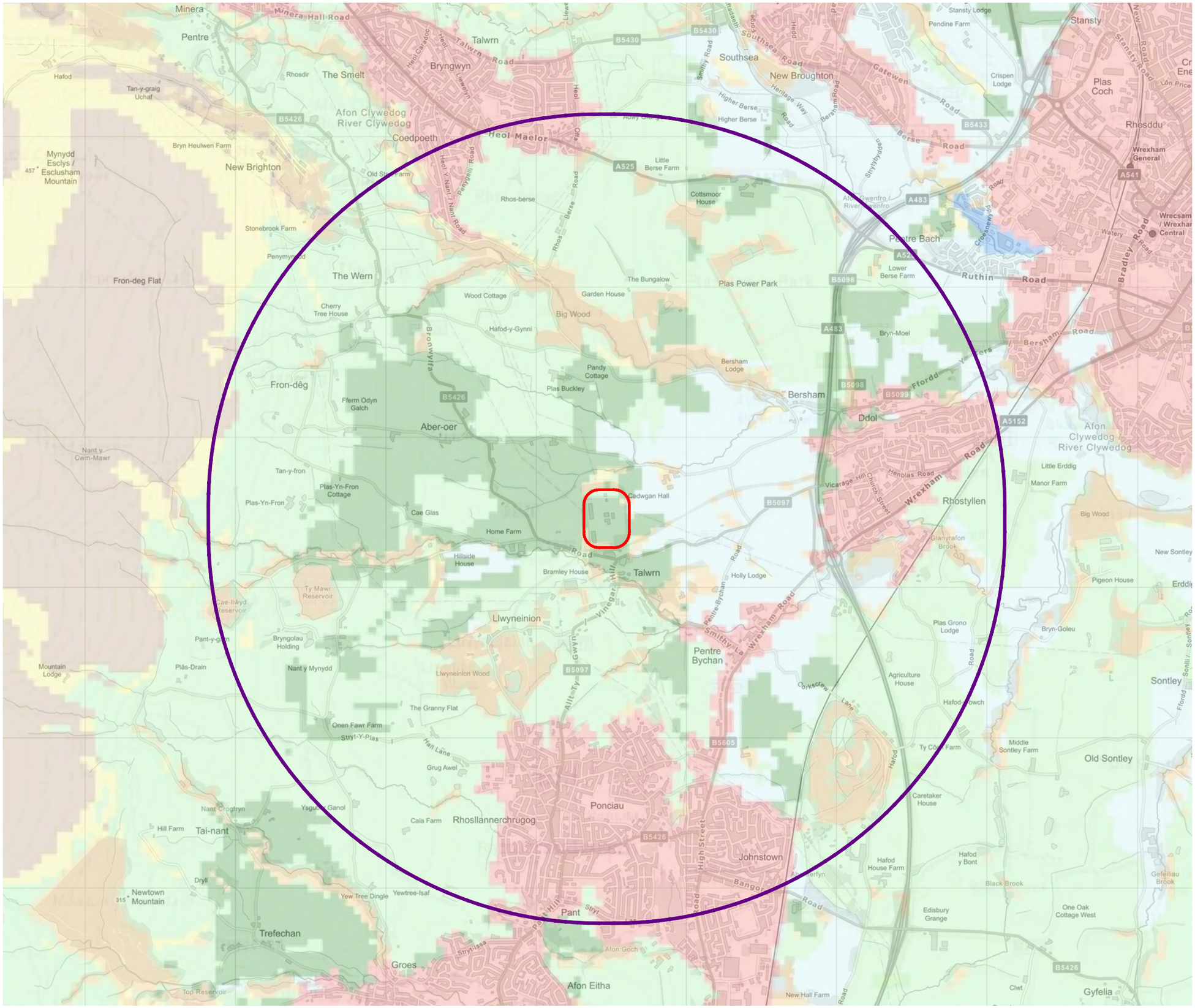
Appendix 5 – Agricultural Land



The scaling of this drawing cannot be assured

Revision	Date	Drn	Ckd
-	-	-	-

N

LEGEND

- Substation
- 2.5km Study Area

Agricultural Land Classification

- Grade 1
- Grade 2
- Grade 3a
- Grade 3b
- Grade 4
- Grade 5
- Non Agricultural
- Urban

Project
Land at Legacy Substation, Wrexham

Drawing Title
Agricultural Land

Date	Scale	Drawn by	Check by
24.11.22	1:25,000@A3	KT	CH

Project No	Drawing No	Revision
34262	BL-M-08	A

0 200 400 600 800 1000m

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Appendix 6 – Flood Risk

The scaling of this drawing cannot be assured

Revision	Date	Drn	Ckd
-	-	-	-

N

LEGEND

- Substation
- 2.5km Study Area
- Flood Zone 2
- Flood zone 3

Project
Land at Legacy Substation, Wrexham

Drawing Title
Flood Risk

Date	Scale	Drawn by	Check by
24.11.22	1:25,000@A3	KT	CH

Project No	Drawing No	Revision
34262	BL-M-03	A

0 200 400 600 800 1000m

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Appendix 7 – Public Rights of Way

The scaling of this drawing cannot be assured

Revision	Date	Drn	Ckd
-	-	-	-

N

LEGEND

- Substation
- 2.5km Study Area
- Public Right of Way

Project
Land at Legacy Substation, Wrexham

Drawing Title
Public Rights of Way

Date	Scale	Drawn by	Check by
24.11.22	1:25,000@A3	KT	CH

Project No	Drawing No	Revision
34262	BL-M-07	A

0 200 400 600 800 1000m

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Appendix 8 – Potential Site Locations

The scaling of this drawing cannot be assured

Revision | Date | Drn | Ckd

-

LEGEND

- Substation
- 2.5km Study Area
- Potential site location
- Public Right of Way
- Scheduled Monument
- Flood Zone 2
- Flood zone 3
- Ancient Woodland
- Traditional Orchard
- Conservation Area
- AONB
- SSSI
- Special Area of Conservation
- GCN habitat areas
- Special Landscape Area
- Green Barrier
- Country Parks
- Listed building
- Coflein Records

N

- Contours (10m

Agricultural Land Classification

- Grade 1
- Grade 2
- Grade 3a
- Grade 3b
- Grade 4
- Grade 5
- Non Agricultural
- Urban

Project

Land at Legacy Substation, Wrexham

Drawing Title

Constraints Plan
Potential Site Locations

Date	Scale	Drawn by	Check by
24.11.22	1:25,000@A3	KT	CH

Project No	Drawing No	Revision
34262	BL-M-02	-

0 200 400 600 800 1000m

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Appendix 9 – Table of Findings

Location No.	Access	Landscape	Biodiversity	Heritage	Agricultural Land	Topography	Local Amenity	Cable Connection	Score
1	Access could be achieved from A525 to the south; Heol Offa to the west or Tan LLan to the north. PRoW crosses area to the east	Located within an SLA and Green Barrier	Area is not subject to any statutory biodiversity constraints	Listed building located to the west Ancient woodland located to the south	Grade 3b	Sloping	Within close proximity of existing residential dwellings to the north-west off Tan Llan; north-east off Higher Berse Road; and the residential settlement at Coedpoeth to the west	Area is approx. 2km from substation and cable will need to cross the River Clywedog	
2	Access could be achieved from Rhos Berse Road to the east; A525 to the north; or Penygelli to the west	Partly located within an SLA and Green Barrier	Area is not subject to any statutory biodiversity constraints	Listed buildings located off Rhos Berse Road Ancient woodland located to the north east and south	Grade 3b	Sloping	Within close proximity of existing residential settlement at Coedpoeth to the north and west	Area is approx. 2.4km from substation and cable will need to cross the A525 and the River Clywedog	
3	Access could be achieved from A525 to the north or Rhos Berse Road to the west	Located partly within an SLA and fully within a Green Barrier	Area is not subject to any statutory biodiversity constraints	Listed buildings located to the south Ancient woodland located to the east and south Scheduled monument located to the west	Grade 3b	Sloping	Within close proximity of existing residential dwellings to the north along the A525	Area is approx. 1.9km from substation and cable will need to cross the River Clywedog	
4	Access could be achieved from the A525 to the north and adjacent to the A483 which is subject to upgrade works at this location	Located within a Green Barrier	Area is not subject to any statutory biodiversity constraints	Ancient woodland located to the east and south	Grade 3b	Relatively flat	Within close proximity of existing residential dwellings to the north along the A525 and gypsy/traveller accommodation to the east along the A525	Area is approx. 2.2km from the substation and cable will need to cross the River Clywedog	

5	Access only from surrounding country lanes although site is adjacent to the A483 to the east which is subject to upgrade works at this location	Located within a Green Barrier	Area is not subject to any statutory biodiversity constraints although GCN habitat located west	Ancient woodland located to the west	Grade 3b	Relatively flat	Not within close proximity of any residential dwellings	Area is approx. 1.8km from the substation and cable will need to cross the River Clywedog	
6	Access only from surrounding country lanes	Located partly within an SLA and fully within a Green Barrier	Area is not subject to any statutory biodiversity constraints although GCN habitat located north	Listed buildings located to the south and east Conservation area located to the south Ancient woodland located to the south and east	Grade 3b	Relatively flat	Not within close proximity of any residential dwellings	Area is approx. 1.6km from substation and cable will need to cross the River Clywedog	
7	Access only from surrounding country lanes although site is adjacent to the A483 to the east PRoW crosses the northern part of the site	Located within a Green Barrier	Area is not subject to any statutory biodiversity constraints	Listed buildings and conservation area located to the south	Grade 3b	Relatively flat	Within close proximity of residential dwellings to the south	Area is approx. 1.5km from substation and cable will need to cross the River Clywedog	
8	Access only from surrounding country lanes – not likely suitable for construction traffic	Located within an SLA and partly within a Green Barrier Setting of nearby AONB should be	Area is not subject to any statutory biodiversity constraints	Ancient woodland located to the north west	Grade 3b	Sloping	Not within close proximity of any residential dwellings	Area is approx. 1.5km from substation	

		considered which is in close proximity							
9	Access could be achieved from the B5426 / Bronwylfa to the north and east	Located within an SLA Setting of nearby AONB should be considered which is in close proximity	Area is not subject to any statutory biodiversity constraints	Ancient woodland located to the north west	Grade 3a	Steep	Not within close proximity of any residential dwellings	Area is approx. 1.6km from substation	
10	Access could be achieved from the B5426 / Bronwylfa to the west	Located within an SLA Setting of nearby AONB should be considered which is in close proximity	Area is not subject to any statutory biodiversity constraints	Area is not subject to or within close proximity of any historic designations	Grade 3a/3b	Sloping	Within close proximity of existing residential dwellings to the south and east	Area is approx. 1.1km from substation	
11	Access only from surrounding country lanes – not likely suitable for construction traffic PRoW intersects the site from north to south	Located within an SLA	Area is not subject to any statutory biodiversity constraints	Scheduled monument located to the east Ancient woodland located to the north	Grade 2/3a	Sloping	Within close proximity of existing residential dwellings to the west	Area is approx. 600m from substation	
12	Access only from surrounding country lanes – not likely suitable for construction traffic	Located within an SLA	Area is not subject to any statutory biodiversity constraints	Scheduled monument located to the west Ancient woodland located to the north	Grades 2/3a/3b	Sloping	Not within proximity of any residential dwellings	Area is approx. 700m from substation and cable will need to cross the scheduled monument	

13	Access could be achieved from the B5097 to the south – the area is also adjacent to the A483 PRoW crosses the eastern part area	Located partly within an SLA and a Green Barrier	Area is not subject to any statutory biodiversity constraints	Area is not subject to or within close proximity of any historic designations	Grade 2	Flat	Not within close proximity of any residential dwellings	Area is approx. 1.1km from substation and cable will need to cross the scheduled monument	
14	Access could be achieved from the B5097 to the south	Located within an SLA and partly within a Green Barrier	Area is not subject to any statutory biodiversity constraints	Scheduled monument is located to the west	Grade 2	Relatively flat	Within close proximity of existing farm and dwellings to the north-west. There is also a cricket club is located in the south of the area	Area is approx. 350m from substation and cable will need to cross the scheduled monument	
15	Access could be achieved from the B5097 to the north; Pentre-Bycan Road to the west; Wrexham Road to the south; or B5098 to the east. PRoW crosses the area to the south	Located partly within an SLA and a Green Barrier	Area is not subject to any statutory biodiversity constraints	Listed buildings located south-east	Grade 2	Flat	Within close proximity of existing dwellings located south-east off the B5098	Area is approx. 1km from substation and cable would need to cross the scheduled monument	
16	Access could be achieved from Wrexham Road to the north or Hafod Road to the south-east	Located partly within an SLA and a Green Barrier	Area is not subject to any statutory biodiversity constraints	Area is not subject to or within close proximity of any historic designations	Grade 3b	Flat	Within close proximity of the residential settlement of Rhostyllen and hotel accommodation (Manor Farm B&B)	Area is approx. 2.4km from substation and cable would need to cross the A493	
17	Access could be achieved from the B5426 to the	Located within an SLA	Area is not subject to any statutory	Area is not subject to or within close proximity of	Grade 3a	Sloping	Within close proximity of existing residential dwellings located to the north	Area is approx. 300m from substation	

	west or Bronwylfa Road to the south PRoW crosses the area to the north-east		biodiversity constraints	any historic designations			and east and a large part of the area is occupied by a solar farm		
18	Access could be achieved from the B5426 to the east ProW cross the area to the east and west	Located within an SLA Setting of nearby AONB should be considered which is in close proximity	Area is not subject to any statutory biodiversity constraints	Area is not subject to or within close proximity of any historic designations	Grade 3a/3b	Steep	Within close proximity of existing residential dwellings to the east along the B5426	Area is approx. 600m from substation	
19	Access only from surrounding country lanes – not likely suitable for construction traffic ProW intersects the area from north to south	Located within an SLA Setting of nearby AONB should be considered which is in close proximity	Area is not subject to any statutory biodiversity constraints	Area is not subject to or within close proximity of any historic designations	Grade 3a	Steep	Within close proximity of existing residential dwellings to the north along the country lane	Area is approx. 1.3km from the substation	
20	Access only from surrounding country lanes – not likely suitable for construction traffic ProW crosses the area to the east	Located within an SLA Setting of nearby AONB should be considered which is in close proximity	Area is not subject to any statutory biodiversity constraints	Listed building located to the west	Grade 3b	Sloping	Within close proximity of existing residential dwellings of the village of Llwyneinion to the south	Area is approx. 700m from substation and cable would need to cross Pentrebychan Brook	
21	Access could be achieved from the B5097 to the north or the	Located within an SLA	Area is not subject to any statutory biodiversity constraints	Scheduled monument located to the west	Grade 2	Relatively flat	Within close proximity of existing residential dwellings of the village of Talwrn to the west	Area is approx. 450m from substation and cable would need to cross	

	B5426 to the west and south			Listed buildings located to the north-east and south-west			and part of the area is occupied by a crematorium	the scheduled monument	
22	Access could be achieved from Hafod Road to the south and east PRoW crosses the area to the east	Area not subject to any landscape constraints	Area is not subject to any statutory biodiversity constraints	Listed buildings located to the south, east and north	Grade 3b	Relatively flat	Not within proximity of existing residential dwellings	Area is approx. 2km from substation and cable would need to cross the A483 and the scheduled monument	
23	Access could be achieved from the B5097 to the north and west PRoW crosses the area to the south-east	Located within an SLA	Area is not subject to any statutory biodiversity constraints	Ancient woodland located to the south-east	Grade 3b	Relatively flat	Within close proximity of existing residential dwellings of the village of Talwrn to the north	Area is approx. 600m from substation and cable would need to cross Pentrebychan Brook	
24	Access could be achieved from the B5097 to the west Multiple PRoW crosses the area	Located within an SLA	Area is not subject to any statutory biodiversity constraints	Ancient woodland located to the north-east	Grade 3b	Sloping	Within close proximity of existing residential dwellings within the settlement of Rhosllanerchrugog to the south	Area is approx. 900m from substation and cable would need to cross Pentrebychan Brook	
25	Access only from surrounding country lanes – not likely suitable for construction traffic PRoW crosses the area to the south	Located within an SLA Setting of nearby AONB should be considered which is in close proximity	Area is not subject to any statutory biodiversity constraints although GCN habitat located north	Ancient woodland located to the east	Grade 3b	Steep	Within close proximity of existing residential dwellings of the village of Bronwylfa to the west	Area is approx. 1.7km from substation and cable would need to cross Pentrebychan Brook	

26	Access could be achieved from Hall Lane to the south PRoW crosses the area to the west	Located within an SLA Setting of nearby AONB should be considered which is in close proximity	Area is not subject to any statutory biodiversity constraints	Listed building located to the south-east	Grade 3b	Steep	Within close proximity of existing residential dwellings to the south off Hall Lane	Area is approx. 1.9km from substation and cable would need to cross Pentrebychan Brook	
27	Access could be achieved from Hall Lane to the south PRoW crosses the area to the west	Located within an SLA Setting of nearby AONB should be considered which is in close proximity	Area is not subject to any statutory biodiversity constraints although GCN habitat located north	Listed building located to the west Ancient woodland located to the north	Grade 3b	Sloping	Within close proximity of existing residential dwellings within the settlement of Rhosllanerchrugog to the east	Area is approx. 1.5km from substation and cable would need to cross Pentrebychan Brook	
28	Access could be achieved from Lambpit Street to the west	Located within an SLA Setting of nearby AONB should be considered which is in close proximity	Area is not subject to any statutory biodiversity constraints	Area is not subject to or within close proximity of any historic designations	Grade 3b	Steep	Not within proximity of existing residential dwellings	Area is approx. 2.2km from substation and cable would need to cross Pentrebychan Brook	
29	Access only from surrounding country lanes – not likely suitable for construction traffic Multiple PRoW cross the area	Located within an SLA Setting of nearby AONB should be considered which is in close proximity	Area is not subject to any statutory biodiversity constraints	Area is not subject to or within close proximity of any historic designations	Grade 3b	Sloping	Within close proximity of existing residential dwellings within the settlement of Rhosllanerchrugog to the east	Area is approx. 2.3km from substation and cable would need to cross Pentrebychan Brook	

Site Assessment Sheet

Site ID	Site 15
Location	Land North of Wrexham Road

AONB/National Park	No
Sensitive Ecological Sites	No
Sensitive Receptors	A cluster of rural dwellings positioned at the junction of B5098 and Wrexham Road B5605 look towards the site and four dwellings south of B5605 have views across site.
Heritage	No designated heritage assets within the site itself. A number of Listed Buildings located to the south east. Cable route will require to cross Offa's Dyke Scheduled Monument. Moated site and Tumulus iodentified as being within the site itself.
ALC	Grade 2
Flood Risk	Low flood risk with some areas of surface water flood risk in the eastern area of the site
PRoW	Yes. PRoW crosses diagonally from B5098 to Pentre-Bychan Road. Site would be highly visible for almost the entirety of this 0.5km stretch of public footpath.

Summary

Agricultural land with low scattered hedgerows along field boundaries. Open views across the site from both B5098 and B5605. Residential dwellings located at the eastern and southern boundaries with first floor views across the site. A number of these are designated heritage assets. Public footpath dissects much of the site in a diagonal path with extensive views either side and looking across towards the AONB to the west.

Overall, the site is not selected to progress

Site Assessment Sheet

Site ID	Site 22
Location	Land between Haffod Road and A483

Green Belt	No
AONB/National Park	No
Sensitive Ecological Sites	No
Sensitive Receptors	Scattered rural dwellings and users of the footpath
Heritage	Listed buildings to the north
ALC	Grade 3b
Flood Risk	Flood Zone 1
PRoW	Yes. Within south and east of the site running across.

Summary

The site is in arable agriculture and positioned to the south of the railway line and east of the A483. The land is relatively flat with hedgerows along the boundaries. Access is taken from a narrow rural road with bridge crossings of the A483 and railway. A high pressure gas pipe runs through the central part of the site. Views from the public rights of way running through and adjacent to the site.

Positioned on the far edge of the search area the cable connection to the substation would be complex and would requiring crossing both the railway and A483. The distance and complexity of the cable route would not present a viable connection opportunity.

Overall, the site is not selected to progress.