

Site Selection Report

Sandy Brow Lane, Knowsley, Liverpool.

On behalf of Balance Power Ltd.

Date: 08 April 2025 | Pegasus Ref: P23-1730

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Document Management.

Version	Date	Author	Checked/ Approved by:	Reason for revision
V1	April 2025	DG	JE	Client Issue
V2	April 2025	DG		Client Comments
V3	May 2025	DG		Final Issue



Contents.

1.	Introduction.....	1
2.	Key Features of Proposed Development.....	3
	The Proposal.....	3
	Site Requirements and Rationale for the Development Site.....	3
3.	Planning Policy.....	6
	Local Planning Policy.....	6
	National Planning Policy Framework.....	7
	Overarching National Policy Statement for Energy Planning	8
4.	Methodology.....	10
	Overview	10
	Stage 1: Site Selection Criteria.....	10
5.	Assessment of Alternative Sites.....	19
	Stage 2: Defining the Search Area.....	19
	Stage 3a: Review of Brownfield and Previously Developed Land.....	21
	Stage 3b: Review of Non-Agricultural Land.....	23
	Stage 3c: Review of Agricultural Land Outside of Green Belt.....	25
5	Conclusions	28

1. Introduction

This Site Selection Report has been prepared on behalf Balance Power Projects Limited ('The Applicant') in support of their planning application for the development of Battery Energy Storage System on Land Adjacent to Sandy Brow Lane, Knowsley, Liverpool.

Background

- 1.1. The application proposal comprises a battery energy storage system that is able to store, release or absorb energy from the power network. Being able to absorb energy during times of low demand and release energy at period of high demand, the battery storage development can be used to contribute towards the frequency balancing services, where the power is being generated or absorbed statically or dynamically depending on the system frequency. When there is not enough power, batteries are discharged to balance under frequency preventing black and brown outs. To balance over frequency, batteries are charged to prevent dangerous spikes across electricity infrastructure.
- 1.2. The proposed energy storage scheme will connect directly into Scottish Power MANWEB's Kirkby Supergrid (GSP) Substation located approx. 940m to the south of the site. The proposal will assist towards controlling the frequency by either charging or discharging its stored energy into the distribution grid as and when required. Development of the battery project therefore provides a valuable service to the National Grid and Local Distribution Grid.
- 1.3. Importantly, battery storage schemes also allow more renewable energy production to be integrated into the system. The variable supply that is inherent in renewables creates peaks and troughs in electricity production. Battery storage facilities such as the one subject to this application, balances any peaks and troughs in electricity supply in short notice from requests by National Grid, when renewable sources are not generating. This ensures security of energy supply and keeping electricity prices low. Subsequently, battery storage is inherently fundamental infrastructure for the UK energy mix. Situating the development within close proximity of the substation enables the grid system to be decentralised, reducing the over-dependence on centralised, fossil-fuel facilities, which in turn has a cumulative effect on reducing CO2 emissions and de-carbonising the grid.
- 1.4. The proposed development would comprise a form of carbon zero energy storage to provide balancing energy to the National Grid. Its grid balancing mechanism specifically forms part of the renewable energy infrastructure being developed to meet the UK's obligations under the Renewable Energy Directive.

Purpose of Site Selection Report

- 1.5. This report introduces the Development and the Development Site, land requirements for Battery Energy Storage Systems (BESS) and rationale for the need for the Development and outlines the process that has been followed, and analysis undertaken, to identify a suitable location for the Development. It assesses the Development Site in terms of the requirements of the National Planning Policy Framework (NPPF) with regards to the siting of the Development within the Knowsley Green Belt.
- 1.6. This Site Selection Report provides an up-to-date comparative analysis of potential sites that could accommodate the development proposal within a defined area of search. There

is no national or local planning application validation requirements to prepare this assessment and as such it is duly submitted on a without prejudice basis.

- 1.7. The purpose of the report is to provide a desk top evaluation of any potential alternative sites that could accommodate the development, with focus given to the availability of brownfield or previously developed land, non-agricultural land or land located outside of the Knowsley Green Belt available within the defined area of search.
- 1.8. The assessment set out in this report seeks to identify if there are any potentially more suitable sites situated on:
 - Brownfield or previously developed land outside of the Green Belt;
 - Other available land outside of the Green Belt; or
 - Brownfield or previously developed land within the Green Belt.
- 1.9. This assessment is carried out in support of the planning application and seeks to demonstrate that the applicant has given due consideration to the benefits and constraints associated with the proposed site and has considered reasonable alternatives in a proportionate manner. Importantly, it should be noted that there is no statutory or defined policy requirement to carry out a 'site selection report'.
- 1.10. The remainder of this report is structured as follows:
 - Section 2 – key features of the site and proposed development;
 - Section 3 – relevant planning policy;
 - Section 4 – the methodology applied to identify and assess alternative sites;
 - Section 5 – assessment of alternative sites; and
 - Section 6 – summary and conclusions.

2. Key Features of Proposed Development

The Proposal

- 2.1. The Proposed Development is for the construction and operation of a battery energy storage facility that will connect directly into the 132kV Kirkby GSP Substation, c. 900m to the south of the site, to provide frequency balancing services to the Local Distribution Grid.
- 2.2. The proposed battery energy storage scheme is a temporary use which following its decommissioning will be removed from the site and the land restored to its former use and condition.
- 2.3. The main components of the proposed development are set out below: –
- 72 No. containerised battery units;
 - 33 No. containerised transformer and inverter units, whilst smaller than the containerised battery units these will be similar in appearance to the proposed battery containers and would be painted a sympathetic colour such as dark green;
 - 1 No. controller room & welfare unit;
 - 1 No. District Network Operator Control Room;
 - 1 No. Private Substation;
 - 1 No. Storage Room
 - Security and Acoustic Fencing;
 - Pole Mounted CCTV cameras and downward facing lighting;
 - Access track, vehicular parking within gated compound;
 - Emergency access track;
 - Underground water tank;
 - Drainage attenuation basin with outfall to existing watercourse; and,
 - Extensive landscape planting comprising diverse grassland, tree, hedgerow and scrub.

Site Requirements and Rationale for the Development Site

- 2.4. The purpose of the development is to provide frequency balancing services to the distribution grid, where the power is being generated or absorbed statically or dynamically depending on the system frequency. When there is not enough power, batteries are discharged to balance under frequency preventing black and brown outs. To balance over frequency, batteries are charged to prevent dangerous spikes across electricity infrastructure, therefore providing grid stability services. The design of a Battery Energy

Storage System (BESS) must also take account of potential environmental effects and must strike a balance between energy capacity and minimising environmental effects.

2.5. Not every site will be suitable for accommodating BESS development and therefore Balance Power Projects Ltd have been through a thorough feasibility exercise to assess the suitability of the Development Site. To identify viable land for large scale BESS development, the following constraints were reviewed/applied, and the Development Site is free of all of these:

- National Parks and National Landscapes;
- Special Protection Areas, Special Areas of Conservation and Ramsar sites;
- Sites of Special Scientific Interest;
- Local and National Nature Reserves;
- Local Wildlife Sites and Sites of Importance for Nature Conservation;
- RSPB Reserves;
- Registered Parks and Gardens;
- Country Parks;
- World Heritage Sites;
- Conservation Areas;
- Scheduled Monuments;
- Listed Buildings;
- Land identified to be at risk to flooding (Flood Zones 2 or 3);
- Land within 250m of Settlements and sufficiently set back and/or screened from isolated residential properties.

2.6. The key criteria which have led to the Site being selected for BESS development include:

- Proximity to an available grid connection;
- Avoiding statutory landscape, heritage and ecological designations;
- Separation from residential areas and designated heritage assets;
- Topography, being generally flat or gently sloping;
- Large enough area of land generally requiring a rural location with good field sizes and shapes (large, regular shaped fields);
- Suitable access for construction;

- Minimising impacts on sensitive landscapes by focusing on landscapes of lower sensitivity and benefiting from existing tree and hedgerow screening;
- Located outside of high flood areas; and
- Avoiding areas of ecological sensitivity and looking for opportunities for ecological/ biodiversity enhancement.

2.7. Whilst the Development Site is located in the Knowsley Green Belt, there are very special circumstances which exist that justify the Development as being acceptable and these will be set out as part of the planning application and are not included in this report.

2.8. The purpose of this report is focused on confirming that there are no suitable sites for the Development which are located on brownfield or previously developed sites or land that is outside of the Green Belt.

3. Planning Policy

3.1. The planning policy and guidance most relevant to the consideration of alternative sites in the context of this assessment is considered to comprise the following:

- Local Plan Core Strategy (2016)
- Unitary Development Plan (2006)
- Local Plan Policies Map
- Merseyside and Halton Joint Waste Local Plan (2013)
- National Planning Policy Framework ('NPPF') (2024);
- National Planning Practice Guidance ('NPPG'); and
- Overarching National Policy Statement ('NPS') for Energy Planning ('EN-1') (2024).

3.2. This report considers policies relating to the use of sites and the consideration of alternative sites only. For further detail to the planning policy and the compliance of the Proposed Development with it, please refer to the full Planning, Design and Access Statement.

Local Planning Policy

3.3. Knowsley's Local Plan Core Strategy was adopted in 2016 and provides the spatial planning strategy for development decisions up to the year 2028. The Core Strategy sets out the long-term vision, objectives, and planning policies to deliver the vision and secure a sustainable future. The Development Plan Proposal Map locates the site within the open countryside and within the Green Belt.

3.4. **Policy CS1** sets out the Council's Spatial Strategy for Knowsley. The policy includes the removal of Sustainable Urban Extensions from the Green Belt to help meet the needs of housing and employment development, while also maintaining the openness of remaining Green Belt areas. Development outside of the Principal Regeneration Areas will be promoted where this is of a scale and nature which meets the needs and opportunities in the local area.

3.5. **Policy CS5** provides the Council's approach towards the future of the Green Belt. The policy states that inappropriate development will not be permitted in the Green Belt except in very special circumstances in which it has been demonstrated that the harm to the Green Belt (including any harm to its openness, purposes or to its visual and recreational amenities) would be clearly outweighed by other considerations. This aligns with the guidance set out in Section 13 of the NPPF.

3.6. **Policy CS2** is a broad policy that provides the development principles for new development in Knowsley. The policy provides five development principles which include:

- Principle 1 – Promote economic development.

- Principle 2 – Reduce carbon emissions and adapt to the effects of climate change.
- Principle 3 – Reduce the need to travel and increase accessibility.
- Principle 4 – Recognise environmental limits, protect, and enhance environmental assets, enhance local character, and promote quality of place.
- Principle 5 – Make the most efficient use of available resources and infrastructure by prioritising locations consistent with the spatial strategy.

3.7. Policy CS23 sets out Knowsley Council's strategy for the development of renewable and low carbon and renewable energy, provided that they do not cause significant harm (in terms of their number, scale, siting or cumulative impacts) to:

- a) Natural resources, biodiversity, geodiversity, water and air quality and, landscape character;
- b) Aviation and transport safety;
- c) Historical and cultural assets;
- d) Public amenity and living conditions; or
- e) Openness and amenity of the Green Belt, except in very special circumstances.

National Planning Policy Framework

3.8. The 8th edition of the NPPF was published in February 2025 (as amended) and includes minor clarifications to the revised document that was published in December 2024. The NPPF sets out the Government's planning policies for England and how these are to be applied, including in respect of development within the Green Belt and renewable energy projects.

3.9. **Paragraph 124** seeks that strategic policies should make as much as possible use of brownfield or previously developed land;

3.10. **Paragraph 153** sets out that Inappropriate in the Green Belt is by definition, harmful to the Green Belt and should not be approved except in very special circumstances. Paragraphs **154 and 155** set out the forms of development which are not considered to comprise inappropriate development within the Green Belt.

3.11. **Paragraph 161** states how the planning system should support the transition to a low carbon future in a changing climate and support renewable and low carbon energy and associated infrastructure.

3.12. **Paragraph 168** states that when determining planning applications for renewable and low carbon development they should a) not require applicants to demonstrate the overall need for renewable or low carbon development; b) approve the application if its impacts are (or can be made) acceptable. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications

for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.

- 3.13. **Paragraph 187** highlights that new development should be prevented from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability. It identifies how decisions should provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

National Planning Practice Guidance (NPPG)

- 3.14. The policies contained within the NPPF are expanded upon and supported by the NPPG, which was originally published in March 2014 and has been updated periodically since.
- 3.15. With regards to identifying suitable areas for renewable and low carbon energy schemes, paragraph 005 (Ref: 5-005-20150618) cites that:

'There are no hard and fast rules about how suitable areas for renewable energy should be identified, but in considering locations, local planning authorities will need to ensure they take into account the requirements of the technology and, critically, the potential impacts on the local environment, including from cumulative impacts. The views of local communities likely to be affected should be listened to.'

Overarching National Policy Statement for Energy Planning

- 3.16. NPS EN-1 is a material consideration for planning applications under the Town and Country Planning Act 1990 and has been included because it is the only policy document that provides any practical guidance in terms of alternative site assessments for energy projects.
- 3.17. The principles set out at paragraph 4.2.21 – 4.2.23 of EN-1 provide useful guidance, as follows:
- 4.2.21 Given the level and urgency of need for new energy infrastructure, the Secretary of State should, subject to any relevant legal requirements (e.g. under the Habitats Regulations) which indicate otherwise, be guided by the following principles when deciding what weight should be given to alternatives:
 - the consideration of alternatives in order to comply with policy requirements should be carried out in a proportionate manner; and
 - only alternatives that can meet the objectives of the proposed development need to be considered.
 - 4.2.22 The Secretary of State should be guided in considering alternative proposals by whether there is a realistic prospect of the alternative delivering the same infrastructure capacity (including energy security, climate change, and other environmental benefits) in the same timescale as the proposed development.
 - 4.2.23 The Secretary of State should not refuse an application for development on one site simply because fewer adverse impacts would result from developing similar infrastructure on another suitable site, and should have regard as appropriate to

the possibility that all suitable sites for energy infrastructure of the type proposed.

- 3.18. Paragraph 4.2.26 of the EN-1 stipulates that alternative proposals which mean the necessary development could not proceed, for example because the alternative proposals are not commercially viable or alternative proposals for sites would not be physically suitable, can be excluded on the grounds that they are not important and relevant to the determination.
- 3.19. The above principles are effective provisions in terms of scoping the assessment; although, as previously stated, it is important to note that there is no statutory or specific planning policy requirement to consider alternative sites in relation to the development of Green Belt Land in EN-1 or in other planning policy documents.

4. Methodology

Overview

- 4.1. This section sets out the qualitative, sequential methodology utilised to carry out the assessment. It should be noted that this type of methodology has been utilised to support many planning applications relating to renewable and low carbon energy schemes in the UK.
- 4.2. A phased approach has been developed; the key stages are: –
- **Stage 1:** Developing appropriate site selection criteria reflecting National and Local planning policy and guidance together with operational and developer considerations guiding the positional needs and requirements of the development proposal.
 - **Stage 2:** Identify the broad area of search based on the methodology established during stage 1 and identify potential sites for review.
 - **Stage 3:** Staged sieving of identified sites against the specific criteria in order to identify sites considered available and suitable to accommodate the development proposal. This stage is split into two key parts; namely (a) reviewing and staged sieving of brownfield or previously developed land in order to identify potential sites that would be available and appropriate for the development proposal; (b) reviewing and staged sieving of non-agricultural sites against criteria in order to identify potential sites that would be available and appropriate for the development proposal; and finally, (c) reviewing and staged sieving of agricultural sites located outside of the Green Belt that would be available and appropriate for the development.
- 4.3. If sites are deemed appropriate for further consideration, then they will be assessed against a criteria-based assessment in order to assess their appropriateness for the development proposal when assessed against the development site.

Stage 1: Site Selection Criteria

- 4.4. Reflecting the above, the site selection process is guided by development control considerations laid out through the relevant national and local planning policy guidance together with the operational needs and requirements of the development proposals, these are pulled together and summarised within Table below.

Table 1 – Planning, Operational and Developer Considerations Guiding Positional Requirements of Development Proposal

Requirement No.	Issue	Explanation
1	Site of suitable size, shape and topography which can accommodate the development.	Approx. 7 acres is the site area requirement to accommodate the proposed development. Sites should be flat or gently sloping.

		This size requirement only applies when the site is characteristically clear of obstructions (or can be made clear of obstructions) and benefits from a level or gentle sloping topography to limit unnecessary ground works. Importantly: 4.5. Where potential sites are subject of physical obstructions which cannot be removed (such as public footpaths, historical field boundaries, woodland, rivers, streams, highways etc.) the site area requirement is increased, where there is more than one constraint the development footprint can be significantly increased. Additionally, a site positioned within the rolling countryside would require a greater development footprint to account for topographical and landscape constraints. A combination of both the physical and topographical constraints would further increase the area requirements; i. The fragmentation of the development site would have an adverse effect towards a scheme's viability and deliverability. Furthermore, it would significantly increase the size of the development footprint.
2	A site with suitable grid connectivity	Viable grid connection is an essential material consideration and is instrumental in defining the 'area of search' for alternative sites. The grid connection costs vary dependant on scheme size; grid capacity, proximity to substation (due to cable length) and local grid infrastructure. Typically; large scale battery schemes must be located within circa 2km in order for the scheme to be financially viable. The area of search is therefore set at 2km from the point of grid connection. The 2km range applies when there's no physical impediment which prevents a direct (or near direct) cable route running from the development site to point of grid connection. For example, a site within 1km of the point of grid connection may prove to be unviable if there are physical or legal obstacles to negotiate (such as directing a cable

		run through a residential estate; under a river; over a railway; or lack of easements over land etc. All substations in Knowsley are subject to connection constraints informed by Scottish Power MANWEB Plc as the Distribution Network Operator. A summary of the current connection constraints at all substations within Knowsley and Merseyside is provided below: Scottish Power MANWEB Plc provides one of three categories for their substations and circuits. The categories are as follows: Green-- All operational factors are within tolerable limits and so opportunities may exist to connect additional Distributed Generation without reinforcing the network (subject to detailed studies). Amber-- At least one factor is nearing its operational limit and hence, depending on the nature of the application, network reinforcement may be required. However, this can only be confirmed by detailed network analysis. Red-- At least one factor is close to its operational limit and so installation of most levels of Distributed Generation and a local connection is highly unlikely. It may also require extensive reinforcement works or given the lack of a local connection, require an extensive amount of sole user assets to facilitate such a connection. On a local scale, there are no primary, grid (BSP) or supergrid (GSP) substations with capacity within Knowsley Council's administrative area. All the substations are categorised as red and therefore it would require extensive reinforcement works, or given the lack of a local connection, require an extensive amount of sole user assets to facilitate such a connection. Across Merseyside, the majority of substations are categorised as red. The metropolitan area of Liverpool has amber substations, but it is considered not feasible to located a BESS within a densely populated area.
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		In this case the applicant has secured a viable connection offer at Scottish Power MANWEB's 's Kirkby Supergrid (GSP) Substation. The applicant has undertaken numerous connection surgeries with Scottish Power MANWEB Plc regarding all available connection points and it was determined that a connection of this size was only possible at the Kirkby Supergrid (GSP) Substation. This is a material consideration. SP MANWEB's position is that the grid offer is not transferrable i.e. a similar offer to other substations in the area may not be unlocked without significant investment to the existing grid network.
3	Brownfield and previously developed land	The NPPF encourages the effective use of land by sequentially focussing development on previously developed or 'brownfield' land. Re-using brownfield or previously developed land for new development can make a major contribution to sustainable development by reducing the amount of undeveloped greenfield land that needs to be used. Based on this definition, this criterion involved consideration of whether a site could properly be categorised as previously developed land and/or non-agricultural land. The Council has a brownfield register from 2021 with a list of all brownfield sites within Knowsley, and which provides the current context of any planning permissions on the land. The strategic objective of the respective Development Plans is to deliver brownfield and previously developed sites as the preferred areas for housing and commercial development within its urban areas. Nevertheless, the availability of such sites must be considered as part of this assessment.
4	Sensitive areas as defined by the EIA regulation	The EIA regulations define sensitive areas as including land notified under section 28(1) (Sites of Special Scientific Interest) of the Wildlife and Countryside Act 1981(21); a National Park within the meaning of the National Parks and Access to the Countryside Act 1949; the Broads; a property appearing on the World Heritage List kept under article 11(2) of the 1972 UNESCO Convention for the

		Protection of the World Cultural and Natural Heritage; a Scheduled Monument within the meaning of the Ancient Monuments and Archaeological Areas Act 1979; a National Landscape (formerly 'Area of Outstanding Natural Beauty') designated as such by an order made by Natural England under section 82(1) (areas of outstanding natural beauty) of the Countryside and Rights of Way Act 2000(26); a European site within the meaning of regulation 8 of the Conservation of Habitats and Species Regulations 2010(27).
5	A suitable location which is served by appropriate highways infrastructure	Appropriate highway infrastructure is a material consideration due to the (HGV) Heavy Goods Vehicle traffic trips generated during the construction period. Avoiding weak bridges, steep gradients or narrow roads is key to ensure the viability and safety of construction.
6	Site access	Site must benefit from suitable point of access onto and from the adopted highway. Ideally an existing access point / field gate.
7	A suitable site which is available for the duration of the development proposal	The site must be available for the duration of energy generation requirement of 35–40 years and preference is for a site within single ownership. This will give confidence to applicant, local community, developer, and local planning authority that the scheme can be delivered, maintained and decommissioned.
8	Site specific allocation	Consideration should be given to any existing planning proposals for the site as presented within the extant and emerging development plan. For example; use of land safeguarded for amenity use or allocated for housing would be inappropriate and generate a policy conflict within the extant and emerging development plan. Furthermore, economic justification would be required for the change of use of land allocated for employment / industrial uses.
9	Flood risk	Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe

		without increasing flood risk elsewhere (extract from NPPF para 100). Surface water flooding is also taken into consideration.
10	Sensitive human receptors	This criterion requires an assessment of how the proposed development would relate to potentially sensitive human receptors on the site and in relation to neighbouring land uses including proximity to populated areas and or local villages.
11	Landscape and visual considerations	The landscape and visual effects of energy projects will vary on a case-by-case basis according to the type of development, its location and the landscape setting of the proposed development. Government guidance promotes good screening of sites.
12	Heritage considerations	Proposals should demonstrate that no substantial harm is caused to heritage assets; where there is an impact on heritage assets relevant mitigation measures should be considered to lessen impact.
13	Biodiversity considerations	Approach would be to minimise impact on biodiversity and providing net gain in biodiversity.
14	Green Belt	Assessment of site against its contribution to the 5 purposes of the Green Belt. As stated elsewhere in this assessment, the urban area of Knowsley is adjoined by the urban area of Liverpool to the west and the Green Belt to the east, centre and south. 48.9% of the administrative area of Knowsley is defined as designated Green Belt, as per the plan provided in Stage 2 below.
15	Exclusion of services	Site must avoid and not be situated on top of important services, e.g: drains, high pressure gas mains, power cables.

4.6. Accordingly, the purpose of the alternative site search is to: –

- Firstly, identify any brownfield or previously developed land available to accommodate the proposal within the defined search area. If more than one site is identified, then the criteria applied above will be used as a sieve to identify the most suitable brownfield or previously developed land to accommodate the development proposal.

- Secondly, where no suitable brownfield or previously developed sites are identified, the assessment will continue to review available sites located outside of the Green Belt. If more than one site is identified then subject to their availability, the criterion set out above will be used to sieve out the most suitable non-agricultural land.
- Thirdly, where no suitable sites are identified outside of the Green Belt, it must be deemed that the proposed development can only be accommodated within the Green Belt. Whilst there may be other similar locations within the Green Belt that could accommodate the proposed development, any effects associated with the development would likely be similar. It is not the purpose of this report to identify whether other suitable sites exist within the Knowsley Green Belt.

4.7. Should the assessment identify no viable alternative sites outside of the Knowsley Green Belt in line with the third point above, then no further assessment of alternatives is against the scoring matrix below is required.

4.8. The numeric system of scoring which will be applied to the assessment criteria is presented below.

Table 2: Scoring Matrix

Negative Context (Low Score)	Scoring					Positive Context (High Score)
Site size & shape not suitable	1	2	3	4	5	Site size and shape suitable
Unsuitable topography	1	2	3	4	5	Suitable topography
Unviable grid connection	1	2	3	4	5	Viable grid connection
Greenfield site	1	2	3	4	5	Brownfield or Previously developed land
In sensitive area as defined by EIA Regs	1	2	3	4	5	Not in sensitive area as defined by EIA Regs (for example a site within the AONB would be given a 1 rating)
Poor highway infrastructure	1	2	3	4	5	Good highway infrastructure

Poor Site access	1	2	3	4	5	Good Site access
Land not available / delivery constraint	1	2	3	4	5	Land available to the developer for the duration of the scheme.
Land allocated / safeguarded for other use	1	2	3	4	5	Land not allocated / safeguarded for other use
Land within flood zone 3 (high risk of flooding)	1	2	3	4	5	Land within Flood Zone 1
Sensitive human receptors	1	2	3	4	5	No sensitive human receptors surrounding the site
Development not screened by landscape	1	2	3	4	5	Development site screened by landscape
In proximity to heritage assets	1	2	3	4	5	Not in proximity to heritage assets
Potential significant impact on biodiversity	1	2	3	4	5	Minimal impact on biodiversity
Multiple services restrict development	1	2	3	4	5	Minimal to no services restricting development
Green Belt Purpose (sites outside of the Green Belt will default to a maximum score): –						
Would result in unrestricted sprawl	1	2	3	4	5	Would not result in unrestricted sprawl
Would result in neighbouring town merging	1	2	3	4	5	Would not result in neighbouring town merging
Would not assist in safeguarding	1	2	3	4	5	Would assist in safeguarding

countryside from encroachment						countryside from encroachment
Would not preserve setting and special character of town	1	2	3	4	5	Would preserve setting and special character of town
Would not assist in urban regeneration	1	2	3	4	5	Would assist in urban regeneration (encouraging use of derelict land)

5. Assessment of Alternative Sites

Stage 2: Defining the Search Area

- 5.1. One of the biggest constraints which must be considered when developing a battery energy storage scheme is gaining access to the local electricity grid. Obtaining a grid connection is a difficult and complex process. Firstly, finding a point of connection (PoC) within the regional grid network which has appropriate capacity available is a significant challenge. A battery storage facility requires both an import and export connection readily available to operate effectively on the grid network. Once a suitable connection is established, the number of potential sites is then limited as they are required to be situated within a viable distance from the PoC to be considered 'commercially viable'. The greater the cable distance, the more factors such as fault level and voltage drop becomes an issue. Additionally, a key function of battery storage is to decentralise the grid network, locating such developments at increased distances from a PoC will result in transmission loss, which reverts back to the centralised make-up of the current system. Therefore, as stated in section 4, Table 1, a site should be located as close as possible to its PoC at the electricity grid which should be a maximum of 2km.
- 5.2. The process of securing a grid connection is a lengthy and complex process. A Developer is required to go through several stages before securing a connection. As mentioned previously an area within the network must be initially identified for suitable import and export capacity to the electricity grid. Once identified, a budget will be requested from the Distribution Network Operator (DNO), in this case Scottish Power MANWEB Plc, which provides indicative costs of the connection, potential re-enforcement works, cable routes and machine installations. Once the budget costs are commercially assessed, a formal application is applied for to the network operator. Receiving an offer takes 90 days and provides the developer with a PoC plan and a legally binding connection offer. The formal offer secures the connection to the specific site. Once accepting the formal offer, the connection is then assessed by Scottish Power MANWEB Plc through a process called 'Project Progression'. This process takes another 90 days, which involves a detailed study, assessing how a potential BESS will affect the wider network. Upon completion, information such as curtailment and connection date are provided, which can also have an impact on the commerciality of the development. Only once all these stages have occurred can the connection be secured and then planning permission be obtained. Accordingly, all battery energy storage schemes are essentially 'grid-led'. It is only possible to consider alternative sites within the vicinity of an available grid connection.
- 5.3. In this case, the applicant obtained their grid connection by working with Scottish Power MANWEB Plc as the local distribution network operator.
- 5.4. As evidenced above, the existing Distribution Grid within Knowsley and Merseyside is highly constrained. There are a total of 26 primary substations, 4 grid (BSP) substations and 1 supergrid (GSP) substation within the administrative area of Knowsley. As set out above, the applicant has managed to secure a connection agreement to connect into the Kirkby 132 kV GSP Substation. In general, GSP substations benefit from much greater generation and demand headroom compared to the smaller primary and grid BSP substations and are subsequently able to accommodate larger scale battery storage facilities such as the proposed development without significant network improvements and investment.

- 5.5. There are 31no. substations located within the Knowsley administrative area, none of which are identified to currently have capacity to accommodate a new BESS development. The Kirkby GSP substation is identified as being capable of accommodating a new BESS development of the scale proposed due to significant planned network improvements and investment at this substation which is confirmed through the offer of a grid connection.
- 5.6. Furthermore, as identified in Table 1 above, a large proportion of the Knowsley administrative area (approx. 49%) is designated as part of the Knowsley Green Belt. Several substations are located outside the Green Belt such as the Halewood Grid (BSP) Substation to the south of the administrative area, Prescott Grid (BSP) Substation located to the centre of the administrative area, Kirkby Supergrid (GSP) Substation located to the southwest of Knowsley Industrial Park and Simonswood Grid (BSP) Substation located at the northern border of the administrative area. Neither of the BSP substations would be capable of accommodating a new BESS development without substantial upgrades and network improvements.

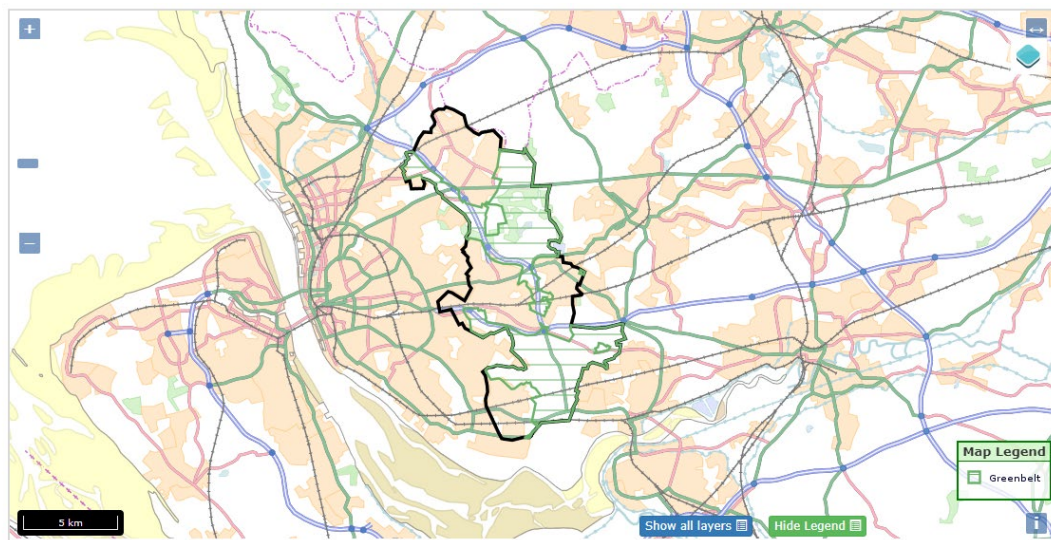


Figure 1 – Map of Administrative Area of Knowsley Council with areas of Green Belt

- 5.7. Due to the existing constraints at the available distribution network substations within Knowsley, only a connection directly into the National Grid's Kirkby Supergrid Substation is identified as achievable. In this case the applicant has secured a viable grid connection offer at the Kirkby Supergrid (GSP) Substation, located to the southeast of Knowsley Industrial Park. The defined search area is therefore set at 2km radius from this PoC.
- 5.8. The image below shows a 2km radius from the Kirkby Supergrid (GSP) Substation (red line). The application site is shown outlined in blue.



Figure 2 – Map showing 2km Search Area and Green Belt

- 5.9. This does not mean that it would be feasible or viable to connect every location near to the substation because it will depend on factors such as the intervening presence of development, landscape features, infrastructure, and the type of terrain. For example, laying a cable across a field directly to a connection is significantly more viable than if it is required to cross a river, road, railway or pass through a local settlement, and does not require additional rights to be secured.
- 5.10. Establishing a connection to a generation or storage development will need to run underground to the substation itself, with the viability of the connection (due to costs) declining as distance increases (estimates of such costs are c£800–£1000 per linear metre, or around £500,000 for a connection 500m away). Therefore, a search area with a 2km radius of the substation was established to form the study area for potential sites (as shown in Figure 2 above).

Stage 3a: Review of Brownfield and Previously Developed Land

- 5.11. As suggested by the Planning Practice Guidance, the applicant has considered the availability of brownfield and previously developed land within the search area.
- 5.12. As evidenced above, the 2km search area is almost divided in half into open countryside and built-up urban areas, with an area to the southeast designated as a Registered Park and Garden. The urban built-up area is predominantly commercial and industrial owing to the Knowsley Industrial Park, with areas of residential properties located around the southern and western extent of the search area. From a desktop review of the search area, it is identified that there are limited existing, suitably sized, brownfield or previously developed

sites within the area of search that are either available or capable of accommodating a BESS development of the proposed scale.

- 5.13. Notwithstanding the above, the applicant has undertaken a detailed review of Knowsley's Brownfield Register. The Brownfield Register is a list of brownfield and previously developed sites in the district that the Council have assessed as being suitable for redevelopment or converted to provide housing-led development. The register identifies 79 such sites. As identified from the register 4 of the 79 registered sites are located within the 2km search area from the PoC, with the closest registered site located c. 1.8km to the west of the PoC.
- 5.14. The four registered brownfield sites within the 2km search radius is listed below:
- BRO09 – Southdene Methodist Church, Broad Lane, Southdene, Kirkby – approx. 1.9km west of the PoC.
 - BRO10 – Thursby Walk, Southdene, Kirkby – approx. 1.9km west of the PoC.
 - BRO19 – St Martins Church and Vicarage, Peatwood Avenue, Southdene, Kirkby – approx. 2km to the west of the PoC.
 - BRO75 – Land to the Rear 112 Broad Lane, Southdene, Kirkby, L32 6QH – approx. 1.8km to the west of the PoC.
- 5.15. It is noted that 2 of the 4 brownfield registered sites have been permissioned for residential housing:
- BRO10 – Reserved matters approved Ref. No: 19/00059/REM for 9 no. retirement bungalows.
 - BRO75 – Application for the erection of 14 dwellings approved under ref. 19/00675/FUL
- 5.16. This therefore identifies two brownfield sites that may be considered for the installation of a large-scale BESS. Although both sites are registered brownfield sites and can be accessed from the highway, the sites are both below 0.86 acres. This would be too small to accommodate a large-scale BESS. Additionally, both sites are located within populated areas, and it is recommended that BESS development is guided away from heavily populated areas.
- 5.17. Due to the size of the two remaining registered brownfield sites, they are not suitable for BESS development and therefore it is considered that there is no suitable registered brownfield sites located within the 2km search radius.
- 5.18. In addition to Knowsley's Brownfield Sites Register the applicant looked into non-designated previously developed land. From a desktop search of online real estates and Google Earth and no site have been considered capable for accommodating a BESS development as all available sites are either located within designated employment areas, which would be contrary to policy or are below the required land size.
- 5.19. For the purpose of this alternative site search assessment, it is therefore demonstrated that non-agricultural land or agricultural land is required to accommodate the application proposal.

Stage 3b: Review of Non-Agricultural Land

- 5.20. Due to the lack of available brownfield or previously developed sites to accommodate the development proposal within the defined area of search, it has been demonstrated that either non-agricultural land or agricultural land is required to accommodate the development proposal. Consideration is firstly given to non-agricultural land located outside of the Green Belt.
- 5.21. The Framework does not provide a definition of the term 'Non-agricultural land'. A definition of non-agriculture is provided through *'The Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land'* (published 1988). It defines non-agriculture as:- **'Soft' uses where most of the land could be returned relatively easily to agriculture, including: golf courses, private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/ airfields**".
- 5.22. Natural England's provisional agricultural land classification map identifies areas of non-agricultural land and urban land respectively as orange or green, as shown on the below extract. As evidenced below, the urban areas (red) of Kirkby extend within the area of search and generally follow the pattern of built development. Areas of non-agricultural land are located to the southeast of the search area and is mostly located within the designated Historic Park and Garden of Knowsley Park, with a small area directly south at the boundary of the search area located outside of any designations.

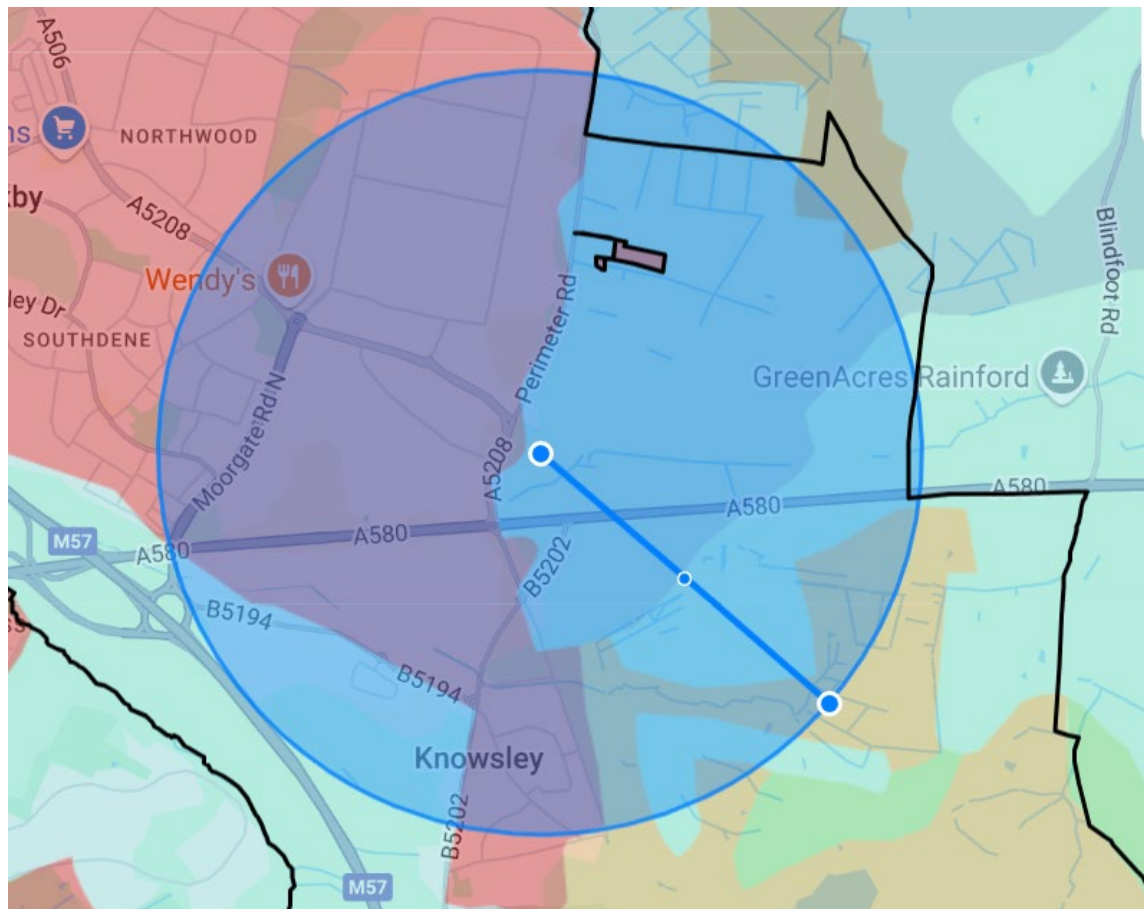


Figure 3 – Natural England Provisional Agricultural Land Classification Map Extract (Green – Grade 1, Blue – Grade 2, Dark Blue – Grade 3, Yellow – Grade 5, Urban – Red, Non-agricultural – Orange) (Dark Blue – Grade 1; Light Blue – Grade 2; Green – Grade 3; Brown – Grade 5; Orange – Non-agricultural; Red – Urban)

5.23. In addition to the non-agricultural land identified within Natural England's Provisional Grading, the Knowsley Council Policy Map (Figure 7 below) identifies the other following non-agricultural sites within the site search area:

- Local Wildlife or Geological Site – Fields to the northeast and southwest of the search area are designated as Local Nature Reserves.
- Major Development in the Green Belt – The land surrounding and including the PoC is designated for major development in the Green Belt. It is designated for employment.
- Historic Parks and Gardens – A large section of the southeastern corner of the search area is located within a designated Listed Parks and Garden.
- Safeguarded Land – A parcel of Safeguarded Land for housing development is located directly south of the PoC, at the boundary of the search area.

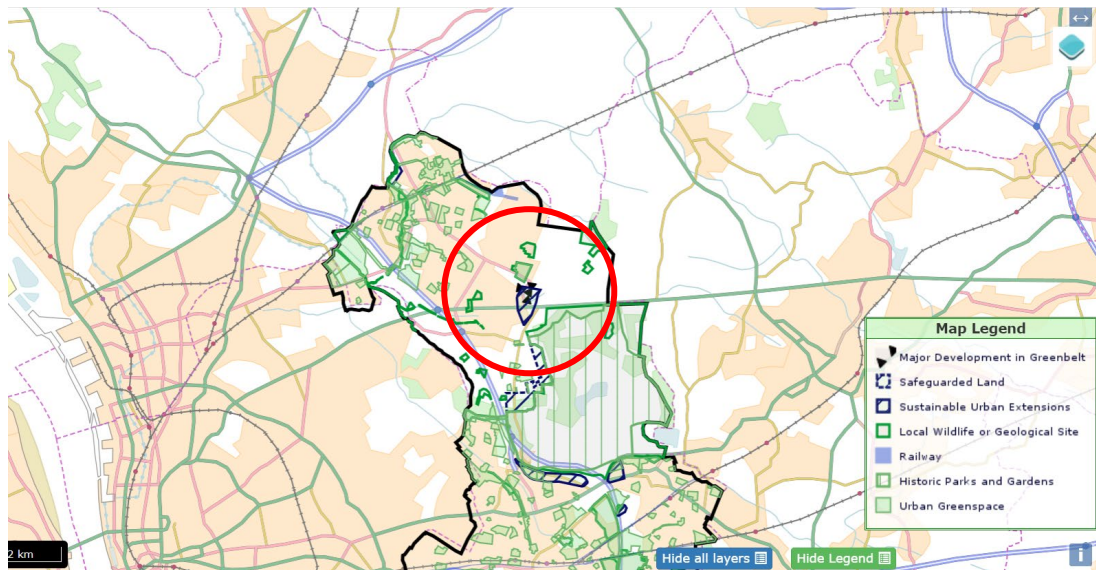


Figure 4 – Map of Administrative Area of Knowsley Council Showing Further Constraints

- 5.24. In addition to the above, whilst not designated within the adopted policy map, the desktop study of the search area identifies several other non-agricultural land uses are identified within the Knowsley administrative area, including:
- Woodlands located to the south of the search area and surround the PoC.
 - St Mary's Church, Knowsley Village, located to the south of the search area.
- 5.25. None of the sites outlined above are considered suitable locations for the proposed battery facility. The loss of significant areas of designated or undesignated public open space, recreational facility, sites of local nature conservation interest, designated sites, and land within or directly adjoining designated heritage assets would be contrary to local planning policies and likely to result in significant harm to the local environment and landscape.
- 5.26. Therefore there are no non-agricultural site available to accommodate the proposal within the area of search, as defined by the 2km radius from Knowsley GSP Substation.
- 5.27. For this alternative site search assessment there are no available brownfield, or previously developed sites or non-agricultural sites located either outside or within the Green Belt which are available and suitable to accommodate the proposed development within the defined area of search. It has therefore been demonstrated that agricultural land is required to accommodate the proposed development.

Stage 3c: Review of Agricultural Land Outside of Green Belt

- 5.28. As per the staged approach outlined above, it has been demonstrated that agricultural land is required to accommodate the proposed development.
- 5.29. Within the 2km search area, the majority of the land outside of the Green Belt is either designated as employment areas, industrial areas, safeguarded land, residential areas, designated Gardens and Parks or designated for housing. It is therefore demonstrated that all agricultural land within the 2km search area falls within the Green Belt.

- 5.30. On the basis of the above, it has been sequentially demonstrated that there are no available suitable sites outside of the Green Belt that would be capable of accommodating the development and therefore, the use of Green Belt Land is demonstrated to be necessary for a BESS Development of the type proposed in this location.
- 5.31. For the purpose of this alternative site search assessment there are no available brownfield or previously developed sites or non-agricultural sites located outside of the Green Belt which are available and suitable to accommodate the proposed development within the defined area of search. It has therefore been demonstrated that agricultural land is required to accommodate the proposed development. Within the area of search there is no agricultural land located outside of the defined Knowsley Green Belt and therefore agricultural land within the Green Belt is required to accommodate the development.
- 5.32. As it has been demonstrated that land required within the Knowsley Green Belt is required to accommodate the development no further assessment of potential alternative sites within the Green Belt is required in line with the assessment methodology. Whilst there may be other similar locations within the Green Belt that could accommodate the proposed development, any effects associated with the development would likely be similar. It is not the purpose of this report to identify whether other suitable sites exist within the Knowsley Green Belt.
- 5.33. Notwithstanding the above, the site is located within land classed as Grade 1 according to the Natural England Provisional Agricultural Land Classification Map (Figure 3). However, it is considered that the land within the site cannot be considered Grade 1 as it has previously been used as historic landfill and thus cannot be considered Best and Most Versatile (BMV) agricultural land.
- 5.34. The majority of agricultural land within the 2km search radius is classified as BMV (Either Grades 1 or 2), with the exception of small areas of Grade 4 land. The Grade 4 land is heavily constrained by the designated Listed Park and Garden of Knowsley Park to the south and ecological designations, such as Local Wildlife Reserves to the north.
- 5.35. Additionally, within the 2km search radius are areas of Peat (Figure 5 below). Again, as mentioned above, the site was previously used as landfill, and therefore it is considered any valuable peat land has been extracted from the site. This further demonstrates that the site is the most suitable sequentially available site within the search area and other potential agricultural land within the search area would either comprise BMV agricultural land and or comprise peaty soils.

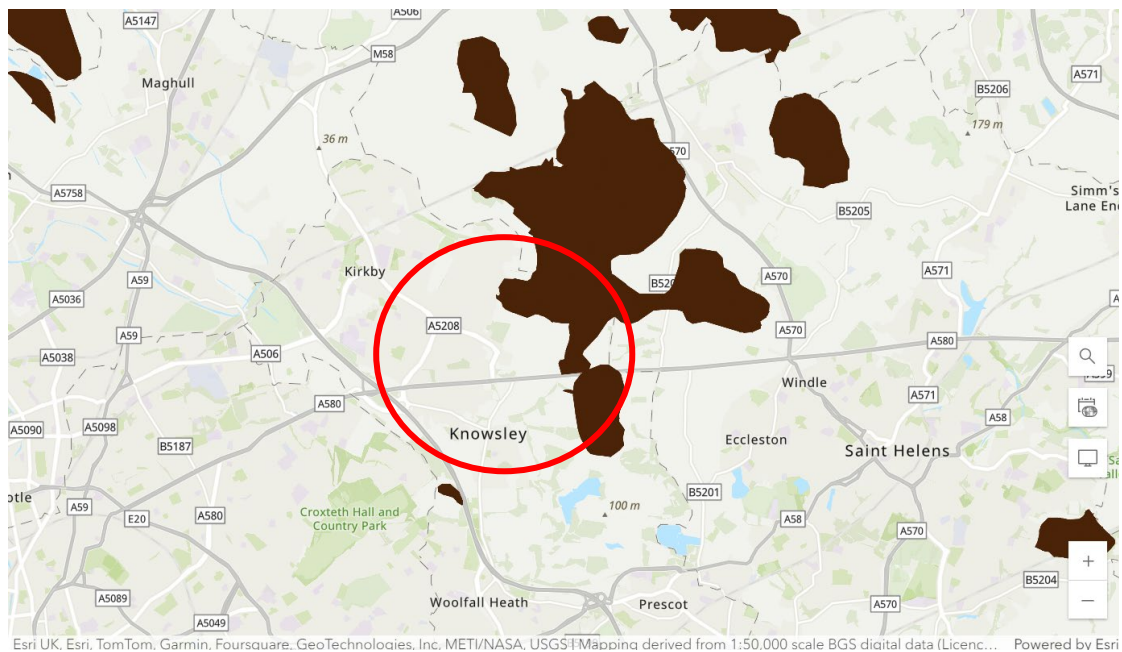


Figure 5 – Map Showing Areas of Peat

5.36. It is therefore considered that owing the site's previous use as a landfill site, that the selected site is the sequentially preferable site.

5 Conclusions

5.2 This Site Selection Report clearly demonstrates that the selection of the Development Site meets the requirements of the NPPF with respect to Green Belt for the following reasons:

- The distribution network within Knowsley and Merseyside is significantly constrained. There are no PoC identified that can accommodate the proposed development, but Scottish Power MANWEB Plc have agreed that the Kirkby Supergrid (GSP) substation will have suitable capacity to accommodate the development in the future. The substation is located on the boundary of the Green Belt. It is not the purpose of this report to identify alternative sites for the PoC, only to demonstrate that there are no alternative site options on either brownfield/previously developed land or land outside of the Green Belt.
- The site has to be located in close proximity to the proposed POC, in this case the existing Kirkby Supergrid (GSP) Substation with suitable access to the highway to enable the safe movement of construction vehicles during the construction process. This does not mean that it would be feasible or viable to connect every location near to the substation because it will depend on factors such as the intervening presence of development, landscape features, infrastructure, and the type of terrain. Establishing a connection to a generation or storage development will need to run underground to the substation itself, with the financial viability of the connection declining as distance increases (estimates of such costs are c£800-£1000 per linear metre, or around £500,000 for a connection 500m away). Therefore, a search area with a 2km radius of the substation was established to form the study area for potential sites.
- Knowsley Council's Brownfield Register was first reviewed for potentially suitable alternative sites. No brownfield or previously developed sites were identified to be suitable within the Search Area and where brownfield or previously developed sites were identified within close proximity of the area of search, these had already been earmarked for residential redevelopment or employment development. No suitable non-agricultural or brownfield/previously developed sites were identified within the Study Area, thus demonstrating the need for the use of agricultural land to accommodate the proposed development.
- All agricultural land within the search area was identified to fall outside of the defined settlement boundaries and subsequently falls within the Green Belt. As no suitable agricultural land outside of the Green Belt is available within the area of search, it has been sequentially demonstrated that agricultural land within the Green Belt is required to accommodate the development proposals.
- There are land rights in place to enable the Development to progress at the Development Site and there is also a grid connection offer accepted with Scottish Power MANWEB Plc as the DNO. Both would be uncertain at any other potential alternative sites within the Green Belt. Notwithstanding this, whilst there may be other potential alternative sites within the Green Belt that could accommodate the proposed development, any effects associated with the development would likely be similar. It is not the purpose of this report to identify whether other suitable sites exist within the Knowsley Green Belt.

- The search area is mostly Urban, and BMVAL land. It is demonstrated above that although the land is classed as Grade 1, the previous use of the site as historic landfill heavily restricts use of the site as such. It is demonstrated that there is no available land within Grade 4 land due to constraints, there are not previously developed/brownfield sites available and no non-agricultural land available.
- The 2km search area is heavily constrained by peat. The development is located within a site identified for peat, but again, due to the previous use of the site as landfill, it is considered that no valuable peat land remains, and therefore the site is suitable.

5.3 Overall, there are no sequentially preferable sites of appropriate size that have been identified which could accommodate the development proposal within 2km of the PoC which could be capable of delivering the same benefits as the appeal site.

5.4 The Applicant duly considers that the location, with immediate proximity to an existing grid connection with available capacity, would be efficient and economic, and it would allow connection without significant delay.

Town & Country Planning Act 1990 (as amended)
Planning and Compulsory Purchase Act 2004

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