

WARLEY ENERGY HUB

Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA

Planning Application Ref. P1498.24 - Alternative Site Assessment

ALTERNATIVE SITE ASSESSMENT

Date: 18 February 2025
Authors: Clearstone Energy (Applicant)

1. INTRODUCTION

- 1.1. Further to a number of consultation responses regarding the appropriateness of this development within the Green Belt, this Alternative Site Assessment (ASA) has been prepared to provide some additional context around site selection and demonstrate that there are no suitable alternative sites available.

2. PROPOSED METHODOLOGY

- 2.1. There is no guidance at a local or national level as to how an ASA should be approached or the methodology that should be followed. However, there is a generally accepted approach which follows the following steps:
- Defining the grid connection opportunity and identification of the study area.
 - Formulation of a short-list of sites; and
 - Assessment of the short-list of sites based on the agreed parameters.
- 2.2. Within the methodology, there are several locational constraints of BESS that are necessary to ensure that a BESS can be deployed and operated effectively.

Locational Requirements**2.3. Grid Connection**

- 2.4. Firstly, National Grid needs to identify available capacity within their Network of substations for the connection of a BESS project.
- 2.5. A grid connection then needs to be established with sufficient capacity to connect a BESS. For a transmission scale battery storage project 200MW import capacity and 200MW export capacity is required at the grid connection.
- 2.6. National Grid provided a 200MW Grid Connection at Warley 275kV Substation, forming the basis for the project search location.

2.7. Distance from Grid Connection

- 2.8. A 200MW Transmission-scale BESS must be located within a 3km radius of the Point of Connection (POC). It is necessary that the BESS is located as close as possible (within this 3km radius) to the POC for commercial and practical reasons which are set out as follows:

WARLEY ENERGY HUB**Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA****Planning Application Ref. P1498.24 - Alternative Site Assessment**

- With a shorter cable route, the transfer of energy from the BESS to the POC (and vice versa) is much more efficient, losing less energy from voltage drops.
- The further away from the POC the more that must be spent on the cable, which has a significant impact on the viability of the project; and
- A longer cable route results in more disturbance to the local population, road users and to the natural environment.

2.9. Due to the nature of battery energy storage systems, which import as well as export energy from the grid (generators such as solar and wind energy only export to the grid for example), the extent of such viability criteria become even more critical. This severely restricts the potential locations such a development can be deployed.

2.10. Grid Connection Route Constraints

2.11. BESS projects need to be physically connected to the National Grid substation via a cable, or series of cables. In the case of this project, these are large High Voltage cables, meaning that there are some physical barriers that constrain and/ or hinder the viability of a cable connection route.

2.12. These primarily include avoiding crossing the strategic road network, railway lines, and/ or large watercourses/ rivers.

2.13. These constraints are not always avoidable, but it is advisable to seek alternative solutions where possible.

2.14. The cable connection route also requires approval and legal agreements with all landowners crossed by the route, constraining the potential route if third party consent is required.

2.15. Land Use Considerations

2.16. There are various land use matters which dictate where a BESS can be located, such as;

2.17. BESS cannot be located within a built-up area nor a heavily industrial area. In these locations the BESS is more likely to be competing with other land uses for capacity from/ to the National Grid. In particular industrial estates are very intensive in terms of energy consumption, meaning that points of connection close to industrial areas have insufficient capacity.

2.18. Built up areas by their very nature also include residential areas, which is incompatible with a BESS. BESS transmits a level of noise and therefore, a Noise Impact Assessment accompanies the planning application submission to assess the impact of the development on nearby sensitive noise receptors. As a residential use

WARLEY ENERGY HUB**Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA****Planning Application Ref. P1498.24 - Alternative Site Assessment**

would be a sensitive noise receptor, a BESS is considered an incompatible use of land in very close proximity of a residential area (less than 200m).

- 2.19. Although built-up areas are avoided as part of the initial site search programme, inevitably there will likely be some form of residential use within proximity of a BESS site, as such a minimum offset of 200m from the nearest residential properties is applied.

2.20. Environmental and Physical Constraints

- 2.21. Such projects must also be in areas where there are fewer construction hazards. Factors such as topography, flood risk and access can all contribute, thus locations are selected carefully to ensure risks are minimised during both construction and ongoing maintenance of the project.
- 2.22. There is also preference to locate such projects outside of designations such as AONB's, National Parks and Sites of Special Scientific Interest (SSSI's) and away from designated sites and assets such as conservation areas and listed buildings.
- 2.23. As such, there are a range of locational requirements that dictate where a BESS can be located and will inform the assessment of alternative sites.

3. ASSESSMENT

- 3.1. This section of the ASA follows the methodology outlined in Section 2, which includes defining the grid connection opportunity, undertaking a sieving exercise, formalising a list of sites and then undertaking an assessment of the suitable alternative sites.
- 3.2. Stage 1 – Identifying the study area**
- 3.3. Having identified the POC, we can further focus our study area to sites within a 3km radius of this location. This is a suitable area of search given the capacity requirements for the BESS.
- 3.4. There are then various land use considerations which need to be considered in the site search. BESS is incompatible within built up and residential areas and industrial estates for the reasons explained in section 2 of this report.
- 3.5. We have assessed any sites within this area for robustness. However, taking into account land use considerations.
- 3.6. Within the area of search, a review of environmental and physical constraints has also been undertaken. Areas that accommodate designated sites such as Local Nature Reserves, or SSSI's etc have been discounted from further search.

WARLEY ENERGY HUB

Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA

Planning Application Ref. P1498.24 - Alternative Site Assessment

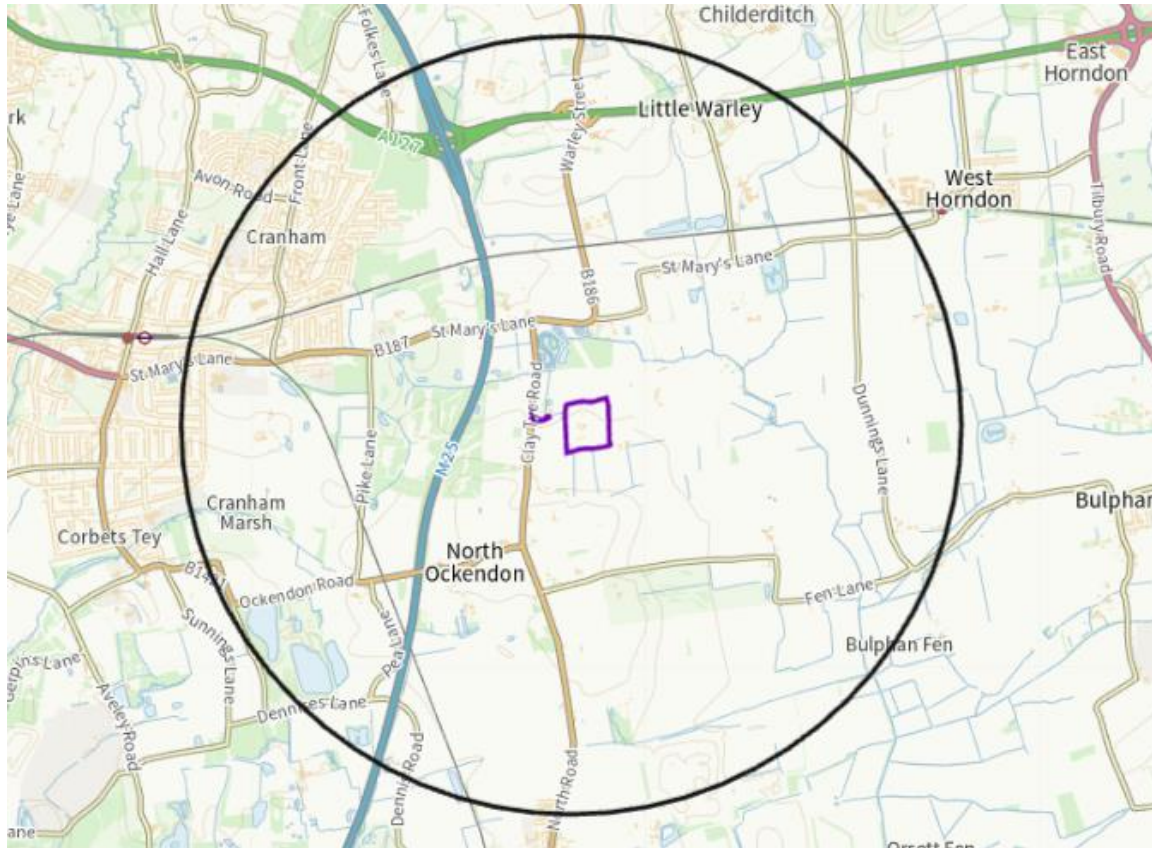


Figure 1: 3km Search radius from National Grid's Warley Substation

3.7. Stage 2 – Site Searching

3.8. Having identified the area of search based on the above we now consider potential sites having regard to the site search parameters that a suitable BESS site must have:

- land of adequate site area for the capacity of the Grid Connection. In this case, a minimum of 4ha site area and maximum of 10ha site area;
- Have sufficient access for construction and management, including access to the strategic highway network;
- Not within statutory or non-statutory designated sites of ecological, heritage or landscape importance, such as AONB, Special Protection Areas (SPA), SSSIs or World Heritage Sites;
- Minimal physical and environmental landscape impacts;
- Predominantly outside of a flood risk zone or an area historically prone to flooding owing to operational risks associated during the operational phase;
- Land that is available for development, with no other planning applications or permissions over it, and land that is not competing for use for higher-

WARLEY ENERGY HUB

Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA

Planning Application Ref. P1498.24 - Alternative Site Assessment

value developments such as residential, commercial, or other large infrastructure;

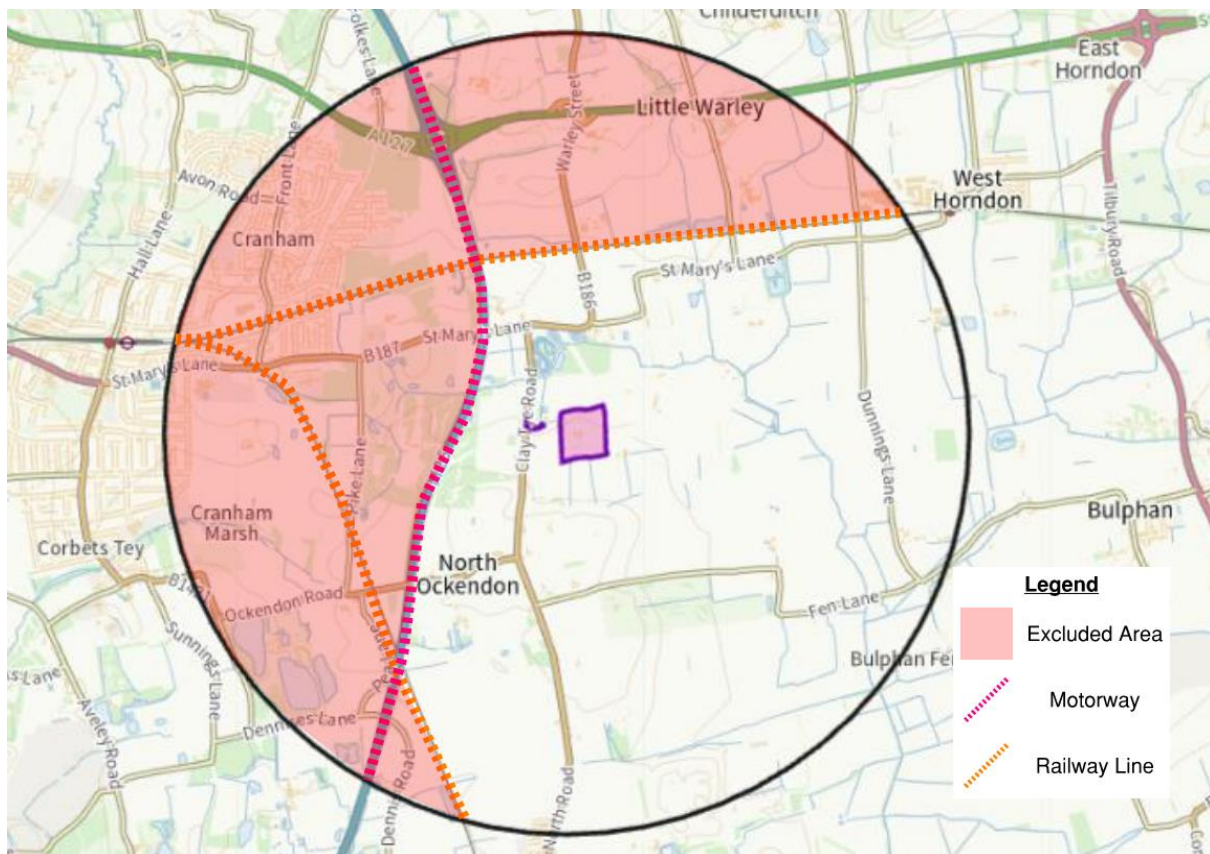
- Land that is not in close proximity to residential areas (less than 200m) or other sensitive receptors where construction or landscaping impacts may be objectionable; and
- Land which is accessible or adjacent to a public highway network so that cabling can be run under the public highway as per Permitted Development Rights if necessary.

3.9. Grid Connection Route Constraints

3.10. The cable connection route should avoid crossing any major physical barriers en-route to the POC. These primarily include avoiding crossing the strategic road network, railway lines, and/ or large watercourses/ rivers.

3.11. In this case, there are three major constraints identified within the search area, being: the railway passing east-west between Upminster and West Horndon north of the POC, the M25 motorway passing north-south to the west of the POC, and the railway passing north-south to the south-west of the POC.

3.12. These constraints have been highlighted at Figure 3.1 below.



WARLEY ENERGY HUB

Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA

Planning Application Ref. P1498.24 - Alternative Site Assessment

Figure 3.1: Physical constraint barriers

3.13. Planning and Environmental Constraints

3.14. There are numerous aspects to consider when identifying potential alternative sites for the proposed BESS. A number of constraints maps have been produced below which indicate existing constraints within the study area. The search area is shown on each map.

3.15. Green Belt

3.16. The majority of the land within the defined search area is within the London Metropolitan Green Belt, as set out shaded Green on Figure 3.2.

3.17. The land that is not within the designated Green Belt is either urban areas, or existing industrial land.

3.18. The non-Green Belt areas are also beyond the physical barriers set out at Section 3.9.

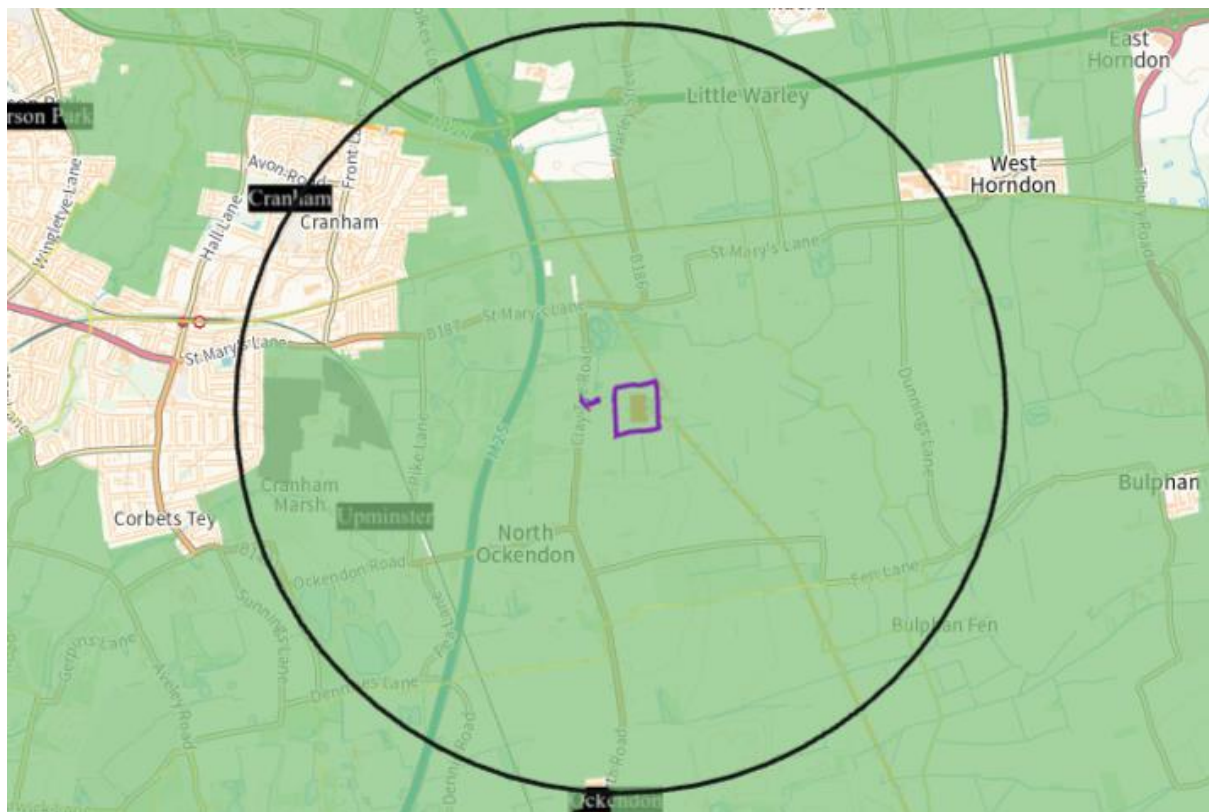


Figure 3.2: Green Belt Area

WARLEY ENERGY HUB

Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA

Planning Application Ref. P1498.24 - Alternative Site Assessment

3.19. Agricultural Land Classification

3.20. Ideally, development sites would be sought on lower quality agricultural land (grades 3b, 4 and 5). As seen in the Agricultural Land Classification map, the land within the wider area of the Havering Borough is predominantly urban and non-agricultural.

3.21. There is a larger area of Grade 3 ("Good to Moderate") land to the north-east of the study area, which also contains a patch of Grade 4 within it. Grade 3 is split into two sub-categories, 3a and 3b. Grade 3a is considered to be within the Best and Most Versatile (BMV) category of agricultural land alongside Grade 1 and Grade 2. However, the ALC mapping shown below does not differentiate between Grade 3a and Grade 3b agricultural land. Sites within ALC Grade 3 may be BMV land, but it is not possible to determine the true grade without soil surveys. It is assumed that Grade 3 land is suitable for development, due to the absence of lower grade land in the search area.



Figure 3.3: Agricultural Land Classification

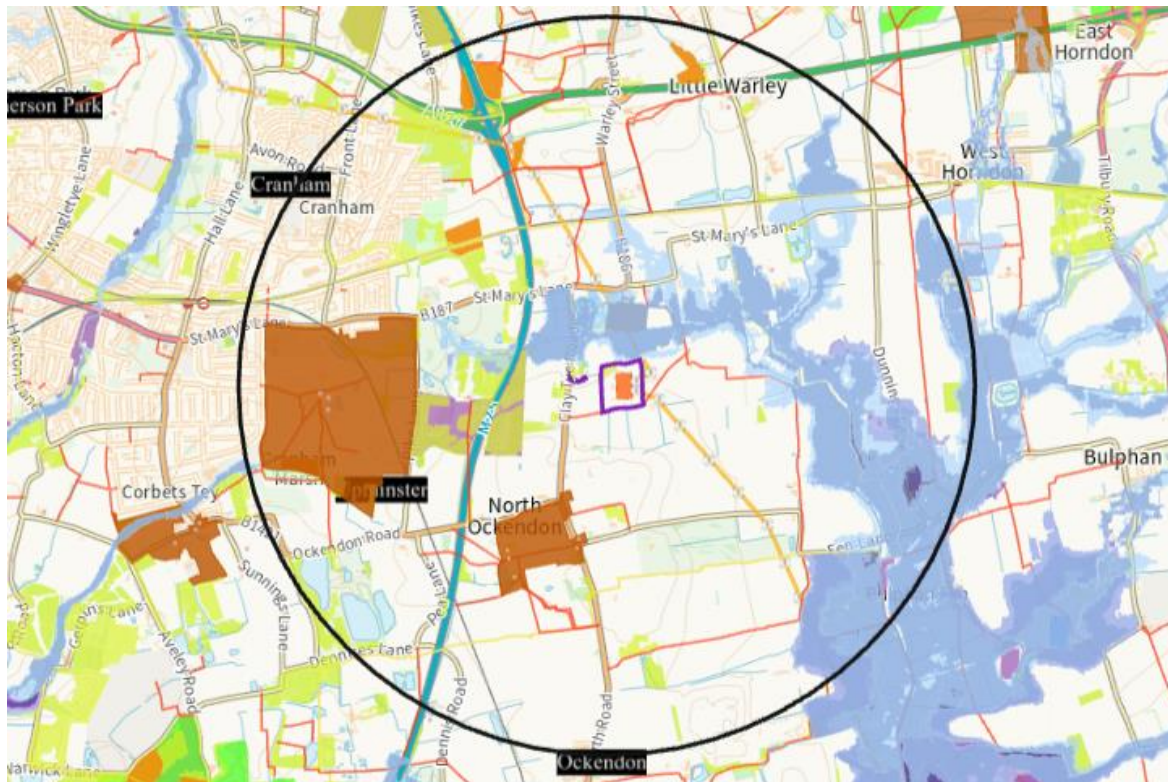
3.22. The search area is also subject to numerous environmental and heritage constraints. These constraints include, but are not limited to:

WARLEY ENERGY HUB

Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA

Planning Application Ref. P1498.24 - Alternative Site Assessment

- AONBs
- Listed Buildings
- Conservation Areas
- Ancient Woodlands
- SSSI's
- Flood Zones
- Green Belt
- Local Nature Reserves



Legend

Planning constraints

 Listed buildings	 Flood zone 2	 Flood zone 3
 Conservation area	 TPO (Tree preservation orders)	 Protected from flooding
 Public rights of way	 National landscapes (AONB)	 Ancient woodland
 National forests & land	 SSSI	 National parks
 Country parks	 CRoW	 National nature reserves
 Local nature reserves	 SPA	 Special area of conservation

WARLEY ENERGY HUB

Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA

Planning Application Ref. P1498.24 - Alternative Site Assessment

Figure 3.4: Key planning constraints

4. SITE ASSESSMENTS

- 4.1. The site search process identified a shortlist of potential sites which meet the relevant baseline criteria for a BESS.
- 4.2. Based on the above criteria, we have reviewed 7 sites that are not excluded from the search.

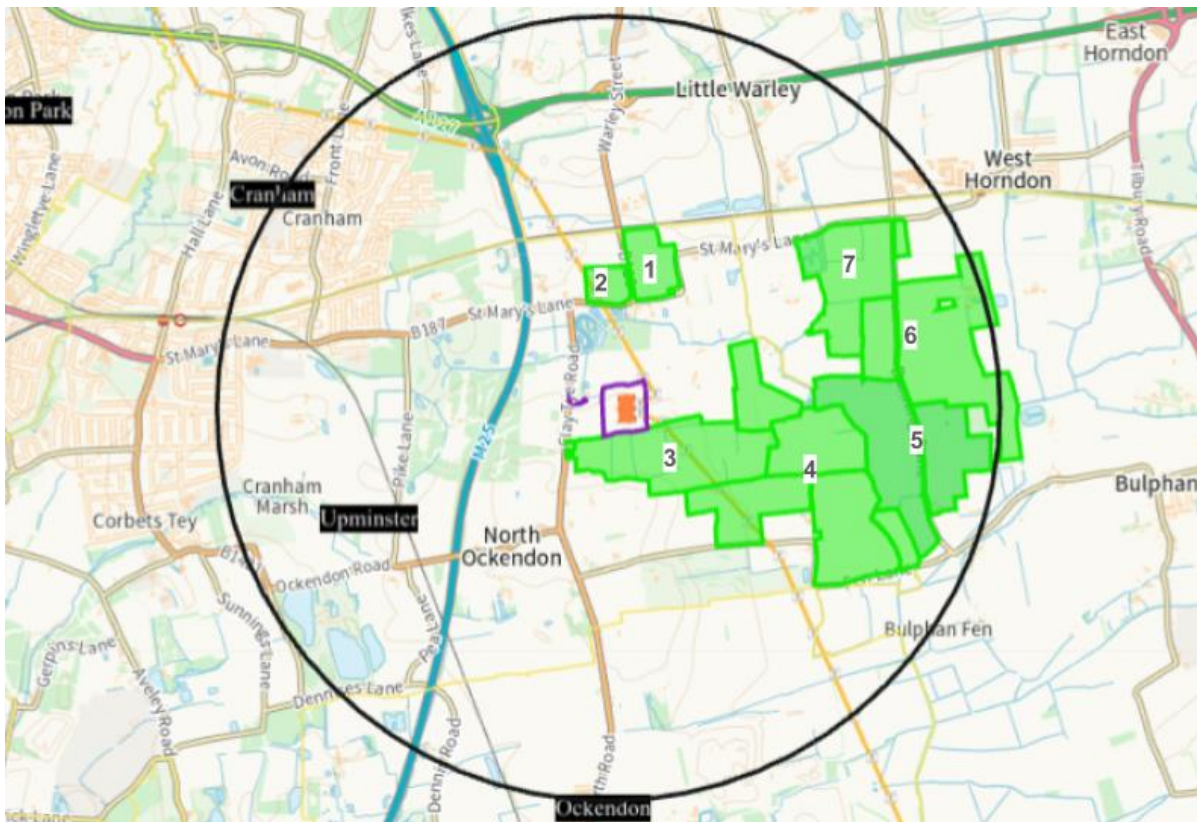


Figure 4.1: Site Assessment map

- 4.3. The below table sets out the analysis of each of the above sites individually.

WARLEY ENERGY HUB
Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA
Planning Application Ref. P1498.24 - Alternative Site Assessment

Site:	Assessment:	Reason for discounting:
Ref: 01 Address: Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA	- Willing landowner - Suitable topography and access - Suitable local road network and access to facilitate development - Adjacent to existing highway and rail infrastructure - Within the designated Search Area - Distant from residential receptors - No heritage assets in close proximity - Sufficient distance from the PROW network - Within the definition of 'Grey Belt'	- Selected site (application site)
Ref: 02 Address: Land Junction of Warley Street And, Havering, RM14 3PA	- No landowner response - Suitable topography and access - Suitable local road network and access to facilitate development - Isolated from existing infrastructure - Good natural screening - Within the designated Search Area - Close proximity to residential receptors - No heritage assets in close proximity - Sufficient distance from the PROW network	- No landowner response - No viable cable route to Point of Connection
Ref: 03 Address: land at Clay Tye Road, Upminster, RM14 3PH	- Unwilling landowner - Suitable topography and access - Access requires vehicle movements in close proximity to residential receptors - Isolated from existing	- Unwilling landowner

WARLEY ENERGY HUB
Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA
Planning Application Ref. P1498.24 - Alternative Site Assessment

Site:	Assessment:	Reason for discounting:
	infrastructure - Within the designated Search Area - Close proximity to residential receptors - No heritage assets in close proximity - Sufficient distance from the PROW network	
Ref: 04 Address: Home Farm, Fen Lane 15m From Unnamed Road, RM14 3RD	- No landowner response - Suitable topography and access - Access requires vehicle movements in close proximity to residential receptors - Within the designated Search Area - Significant areas of Flood Zone - No viable cable route to Point of Connection	- No viable cable route to Point of Connection
Ref: 05 Address: land adjoining Blankets Farm, Dunnings Lane, Bulphan, Upminster (RM14 3RL)	- Within the designated Search Area - Significant areas of Flood Zone - No viable cable route to Point of Connection - Poor natural screening	- No viable cable route to Point of Connection
Ref: 06 Address: Dunnings Lane, West Horndon, Brentwood, CM13 3HE	- Very poor natural screening and highly visible from surrounding area - Within the designated Search Area - Significant areas of Flood Zone - Technically challenging and constrained cable route	- Technically challenging and constrained cable route
Ref: 07 Address: Land at Dunnings Lane, West Horndon,	- Very poor natural screening and highly visible from surrounding area	- No viable cable route to Point of Connection

WARLEY ENERGY HUB

Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA

Planning Application Ref. P1498.24 - Alternative Site Assessment

Site:	Assessment:	Reason for discounting:
Brentwood, CM13 3HE	- Within the designated Search Area - Significant areas of Flood Zone - Technically challenging cable route - Proximity to existing residential dwellings - No viable cable route to Point of Connection	

4.4. The Proposed Site

- 4.5. From a review of relevant planning documents, it is clear there are no available alternative sites to locate the BESS development outside of the Green Belt. There are also no suitable Brownfield sites within the search area.
- 4.6. The above search shows that there are no better alternative sites within the 3km study area which is currently available which could be more suitable for the BESS.
- 4.7. Conversely, the proposed site is available with a willing landowner and therefore, development can come forward on the site. Furthermore, the site has considerable locational advantages as a suitable location for the proposed development:
- There are no designated (protected) heritage assets within the immediate vicinity of the site.
 - Suitable route, with limited physical constraints, in proximity to the point of connection with minimal disruption on the surrounding area.
 - Construction vehicles can travel to the site via the strategic highways network, without passing residential properties.
 - The site makes a limited impact on the openness of the Green Belt; and
 - There are no residential receptors immediately adjacent (>200m) to the site's boundaries.
- 4.8. Therefore, there is no other land with a willing landowner which provides locational and grid connectivity benefits such as the proposed site.

5. ASSESSMENT

- 5.1. Further to a number of consultation responses regarding the appropriateness of this development within the Green Belt, this report has been prepared to provide some

WARLEY ENERGY HUB**Land Adjacent to St Mary's Lane, Ockendon, Upminster, RM14 3PA****Planning Application Ref. P1498.24 - Alternative Site Assessment**

additional context around site selection and demonstrate that there are no better alternative sites available.

- 5.2. It has been demonstrated that there are no brownfield or other alternative sites on non-Green Belt land which are known to be available and are suitable to accommodate the proposed development. The proposed site is ready, available, and suitable for a BESS and as such, is the most preferable site for development within the 3km search area, as demonstrated through this ASA.
- 5.3. As required in paragraph 151 of the NPPF, developers must demonstrate very special circumstances to located renewable energy projects in the Green Belt. This ASA supports the case highlighting that no other non-Green Belt sites are available for this development within the search area.