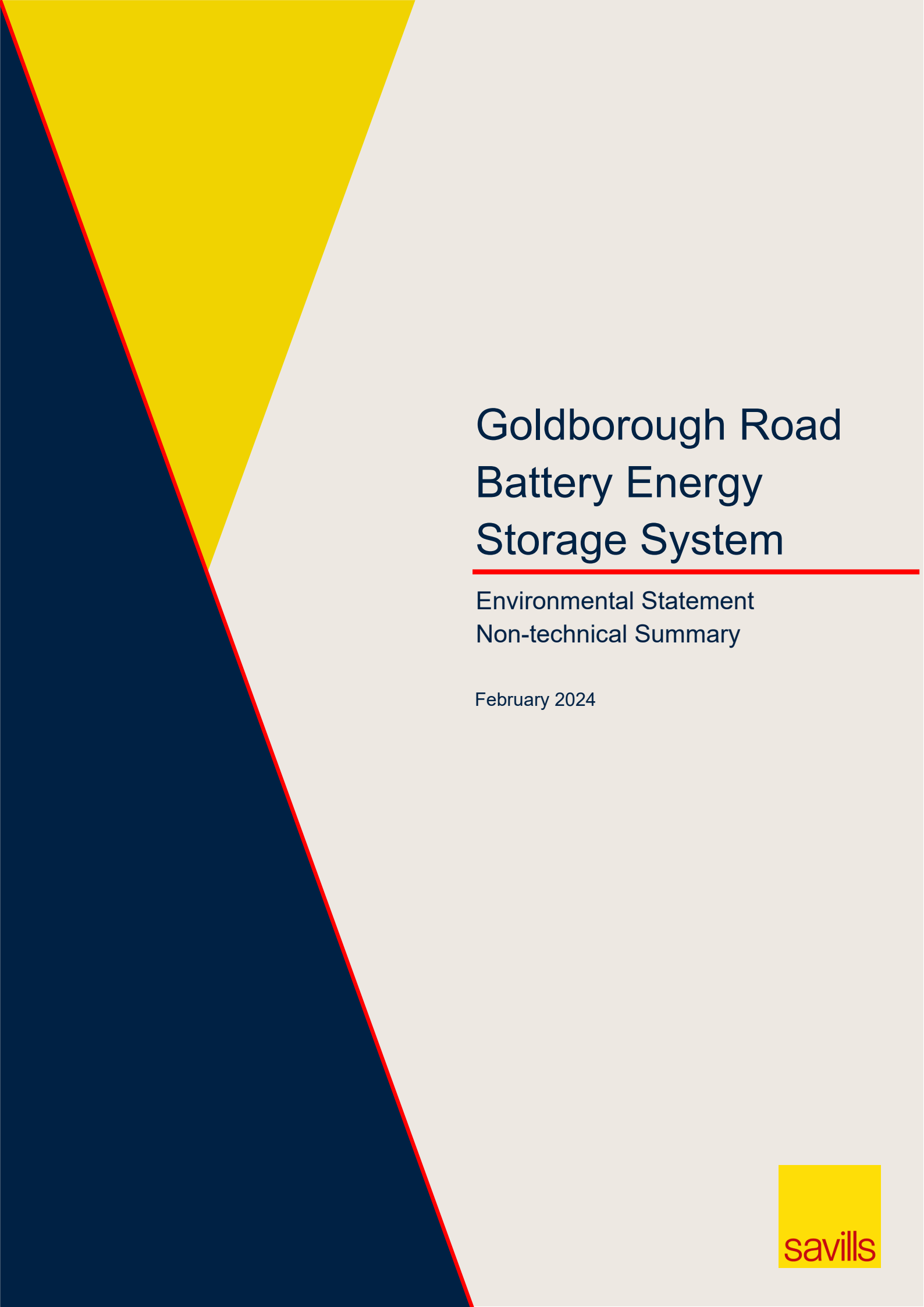




Goldborough Road Battery Energy Storage System

Environmental Statement
Non-technical Summary

February 2024

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	Miles Ryan-Cummings / Erin Banks



1 Introduction

1.1 Introduction

- 1.1.1 Pembroke Green Limited (the Applicant) are applying for full planning permission for the construction of a Battery Energy Storage System (BESS) with associated infrastructure and works (the 'Proposed Development') on land south of Goldborough Road, Hundleton, Pembroke, near SA71 5SH. A BESS is a rechargeable battery that can store energy from different sources and the release this energy when needed.
- 1.1.2 The Proposed Development has potential for significant environmental benefits, especially in relation to climate change. BESS are a key part of renewable electricity infrastructure which ensure that energy can be stored from renewable sources to cover the times when they are not generating the energy (i.e. solar energy generation only being possible during daylight hours and wind energy generation only being possible during windy conditions). The Proposed Development will reinforce the National Grid by storing renewable energy produced nearby and releasing it to the grid during periods where demand is higher than renewable energy generation. This will reduce reliance on fossil fuels which have historically been used to provide rapid response power during periods of peak energy demand. The Proposed Development will therefore positively contribute towards the UK's net zero target by 2050 and decarbonisation of the electricity grid by 2035.
- 1.1.3 This document is a summary of the Environmental Impact Assessment (EIA) undertaken as part of the planning process. The main Environmental Statement (Volume 1) and the supporting appendices (Volume 2) contain detailed information on the project and each of the environmental topics considered.

Environmental Assessment

- 1.1.4 EIA is a formal process by which the likely environmental effects of a project are assessed and where there is potential for a significant negative effect that cannot be avoided, works are identified to lessen the effect (mitigation). The Environmental Statement (ES) reports on the findings of the EIA and sets out those areas where likely significant environmental effects have been identified and the mitigation proposed to lessen the predicted effects. It forms an important part of the planning application decision making process.
- 1.1.5 The Environmental Statement (ES) reports the findings of an EIA undertaken in accordance with the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (as amended) ('the EIA Regulations').
- 1.1.6 Based on the Screening Opinion received from Pembrokeshire County Council (PCC), the following topics were considered likely to give rise to potentially significant effects and so were included in the EIA:
- Ecology; and
 - Landscape and Visual Impacts.
- 1.1.7 Following a review of other environmental topics, no other likely significant effects were identified and so these have not been assessed in detail in this EIA. However, these other environmental topics have been considered within Chapter 7 of the ES (Other Environmental Matters).

Assessment Methodology

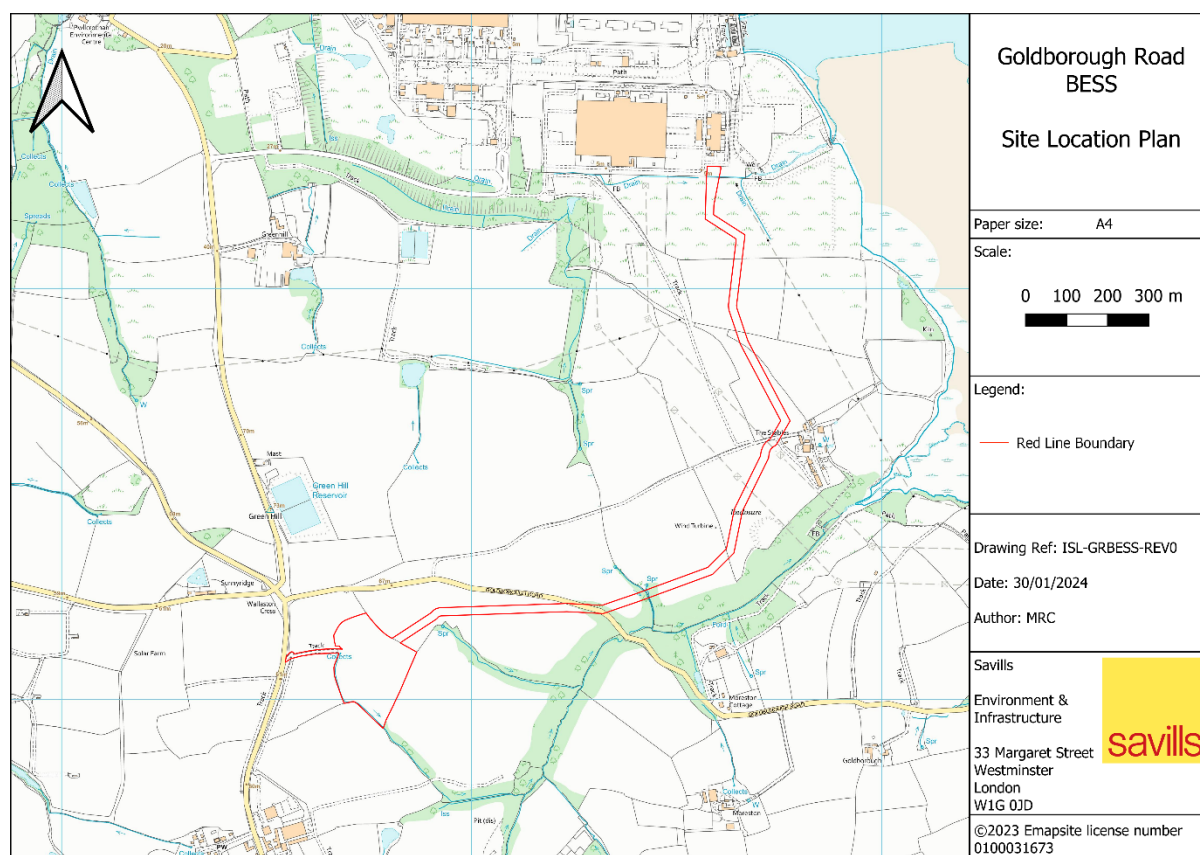
- 1.1.8 The methodology used to assess the Proposed Development is set out within Chapter 4 of the ES (Approach to assessment). Where industry standard approaches and methodologies exist these have been used to identify likely significant effects. For those topic areas where no standard approach exists, a matrix based approach has been used, which considers the sensitivity of receptors and the magnitude (scale of change) of the impact which results in the likely significance of the effect. This ensures that the effects are considered in a standard and transparent manner; the main ES sets out how the approach has been applied to each environmental topic in more detail.
- 1.1.9 The EIA project team has been led by EIA co-ordinators Savills, with input from other technical specialists within Pegasus Group and RPS.

2 Site and Local Context

2.1 The Site

2.1.1 The indicative location of the Site boundary is shown in Figure 2-1 below.

Figure 2-1: Site Location Plan



2.1.2 The application Site occupies approximately 7.5 hectares (ha) and comprises: (1) 'the main BESS Site' (containing the battery storage area, access, fencing, planting, etc); and (2) 'the cable corridor' from the main BESS Site to the Point of Connection (POC) at Pembroke Substation (the POC is the location where the cable connects the BESS to the National Grid). The existing use is agricultural land, which is of moderate quality. The Site is located within the administrative boundary of Pembrokeshire County Council.

2.1.3 The immediate area around the site is agricultural, set within agricultural fields which have strong hedgerow boundaries. The southern and western boundaries of the proposed BESS Site are bounded by a belt of trees. The eastern and northern boundaries are hedgerows. There is a small gap in planting on the north-western boundary.

2.2 Local Context

2.2.1 Agricultural land and the settlement of Wallaston Green are located approximately 500m to the south; the C3101, agricultural land and two solar farms (Hoplass Solar Farm and Wogaston Solar Farm) are located to the west; the B4320 and Green Hill Reservoir are located to the north, with the Valero Oil Refinery approximately 1.75km away in the same direction; Pembroke

Power Station lies immediately next to the northernmost end of cable corridor; agricultural land and Lambeeth Farm are located to the east. Pembroke Dock is located approximately 3.5km to the north-east of the site. Milford Haven is located approximately 5km to the north-west of the site. The Site and local context can be described as both agricultural and industrial in nature.

- 2.2.2 There are very few nearby residential properties to the Site, the closest to the main BESS Site being a pair of bungalows 250m to the northwest on an unnamed road; there are also residential receptors approximately 450m to the southwest, associated with Davies TG Dairy Farm. In relation to the cable corridor, Lambeeth Farm, a residential receptor, is located approximately 50m to the east. There are limited settlements with traditional scattered farms, houses and villages, with minor road networks which intersect the broader area. Beyond these is a larger built-up residential area of Pembroke Dock 3.5km northeast of the Site.
- 2.2.3 The underground cable corridor from the main BESS Site to the Point of Connection runs eastwards from the easternmost point of the main BESS Site, crossing beneath Goldborough Road and into the agricultural fields north of Goldborough Road. The cable corridor then runs parallel to the southern borders of these fields until it reaches existing overhead pylons, where it changes direction to run in a north-eastern orientation, before changing direction again at Lambeeth Farm, pivoting to a northwest orientation until it reaches Pembroke Substation.
- 2.2.4 There are no designated ecological sites or features, or built heritage constraints within the main BESS Site. There are also no Public Rights of Way on, or in the immediate surrounding area, of the main BESS Site.
- 2.2.5 Traffic access to the main BESS Site will be through the access created for construction, via the B4320.

3 The Proposed Development

3.1 Overview

3.1.1 The description of the development applied for covered by this ES is as follows:

“Installation of a Battery Energy Storage System with Associated Infrastructure and Works”.

3.1.2 The proposal is for the construction, operation, maintenance and decommissioning of a Battery Energy Storage System (BESS) for distribution of electricity to the National Grid. The Proposed Development would operate for a time limited period of 40 years.

3.1.3 The proposed layout for the Proposed Development is shown in Figure 3-1.

Figure 3-1: Proposed Site Plan



3.1.4 The total area contained within the redline planning application boundary is 7.5 ha (the main BESS Site and the cable corridor).

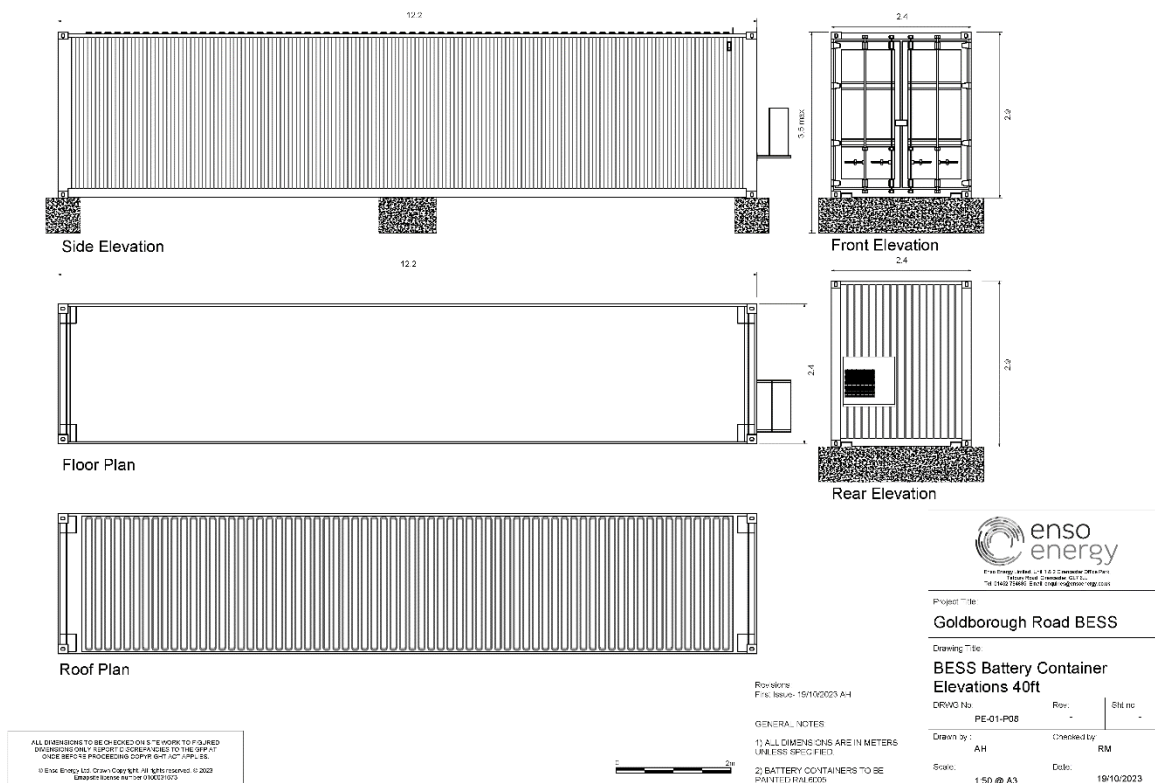
3.1.5 The main components of the Proposed Development are:

- Battery storage facility (this includes battery modules housed within shipping containers or similar; auxiliary transformer; switchgear and associated buildings including control rooms and switchgear rooms);
- Inverter/transformer stations (to convert the stored power into power that can be exported to the National Grid) and associated electrical infrastructure distributed evenly across the site housed within shipping containers or similar;
- Onsite 132kV substation infrastructure;

- Perimeter fencing and CCTV/infra-red cameras mounted on posts internally within the perimeter of the Site;
- Underground cabling to connect the battery containers and inverters/transformer stations to the proposed on-site substation and control room;
- Underground cabling from the main BESS Site to the Point of Connection (POC) at Pembroke Substation;
- Limited earthworks on part of the Site ('cut and fill' to form level development base on which the BESS will be situated);
- On-site construction compound and temporary construction area within the main BESS Site, and site access from the public highway; and,
- Landscape planting, biodiversity enhancements and surface water management measures.

3.1.6 As illustrated in Figure 3-2, the shipping containers in which the battery modules will be housed typically measure 12.2 m in length, 2.4 m in width and 3.5 m in height, taking into account the fact that the containers will be on a concrete base.

Figure 3-2: Battery Container



3.1.7 The inverters will also be housed within shipping containers, however, these containers will typically be 6.1 m in length, and 2.4 m in width and 3.5 m in height (when the concrete base is taken into account).

3.1.8 The maximum height of any structure on site will be 6.5 m, which is the maximum height of the 132kV substation.

3.1.9 The main BESS site will be secured through 2.4 m perimeter fencing and CCTV/infra-red cameras mounted on posts inside the perimeter of the Site.

- 3.1.10 The connection to the grid will be made to the Pembroke Substation, located approximately 1.3 km north-east of the main BESS site. The cable would run below ground from the boundary of the site directly to the Point of Connection, so once it has been built, there would be no impact arising from the cable.

3.2 Alternatives and Design Evolution

Alternative Sites

- 3.2.1 Due to the nature of the proposals, the main aim when choosing the location of the Proposed Development was to be close to an available grid connection point. This is important as the viability for a BESS project reduces the further away it is from the Point of Connection. The Pembroke Substation has capacity and the Applicant has secured this through a Connection Agreement.
- 3.2.2 Once the connection at the Pembroke Substation was secured, a 2km radius was mapped from the Point of Connection. This is because:
- The further away from the Point of Connection, the more must be spent on the cable, which has a significant impact on the viability of the project;
 - Longer cable routes result in increased inefficiency in the scheme, i.e. increased electrical losses; and
 - A longer cable route results in more disturbance, both environmentally and to local receptors.
- 3.2.3 Within this 1km radial search area, the Applicant has considered environmental and planning constraints, such as landscape designations, policy designations such as Strategic Gaps, sensitive habitats, archaeological and heritage issues etc. The Applicant has also carefully considered other factors such as slope and aspect, shading, access etc.
- 3.2.4 Once potentially suitable locations were identified, the Applicant engaged with the landowners in the area. This exercise has been successful and the Applicant is bringing forward the Proposed Development on a suitable site.

Alternative Layout Design

- 3.2.5 Alternative designs for the Proposed Development were considered throughout the design process. The final design was the outcome of consultation with the technical consultant team. Amendments to the original design include:
- New substantial structural tree planting to create green corridors;
 - Boundary enhancement planting where needed to improve visual screening; and
 - Pulling in of the security fencing as close as possible to the main BESS Site to create larger zones outside of the main BESS site for planting.

Do Nothing Alternative

- 3.2.6 It is regarded as best practice within the EIA to consider the “do nothing” alternative. The “do nothing” option would entail leaving the Site in its current condition and it is assumed that the current land use would remain as it is; that is, available for agriculture. It is an obvious statement that any impacts associated with the Proposed Development would therefore not occur.
- 3.2.7 However, the “do nothing” option would result in the loss of a significant and urgently needed low carbon energy source and storage proposed by the Proposed Development. Other benefits that would not be secured are the biodiversity benefits; carbon sequestration benefits through tree planting; and farm diversification benefits.

3.3 Phasing, Construction and Implementation

- 3.3.1 The construction of the proposal would commence in 2025, subject to planning consent being granted. Construction would take place over 12 months, and be completed during 2026, with some elements of the Proposed Development being sequenced during this period as follows: (1) site establishment; (2) site groundworks; (3) BESS installation; (4) associated equipment installation; (5) 132kV substation installation; (6) testing and commissioning works; and (7) landscaping and site restoration.
- 3.3.2 Construction access will be via the B4320.
- 3.3.3 Traffic movements been estimated based on the likely construction activities and previous experience from the Applicant in similar projects. For the construction phase of the Proposed Development, it is assumed that there will be a maximum of nine Heavy Goods Vehicle movements per day.
- 3.3.4 Construction activities and deliveries will be carried out Monday to Friday 08:00-1800 and between 08:00 and 13:30 on Saturdays. No construction activities or deliveries will occur on Sunday or Public Holidays unless agreed in advance with Pembrokeshire County Council. Where possible, construction deliveries will be coordinated to avoid the traditional AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00).
- 3.3.5 A Construction Traffic Management Plan (CTMP) has been prepared and submitted with the planning application, which will be implemented during the construction phase. The CTMP includes measures to reduce the effect of construction on the local highway network.
- 3.3.6 The project will be constructed in accordance with industry standard techniques and mandatory minimum standards, and suitable experienced contractors will be appointed to design, construct and commission the development.
- 3.3.7 A Construction Environmental Management Plan (CEMP) has been prepared to control construction activities on site and is submitted alongside the application. The CEMP sets out how the works will be constructed and managed to ensure, the protection of local amenity, highway operation and the environment.

3.4 Operation

- 3.4.1 Once operational, with the exception of the main BESS Site, all development would be at or below ground level. Within the main BESS Site, the tallest infrastructure will be the 132kV generator/transformer at 6.5m tall.
- 3.4.2 Once operational, there would be limited vehicle visits each month comprising a transit-style van, accessing the main BESS Site via the access created for construction via the B4320.
- 3.4.3 A landscape masterplan has been developed as part of the design and layout of the Proposed Development. Trees will be planted along the north western and south eastern edges of the main BESS Site, which will provide screening to nearby receptors. The BESS will be surrounded by proposed native planting to act as a buffer. In the southeast corner of the main BESS Site, a wet grassland is proposed, enclosed by a neutral grassland.
- 3.4.4 Allowances for climate change in development have been made to ensure flood risk is considered for the 40 year lifetime of the development and will also help minimise vulnerability and provide resilience to flooding. The drainage strategy sets out how surface water will be managed on site and the plans provide attenuation of up to the 1 in 100 year flood event plus 40% climate change allowance, which will reduce risk of flooding downstream.

3.5 Decommissioning

- 3.5.1 The Proposed Development is anticipated to have a lifespan of 40 years once operational. Once the development is no longer operational, it will be decommissioned in accordance with a decommissioning plan agreed with Pembrokeshire County Council. A decommissioning plan will include the safe management and disposal of the batteries and associated infrastructure in accordance with the most appropriate approach and technology at the time.

4 Findings of the EIA

4.1 Introduction

- 4.1.1 A request was made to Pembrokeshire County Council for its opinion on which topics should be assessed within the Environmental Impact Assessment (EIA) in October 2023 (reference 23/0616/SO), the Council consulted with statutory consultees and issued a formal EIA scoping opinion in January 2024 (see Appendix 1.3).
- 4.1.2 The Scoping Opinion confirmed that the following environmental effects require further assessment:
- Ecology; and
 - Landscape and Visual
- 4.1.3 The following sections summarise the findings of the EIA relevant to each topic listed above.

4.2 Ecology

- 4.2.1 An assessment of the likely ecological effects of the Proposed Development has been undertaken, i.e. effects on habitats and wildlife species, the findings of this assessment are set out in the Ecology ES chapter and Appendix 5.1 of the ES.
- 4.2.2 The proposed BESS facility and new access road is located within a single grass ley / improved pasture which is bounded by hedgerows and a wooded stream. The proposed cable route passes through arable fields/grass leys, species-poor semi-improved grassland and the field boundary hedgerows. Two narrow sections of woodland are also present on the alignment of the cable route.
- 4.2.3 A number of international nature conservation designation site occur within 10km of the proposed development. The boundary of the nearest designated site, Milford Haven Waterway SSSI / Pembrokeshire Marine SAC lies approximately 1.2km to the east of the site and approximately 260m east of the cable route at the closest point. A wooded stream located outside the boundary of the proposed BESS development is hydrologically connected to this designated site
- 4.2.4 The site and adjoining habitats have potential to be used several protected species specifically:
- **Bat species:** Bats will forage and commute along hedgerows and woodland edge habitat in the locality with an assemblage of species assumed to feed on the boundary of the BESS and on the alignment of the cable route.
 - **Bats (roosts):** Two semi-mature ash trees with dense ivy, located very close to the cable route, could have features with the potential to be used by roosting bats.
 - **Badger:** there is a badger main sett located on the line of the proposed cable route and two status setts in the vicinity.
 - **Dormouse:** the woodland and hedgerow are habitats (primarily off-site) have suitability for dormouse and have the potential to support a population. The record centre holds no records of this species within 2km from the site.
 - **Otter:** there is a very low likelihood of otter using hedgerows and adjacent woodland edge as laying up sites. It is assumed that otters will be using habitats in the wooded valley to the south of the cable route and will be moving through the landscape at night.

- **Breeding Birds:** the site will support a small assemblage of breeding birds in the boundary hedgerows. Ground nesting birds may nest in the arable and/or grassland with a low tussocky sward. Barn owl are resident in the local area and an individual was roosting on the boundary of the proposed BESS during the walkover survey.
- **Wintering Birds:** the areas of arable and pasture to the west of Pembroke River will provide feeding and roosting areas for some of the wintering populations associated with intertidal habitat in the Milford Haven Waterway. The cable route crosses underground through these terrestrial habitats. The proposed BESS and cable route will also form a small part of the local wintering feeding habitat used by farmland passerines. The habitats directly affected by the BESS have low value for wintering birds.

4.2.5 The chapter details the methodology followed and the results of the assessment. The assessment reports on the environmental effects on biodiversity with reference mitigation that has been included within the design of the Proposed Development, including the landscape scheme, working methods and best practice environmental protection to be implemented by all site contractors.

4.2.6 The chapter identifies additional mitigation measures that will prevent, reduce or offset adverse effects on species. This includes a Landscape and Ecology Management Plan (LEMP) which will run for a minimum duration of 30 years once the site is operational and will set out biodiversity objectives, detailed management specifications, management schedules and a biodiversity monitoring programme.

4.2.7 When taking into account the baseline conditions, adopting a precautionary approach and when considering all of the mitigation measures proposed, no significant effects are predicted for habitats and species as a result of the Proposed Development.

4.3 Landscape and Visual

4.3.1 The likely significance of effects on landscape character and visual amenity resulting from the Proposed Development have been assessed.

Construction Effects

Landscape

4.3.2 A Construction and Environment Management Plan (CEMP) will ensure good working practices that minimise adverse impacts on landscape character and visual amenity. This includes measures such as fencing to protect those landscape features that are to be retained, and the sensitive location of site cabins, lay down areas, and compounds to minimise impact.

4.3.3 Disruption to the site landscape and its immediate environs during the construction phase is judged to result in a temporary minor adverse effect on landscape character, and a minor adverse effect on the land use, public rights of way and landscape designations including the Pembrokeshire Coast National Park. There will be a moderate adverse effect on the site topography owing to the ground modelling require to create a flat platform form for the BESS.

4.3.4 Whilst there will be a level of harm – as would be the case for any development of this scale upon a green field site – these effects will be restricted to the site and its immediate context.

Visual

4.3.5 Given the nature of the phased construction process, the potential visual effects vary throughout the period of works. Construction activities such as plant movement will be noticeable at times from visual receptors closest to the Site, although the visible extent will be dependent upon

proximity to the site and orientation of views. Adverse effects vary between moderate adverse for those sensitive receptors closest to the site to the north (Viewpoint 2 and Viewpoint 4) to minor adverse and negligible effects for the remaining viewpoints.

Operation effects

Landscape

- 4.3.6 A strong landscape frameworks forms an integral part of the Proposed Development, comprising the conservation of existing hedgerows and trees, reinforced with perimeter planting and biodiversity/habitat areas which have been introduced within wide offsets to existing boundaries to ensure that the Proposed Development is appropriately and sensitively assimilated into the landscape such that the impact and consequential adverse effects on the landscape are minimised and that environmental enhancements can be established.
- 4.3.7 Detailed implementation of the new green infrastructure will be agreed with Pembrokeshire County Council to ensure that the proposed mitigation and enhancement measures establish successfully.
- 4.3.8 Existing site features of particular landscape value are retained, whilst new green infrastructure will include a variety of new tree planting and native scrub habitat alongside riparian planting and suitable wildflower grassland to improve the ecological resource throughout the Site perimeter. Landscape effects for the site and its immediate context are assessed as minor adverse at completion. However, this will reduce in the medium to longer term to negligible on public rights of way and landscape designations through the establishment of tree planting, with a minor beneficial effect on vegetation. Topography will continue to have a moderate adverse due to the change in landform to create a flat BESS platform.

Visual

Public Rights of Way

- 4.3.9 A range of views towards the Site are possible from a number of public footpaths. The extent of available views varies with proximity and presence of intervening vegetation cover. The clearest views are from closeby at PRoW Footpath SP34/6 to north of Goldborough Road with assessed effects at completion being moderate adverse. For users of the remaining public footpaths, assessed effects once operational in the medium to long term reduce to negligible owing to the well enclosed landscape framework.

Road Users

- 4.3.10 Road users are of lower sensitivity to change owing to the glimpsed nature whilst travelling at high speeds. Views of the Proposed Development will be available to users travelling along Goldborough Road and Wallaston Cross to the north, and the B4320 further to the south. The assessed effects for road users are minor adverse to negligible on completion.

Settlement

- 4.3.11 The majority of properties in close proximity will have no views of the Site, including those at Sunnyridge and Wallaston Green. Similarly, there is limited potential for distant views from the limited number of properties in the wider area. For residents, the assessed effects are considered to be negligible.

Visual Summary

- 4.3.12 In the longer term, as the proposed landscape planting matures, it is judged that all effects on visual receptors would reduce as a consequence of the containment, filtering and softening of the built features of the BESS Site formed by the retained and proposed vegetation.

4.4 Other Environmental Matters

- 4.4.1 The ES has also considered those other potential environmental topics which are covered through the EIA (Wales) Regulations, but were not considered likely to give rise to significant environmental effects, as agreed by Pembrokeshire County Council in their Scoping Opinion. The topics considered were:

- Accidents, fire and natural disasters;
- Agricultural land and soils, including ground conditions;
- Air quality;
- Heritage;
- Human health;
- Hydrology, flood risk and drainage;
- Noise and vibration; and,
- Transport and access.

- 4.4.2 No significant adverse effects would occur in relation to the above listed environmental topics. Any negligible/minor adverse effects which might occur during construction would be temporary and suitably mitigated through the measures implemented via the Construction Environmental Management Plan (CEMP).

- 4.4.3 Once operational, it is concluded that several beneficial effects would occur, particularly in relation to climate change (increased provision of renewable energy) and biodiversity enhancement (improved biodiversity through the Green Infrastructure Plan).

5 Conclusions and Next Steps

5.1 Conclusions

- 5.1.1 The Environmental Statement has considered how the environment and the local community would be affected by the Proposed Development.
- 5.1.2 A range of effects have been predicted to occur as a result of the Proposed Development, both positive and negative, though none of these effects are significant. Mitigation measures have been identified and are either part of the scheme's design or are additional measures that are required to reduce negative effects.
- 5.1.3 Many of the effects that have been identified happen at the construction stage of the Proposed Development, these effects are of a temporary nature for the construction period.
- 5.1.4 In addition, it is important to recognise that the Proposed Development will have a positive effect in terms of supporting the UK's net zero target by 2050 and decarbonisation of the electricity grid by 2035.

5.2 Next Steps

- 5.2.1 The ES has been submitted alongside other relevant documents to form a planning application for the Proposed Development to Pembrokeshire County Council. This application is now subject to a period of pre-application consultation (PAC), where interested parties are able to review the application and make comments before the application is formally submitted.
- 5.2.2 The project website can be accessed at: www.goldboroughroadbess.co.uk.