



Great Harmeston Solar Farm

Environmental Statement

Chapter 3 Application Site



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3. Application Site

3.1. Introduction

3.1.1. This draft chapter of the ES provides a description of the Application Site and the surrounding context.

3.1.2. This ES Chapter is supported by the following figures:

- **Figure 3.1 – Environmental Designations Plan**

3.2. Application Site

3.2.1. The Site is located on land near Great Harmeston Buildings, Pembrokeshire. The Site is illustrated at **Figure 1.1 – Site Location Plan** within the red line and has an area of approximately 128 hectares (“ha”), incorporating cable routes.

3.2.2. The Site is located entirely within the administrative boundary of Pembrokeshire County Council (PCC), on land near Great Harmeston Buildings, Pembrokeshire, SA62 3HM. The village of Johnston lies immediately north, village of Steynton (1.1km) south and Milford Haven (2.9km) south of the Site. The Site comprises of fields predominantly for arable use, bound by a mixture of mature woodland, trees, hedgerows, fencing, tracks, road and a railway line.

3.2.3. The Site is segregated by two ‘A’ roads and a railway line, a number of land parcels are located to the west of the A4076 Milford Road, with further land located between the A4076 and A477 (which is bisected by the Transport for Wales (TfW) railway line), and additional fields located on land to the west of the A477 (also bisected by the TfW railway line). There are a number of separate access points owing to the presence of the TfW railway line.

3.2.4. The A4076 Milford Road routes between Haverfordwest and the A40 in the north and Milford Haven in the south. It is a trunk road maintained by Welsh Government / Traffic Wales. In the vicinity of the site, it forms the northern and southern arm of the ‘Sunnycroft’ roundabout at the site’s northern boundary.

3.2.5. The A447 routes between the A40 at St Clears to the west and the ‘Sunnycroft’ Roundabout to the west. It forms the eastern arm of the ‘Sunnycroft’ roundabout and bisects the eastern parcel of the site.

3.2.6. The surrounding landscape is a mixed rural and urbanising setting, within the immediate area agricultural fields are interspersed with pockets of urban features. This includes the village of Johnston to the north of the Site, the local road network

(A4076 Milford Road and A477). A Solar Farm is located south of Tiers Cross, 0.5km west of the Site. The adjoining area to the Site primarily consists of non-built-up land and agricultural land. The Site is surrounded by multiple unused artificial landscapes and industrial/manufacturing units located to the southeast and east. Residential buildings are located to the southeast, east, south, and northeast. Nearby, the Johnston Community Primary School is 0.94 km to the east, and Milford Haven School is 1.72 km to the south.

- 3.2.7. The Site will be served from the A4076 Milford Road to the north via Haverfordwest for construction, operation and decommissioning purposes which has onward connections to the A40/A48 and M4. There are a number of separate access points into the Site owing to the land parcels being segregated by the A4076 and A477.

Landscape

- 3.2.8. The Site does not fall within any statutory landscape designations and is not within the Green Belt. The Site forms part of the undulating landform and largely slopes from the north / north east around Johnston at c. 75 m AOD descending into a narrow and wooded valley near Great Harmeston and Hayston Bridge / Lower Hayston reaching c. 30 m – 40 m along its southern edge. The eastern part of the Site slopes east descending to c. 60 m AOD along its eastern edge.
- 3.2.9. The field enclosures within the Site are medium scale delineated by well maintained hedgerows with occasional gaps and low trimmed sections. Woodland is prevalent in narrow incise valleys that mark the Site's western part and its southern edge. This woodland forms a continuous line of vegetation extending from the north western edge of the Site, across its western part and then runs along its southern edge, and then continuing south east past Rosemarket towards the valley of Westfield Pill.
- 3.2.10. There are no public rights of Way (PRoWs) within the Site. Public Rights of Way (PRoW) footpath PP81 1/1 and bridleway PP81 2/2 route west to east to the south of the Eastern Parcel. The development proposals will not impact the PRoWs.
- 3.2.11. Due to its relative elevation and change in levels the Site has a variable sense of enclosure. The landscape does not contain any high sensitivity receptors apart from PP8/1 and other PRoWs in the wider area, some of which are relatively distant with field boundary hedgerows interrupting the views – for example PRoWs south of Neyland Road.
- 3.2.12. Pembrokeshire Coast National Park is located approximately 4km east and west of the Site at its nearest points. The park encompasses a diverse coastal landscape,

including dramatic cliffs, sandy beaches, and the Milford Haven waterway. The theoretical visibility of the Proposed Development (bare earth) extends towards Robeston Cross on the outskirts of the oil refinery but does not breach the boundary of the National Park within the preliminary study area. The eastern areas of the National Park are more distant with theoretical visibility largely terminating on the higher ground around Rosemarket and not breaching this part of the National Park either.

- 3.2.13. The Site falls into Pembrokeshire County Landscape Character Assessment Landscape Character Area (LCA) 9: Johnston Lowlands. The LCA is located in central Pembrokeshire south of Haverfordwest, north of Milford Haven and west of the Western Cleddau and Daugleddau where it extends to the National Park Boundary. The Landmap Aspect Landscape Context feature summaries Johnston Lowlands as rolling farmland and small valleys.
- 3.2.14. The LCA is a rolling plateau landscape of gentle hills and wooded valleys. Farmland is dominated by high quality pastoral agriculture with hedgebanks and some arable, rough grassland and woodland blocks. The area is interspersed with scattered village settlements and farmsteads some of which have a strong historic character such as Rosemarket or Llangwm linked by quiet rural lanes. Busy A roads run north south, the A4076 and A477, between Haverfordwest to the north and Milford Haven and Pembroke Dock to the south. Johnston is the largest settlement and hosts both commercial and industrial/business uses. The area to the east is more tranquil and rural in character closer to the Western Cleddau, Daugleddau and the National Park. Views south to the Haven are dominated by refineries and wind turbines and pylons in places and solar farms lie to the south west
- 3.2.15. Further details of landscape and visual baseline information, site visits, methodologies, assessment and conclusions can be found in **draft Chapter 6 Landscape and Visual** of this ES.

Cultural Heritage

- 3.2.16. The Site is not located within any statutory and / or non-statutory designated sites for cultural heritage or archaeology. The Site is not within or adjacent to a Conservation Area. A Scheduled Monument of a prehistoric burnt mound lies adjacent to the northern boundary of the site – Heneb ref. 3347.
- 3.2.17. One non-designated historic asset is located within the site: a linear earthwork in the south-eastern part of the site, which the Historic Environment Record (HER) states has been used recently as a farm track but may have its origins in a prehistoric defensive boundary feature – Heneb ref. 33149.

- 3.2.18. A high-level review of Heneb (Dyfed Archaeological Trust) HER of non-designated historic assets within a 1km radius of the site has been carried out. The vast majority of assets recorded by the HER within the study area are of post-medieval date and comprise buildings and features recorded on the First and Second Edition Ordnance Survey maps of 1871 and 1908 respectively. From the initial review of currently available information, no overriding archaeological constraints to the proposed development have been identified.
- 3.2.19. No designated historic assets are recorded within the site, but some designated heritage assets are recorded close to the site's boundaries and include:
- There is 1 Scheduled Monument within a 1km radius of the site: *Burnt Mound 170m S of Jubilee Cottages* – Cadw ref. PE476. Its southern boundary abuts the northern boundary of the north-western part of the site.
 - There is 1 Registered Historic Park and Garden within a 1km radius of the site: the Grade II *Great Harmeston* – Cadw ref. PGW(Dy)19(PEM).
- 3.2.20. There are 10 Listed Buildings within a 1km radius of the site, as follows:
- Grade II Listed *Upper Harmeston*, within the area excluded from the site boundary in the north – Cadw ref. 82698;
 - Grade II Listed (two separate Listings) *Hayston Bridge*, c.50m south of the south-eastern part of the site – Cadw refs. 82524, 83218;
 - Grade II Listed *Hayston Hall, Lofted Outbuilding at Hayston Hall*, and *Courtyard of Outbuildings at Hayston Hall*, c.220m, c.250m and c.270m south of the southern cable route of the site – Cadw refs. 83215, 83216, 83217;
 - Grade II Listed *Great Harmeston and Long Agricultural Range to W of Great Harmeston House*, including *Cartsheds and Food Processing Store*, c.90m and c.100m south of the southern boundary of the site – Cadw refs. 13052, 13053;
 - Grade II Listed *Milepost near Redstock Bridge*, c.160m south of the south-western part of the site – Cadw ref. 82696; and
 - Grade II* Listed *Church of St Peter* at Johnston, c.530m north of the northern boundary of the site – Cadw ref. 11996.
- 3.2.21. The Outstanding Registered Historic Landscape of Milford Haven Waterway covers an area of 204 square kilometres; a very small part of it extends into the southern

part of the study area, to within c.35m of the south-western part of the site – Cadw ref. HLW (D) 3.

- 3.2.22. A site visit and walkover took place in June 2025 to review the condition and nature of any known assets or HER entries and to identify any unrecorded assets. All assets have been subject to a basic record (e.g. photography) used to inform the Historic Environment Desk Based Assessment (HEDBA). Assets identified as susceptible to effects related to setting change have been subject to field visits to understand their setting. Selected images from the walkover and setting surveys have been used to illustrate the HEDBA.
- 3.2.23. A full desk-based assessment has been carried out considering all designated historic assets within a minimum 1km radius of the site, followed by an appropriate and proportionate level of heritage setting assessment in accordance with the methodology presented in Cadw's guidance document 'Setting of Historic Assets in Wales' (2017).
- 3.2.24. Further details of the heritage and archaeological baseline information, surveys, methodologies, assessment and conclusions can be found in **draft Chapter 6 Cultural Heritage Assessment** of this ES.

Ecology and Biodiversity

- 3.2.25. There are no statutory or non-statutory sites designated for nature conservation located within the Site or adjacent to it.
- 3.2.26. The closest statutory nature conservation designations within 3km of the Site include:
- Scoveston Fort SSSI (circa 2.3km south east)
 - Milford Haven Waterway SSSI (circa 3km south east of the Site)
 - Pembrokeshire Marine Special Area of Conservation (SAC) (circa 3km south east of the Site).
- 3.2.27. The Site predominantly comprises a mix of arable land, improved grassland (cattle grazed) and silage production bounded by species poor (blackthorn and hawthorn dominated) hedgerows and hedgerow and trees. There are a number of ponds, ditches and waterways primarily around the site boundary as well as some woodland blocks. The Site is considered to be of low ecological value as it is subject to frequent agricultural and grazing management techniques. Field boundaries, hedgerows and boundary trees offer greater ecological value, and

these features have been retained and safeguarded through the Proposed Development (see **Chapter 4 Proposed Development and Alternatives**).

- 3.2.28. There are no areas of Ancient Woodland within the Site, but discrete pockets of Ancient Woodland are dispersed in the wider area. An arboricultural survey has been carried out (see **Chapter 5, Appendix 5.5**) to assess the trees on site, the Proposed Development seeks to avoid removal of trees and tree root protection areas across the site, there is however, limited vegetation / hedgerow removal at Site accesses.
- 3.2.29. Desk based studies were undertaken in November 2024 for a 10km radius around the Proposed Development for international statutory sites, and a 2km radius for national statutory and non-statutory sites and protected and priority species records.
- 3.2.30. An 'extended' Phase I habitat survey¹ and UK Habitat Classification survey was undertaken in October 2024. A follow up visit was conducted in July 2025, during the optimal botanical season. The methods used during the walkover survey broadly followed methods used in an 'extended' Phase I habitat survey and entailed recording the main plant species, assessing the suitability of habitats for protected/notable species and classifying and mapping habitat types with reference to the Habitat Definitions provided by the UK Habitat Classification Working Group². An updated habitat survey was carried out on 17th / 18th February 2026 and confirmed the habitat types were broadly in line with the findings of the 2024 survey.
- 3.2.31. A badger survey was undertaken in October 2024 in accordance with standard best-practice methodologies comprising a walkover of all accessible habitats within the Site and a 30m buffer, recording field signs including setts, latrines, paths, snuffle holes, prints and hair. Suitable foraging habitats such as hedgerows, field margins and grassland are present across the Site, and badgers are therefore considered likely to use the area for commuting and foraging, and buffers to sett features have been incorporated where required.
- 3.2.32. Non-breeding (wintering) bird surveys were undertaken in the 2024/2025 winter season to assess the presence and distribution of bird species across the Proposed Development Area. The objective of the surveys was to identify the diversity and abundance of wintering bird species across the terrestrial habitats

1 Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey - a technique for environmental audit. JNCC, Peterborough.

2 Butcher, B., Carey, P., Edmons, R., Norton, L. and Treweek, J. (2020). UK Habitat Classification – Habitat Definitions V1.1

within the Site, and to identify areas used consistently, or for a significant part of the non-breeding season.

- 3.2.33. Breeding bird surveys were conducted in 2024 to assess the presence and distribution of bird species across the Proposed Development area of the Site. The method for Breeding bird surveys is based on a territory mapping methodology in accordance with published guidance. The identity and activity of all birds, either seen or heard inside the Proposed Development Area or within 50m of its boundary, has been recorded on maps of a suitable scale.
- 3.2.34. Great Crested Newt (GCN) environmental DNA (eDNA) surveys of four ponds (ponds 1, 2, 3 and 12) was undertaken in July 2024. All other on site ponds were dry and it was not possible to obtain samples. An effort was made to visit ponds outside the site boundary but access was not granted by third party landowners and therefore no survey was possible on these ponds. The survey aimed to determine whether great crested newt are present/likely absent in the Proposed Development area.
- 3.2.35. Bat activity surveys were undertaken with a total of fourteen static bat detectors being deployed across the site in April, May, June and July in 2024 and August, September and October in 2025. The surveys followed standard methodologies set out in the Bat Mitigation Guidelines³, the Bat Workers Manual⁴ and Bat Surveys for Professional Ecologists- Good Practice Guidelines 4th Edition⁵.
- 3.2.36. An otter survey and water vole habitat suitability assessment were undertaken in January 2026. The survey comprised a walkover assessment of all watercourses, ponds, ditches and associated riparian habitats near to the proposed cable route, where access permitted. Any field signs of features to support otter and / or water vole were recorded using a GPS enabled device.
- 3.2.37. Further details of ecological baseline information, surveys, methodologies, assessments and conclusions can be found in **draft Chapter 7 Ecology and Biodiversity** of this ES.

Glint and Glare

³ Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management, Ampfield.

⁴ Mitchell-Jones, A.J. & McLeish, A.P. (eds). (2004) 3rd Edition Bat Workers' Manual, JNCC, Peterborough, ISBN 1 86107 558 8

⁵ Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London. ISBN-978-1-7395126-0-6

- 3.2.38. Glint and glare effects occur as a result of the presence of solar panels which act as reflective surfaces. Effects will endure for the duration of the project's lifetime but cease once the panels are removed or mitigation measures such as effective visual screening are included.
- 3.2.39. The following ground based receptors have been identified within the associated study areas:
- Major, National and Regional roads (Separate 2.5km, 300m and 2.9km sections of the A4076, Bulford Road Bypass and the A477); and
 - 2.6km of railway line and two signals; and
 - 51 residential dwellings
- 3.2.40. Aviation receptors have been identified within a 10 km study area surrounding the Proposed Development which is considered appropriate for glint and glare effects on aviation activity. The following aerodromes have been identified:
- Rosemarket Airfield (1.7km)
 - Haverfordwest Airport (9.1km)
- 3.2.41. The surrounding area includes existing vegetation and intervening terrain that provide a level of mitigation for reflecting panels and therefore reduce the level of impact upon identified receptors Baseline Survey Information. The Baseline conditions for the study area have been informed by reviewing information sources such as Ordnance Survey Terrain 50 Digital Terrain Model, NATS Aeronautical Information Publication (AIP) – Database of airports and flight procedures, airspace, and aviation infrastructure within the UK.
- 3.2.42. Geometric modelling of the reflective surfaces of the solar panels has been conducted carried out using a bespoke modelling software with secondary calculations carried out for aviation receptors using the ForgeSolar software.
- 3.2.43. Further details of the glint and glare baseline information, modelling, methodologies, assessment and conclusions can be found in **draft Chapter 8 Glint and Glare** of this ES.

Socio Economics

- 3.2.44. The Socio Economic assessment will evaluate how the Proposed Development influences local employment, economic output, and accommodation demand within Pembrokeshire. Baseline conditions will be established using the most up-to-date secondary data available from sources including the ONS, Welsh Government datasets, and Visit Wales. The study area has been defined to include the Local Planning Authority (Pembrokeshire), as well as comparator areas of Wales and Great Britain, to contextualise local trends in population, employment, skills, economic performance and deprivation.
- 3.2.45. The assessment will be undertaken in line with recognised good practice and relevant national and local policy, including the requirements of NPS EN-1, Future Wales: The National Plan 2040, and Planning Policy Wales. Sensitivity of socio-economic receptors—including the construction sector, the local labour market, the Pembrokeshire economy and the local accommodation sector will be determined with reference to quantitative indicators and the extent to which each receptor is prioritised in relevant policy. Predicted changes during construction, operation and decommissioning will be evaluated in terms of magnitude, taking into account direct job creation, indirect supply-chain impacts, gross value added (GVA) contributions and any temporary accommodation needs associated with non-local workers.
- 3.2.46. Further details of the socio-economics baseline information, methodologies, assessment and conclusions can be found in **draft Chapter 9 Socio Economics** of this ES.

Air Quality

- 3.2.47. The Site does not lie within an Air Quality Management Area (AQMA) and is not adjacent or within close proximity to any other AQMA.
- 3.2.48. Once operational the only vehicle movements to / from the Site would be from the occasional maintenance vehicle, which would visit the Site approximately once a week. Such a low level of traffic to the Site would not give rise to significant effects on air quality.
- 3.2.49. Whilst there will be some emissions associated with vehicles during the construction stage this is limited to a short timeframe in comparison to the operational life of the solar farm which will displace primary fossil fuel derived electricity that relies on thermal combustion and the consequent release of Green House Gases (GHGs) and other pollutants into the atmosphere. Consequently, the proposal is considered to have a beneficial effect on air quality and therefore will have no significant environmental effect in EIA terms and is scoped out.

Ground Conditions and Agricultural Land

- 3.2.50. A Phase 1 geo-environmental survey and ground conditions report is to be submitted as part of the wider DNS application. The report confirms no potentially significant geo-environmental hazards or abnormalities have been identified across the majority of the Site. The Site is not known to have any contaminated land although there is a landfill named Hayston covering a small proportion of the southeast area of the Site. A detailed Phase II geo-environmental intrusive investigation has been recommended to consider targeted features for further assessment.
- 3.2.51. The majority of the geology at the Site is underlain by the Rosemarket Formation of the Silurian period, consisting of interbedded sandstone and argillaceous rocks.
- 3.2.52. The hydrogeology consists of solid geology beneath the Site designated as a Secondary B Aquifer (Rosemarket Formation) and a Secondary A Aquifer (Milford Haven Group). The Site is not within a Source Protection Zone, however, is within an area identified as 'high' for groundwater vulnerability. The nature of the Proposed Development will reduce the need for any fertilizers or other polluting chemicals that could affect the groundwater that is already noted to be vulnerable. The proposals therefore protect the groundwater from potential pollution, providing a benefit to the local environment. Potential contaminants during the construction and decommissioning periods will be controlled through a site specific Construction Environmental Management Plan (CEMP) (see **Chapter 4, Appendix 4.1 Outline CEMP**).
- 3.2.53. An Agricultural Land Classification survey (ALC) has been carried out for the Application Site and is to be submitted as part of the wider DNS application. The ALC is verified by Land Quality Assessment Service⁶ (LQAS) confirming the Site consists of a mix of Grades 2, 3a, 3b, 4 and non-agricultural land although the Site is predominantly low grade (Grade 3) agricultural land. The ALC calculations confirm the majority of the development footprint within the Site consists of Grade 3b and Grade 4 (non Best and Most Versatile (BMV) Land) land which constitutes almost 80% of the Site.
- 3.2.54. No significant effects are anticipated as the site is largely underlain by stable geology, presenting no major ground risks and is predominantly lower-grade

⁶ LQAS is the specialist service within the Welsh Government that validates Agricultural Land Classification (ALC) surveys

agricultural land which is not expected to give rise to significant effects and therefore scoped out of the EIA.

Flood Risk

- 3.2.55. The Flood Map for Planning Rivers Dataset produced by Natural Resource Wales (NRW) shows that the majority of the Site is located in Flood Zone 1. There are some small areas along the southern boundaries of the Site which are located within Flood Zone 2 and 3. There is no proposed infrastructure within areas of Flood Zone 2 and 3.
- 3.2.56. The Flood Map for Planning Sea dataset (NRW) shows that the entire Site is located in Flood Zone 1 and therefore there is no tidal flood risk on Site.
- 3.2.57. The Flood Map for Planning Surface Water and Small Watercourses dataset (NRW) shows that the majority of the Site is in Flood Zone 1. There are some Flood Zone 2 and 3 flow paths located within the Site, however these are mainly associated with existing watercourses on Site. The layout will be designed to ensure no greater vulnerability infrastructure is located within areas at risk of Flooding from Surface Water and Small Watercourses.
- 3.2.58. There are no Main Rivers located within the Site according to DataMapWales⁷ and the closest Main River, known as 'Merlins Brook' is located approximately 1.8km north of the Site. There are several Ordinary Watercourses along the boundaries of the Site and through western portions of the Site.
- 3.2.59. Hydrology and Flood Risk can be scoped out of the EIA because the Site is predominantly in low-risk Flood Zone 1, with limited higher-risk areas avoided by the design. Surface water will be managed through Sustainable Drainage Systems (SuDS) to maintain greenfield runoff rates, and construction and decommissioning impacts will be controlled via CEMP measures (see **Chapter 4, Appendix 4.1 Outline CEMP**) to prevent pollution and protect water quality. Consultation with Natural Resource Wales (NRW) and the Sustainable Drainage Approval body (SAB) confirms that no significant hydrology-related effects are expected, though a Flood Consequence Assessment (FCA) is to be submitted as part of the wider DNS application.

Noise and Vibration

⁷ <https://datamap.gov.wales/maps>

- 3.2.60. The noise environment is rural in character, with generally low levels of road traffic from intersecting minor, local roads.
- 3.2.61. A noise assessment is to be submitted as part of the wider DNS application with baseline noise surveys proposed to prepare a full BS4142 assessment, factoring proximity of the main roads to the site to demonstrate no adverse impacts are anticipated. No significant effects are expected and this topic is Scoped out of the EIA.

Transport

- 3.2.62. A Draft Construction Traffic Management Plan is to be submitted as part of the wider DNS application.
- 3.2.63. The designated route for all traffic associated with the construction phase will be to and from the A4076 via the A40 located to the north of the site. This is the closest connection to the wider trunk road network within Wales.
- 3.2.64. Access for both the construction and operational phases of the development are proposed via multiple existing agricultural access points from the A4076 Milford Road and the A447 which will be improved to accommodate the largest vehicles associated with the proposed development. The A4076 Milford Road is defined as a trunk road, under the maintenance of Traffic Wales.
- 3.2.65. There are 11 access points (Access A to K) to the land parcels within the Site, of which 10 are existing accesses which will need widening and modification for construction vehicles. Access K is the only access arrangement that will form a new access, proposed to be located approximately 380 metres south of Access J (see **Chapter 4** for further details of Access points).
- 3.2.66. Once operational, the site will continue to be accessed from the A4076 Milford Road and the A477 via the access points A to K. During the operational phase it is anticipated that there could be up to one vehicle trip to the site per week, associated with the maintenance of the development. Therefore, it is considered that operational effects related to vehicle movements will not be significant in EIA terms and Scoped out.
- 3.2.67. Please see **Figure 3.1 – Environmental Designations Plan** for further details of the above environmental opportunities and constraints.