Mey BESS

Design & Access Statement

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Contents

Abbreviations

Abbreviations	Definition
AOD	Above Ordnance Datum
BESS	Battery Energy Storage System
BNG	British National Grid
CCTV	Closed Circuit Television
CEMP	Construction Environmental Management Plan
CO_2	Carbon Dioxide
CTMP	Construction Traffic Management Plan
DAS	Design and Access Statement
ECU	Energy Consents Unit
EIA	Environmental Impact Assessment
GDL	Gardens and Designed Landscapes
Ha	Hectares
HRA	Habitats Regulations Appraisal
NCN	National Cycle Network
NPF4	National Planning Framework 4
OBEMP	Outline Biodiversity Enhancement and Management Plan
PCU	Power Conditioning Unit
SEIR	Supporting Environmental Impact Report
SPA	Special Area of Conservation
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Urban Drainage System
THC	The Highland Council
UK	United Kingdom

1. Introduction and Background

1.1 Background

1.1.1 This Design and Access Statement (DAS) describes the design process and the resultant development proposal for a battery energy storage system (BESS), known as Mey BESS (the 'Proposed Development'). The Proposed Development is located approximately 0.5 km southeast of the small village of Mey, Caithness in the Highland Council (THC) area. This DAS accompanies an application submitted to the Energy Consents Unit (ECU) of the Scottish Government for Section 36 consent to construct and operate the Proposed Development.

1.1.2 The purpose of this DAS is to provide information on the principles and approach that have guided the design process. This DAS demonstrates how the Site and its surroundings have been fully assessed to ensure that the final design solution is the most suitable for the Site. It describes the starting point for the Proposed Development design, and subsequent alterations to the layout that were made in response to the issues that were identified through the consultation and appraisal process. Details are also provided on the access arrangements to the Site.

1.1.3 This DAS should be read in conjunction with the Supporting Environmental Information Report (SEIR), which also contains information on the planning policy context the design iteration process, predicted landscape and visual effects, and includes a Construction Traffic Management Plan (CTMP).

2. Background Information

2.1 Name of the Scheme

2.1.1 The Proposed Development is called Mey BESS.

2.2 The Applicant

2.2.1 The Applicant, 'Mey Energy Storage Limited', owned by SIMEC Atlantis Energy, is a company dedicated to the development, construction and operations and maintenance of the Mey BESS project. SIMEC Atlantis Energy are a developer of renewable energy projects and the owners of the local MeyGen tidal stream energy project which is their flagship project and have been working in the area for over 15 years.

2.3 Advisors

2.3.1 The Applicant appointed ITPEnergised to undertake the design and assessment of the Proposed Development. ITPEnergised has been supported by the following technical teams:

- Young Planning and Energy Consenting (planning policy);
- TGP Landscape Architects (landscape and visual);
- AOC Archaeology (cultural heritage and archaeology);;
- Pell Frischmann (transport and access); and
- Gondolin Land and Water (flood risk and drainage).

3. Site Context and Development

3.1 Site Location and Site Plan

3.1.1 The Proposed Development Site is located at Phillips Mains Farm approximately 0.5 km southeast of Mey, Caithness at Site centre British National Grid (BNG) 329608 972340, as illustrated in **Figure 1** below. This Site location is also shown in Figure 3.1 of the SEIR.

Figure 1 - Site Location Plan

3.2 Description of the Site

3.2.1 The Site comprises an area of approximately 10.66 hectares (ha). It is currently a low quality arable agricultural field, of which the agricultural land classification is predominately Class 6.2 (land capable of use as rough grazing with moderate quality plants) with a pocket of Class 3.1 (land capable of producing consistently high yields of a narrow range of crops and/or moderate yields of a wider range) in the northeast corner of the Site.

3.2.2 There are no major surface watercourses within the Site boundary. A field drain runs roughly northeast-southwest, bisecting the eastern part of the Site.

3.2.3 The Site does not overlap with any statutory nature conservation or landscape designations. Outwith the Site boundary but within 5 km there are a small number of environmental designations, as shown in **Figure 2** below. Refer to Section 3 of the SEIR for further information.

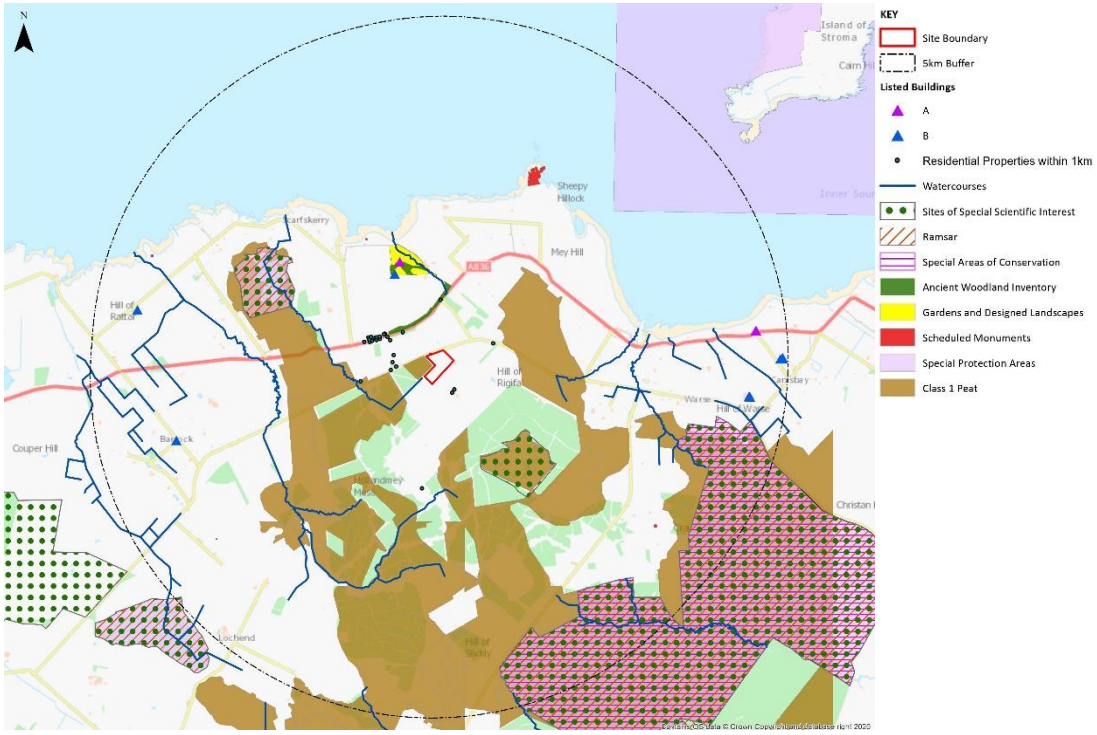

Figure 2 - Environmental Constraints within 5 km

3.3 Policy Context

3.3.1 In June 2019, the UK became the first major economy to set a legally binding target to reach net zero greenhouse gas emissions by 2050, in recognition of the transformative change needed to tackle global climate change. The Scottish Government has since set a more challenging target of 2045 for full net zero.

3.3.2 However, whilst Scotland has made strides in reducing fossil fuels, there is a global climate emergency, and it is abundantly clear that there is a long way to go in order to reduce the impacts of climate change and in respect of renewable energy. The Scottish Government has increased its climate change targets in legislation and recognises the positive contribution BESS developments can have as part of a shift to a renewables-based energy sector, focussing on reducing carbon footprint. A detailed breakdown of the planning policy context of the Proposed Development can be found in the Planning Statement submitted in support of the Section 36 application.

National Planning Framework 4

3.3.3 On 13th February 2023, the National Planning Framework 4 (NPF4) for Scotland was adopted (Scottish Government 2023). This policy replaces Scottish Planning Policy (2014).

3.3.4 NPF4 supports the expansion of and investment in renewable energy developments. Demand for green energy will increase over the coming decades as the Scottish Government's decarbonisation plans aim to achieve its legally-binding target net zero greenhouse gas emissions by 2045. NPF4 now forms part of the development plan and confirms in Policy 1 that significant weight will now be given to the global climate and nature crises when considering all development proposals. The most relevant NPF4 policy introduced for the Proposed Development is Policy 11 Energy which states:

'To encourage, promote and facilitate all forms of renewable energy development onshore and offshore. This includes energy generation, storage [our emphasis], new and replacement transmission and distribution infrastructure and emerging low-carbon and zero emissions technologies including hydrogen and carbon capture utilisation and storage (CCUS).'

3.3.5 The policy outcome is: "Expansion of renewable, low-carbon and zero emissions technologies."

3.3.6 Policy 11 is supportive of all forms of renewable energy developments including battery storage and provides detailed criteria for the assessment of renewable energy proposals.

3.3.7 The Proposed Development is also supported by the National Energy Strategy, published in 2018, which supports new energy storage capacity. It states that the Scottish Government will continue to support innovation and deployment in storage and to work to accelerate its penetration across Scotland.

Highland-wide Local Development Plan (HwLDP) (Adopted 2012)

3.3.8 The HwLDP was adopted by Highland Council in 2012 (Highland Council 2012a) and sets out the policies that will be used for assessing planning applications.

3.3.9 In relation to Caithness and Sutherland, the HwLDP states that by 2030 the area will be 'A centre of excellence for energy and engineering.'

3.3.10 By 2030, Highland will be one of Europe's leading regions and will provide 'Opportunities which encourage economic development and create new employment across the area focusing on the key sectors including renewable energy.'

3.3.11 Regarding sustainable development and climate change, HwLDP states:

'The Highland area has great potential for renewable energy production and to contribute towards meeting ambitious targets set internationally, nationally and regionally. This is recognised in the Highland Renewable Energy Strategy (2006) and can bring benefits in terms of tackling climate change, increasing energy security and contributing to the local and regional economies of the Highlands.'

3.3.12 Policy 67 Renewable Energy Developments, states that THC will support proposals where it is satisfied that they are located, sited and designed such that they will not be significantly detrimental overall, either individually or cumulatively with other developments, whilst having regard to any significant effects on the following:

- Natural, built and cultural heritage features;
- Species and habitats;
- Visual impact and impact on the landscape character of the surrounding area;
- Amenity at sensitive locations, including residential properties and public rights of way;
- Noise generation;
- Ground and surface water;
- Air safety, defence and emergency service operations;
- Communications installations;
- Tourism and recreation interests.

3.3.13 Policy 28 Sustainable Design, states that proposed developments will be assessed on the extent to which they 'Demonstrate sensitive siting and high quality design in keeping with local character and historic and natural environment and in making use of appropriate materials'.

4. Site and Area Appraisals

4.1 Site Search

Site Selection and Alternatives

4.1.1 The Site was identified as an area which would be appropriate for BESS development through initial feasibility work which considered the following key issues:

- Grid connection;
- Environmental and heritage designations;
- Topography
- Visual impact; and
- Agricultural land use.

4.1.2 Once the Site was identified, the main alternatives considered for the Proposed Development included layout design, location, size and scale.

4.2 Area Appraisal

Electricity Infrastructure

4.2.1 The Site is approximately 150m east of the proposed Gills Bay switching station which was consented in July 2022. The location of the Site close to the proposed switching station was an important factor in Site selection. The Proposed Development depends upon access to the National Grid. It would connect to the switching station via a cable connection and, therefore, proximity to the switching station is an advantage.

Topography and Elevation

4.2.2 Initially, the wider Phillips Mains landholding was considered in terms of suitability for the Proposed Development. The wider landholding extends to land that slopes upwards to the south. These more southern parts of the landholding were soon discounted from consideration due to concerns about the potential visibility of the Proposed Development and probable engineering constraints in terms of creating flat development platforms in an area of sloping topography.

4.2.3 It was clear that the land in the northern part of the landholding would be most suitable for the Proposed Development because it is flatter and there is natural visual screening offered by the plantation forestry.

Landscape Context

4.2.4 The Site lies approximately 0.5 km southeast of Mey, Caithness. The Site comprises a pastoral field demarcated by drystone walls and is open in character. The surrounding area incorporates areas of expansive forestry to the west, south and southeast. The local landform rises to the east towards the summit of the Hill of Rigifa (80m AOD), resulting in a high degree of visual containment to the west, south and east. Accordingly, the Site is most open to the north.

4.2.5 In addition, as noted above, the Site is located in close proximity to the consented Gills Bay 132kV Switching Station (located 150m to the west and forming part of the future baseline). This close proximity negates the spread of infrastructure across wider parts of the landscape, thus minimises potential adverse effects on landscape character and visual amenity.

Transport and Access

4.2.6 The Proposed Development will be accessed from the minor road to the north (C1033). Access to the Proposed Development is to be made via a new site access junction on the C1033.

4.2.7 The construction activities will lead to increased traffic volumes on the local road network during the construction phase only. The impact on the wider road network during the operational period of the Proposed Development would be negligible as there would be only occasional visits for maintenance purposes.

4.2.8 At the end of the operating lifetime of the Proposed Development, decommissioning will be undertaken to remove all structures and on-site equipment. On completion of the decommissioning works, all structures will be removed, and disturbed ground will be reinstated. The mitigation measures proposed for the decommissioning phase of the Proposed Development would be similar to that required at the construction stage. A Restoration and Decommissioning Plan would be prepared and agreed with THC at least three months in advance of decommissioning.

4.2.9 A Construction Traffic Management Plan (CTMP) has been prepared with traffic management measures to ensure efficient and safe transport of vehicles and personnel to and from the Site, minimising disruption to other road users where possible. The CTMP will be approved by THC prior to construction commencing.

5. Design Principles

5.1 Introduction

5.1.1 Design iterations were prepared and considered for the BESS layout and on-site ancillary infrastructure. In order to propose a development layout which is considered to represent the most appropriate design, potential environmental impacts and their effects, physical constraints and project economics were taken into account. Information was collated from desktop information, field surveys, consultation and local planning policy. This information provided the baseline from which site issues and sensitivities could be identified and highlighted for further detailed assessment and given priority in influencing the layout iterations of the Proposed Development. The design evolution process is described below.

5.2 Environmental Constraints and Opportunities

5.2.1 The design of the Proposed Development took into consideration the following environmental constraints and opportunities.

Opportunities

Planning Policy

5.2.2 The Proposed Development Site is located within the THC area. The Proposed Development would contribute to the delivery of national energy policy objectives underpinned by the statutory development plan, in particular National Planning Framework 4's national development number 3's recognition of the role of battery storage developments of over 50MW as a national development.

Ecological and Ornithological Statutory Designations

5.2.3 The majority of the Site comprises habitats of limited ecological value including arable farmland and modified grassland. These are species poor and are not protected or Priority Habitats in Scotland. There are no statutory ecological designations present on site. The closest ecological designation is Phillips Mains Mire Site of Special Scientific Interest (SSSI), located ~460 m southeast of the Site. The SSSI is designated for its nationally important blanket bog. No adverse effects to any designated

ecological site is predicted during the construction and operational phases (refer to the SEIR for details).

Cultural Heritage

5.2.4 There are no statutory designated heritage assets within the Proposed Development Site boundary and no designated heritage assets will be physically affected by the Proposed Development. The closest designated heritage asset is Castle of Mey, a Category A Listed Building located ~1.5 km to the northwest of the Site. The distance from the Site and the intervening topography and vegetation means that there is likely to be little direct visual connectivity between any designated heritage asset and the Site.

Landscape Sensitivity

5.2.5 The Site is not located within a designated landscape, and there are no National Scenic Areas (NSAs) or National Parks in the vicinity. Castle of Mey Garden and Designed Landscape (GDL) is located approximately 1 km north of the Site.

5.2.6 Given the close proximity of the consented SSE Gills Bay switching station, it is likely that the Proposed Development will be viewed as an extension of this and will consequently not result in significant new landscape and visual effects.

Residential Receptors

5.2.7 There are no residential properties within the Site boundary, and few residential properties within close proximity to the Proposed Development. The nearest properties are at Phillips Mains Farm located 280m to the south of the Site.

5.2.8 All properties have been appropriately considered within the noise assessment and, with appropriate design considerations, no unacceptable noise impacts are predicted.

Constraints

5.2.9 It is important to note that the identification of a constraint does not necessarily result in the exclusion of that area from the potential development envelope; rather it means that careful thought and attention was paid to the constraint and the design altered appropriately.

Landscape and Visual

5.2.10 The Proposed Development will introduce a localised alteration in landcover from arable fields to a BESS facility, surrounded by fencing. There is potential for landscape and visual effects on a number of landscape and visual receptors including residential receptors, designated assets, landscape character, and users of the National Cycle Network (NCN1) and the 'North Coast 500' which is routed along the A836.

5.2.11 The location of battery container units and associated ancillary infrastructure has been considered within the iterative design process in order to minimise the impacts on the nearest receptors.

5.2.12 An appraisal of landscape and visual effects is presented in Section 7 and Annex 3 of the SEIR.

Cultural Heritage

5.2.13 Nine non-designated heritage assets have been identified within the Site. A further 18 non-designated assets have been identified within a surrounding 1km Study Area, and four designated assets including a Scheduled Monument, Category A Listed Building, Category B Listed Building and an Inventory Garden and Designed Landscape have been identified within the 2 km Study Area.

5.2.14 An assessment of cultural heritage effects is presented in Section 9 and Annex 5 of the SEIR.

Residential Amenity

5.2.15 There are several residential receptors within close proximity to the Proposed Development. The location of the containerised battery units has been carefully considered within the iterative design process in order to minimise the impacts on the nearest properties. Additional screening in the form of hedgerows and woodland will also be planted to mitigate any potential effects.

Ecology and Ornithology

5.2.16 Ten statutory nature conservation designations are present within 5 km of the Site. The Caithness Lochs Special Protection Area (SPA) and Ramsar site is located 2.2 km to the north-west of the Site. An Ecological Impact Assessment including a shadow Habitats Regulations Appraisal (HRA) is provided in Annex 4 of the SEIR.

5.2.17 An Outline Biodiversity Enhancement and Management Plan (OBEMP) is provided in Annex 4, Appendix 4 of the SEIR, setting out measures for enhancing the biodiversity of the Proposed Development Site through actions including landscape planting (species-rich grassland, hedgerows, shrubs, trees, and planting around the attenuation pond), and provision of bat, barn owl and bird boxes.

Transport

5.2.18 There will be increased traffic volumes on the study area road network specifically during the construction phase. A CTMP has been prepared to ensure the least disruption to the local residents where possible and can be found in Annex 8 of the SEIR.

5.3 Design Considerations

5.3.1 Taking into consideration the above constraints and opportunities, the following principles were adopted during the design iterations undertaken by the Applicant to ensure that the final design of the Proposed Development is the most suitable for the Site:

- Respected cultural heritage constraints;
- Limited impact on habitats;
- Limited impact on existing trees and hedgerows;
- Considered topography, avoiding steeper slopes;
- Respected the interests and concerns of the residents living in close proximity to the Proposed Development; and
- Maximised the potential export storage capacity.

5.4 Proposed Development Layout Iterations

5.4.1 The Applicant has undertaken design iterations of all aspects of the Proposed Development. This section describes the principal design iterations that have been undertaken as the Applicant has sought to maximise the number of containerised battery units on the Site, whilst minimising the environmental effects as identified above.

Layout Iterations

Layout 1

5.4.2 Layout 1 was the initial layout of containerised battery units and associated infrastructure including site access tracks, BESS substation, temporary construction compound, SuDS Pond, perimeter fence and hedgerow. A 3 m buffer on either side of the existing drainage ditch running perpendicular to the road in the east of the Site was applied.

Layout 2

5.4.3 The second layout, the finalised layout, saw the addition of mixed native species woodland edge tree planting along the north and east side of the Site. Species-rich wildflower meadow was introduced around the peripheral parts of the Site and in the locality of the proposed SuDS location. The internal track layout was made more efficient, reducing the overall length of new tracks. The site access was shifted to the east, away from the adjacent plantation forestry, to improve visibility for drivers using the site access junction. Location of water tanks was also included to consider firewater management within the site design.

6. Design Solution

6.1.1 The Proposed Development comprises containerised battery units with a total export storage capacity of up to 300MW. A number of ancillary elements are also proposed, including:

- BESS Substation;
- Power Conditioning Units (PCUs);
- Low Voltage Board and Transformer;
- Communications Building;
- Welfare Facilities;
- Site fencing;
- CCTV;
- Site access and parking area; and
- Landscape planting and ecological enhancement features

6.1.2 Further details of the site infrastructure are provided within Section 4 of the SEIR. The final layout of the Proposed Development is shown in **Figure 4** below.

Figure 4 Site Layout

7. Conclusion

7.1.1 The final layout has been informed by a design iteration process, taking into account physical constraints, potential environmental, landscape and visual impacts and their effects. The information used to inform the design iteration process included consultation responses received, baseline data and the impact assessment undertaken.

7.1.2 The Proposed Development layout is considered to represent the most appropriate design, taking into account potential environmental impacts and physical constraints, while maximising the export storage capacity of the Site.

7.1.3 Overall, the Proposed Development is an appropriately designed, sensibly located, and completely sustainable development which is in line with local and national planning policy.

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