



ARCUS

**BRANXTON ENERGY STORAGE FACILITY
ECOLOGICAL IMPACT ASSESSMENT**

EASTCOASTGRIDSERVICES LTD

NOVEMBER 2022



Prepared By:

Arcus Consultancy Services

7th Floor
144 West George Street
Glasgow
G2 2HG

T +44 (0)141 221 9997 | **E** info@arcusconsulting.co.uk
w www.arcusconsulting.co.uk

Registered in England & Wales No. 5644976

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Site Description	1
1.2	The Development	1
2	METHODS	2
2.1	Desk Study.....	2
2.2	Extended Phase 1 Habitat Survey	3
2.3	Protected and Priority Species.....	3
2.3.1	Badger.....	3
2.3.2	Otter	4
2.3.3	Water Vole.....	4
2.3.4	Bats.....	4
2.3.5	Herptiles	4
2.3.6	Birds.....	4
2.4	Limitations and Assumptions.....	5
3	RESULTS	6
3.1	Designated Sites.....	6
3.1.1	Statutory Designated Sites.....	6
3.1.2	Non-Statutory Designated Sites.....	8
3.2	Phase 1 Habitats	9
3.3	Protected, Priority and Other Notable Species	13
4	EVALUATION, FURTHER SURVEY REQUIREMENTS AND MITIGATION	18
4.1	Impact of Development.....	18
4.2	Statutory Designated Sites.....	18
4.2.1	Internationally Protected Sites	18
4.2.2	Nationally Protected Sites	19
4.3	Non-Statutory Designated Sites.....	19
4.4	Habitats	19
4.4.1	Mitigation and Enhancements	19
4.5	Badger	20
4.6	Bats.....	20
4.6.1	Lighting and Disturbance.....	20
4.7	Reptiles.....	20
4.7.1	Mitigation and Enhancements	21
4.8	Birds	21

4.8.1	Mitigation and Enhancements	21
4.8.2	Other Species.....	21
5	CONCLUSION.....	22
6	REPORT VALIDITY.....	22
	APPENDIX A: FIGURES.....	23
	APPENDIX B: DEVELOPMENT LAYOUT	24

1 INTRODUCTION

Arcus Consultancy Services Ltd (Arcus, an ERM Group Company) was commissioned by EastCoastGridServices Ltd (the 'Applicant') to complete an Ecological Impact Assessment (EcIA) for the proposed Branxton Energy Storage Facility (the 'Development') located near Thorntonloch, approximately 1.7 kilometres (km) east of Innerwick, East Lothian (the 'Site'). The Site Boundary is shown in **Figure 1**, Appendix A, and Development Layout shown in Appendix B.

On completion of the Extended Phase 1 Habitat Survey and following finalisation of the proposed site layout, an Ecological Impact Assessment (EcIA) was prepared in support of a planning application for the Development.

This report describes the methods and results of the Extended Phase 1 Habitat Survey and ecological surveys and assesses the associated potential ecological impacts. It also provides recommendations to avoid or reduce such impacts, as well as measures for ecological enhancements.

The structure of the EcIA Report is as follows:

- Section 2: Methods;
- Section 3: Results;
- Section 4: Evaluation, Further Survey Requirements and Mitigation;
- Appendix A: Figures.

1.1 Site Description

This Site is located approximately 1.7 km to the east of Innerwick, East Lothian, at National Grid Reference ('NGR') 374768, 673428.

The Site is approximately 97.3 hectares in size, and situated within agricultural land characterised by open areas of cultivated ground and grassland areas. Fencing, hedgerows, scrub and trees are present where field margins adjoin local roads, railway, private properties and woodland areas.

There are no woodland areas within the Site. Woodland is present to the immediate west of the Site, as well as a section to the south of the Site. Several areas of scattered trees are present throughout the Survey Area, alongside roads, burns and field margins, and in residential gardens.

There are no waterbodies located within the Site, with a single small pond in the southwest Survey Area. A single unnamed watercourse associated with agricultural drainage runs along the eastern Site boundary. Ogle Burn runs through an area of semi-natural broadleaved woodland in a steep-sided valley to the southwest of the Site, where it converges with the Braidwood Burn.

There are several farm buildings located within the Site, mainly to the north across the railway line. A small number of private residential properties and farm buildings adjoin the Site in the west and south. There are two existing sub-stations in the centre of the Survey Area also.

1.2 The Development

The Applicant seeks planning permission for the construction of a grid services facility comprising battery storage modules and other associated ancillary electrical infrastructure, designed to balance power flows and adjust and support frequency and voltage conditions on the national electricity grid.

The Development would be designed to support the flexible operation of the national electricity grid and decarbonisation of electricity supply. It would store, import and export

electricity but will not generate any additional electricity, nor have any direct on-site emissions of CO₂ in the course of normal operations. Containerised batteries would be used to store surplus electricity for use when it is needed most and to balance fluctuations in frequency and voltage on the national electricity grid, delivering services which have typically been provided by carbon emitting technologies such as gas or coal-fired turbines.

Due to the nature of the Development infrastructure, groundworks to create a completely flat and levelled surface are not anticipated, minimising the need for significant cut and fill. The Development design, and battery storage modules in particular, will accord with the changing level of the local topography.

Subject to local ground conditions, it is not anticipated that any of the above ground Development infrastructure components listed above will require deep foundations, rather, components will sit on shallow concrete bases, typically, of no more than ploughing depth.

The electrical export capacity of the Development is yet to be confirmed but is expected to exceed 50 MW.

The Development would be operational for a temporary period of 40 years; after which it would be decommissioned.

2 METHODS

2.1 Desk Study

A Desk Study was undertaken to identify baseline ecological conditions and contextual information within the Development's ecological zone of influence (EZOI).

Records of statutory designated sites within 2 km of the Site (the 'Desk Study Area') were searched for using NatureScot (NS) Sitelink¹. The radius was extended up to 20 km to identify any Special Protection Areas (SPAs), in accordance with current NS guidance², or Ramsar sites, to identify potential connectivity between the Development and European Sites where migratory swans/geese are a qualifying feature to the European Site.

In addition, recent records (within the past 20 years) of protected and priority species, including non-native invasive species, within 1 km of Site were obtained from The Wildlife Information Centre (TWIC)³.

A review of historic aerial satellite imagery⁴ was undertaken for the Site to gain an understanding of past land use.

The following relevant legislation and policy relating to protected and priority habitats and species have been considered in carrying out the Desk Study:

- Convention on Wetlands of International Importance (the 'Ramsar Convention')⁵;
- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive')⁶;
- Directive 2009/147/EC of the European Parliament on the on the conservation of wild

¹ NatureScot (2022), NatureScot Sitelink [Online]. Available online at <https://sitelink.nature.scot/home> (Accessed November 2022).

² NatureScot (2016) *Assessing Connectivity with Special Protection Areas (SPAs)*. [Online]. Available online at <https://www.nature.scot/sites/default/files/2018-08/Assessing%20connectivity%20with%20special%20protection%20areas.pdf> (Accessed November 2022).

³ The Wildlife Information Centre (2022). Available online at: <http://www.wildlifeinformation.co.uk/> (Accessed November 2022).

⁴ Google LLC (2020) Google Earth. Available from: <https://earth.google.com/web/> (Accessed November 2022)

⁵ Convention on Wetlands of International Importance. (1971). Adopted in Ramsar (Iran) February 1971, entered into force in December 1975. [Online]. Available at <<https://www.ramsar.org/>> (Accessed November 2022).

⁶ European Council. (1992) 92/43/EEC on the conservation natural habitats and of wild fauna and flora [Online]. Available at <https://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm> (Accessed November 2022).

- birds (the 'Birds Directive')⁷;
- Conservation (Natural Habitats, &c.) Regulations 1994 (the 'Habitat Regulations')⁸;
- Wildlife and Countryside Act 1981 (as amended)⁹;
- Protection of Badgers Act 1992¹⁰;
- Scottish Biodiversity List (SBL)¹¹;
- Birds of Conservation Concern (BoCC)¹².

A 1 km search radius was deemed an appropriate zone of influence for most ecological features considering the scale of the Development and prevailing habitats within and adjoining the Site.

2.2 Extended Phase 1 Habitat Survey

Extended Phase 1 Habitat Surveys ('the Survey') were completed on 21st September and 16th November 2022 by Arcus Ecologists James Allison and Sallie Turnbull, who are both members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and competent in undertaking habitat surveys and assessments.

The Survey was undertaken in accordance with the Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Survey methodology¹³ to map all natural and semi-natural habitats within the Site and a surrounding 100 m buffer where access allowed (the 'Survey Area' as seen in **Figure 1**, Appendix A).

Habitat features indicating the presence, or likely presence, of protected and priority species were also noted; in accordance with the methods described in Section 2.3. The survey was carried out following the Guidelines for Preliminary Ecological Appraisal¹⁴.

Any non-native invasive species of plant encountered during the Survey, including Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*), were also noted.

2.3 Protected and Priority Species

2.3.1 Badger

As part of the Extended Phase 1 Habitat Survey, a thorough inspection of the Site and surrounding habitat, where access was possible, was carried out in accordance with current best practice¹⁵. Particular attention was paid to dense areas of vegetation to check for evidence of badger (*Meles meles*) activity, including:

⁷ European Parliament. (2009) Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds [Online]. Available at <https://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm> (Accessed November 2022).

⁸ UK Government (1994) The Conservation (Natural Habitats, &c.) Regulations 1994 [Online]. Available at: <http://www.legislation.gov.uk/uksi/1994/2716/contents/made>. (Accessed November 2022).

⁹ UK Government (1981) Wildlife and Countryside Act 1981, Chapter 69. Part 1 [Online]. Available at: <http://www.legislation.gov.uk/ukpga/1981/69/section/1>. (Accessed November 2022).

¹⁰ UK Government (1992) Protection of Badger Act 1992 [Online]. Available at: <http://www.legislation.gov.uk/ukpga/1992/51/contents>. (Accessed November 2022).

¹¹ Scottish Government (2020), Scottish Biodiversity List [Online]. Available at: <https://www.nature.scot/doc/scottish-biodiversity-list> (Accessed November 2022).

¹² Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D. and Win, I. (2021) *The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain*. British Birds 114, 723–747.

¹³ JNCC, (2010), Handbook for Phase 1 habitat survey - a technique for environmental audit, JNCC, Peterborough, ISBN 0 86139 636 7.

¹⁴ CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2nd Edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

¹⁵ NatureScot. (2020) *Species Planning Advice: Badger* [Online]. Available at: <https://www.nature.scot/species-planning-advice-badger> (Accessed November 2022).

- Presence of holes/setts with evidence of badger, such as prints and discarded bedding;
- Presence of dung pits and latrines;
- Presence of well-used runs with subsidiary evidence of badger activity; and
- Presence of other indications of badger activity, such as signs of foraging and footprints.

2.3.2 Otter

All ditches and watercourses located within the Survey Area were assessed to determine their suitability to support otter (*Lutra lutra*). In accordance with current best practice¹⁶, potential habitat features were visually inspected for evidence of otter including spraints, feeding remains, holts and footprints.

2.3.3 Water Vole

All ditches and watercourses located within the Survey Area were assessed to determine their suitability to support water vole (*Arvicola amphibious*). In accordance with current best practice¹⁷, potential habitat features were visually inspected for evidence of water vole including droppings, latrines, feeding remains, burrows and footprints.

2.3.4 Bats

A preliminary bat roost assessment (PBRA) was completed. This involved a ground-level visual assessment to identify and classify the suitability of Potential Roost Features (PRFs) in trees and buildings within the Survey Area; in accordance with current good practice guidance¹⁸. The suitability of habitats and linear features for commuting and foraging bats within the Survey Area was also noted.

This initial bat assessment informs whether further surveys are required to assess the potential effects of the Development on bats.

2.3.5 Herptiles

All potential habitat located within the Survey Area was assessed to determine its suitability to support amphibians and reptiles. In accordance with current best practice¹⁹, potential habitat features were visually inspected for amphibians and reptiles including refugia and potential hibernacula.

2.3.6 Birds

All potential habitat located within the Survey Area was assessed to determine its suitability to support breeding and wintering birds. In accordance with current best practice²⁰,

¹⁶ NatureScot. (2020) *Species Planning Advice: Water Vole* [Online]. Available at < <https://www.nature.scot/doc/standing-advice-planning-consultations-water-voles> (Accessed November 2022).

¹⁷ NatureScot. (2020) *Species Planning Advice: Otter* [Online]. Available at < <https://www.nature.scot/doc/standing-advice-planning-consultations-otters> (Accessed November 2022).

¹⁸ Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed.)*. The Bat Conservation Trust, London.

¹⁹ NatureScot (2020). *Species Planning Advice: Reptiles* [Online]. Available at NatureScot (2020). *Species Planning Advice: Reptiles* [Online]. <https://www.nature.scot/doc/standing-advice-planning-consultations-reptiles-adder-slow-worm-common-lizard> (Accessed November 2022).

²⁰ NatureScot (2020). *Species Planning Advice: Birds* [Online]. Available at NatureScot (2020). *Species Planning Advice: Birds* [Online] <https://www.nature.scot/doc/standing-advice-planning-consultations-birds> (Accessed November 2022).

potential habitat features were also assessed for their potential to support scarce breeding birds including Schedule 1²¹/Annex 1²² birds.

2.4 Limitations and Assumptions

The Survey was split between September and November, which is only partly within the optimal period NatureScot recommend for undertaking Phase 1 Habitat Survey²³. However, as the habitats present were mainly arable fields and of low conservation concern, this is not seen to be a limitation to this assessment.

There was no access to third party private land within the Survey Area including residential properties, but surveyors were able to map these from afar and assess suitability from the Site. Surveyors were able to access almost all areas within the Site. The exception was the area of dense gorse scrub bank located in the south of the Site. This area was surveyed using binoculars and by observing the perimeter of the scrub for any mammal paths entering. As such, it was not seen to be a limitation to this assessment.

²¹ Wildlife and Countryside Act 1981 [Online]. Available at: <https://www.legislation.gov.uk/ukpga/1981/69> (Accessed November 2022).

²² Directive 2009/147/EC on the Conservation of Wild Birds [Online]. Available at: <https://eur-lex.europa.eu/legalcontent/EN/TXT/?uri=CELEX%3A32009L0147> (Accessed November 2022).

²³ NatureScot, Natures Calendar. [Online]. Available at: <https://www.nature.scot/sites/default/files/2018-01/Natures%20Calendar.pdf> (Accessed November 2022).

3 RESULTS

A list of protected sites identified during the Desk Study is presented below, followed by a summary of Phase 1 Habitats recorded during the Extended Phase 1 Habitat Survey. Records of protected species recorded during the Desk Study and Extended Phase 1 Habitat Survey are also summarised for each species.

3.1 Designated Sites

3.1.1 Statutory Designated Sites

A total of eight statutory sites designated for their ecological or ornithological importance were identified during the Desk Study. These are summarised below in Table 1 and shown on **Figure 2**, Appendix A.

Table 1: Statutory Designated Sites and their Proximity to the Site

Site	Designation	Proximity (km) to Site	Qualifying Criteria
Outer Firth of Forth and St Andrews Bay Complex ²⁴	SPA	300 m northeast	Designated for; <ul style="list-style-type: none"> - Non-breeding common eider (<i>Somateria mollissima</i>), common guillemot (<i>Uria aalge</i>), red-throated diver (<i>Gavia stellata</i>). - Non-breeding waterfowl and seabird assemblage of; razorbill (<i>Alca torda</i>); Common goldeneye (<i>Bucephala clangula</i>); black-headed gull (<i>Chroicocephalus ridibundus</i>), black-legged kittiwake (<i>Rissa tridactyla</i>); long-tailed duck (<i>Clangula hyemalis</i>); herring gull (<i>Larus argentatus</i>); little gull (<i>Larus minutus</i>); red-breasted merganser (<i>Mergus serrator</i>); common gull (<i>Larus canus</i>); common scoter (<i>Melanitta nigra</i>); European shag (<i>Phalacrocorax aristotelis</i>); Slavonian grebe (<i>Podiceps auritus</i>); and velvet scoter (<i>Melanitta fusca</i>) - Breeding common tern (<i>Sterna hirundo</i>), european shag, northern gannet (<i>Morus bassanus</i>) and arctic tern (<i>Sterna paradisaea</i>). - Breeding seabird assemblage comprising of; Atlantic puffin (<i>Fratercula arctica</i>); common guillemot; black-legged kittiwake; Manx shearwater (<i>Puffinus puffinus</i>) and herring gull.

²⁴ NS (2022) Outer Firth of Forth and St Andrews Bay Complex SPA. Available online at: <https://sitelink.nature.scot/site/10478> [Accessed November 2022].

Site	Designation	Proximity (km) to Site	Qualifying Criteria
Barns Ness Coast ²⁵	Site of Special Scientific Interest (SSSI)	1.45 km north	Designated for its coastal features; saltmarsh, sand dunes and shingle.
Pease Bay Coast ²⁶	SSSI	2 km east	Designated for its maritime cliff.
Lammermuir Deans ²⁷	SSSI	3.2 km southwest	Designated for subalpine calcareous grassland, upland mixed ash woodland and valley fen.
Woodhall Dean ²⁸	SSSI	4.85 km west	Designated for upland oak woodland.
Pease Bridge Glen ²⁹	SSSI	4.95 km southeast	Designated for its bryophyte assemblage and upland oak woodland.
St. Abb's Head to Fast Castle ³⁰	SPA	7.9 km east	Designated for breeding guillemot, herring gull, kittiwake, razorbill, shag and other seabird assemblage.

²⁵ NS (2022) Barns Ness Coast SSSI. Available online at: <https://sitelink.nature.scot/site/153> [Accessed November 2022]

²⁶ NS (2022) Pease Bay Coast SSSI. Available online at: <https://sitelink.nature.scot/site/1276> [Accessed November 2022]

²⁷ NS (2022) Lammermuir Deans SSSI. Available online at: <https://sitelink.nature.scot/site/904> [Accessed November 2022]

²⁸ NS (2022) Woodhall Dean SSSI. Available online at: <https://sitelink.nature.scot/site/1646> [Accessed November 2022]

²⁹ NS (2022) Pease Bridge Glen SSSI. Available online at: <https://sitelink.nature.scot/site/1277> [Accessed November 2022]

³⁰ NS (2022) St. Abb's Head to Fast Castle SPA. Available online at: <https://sitelink.nature.scot/site/8579> [Accessed November 2022]

Site	Designation	Proximity (km) to Site	Qualifying Criteria
Firth of Forth	SPA ³¹ and Ramsar ³²	8.4 km northwest	Designated for; - Non-breeding bar-tailed godwit (<i>Limosa lapponica</i>), common scoter, cormorant (<i>Phalacrocorax carbo</i>), curlew (<i>Numenius arquata</i>), dunlin (<i>Calidris alpina alpina</i>), eider, golden plover (<i>Pluvialis apricaria</i>), goldeneye, great crested grebe (<i>Podiceps cristatus</i>), grey plover (<i>Pluvialis squatarola</i>), knot (<i>Calidris canutus</i>), lapwing (<i>Vanellus vanellus</i>), long-tailed duck, mallard (<i>Anas platyrhynchos</i>), oystercatcher (<i>Haematopus ostralegus</i>), pink-footed goose (<i>Anser brachyrhynchus</i>), red-breasted merganser, red-throated diver, redshank (<i>Tringa totanus</i>), ringed plover (<i>Charadrius hiaticula</i>), scaup (<i>Aythya marila</i>), shelduck (<i>Tadorna tadorna</i>), Slavonian grebe, turnstone (<i>Arenaria interpres</i>), velvet scoter, wigeon (<i>Anas penelope</i>) and waterfowl assemblage. - Sandwich tern (<i>Sterna sandvicensis</i>) (passage)

3.1.2 Non-Statutory Designated Sites

22 areas recorded on the Ancient Woodland Inventory (AWI) were located within 2 km of the Site, with the closest area bordering the southeast corner of the Site.

A further eight non-statutory designated sites were recorded within 2 km of Site, detailed below in Table 2, and on **Figure 3**, Appendix A.

Table 2: Non-Statutory Designated Sites and their Proximity to the Site

Site	Designation	Proximity (km) to Site
Thornton Burn	Scottish Wildlife Trust Reserve (SWTR)	Adjacent to Site to west
Dunglass Burn	Local Biodiversity Site (LBS)	Adjacent to west of Site (encompasses Thornton Burn)

³¹ NS (2022) Firth of Forth SPA. Available online at: <https://sitelink.nature.scot/site/8499> [Accessed November 2022]

³² NS (2022) Firth of Forth Ramsar. Available online at: <https://sitelink.nature.scot/site/8424> [Accessed November 2022]

Site	Designation	Proximity (km) to Site
	SWTR	1.6 km south
Thurston Burn Valley 2	LBS	Adjacent to west of Site
Bilsdean Coast	LBS	100 m north
Thornton Glen ³³	SWTR	260 m northwest
Bilsdean Gorge	SWTR	1.35 km southeast
Dunglass Gorge	SWTR	1.8 km southeast
Dunglass Dean and Berwick Burn	LBS	1.8 km southeast

3.2 Phase 1 Habitats

A summary of Phase 1 habitats recorded within the Survey Area is presented in Table 3, with **Figure 1** showing the mapped habitats.

³³ Scottish Wildlife Trust (2022) Thornton Glen. Available online at: <https://scottishwildlifetrust.org.uk/reserve/thornton-glen/> [Accessed November 2022].

Table 3: Summary of Phase 1 Habitats Present in the Survey Area

Habitat type	JNCC code	Habitat area or length of linear feature	Proportion of Survey Area	Description
Cultivated/ disturbed land – arable	J1.1	85.66 ha	52.33 %	The majority of the Survey Area consists of cultivated arable land, some of which had been planted with a variety of crops (such as Brussel sprouts) during the time of the Survey; other fields had cereal crops that had been harvested and were left as stubble, the majority of this habitat was therefore comprised of bare ground.
Improved grassland	B4	28.38 ha	17.34%	There are many improved grassland fields interspersed with the arable fields in the Survey Area, most of which were used by grazing sheep at the time of the Survey. The dominant species in these fields was perennial ryegrass (<i>Lolium perenne</i>).
Neutral grassland – semi-improved	B2.2	19.48 ha	11.90 %	Semi-improved neutral grassland areas are present within the centre of Site, with the majority into the south of the Survey Area, with other areas scattered throughout the Survey Area. The understory of the majority of scrub and woodland habitats are also semi-improved neutral grassland species. Species recorded within this habitat include perennial rye grass (<i>Lolium perenne</i>), meadow-grasses (<i>Poa</i> spp.), tufted hair-grass (<i>Deschampsia cespitosa</i>), cocksfoot (<i>Dactylis glomerata</i>), common nettle (<i>Urtica dioica</i>), creeping thistle (<i>Cirsium arvense</i>), bramble (<i>Rubus fruticosus</i>), creeping buttercup (<i>Ranunculus repens</i>), yarrow (<i>Achillea millefolium</i>), sheep fescue (<i>Festuca ovina</i>) and ribwort plantain (<i>Plantago lanceolata</i>). In wetter areas, such as adjacent to the burn in the east, soft rush (<i>Juncus effusus</i>) was the dominant species.
Scrub – dense/contin uous	A2.1	6.40 ha	3.91 %	There are many large areas of dense scrub found throughout the west of the Survey Area, with a large area found on Site in the centre/south. The most dominant species of this habitat was common gorse (<i>Ulex europaeus</i>), with sections of bracken (<i>Pteridium aquilinum</i>), nettle and hawthorn (<i>Crataegus monogyna</i>) also present.
Broadleaved woodland (semi-natural)	A1.1.1	5.47 ha	3.34 %	No woodland is present within the Site. A large section of semi-natural broadleaved woodland is present in the western Survey Area, on either side of a steep-sided river valley. It is interspersed with gorse and bracken scrub and semi-improved neutral grassland. The woodland includes mature tree species such as hawthorn, grey willow (<i>Salix cinerea</i>), ash (<i>Fraxinus excelsior</i>), rowan (<i>Sorbus aucuparia</i>) and oak (<i>Quercus</i> sp.).
Broadleaved parkland/ Scattered trees	A3.1	2.74 ha	1.68 %	Scattered broadleaved trees are found throughout the Survey Area, with many alongside roads, burns and field margins, as well as within the grounds of residential and farm properties.

Habitat type	JNCC code	Habitat area or length of linear feature	Proportion of Survey Area	Description
				Species include ash, oak, holly, sycamore, hawthorn, hazel (<i>Corylus avellana</i>) and beech (<i>Fagus sylvatica</i>).
Broadleaved woodland (plantation)	A1.1.2	2.05 ha	1.25 %	Several areas of mature plantation broadleaved woodland are present to the south and southeast of the Site. They are comprised largely of hawthorn, sycamore (<i>Acer pseudoplanatus</i>), holly (<i>Ilex aquifolium</i>) and rowan. The understory is densely vegetated with bracken and bramble.
Bare ground	J4	1.77 ha	1.08 %	Bare ground was found mainly in farm holdings present in the south, west and northeast of the Survey Area.
Scrub – scattered	A2.2	1.68 ha	1.03 %	There are several small patches of common gorse scattered within the woodland areas in the Survey Area, in the northwest and south, as well as alongside the burn in the southwest.
Mixed woodland (plantation)	A1.3.2	1.10 ha	0.67 %	A single area of mixed woodland is present in the south of the Survey Area, adjacent to several residential properties. Broadleaved tree species were similar to those already mentioned, with coniferous species such as Sitka Spruce (<i>Picea sitchensis</i>) and Scot's Pine (<i>Pinus sylvestris</i>) also present.
Buildings	J3.6	0.72 ha	0.44 %	Several barns were present in the northeast of the Site. A small number of private residential properties adjoin the Site to the west and southeast also.
Built-up areas	J3	0.60 ha	0.36 %	Two small electric storage facilities and sub-stations were found in the centre of the Survey Area, one within the Site Boundary and one adjacent. These included pylons which were also found in adjoining fields.
Bracken – continuous	C1.1	0.47 ha	0.29 %	Large areas of bracken were present in the steep-sided valley, interspersed with woodland and scrub, and also in the south and southwest of the Site.
Defunct hedge – species poor	J2.2.2	0.28 ha and 0.69 km	>0.17%	Defunct established hedges border several arable fields within the Site, consisting mainly of hawthorn and elder (<i>Sambucus nigra</i>).
Intact hedge – species poor	J2.1.2	0.08 ha and 1.38 km	>0.05%	Intact established hedges are present between field margins and roads in the southern and western sections of the Site. These comprised of hawthorn, hornbeam (<i>Carpinus betulus</i>) and elder. The understory was sparsely vegetated.
Mixed parkland/ Scattered trees	A3.3	0.25 ha	0.15 %	Scattered mixed broadleaved and coniferous trees were found in the south of the Survey Area within the ground of residential properties.

Habitat type	JNCC code	Habitat area or length of linear feature	Proportion of Survey Area	Description
Marshy grassland	B5	0.06 ha	0.04 %	Marshy grassland is found in the north of the Survey Area, adjacent to a small burn and arable field. Dominant species include soft rush and bulrush (<i>Scirpoides holoschoenus</i>).
Running water	G2	3.96 km	-	A small unnamed watercourse runs along the eastern boundary of the Site, acting as a field drain. The Ogle Burn runs through an area of semi-natural broadleaved woodland in a steep-sided valley to the southwest of the Site, where it converges with the Braidwood Burn.
Standing water	G1	0.09 ha	0.05 %	A small pond is present outside of the Site to the southwest. At the time of survey it looked to be used as a drinking supply for horses which were present in this area.
Wall	J2.5	0.59 km	-	Several drystone walls are present in the northern section of the Site, most were in poor condition with many gaps missing.
Dry ditch	J2.6	0.14 km	-	A dry drainage ditch is present in the centre of the Site located between arable fields. The channel was fully vegetated with bramble and common nettle, with some hawthorn adjacent.
Other habitat (unmapped)	-	6.41 ha	3.92 %	Other habitats in the Survey Area included roads, railways, garden grasslands and some areas within farm holdings, which have been left unmapped.

3.3 Protected, Priority and Other Notable Species

A summary of signs of, and habitat suitability for, protected and priority species recorded within the Survey Area, together with species of conservation concern or local importance, is presented in **Table 4**.

Table 4: Summary of Site Suitability for Protected and Priority Species

Species	Desk Study Records	Evidence Recorded During Survey	Habitat Suitability	Summary
Protected and Priority Species				
Badger	Six records within 1 km of the Site.	Badger survey results detailed in Confidential Annex (CA) to this report.	Badger habitat suitability detailed in CA .	Badger summary detailed in CA .
Otter	One record within 1 km of the Site.	None.	<p>There are no waterbodies or watercourses within the Site. A dry ditch towards the centre of the Site is unlikely to be utilised by foraging or commuting otter.</p> <p>The unnamed burn adjacent to the eastern boundary of the Site offers limited foraging and commuting habitat, with negligible suitability within the Site for otter to establish holts and resting sites.</p> <p>Within the wider Survey Area, the Ogle Burn and the Braidwood Burn provide suitable foraging, commuting and resting places (such as holts).</p>	It is unlikely that otter will commute along linear features within the Site. Foraging and/or commuting otters may be present in the surrounding area, with some areas suitable for the establishment of holts or resting sites. However there is limited connectivity between these watercourses and the Site.
Water vole	No records within 1 km of the Site.	None.	<p>There are no waterbodies or watercourses within the Site. A dry ditch towards the centre of the Site is not likely to be utilised by water vole.</p> <p>No burrows or other evidence of water vole was noted along the unnamed watercourse adjacent to the eastern boundary of the Site, although it contains some suitable habitat for water vole.</p>	The habitats within the Site are unsuitable or sub-optimal for water vole. Whilst there is potential for water vole to establish burrows in adjoining watercourse, suitable habitat is not extensive and the species is not known to the present in the local area and is considered unlikely to be present within the Survey Area.
Bats (<i>Chiroptera spp.</i>)	<p>Many records of bat species were found within 5 km.</p> <p>These included 12 records of both common (<i>Pipistrellus pipistrellus</i>) and</p>	None.	<p>Trees within the Site were assessed as being of negligible suitability for summer roosting and hibernating bats.</p> <p>Habitats within the Site, such as arable fields, are mainly considered to be of negligible suitability for foraging and commuting bats,</p>	Habitats within the Site are largely considered to be of negligible suitability for foraging and commuting bats, while those within the wider area are considered to be of higher suitability, so bats are likely to occasionally present within the Site.

Species	Desk Study Records	Evidence Recorded During Survey	Habitat Suitability	Summary
	soprano pipistrelle (<i>Pipistrellus pygmaeus</i>), as well as 15 records of <i>Pipistrellus</i> sp. One record of brown long-eared (<i>Plecotus auritus</i>), two records of Daubenton's bat (<i>Myotis daubentonii</i>), 6 records of <i>Myotis</i> sp., four records of Natterer's bat (<i>Myotis nattereri</i>), five records of Noctule bat (<i>Nyctalus noctula</i>) and four records of Brandt's bat (<i>Myotis brandtii</i>).		Within the wider Survey Area, woodland areas adjoining the southern section of the Site are considered to be of high suitability for foraging and commuting bats, while hedgerows and treelines along field boundaries are of moderate suitability.	
Amphibians	One record of a newt sp. within 1 km of the Site.	None.	<p>The Site provides very limited suitable habitat for amphibian species. There are no waterbodies or watercourses within the Site. A dry drainage ditch is present in the centre of the Site and is considered likely to dry-out most of the time each season.</p> <p>A small burn runs adjacent to the eastern boundary of the Site, which could provide some suitability for foraging amphibians. A pond to the south of the Site could provide suitable breeding habitat for common amphibian species, but connectivity to the Site is limited by steep valley sides covered in gorse scrub.</p>	Amphibians are considered to be largely absent from the Site.

Species	Desk Study Records	Evidence Recorded During Survey	Habitat Suitability	Summary
Reptiles.	No records within the 1 km of the Site.	None.	<p>The arable fields that make up the majority of the Site provide limited suitable habitat for reptile species.</p> <p>The field margins could be utilised by low numbers of certain reptile species, including common lizard and slow-worm, should they be present in the locality.</p> <p>The drystone walls in the north of the Site could provide some suitability but due to their isolation within arable fields, they are unlikely to be of value.</p> <p>Scattered trees, hedgerows and grassland areas are unlikely to be utilised by reptiles as cover, or hibernacula, as these habitats are small in scale and not connected to more extensive reptile habitats in the wider landscape.</p>	The Survey Area is unlikely to support hibernacula or a significant population of reptiles; however, small numbers of reptiles may be present in grassland habitats (which is limited in extent).
Birds.	Over 4000 records of bird species were returned within 1 km of the Site. Many of these are associated with marine or coastal species, however, recent records of farmland species such as barn owl (<i>Tyto alba</i>), grey partridge (<i>Perdix perdix</i>), tree sparrow (<i>Passer montanus</i>) skylark (<i>Alauda arvensis</i>)	Several species recorded including yellowhammer, skylark, common buzzard (<i>Buteo buteo</i>) and woodpigeon (<i>Columba palumbus</i>).	<p>The arable and grassland habitats within the Site provides habitat for ground-nesting birds such as skylark. Where grassland areas adjoin scattered trees and hedgerows, the additional cover may provide suitable nesting habitat for grey partridge and yellowhammer, although the extent is limited. Field margins may also provide suitable foraging habitat for barn owl.</p> <p>Scattered trees within the Site could be utilised by breeding birds. Hedgerows within the Site provide additional nesting habitat that could be utilised by a range of species.</p>	<p>Habitats within and around the Site are suitable to support a range of nesting and foraging birds during the breeding season, including several UK Red and Amber-listed Birds of Conservation Concern (BoCC)³⁴ and potentially barn owl, which is a Schedule 1-listed species.</p> <p>Although the use of the arable fields by occasional wintering birds (including geese) cannot be entirely ruled out, the Site does not lie within any known goose foraging areas and so is unlikely to be of great value. Roosting barn owl may also be present during the non-breeding season.</p>

³⁴ Stanbury, A.J., Eaton, M.A., Aebischer, N.J., Balmer, D., Brown, A.F., Douse, A., Lindley, P., McCulloch, N., Noble, D.G. & Win, I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114, 723-747.

Species	Desk Study Records	Evidence Recorded During Survey	Habitat Suitability	Summary
	and yellowhammer (<i>Emberiza citrinella</i>) were confirmed as being present in the surrounding area.			
Hedgehog (<i>Erinaceus europaeus</i>)	Three recent records of hedgehog within 1 km of the Site.	None.	Suitable summer nesting habitat is present, but is limited to grassland areas, field margins and hedgerows, mainly within the south of the Site. There is no suitable habitat within the Site for hibernation nests to be established. However, woodland and scrub areas to the south and east could contain hibernation sites, including rank grassland areas and hedgerows within the Site that adjoin these woodland areas.	Suitable summer nesting habitat for hedgehog is present within grassland and hedgerow habitats on Site and in the surrounding area. Suitable habitat for hibernation nest sites is present within the surrounding area, but not within the Site itself.
Brown hare (<i>Lepus europaeus</i>)	12 recent records of brown hare within 1 km of the Site.	Brown hare were observed on the Site.	Grassland areas, hedgerows, scrub and field margins provide year-round cover, as well as suitable foraging habitat during spring and summer months. Arable land may provide suitable foraging habitat during autumn and winter, if retained as stubble.	There is suitable habitat within and around the Site to support brown hare year-round.
Other species of conservation concern and local importance				
Roe deer (<i>Capreolus capreolus</i>)	11 recent records of roe deer within 1 km of the Site.	Roe deer tracks, slots and droppings were recorded in the fields throughout the Survey Area. One was sighted during the survey also.	The woodland and scrub surrounding the Site is likely to provide adequate shelter to support a population of roe deer. Grassland areas, crops and field margins will contain broadleaved herbaceous plants during the growing season that may provide a seasonal feeding resource. In addition, scattered broadleaved trees and hedgerows may provide some cover whilst roe deer move out of woodland areas and may provide a further feeding resource.	Suitable habitat within the Site is likely to support small numbers of roe deer. Extensive areas of suitable habitat are present in the wider area, including woodland areas to the south and east of the Site.

4 EVALUATION, FURTHER SURVEY REQUIREMENTS AND MITIGATION

4.1 Impact of Development

The Development could have the potential to cause the following broad ecological impacts:

- Habitat loss/change during construction and operation;
- Direct harm to, or disturbance of, individuals of species during construction and operations; and
- Legal offences during construction.

The potential ecological effects of these impacts, and the associated mitigation and enhancements, are discussed for each important ecological feature in turn. Where necessary, additional surveys have been undertaken to provide further information to help assess the potential ecological effects of the Development and to inform mitigation.

4.2 Statutory Designated Sites

4.2.1 Internationally Protected Sites

4.2.1.1 Habitat Regulations Appraisal (HRA)

HRA Screening

Outer Firth of Forth and St Andrews Bay Complex SPA

The SPA is located 300m east of the Site at the nearest point, however as the qualifying features of the Outer Firth of Forth and St Andrews Bay Complex SPA are predominantly marine or coastal cliff dwelling species, and therefore are considered to be ecological disconnected to the Site, **no likely significant effects** for qualifying features are predicted, with the exception of breeding common and arctic tern.

Terns breed on shingle and stony beaches, such as those adjacent to the Site, however no direct effects on these habitats will occur. Although disturbance of breeding terns through construction phase noise is a potential impact of this type of development, in this proximity, as the Site lies the other side of both the A1 and a major train-line, disturbance effects are considered to be negligible.

Therefore, although likely significant effects on breeding terns through indirect disturbance cannot be ruled out, the magnitude of any effect is negligible, and therefore **no adverse effects** are determined.

Firth of Forth SPA

Firth of Forth SPA is located over 8 km away from the Development and is designated for variety of non-breeding birds. The Site is considered to be too distant to be ecologically connected to any of the SPA's qualifying features, with the exception of pink-footed geese (*Anser brachyrhynchus*).

Although the maximum foraging range for pink-footed geese is estimated at 15-20 km³⁵, a review of the key foraging areas used by pink-footed geese associated with the Firth of Forth SPA³⁶, did not identify any known foraging areas within the Site or adjacent local area. It is understood that this is likely due to the main roost location at Aberlady Bay being located approximately 30 km from the Site, in excess of the species' core foraging range.

³⁵ NS (2016) *Assessing Connectivity with Special Protection Areas (SPAs)* [online]. Scottish Natural Heritage (now NatureScot). Available from: < <https://www.nature.scot/> > (Accessed November 2022).

³⁶ Mitchell, C. (2012). Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland. Wildfowl & Wetlands Trust / Scottish Natural Heritage Report, Slimbridge. 108pp.

In light of the above, **no likely significant effects** on the SPA or its qualifying features are predicted, and it is considered that no further survey or assessment is required for this designated site.

St Abb's Head to Fast Castle SPA

St Abb's Head to Fast Castle SPA is located 7.8km from the Site and designated for marine or coastal or cliff dwelling species, and therefore is considered to be ecological disconnected to the Site, and therefore **no likely significant effects** are predicted.

4.2.2 Nationally Protected Sites

Lammermuir Deans SSSI, Woodhall Dean SSSI and Pease Bridge Glen SSSI are designated for woodland and botanical features. However, these are located between 3 km and 5 km from the Site, with no woodland areas connecting these to the Development. Therefore, the Development is not likely to damage the qualifying features of these sites and no further survey or assessment is required for these designated sites.

4.3 Non-Statutory Designated Sites

Several non-statutory designated sites were identified during the Desk Study, including 22 areas of woodland listed on the AWI. None of these were present within the Site, with the closest lying adjacent to the western and south-western boundaries of the Site. The Development infrastructure is located a minimum of 250 metres (m) from these statutory designated, with no evident routes of connectivity. Therefore, the Development is not likely to impact the features of these sites and no further survey or assessment is required for these non-designated sites.

4.4 Habitats

Habitats present on Site are largely of low ecological and conservation value; however, there are several features (such as hedgerows, trees, a watercourse, and scrub) which are utilised by birds and also mammals. As these areas exist within such low density, further pre-application botanical survey is not recommended.

Based on the current layout of the Development, see Appendix B, it is assumed that all hedgerows, trees and boundary features will be retained.

Habitat loss will concentrate mainly in arable fields in the northwest area of the Site to accommodate a metal fenced area enclosing containerised battery storage units; electrical infrastructure including inverter, grid connection container, high voltage compound and underground cabling; new site entrance; on-site access tracks; further infrastructure to facilitate operation of the scheme, including metering, welfare, and parts storage cabins; temporary construction compounds; and security perimeter fencing; and CCTV mounted on columns.

Outwith the Development, it assumed that ground disturbance within arable and other grassland areas will be minimal.

4.4.1 Mitigation and Enhancements

It is recommended that field margins surrounding the Development are supplemented with a local, native wildflower seed mix to enhance the biodiversity of the Site and encourage the development of suitable habitat features and nectar for pollinator species³⁷. Vegetation management (i.e. mechanical cutting or grazing) will be undertaken in order to retain diverse wildflower-rich swards.

³⁷ BRE. (2014). *Biodiversity Guidance for Solar Developments* (eds. Parker, G. E. and Greene, L.).

Additionally, the local biodiversity of this Site would benefit from planting of native hedgerows or scattered trees around the margins of the Development. This additional feature would compensate potential loss of habitat for ground nesting birds such as yellowhammer and benefit commuting mammals such as brown hare which may use the arable and improved grassland fields³⁸.

4.5 Badger

Badger assessment and mitigation detailed in **CA**.

4.6 Bats

Bats and their roosts are legally protected by both UK⁹ and European legislation⁸ and it is an offence to damage, destroy or obstruct access to a breeding site or resting place; and to disturb a bat whilst it is occupying any roosting structure.

Trees were surveyed on Site with negligible suitability, and the Desk Study showed no local roost presence either. No further survey or assessment is required in relation to trees with PRFs of negligible suitability.

The area planned for Development infrastructure has negligible suitability for foraging and roosting bats, however, they are likely to present within the wider landscape, utilising boundary features such as watercourses and hedgerows for commuting and foraging. Areas of woodland and buildings within the wider landscape are also likely to provide suitable roosting habitat.

Further bat surveys are not required, however mitigation for bats is recommended.

4.6.1 Lighting and Disturbance

Lighting can adversely affect invertebrates and bats (as well as other animal species). If new lighting is required for the Development, it should be designed in line with good practice³⁹ to ensure the Site is able to provide continued undisturbed foraging and commuting habitats for bats. Should lighting be required (during both construction and operation), the following measures are recommended:

- Motion-sensitive security lighting and avoidance of floodlighting;
- Avoidance of lighting with ultra-violet (UV) components in areas where lighting is required for public safety purposes. UV light is particularly disruptive to bat behaviour^{40,41};
- Use of flat-glass protectors on luminaires to help reduce light spill above angles greater than 70° from the vertical plane; and
- Avoiding light spill on to surrounding habitats by using accessories such as shields, louvres, hoods and cowls.

4.7 Reptiles

No reptiles were found during the Desk Study or the Survey. Suitable reptile habitat is mainly restricted to field margins (which are to be retained) and areas of grassland along the road verges.

³⁸ NatureScot (2022). *Priority Habitat-Hedgerows* [Online]. Available at <https://www.nature.scot/doc/priority-habitat-hedgerows> (Accessed September 2022).

³⁹ Bat Conservation Trust and Institution of Lighting Professionals (2018). *Bats and artificial Lighting in the UK. Bats and the Built Environment Series*. [Online] Available at: <https://cdn.bats.org.uk/uploads/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?v=1542109349> [Accessed November 2022]

⁴⁰ Fure, A. (2006). *Bats and Lighting*. The London Naturalist, No. 85.

⁴¹ Emery, M. (2008). *Effect of Street Lighting on Bats*. Urbis Lighting Ltd.

4.7.1 Mitigation and Enhancements

Reptiles are considered unlikely to be using the Site and particularly the habitats that will be impacted, therefore no specific mitigation is required. In the unlikely event that any reptiles are found during construction works, all works will cease immediately and an ecologist will be contacted for advice.

4.8 Birds

Without mitigation and depending on the time of year that works are carried out, along with the specifics of habitat removal required, the construction of the Development has the potential to negatively impact breeding farmland birds, of low conservation value, and foraging habitats. Further bird surveys are not required, however mitigation for nesting birds is recommended.

4.8.1 Mitigation and Enhancements

The majority of suitable nesting bird habitat will be retained as part of the works. Any removal of suitable nesting bird habitat will ideally need to take place outside of the nesting bird season (September to February) to avoid disturbance to nesting birds prior to and during construction. Should this not be possible, then a nesting bird check no more than 48 hours prior to works activity will be required of the works area prior to the commencement of activities. Where nesting birds are present, works will not commence until such time as the nesting attempt has naturally concluded. A buffer zone to exclude works will be established whilst the nest is active, however the size of the buffer zone would depend on the species⁴². Should nesting birds (including Schedule 1 bird species) be identified at any time, works will need to stop and a suitably experienced ecologist will need to be consulted for advice.

A minimum of two bird boxes will be installed on the buildings to be constructed within the Site. The boxes will provide enhanced nesting opportunities for birds and will need to be placed at least 3 m from the ground, facing north or east. Installation needs to be in accordance with good practice guidelines.

4.8.2 Other Species

To avoid unnecessary suffering and to ensure compliance with the Wildlife and Countryside Act 1981⁹, it is however recommended that precautionary mitigation is put in place for all mammals using the Site. The following controls should be implemented during the construction works, if possible:

- Cover excavations overnight to prevent animals falling into them. Inspect excavations daily for the presence of animals before recommencing work on them;
- Any deep excavations that are to be left open overnight should include a means of escape for any animals that may fall in;
- Where possible, works should be limited to the hours from dawn to one hour before sunset;
- The creation of large stock piles of earth should be avoided as these may be attractive for mammals;
- Store building materials above ground on pallets;
- If any pipes are included within the development, pipe end caps will need to be installed to prevent mammals entering and getting stuck in the pipes; and
- Should any new mammal burrows be identified, works in the area will need to stop and a suitably experienced ecologist contacted for advice.

⁴² NatureScot (2022). *Disturbance Distances in selected Scottish Bird Species – NatureScot Guidance* (Accessed November 2022).

5 CONCLUSION

This report outlines the baseline results from the Extended Phase 1 Habitat surveys and protected species surveys undertaken in September and November 2022. Sensitive design and good practice mitigation that has been recommended will be sufficient to safeguard species during the construction and operation of the Development and, in some cases, enhancements may provide positive effects.

6 REPORT VALIDITY

This report is valid for a period of two years from the date of the extended Phase 1 habitat survey, as per NS standing advice⁴³ and CIEEM guidance⁴⁴. In the event of changes to the submission of the planning application for the Development, update ecology surveys may be required to ensure the validity of the data and supporting EcIA Report.

⁴³ NatureScot. (2022) *Planning and development: protected species* [Online]. Available at: <https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species> (Accessed November 2022).

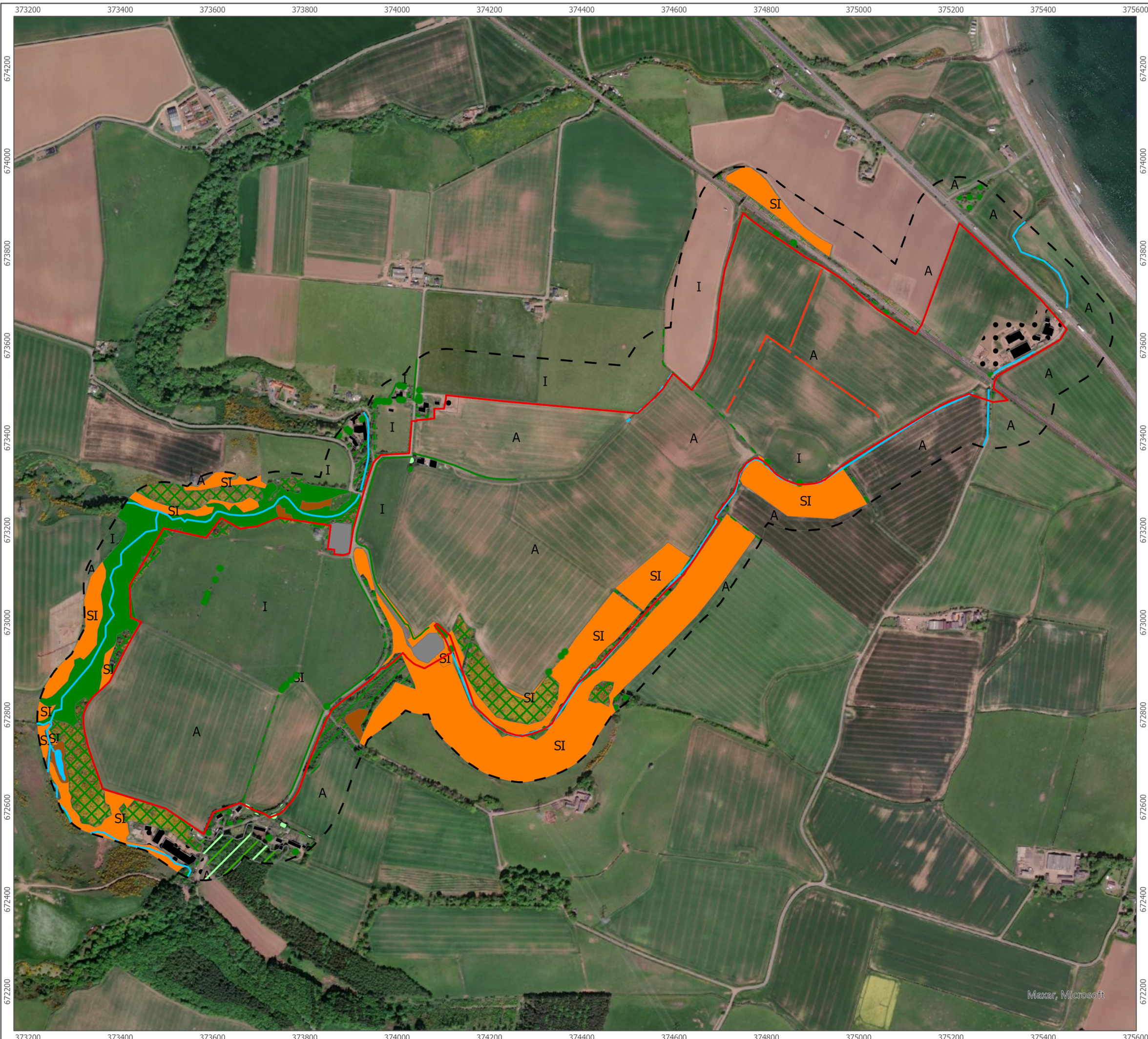
⁴⁴ CIEEM. (2019) *Advice Note on the Lifespan of Ecological Reports and Surveys* [Online]. Available at: <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf> (Accessed November 2022)

APPENDIX A: FIGURES

Figure 1: Phase 1 Habitat Survey Results

Figure 2: Statutory Designated Sites within 10km

Figure 3: Non-Statutory Designated Sites within 2km



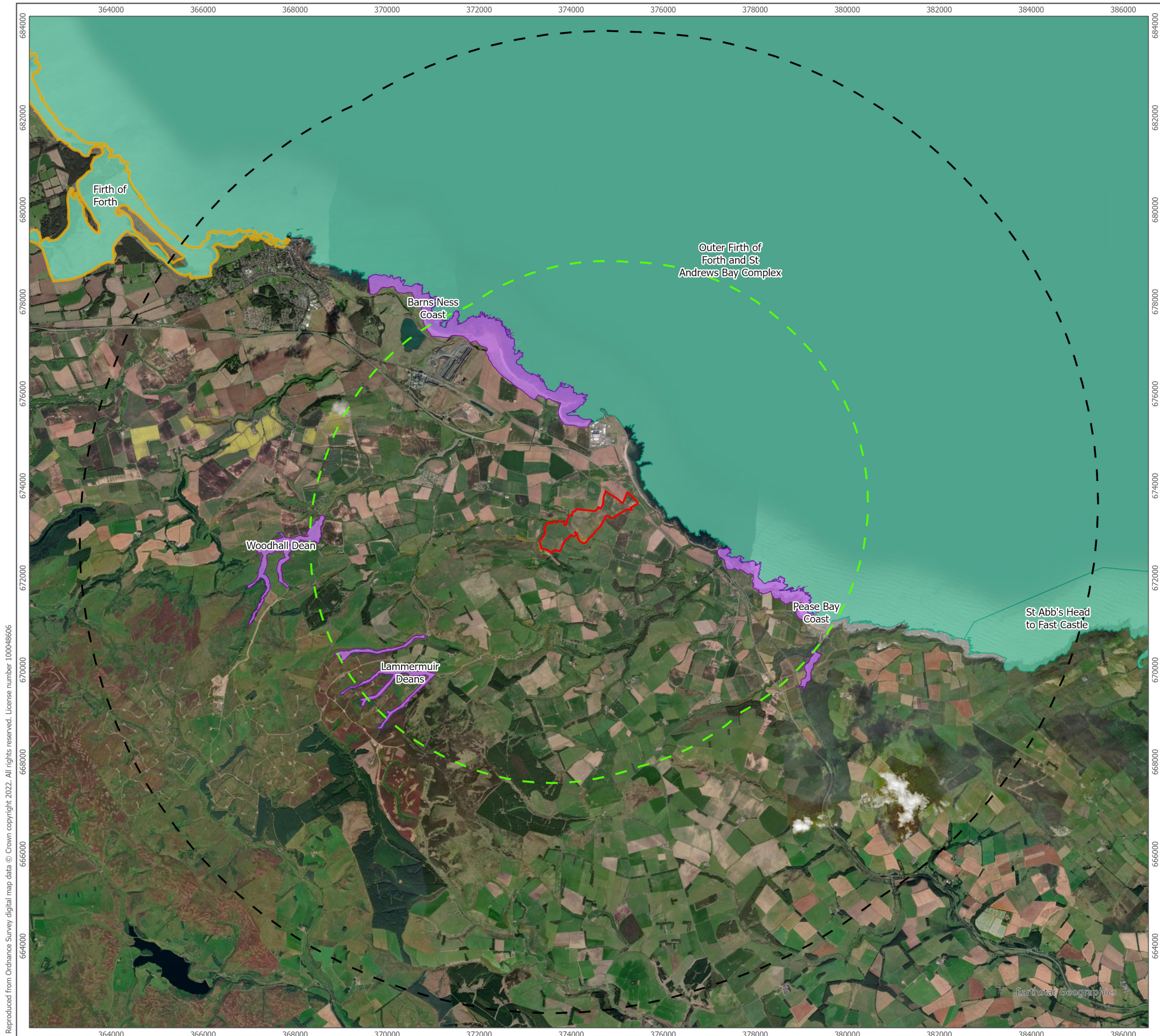
- Site Boundary
- Habitat Survey Area (100 m Buffer of Site Boundary)
- Habitat Survey Results**
- Broadleaved parkland/scattered trees
- Running water
- - - Defunct hedge - species-poor
- Intact hedge - species-poor
- Wall
- - - Dry ditch
- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Mixed woodland - plantation
- Scrub - dense/continuous
- Broadleaved Parkland/scattered trees
- Scrub - scattered
- Mixed Parkland/scattered trees
- SI Neutral grassland - semi-improved
- I Improved grassland
- Marsh/marshy grassland
- Bracken - continuous
- Standing water
- A Cultivated/disturbed land - arable
- Intact hedge - species-poor
- - - Defunct hedge - species-poor
- Built-up areas
- Buildings
- Bare ground

1:8,000 Scale @ A3
 0 0.15 0.3 km ▲ NORTH

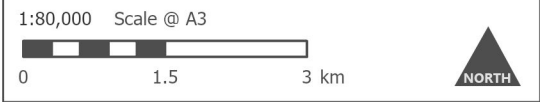
Produced By: AM	Ref: 4852-REP-012
Checked By: SC	Date: 18/11/2022

Phase 1 Habitat Survey Results
Figure 1

Branxton Energy Storage Facility
Ecological Impact Assessment



- Site Boundary
- 5 km Buffer of Site Boundary
- 10 km Buffer of Site Boundary
- Special Protection Areas (SPA)
- Ramsar Sites
- Sites of Special Scientific Interest (SSSI)



Produced By: AM	Ref: 4852-REP-013
Checked By: SC	Date: 18/11/2022

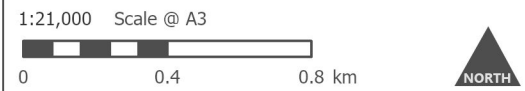
**Statutory Designated Sites
within 10km**
Figure 2

**Branxton Energy Storage Facility
Ecological Impact Assessment**

Reproduced from Ordnance Survey digital map data © Crown copyright 2022. All rights reserved. License number 100048606



- Site Boundary
- 2 km Buffer of Site Boundary
- Local Biodiversity Site (LBS)
- Scottish Wildlife Trust Wildlife Sites (SWTWS)
- Ancient Woodland Inventory (AWI)



Produced By: AM	Ref: 4852-REP-014
Checked By: SC	Date: 18/11/2022

**Non-Statutory Designated Sites
within 2km
Figure 3**

**Branxton Energy Storage Facility
Ecological Impact Assessment**

Reproduced from Ordnance Survey digital map data © Crown copyright 2022. All rights reserved. License number 100048606

APPENDIX B: DEVELOPMENT LAYOUT

Development Layout Ref: AE-BRANXT-GA-01_OPT 1 (2022-11-15)



PERIMETER FENCE
(3.0m HEIGHT)

SECURITY COLUMN
(6.0m)

LAYDOWN AREA (4.3 acres)

278 no. BESS BLOCKS
(6m x 19.2m FOOTPRINT,
3m HEIGHT)



KEY PLAN

NOTES:
 - CLIENT LAND AREA (EXCLUDES TEMP. CONSTRUCTION COMPOUND AREA): 24.24 acres
 - SPT LAND AREA (EXCLUDES TEMP. CONSTRUCTION COMPOUND AREA): 1.7 acres
 - POC: 374768E, 673428N

HV TRANSFORMER
COMPOUND (74.8m x 22.2m)

EXISTING FARM ACCESS
TRACK TO BE MAINTAINED

BUSBAR

EXISTING FARM ACCESS
TRACK TO BE MAINTAINED

SPT TEMPORARY
CONSTRUCTION
COMPOUND

SITE ENTRANCE

EXISTING FARM ACCESS
TRACK TO BE MAINTAINED

SPT 400KV
SWITCHGEAR
51.7m x 31.1m

SPT CONTROL
BUILDING (15 x 12m)

SPT ACCESS GATE

POC: 374768E, 673428N

SPT ACCESS GATE

CLIENT CONTROL
BUILDING (25m x 12m)

CLIENT TEMPORARY
CONSTRUCTION AREA

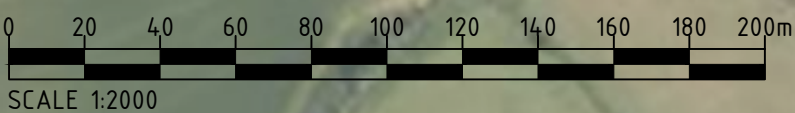
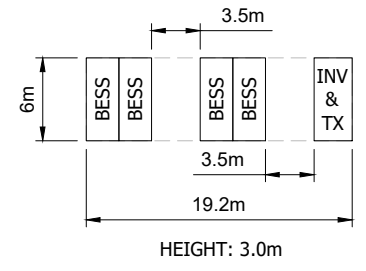
EXISTING STONE WALL (2m BUFFER)

SPARE PARTS AREA

LANDSCAPE SCREENING (3m WIDTH)

MV SWITCHGEAR (6m x 19.2m
FOOTPRINT, 3m HEIGHT)

BESS BLOCK DETAIL



Plot Date : November 15, 2022 10:44:07 AM
File Name D:\UK\BRANXTON\AE-BRANXT-GA-01_OPTION 1_JC(2022-11-15)

Project Title BRANXTON BATTERY STORAGE FACILITY	Drawing Title PRELIMINARY BESS LAYOUT OPTION 1	Purpose of issue PRELIMINARY				NOT FOR CONSTRUCTION	
		Designed JC	Drawn JC	Checked CB	Approved CB		
Client EastCoastGridServices Ltd.		Internal Project No. 00	Date 15/11/22			Drawing Number AE-BRANXT-GA-01	Rev 01
		Scale @ A3 1:2000					