Botley West Solar Farm

Environmental Statement

Volume 3

Appendix 14.3: Outline GHG Reduction Strategy

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Glossary

Term	Meaning
The Applicant	SolarFive Ltd
The Project	The Botley West Solar Farm (Botley West) Project
UK Electricity Grid Carbon Intensity	Carbon intensity is a measure of how clean UK Grid electricity is. It refers to how many grams of carbon dioxide (CO_2) are released to produce a kilowatt hour (kWh) of electricity.
Future Grid Average	Projection of how clean the future UK Grid electricity is likely to be based on current policies. It refers to how many grams of carbon dioxide (CO_2) are released to produce a kilowatt hour (kWh) of electricity.
Life Cycle Assessment	The systematic analysis of the potential environmental impacts of products or services during their entire life cycle.
Marginal Generation Source	Accounts for sustained changes in energy consumption and generation sources for the purposes of cost-benefit analysis, including policy appraisal.
Scope 1 Emissions	Direct greenhouse gas emissions from sources owned or controlled by the company (e.g. from combustion of fuel at an installation)
Scope 2 Emissions	Caused indirectly by consumption of purchased energy (e.g. from generating electricity supplied through the UK Electricity Grid to an installation);
Scope 3 Emissions	All other indirect emissions occurring as a consequence of the activities of the company (e.g. in the upstream extraction, processing and transport of materials consumed or the use of sold products or services).

Abbreviations

Abbreviation	Meaning
BEIS	The former Department for Business, Energy & Industrial Strategy
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
DEFRA	Department for Environment, Food and Rural Affairs
EIA	Environmental Impact Assessment
ES	Environmental Statement
EPD	Environmental Product Declaration
GHG	Greenhouse Gas
GWP	Global Warming Potential
LCA	Life Cycle Assessment

Abbreviation	Meaning
NGET	National Grid Electricity Transmission
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
PEIR	Preliminary Environmental Information Report
PINS	The Planning Inspectorate
PV	Photovoltaic
PVDP	Photovolt Development Partners GmbH

Units

Unit	Description
%	Percentage
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
$kgCO_2e$	Kilogrammes of Carbon Dioxide Equivalent
tCO_2e	Tonnes of Carbon Dioxide Equivalent
km^2	Square kilometres
kWh	Kilowatt hour
MW	Megawatt
MWe	Megawatt electrical
MWh	Megawatt hour

1 Introduction

1.1 Background

Introduction

1.1.1 This document forms Volume 3, Appendix 14.3 of the Environmental Statement prepared for the Botley West Solar Farm (referred to hereafter as 'the Project'). The Environmental Statement presents the findings of the Environmental Impact Assessment (EIA) process for the Project.

1.1.2 This document provides a strategy to minimise emissions in line with the requirements of National Policy Statement (NPS) EN 1 (DESNZ, 2023). It sets out how whole life carbon emissions will be managed and reduced to ensure that best practice is followed.

Project Overview

1.1.3 The key components of the Project considered within this Outline Greenhouse Gas (GHG) Reduction Strategy include the following:

- Retained agricultural use of the land for conservation grazing, and with some areas given over to horticulture;
- Solar photovoltaic (PV) Modules;
- Power conditioning system (PCS) (inverters, transformers and supporting equipment);
- High Voltage Transformers, including switchgear;
- Onsite cabling (33kV and 275kV);
- National Grid Electricity Transmission (NGET) 400kV substation;
- Fencing, security cameras and lighting;
- New vehicular accesses from the public highway and internal maintenance tracks;
- New green infrastructure including trees and hedgerows and other planting measures to enhance biodiversity; and
- New footpaths and cycleways.

1.1.4 Details of the activities and infrastructure associated with the Project are set out in Volume 1, Chapter 6: Project description of the Environmental Statement **[EN010147/APP/6.3]**.

Purpose of the Outline GHG Reduction Strategy

1.1.5 This report aims to outline a strategy to minimise emissions in line with the requirements of National Policy Statement (NPS) EN 1 (DESNZ, 2023) which states:

'Steps taken to minimise and offset emissions should be set out in a GHG Reduction Strategy, secured under the Development Consent Order. The GHG Reduction Strategy should consider the creation and preservation of carbon stores and sinks including through woodland creation, hedgerow creation and restoration, peatland restoration and through other natural habitats' [Paragraph 5.3.7 of NPS EN-1].

1.1.6 This Strategy will be secured under the DCO and should be read in conjunction with Volume 1, Chapter 14: Climate change of the Environmental Statement (ES) **[EN010147/APP/6.3]** as supporting information.

1.1.7 This Outline Strategy sets out how whole life carbon emissions will be managed and reduced during the detailed design stage and throughout the construction, operation and maintenance, and decommissioning phases, to ensure that best practice is followed. This strategy is intended to evolve throughout the design process, building upon the emission reduction opportunities and design measures outlined below, and identifying those to be embedded throughout the procurement and whole life of the Project.

1.1.8 The Applicants, alongside the appointed contractors, will use the information in this Outline GHG Reduction Strategy to prepare an increasingly detailed GHG Reduction Strategy prior to commencement of construction.

1.1.9 The implementation of, and updates to, the Outline GHG Reduction Strategy will integrate the Applicants' commitment to continuously improve their environmental management system through the application of their OMS performance improvement cycle and through the requirement at major operating sites to attest or certify to the international standard, ISO 14001 - Environmental Management.

1.1.10 The appointed principal designer and contractors, informed by this Outline GHG Reduction Strategy, will actively identify and pursue carbon reduction opportunities and mitigate carbon risks through all means as part of the integrated scheme development.

1.2 Outline GHG Reduction Strategy Objectives

1.2.1 When considering current guidance and standards, the core objectives of this Outline GHG Reduction Strategy are as follows:

- to outline the foundations for a strategy through the design evolution of the Project to embed GHG reduction principles across all delivery stages;
- to identify GHG hotspots to inform design evolution; and
- to reduce the whole life carbon footprint of the Project as low as reasonably practicable by applying the carbon reduction hierarchy, to promote innovation and carbon reductions.

1.3 Emissions Assessment

1.3.1 As part of the ES, an assessment of emissions associated with the construction, operation and maintenance, and decommissioning stages of the Project has been completed and reported within Volume 1, Chapter 14:

Climate Change of the ES **[EN010147/APP/6.3]**. Due to the nature of the Project, i.e., infrastructure constructed to generate renewable electricity for connection to and use within the National Grid, the gross GHG emissions total is dominated by avoided carbon emissions associated with the operation of the Project.

1.3.2 This Outline GHG Reduction Strategy considers the emissions reported within the ES, and outlines emission reduction measures to be considered by the design team and during procurement processes, where practicable. Focus will be placed on elements that contribute the greatest amount to project emissions.

1.3.3 The purpose of the Project is to generate renewable electricity for connection to and use within the National Grid, contributing to:

- the United Kingdom (UK) Government's ambition to deliver 70 GW of solar energy by 2035;
- securing our energy supply; and
- the UK's response to the climate change crisis.

1.3.4 The focus of this Strategy is to minimise emissions resulting from the Project.

1.3.5 The whole life assessment of the Project on the global atmospheric mass of carbon dioxide (CO_2) has been considered within Volume 1, Chapter 14: Climate change of the ES **[EN010147/APP/6.3]** .

1.4 Scope

1.4.1 The GHGs considered in this outline strategy are those in the 'Kyoto basket' of global warming gases expressed as their CO_2-equivalent (CO_2e) global warming potential (GWP), listed within Annex A of the Kyoto Protocol (an international treaty to limit and reduce GHGs). This is denoted by CO_2e units in emissions factors and calculation results. GWPs used are typically the 100-year factors in the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (IPCC, 2013) or as otherwise defined for national reporting under the United Nations Framework Convention on Climate Change.

1.4.2 The scope considers the Project during the construction, operation and maintenance, and decommissioning phases. As is detailed within Volume 1, Chapter 14: Climate change of the ES **[EN010147/APP/6.3]**, the key emissions sources included which are considered in the outline strategy are:

- embodied carbon emissions in materials;
- transport emissions; and
- avoided emissions associated with the abatement of required fossil fuel generators and their associated emissions related with the UK Grid electricity.

1.4.3 The primary purpose of the Project is to generate electricity which avoids the need for fossil fuel generated electricity and reduces the UK Grid carbon intensity. The avoided emissions associated with the displacement of projected marginal generation of the UK Grid has been detailed within Volume

3, Appendix 14.2: Greenhouse gas assessment of the ES **[EN010147/APP/6.5]** , and assessed within Volume 1, Chapter 14: Climate change of the ES **[EN010147/APP/6.3]**. Such emissions will not be included within the scope of this GHG Reduction Strategy, given the purpose is to focus on emissions reduction measures associated with the emissions sources listed above.

2 Guidance and Standards

2.1 Overview

2.1.1 The following standards and guidance have been used to inform the preparation of this Outline GHG Reduction Strategy:

- PAS 2080 – Carbon Management in Buildings and Infrastructure (BSI, 2023); and
- Institute of Environmental Management and Assessment (IEMA) Guide: Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance (IEMA, 2022).

PAS 2080

2.1.2 There are multiple technical requirements in the PAS 2080:2023 technical standard when considering GHG reduction in infrastructure projects. Key considerations include:

- following the PAS 2080 carbon reduction hierarchy;
- implementing a carbon management process to help an organisation meet the requirements of PAS 2080 when delivering assets and/or programmes of work;
- quantifying, assessing and reporting a scheme's carbon emissions to inform scheme development and overall asset management;
- engaging with other value chain members, as early as possible, in a collaborative way to identify whole life low carbon solutions, including the selection of relevant low carbon materials and products, innovative design solutions and construction methods;
- defining the specific carbon management actions to be undertaken, and the key strategies and approaches to implement the culture and behaviour changes necessary for delivering carbon reduction, specifically:
  - collaborative working across the value chain;
  - implementing the carbon reduction hierarchy when identifying potential opportunities to reduce carbon; and
  - raising major carbon challenges to design development and construction planning, where key carbon risks are identified.

2.1.3 This Outline GHG Reduction Strategy follows a data collection and analysis methodology which adheres to the requirements of the PAS 2080 standard.

The Strategy assesses carbon use for the whole lifecycle of the project and promotes embodied carbon management and commitment to achieving carbon reductions.

IEMA guidance on greenhouse gas emissions and evaluating their significance

2.1.4 The ability to achieve GHG emissions reduction for the project reduces over time. This makes it important that the emissions reduction measures and opportunities are considered from the outset or at the earliest practical point.

2.1.5 The need to ensure that GHG mitigation measures are implemented does not end at the pre-application Environmental Impact Assessment (EIA) stage, but extends after consent has been granted for the project, in addition to throughout the project lifetime.

2.1.6 The IEMA GHG Management Hierarchy provides a structure set out as eliminate, reduce, substitute and compensate. The IEMA (2022) GHG in EIA Guidance provides a variation of these steps for practitioners in EIA to follow to identify opportunities that direct GHG mitigation action for a project:

- '***Do not build:*** *evaluate the basic need for the proposed project and explore alternative approaches to achieve the desired outcome/s;*
- ***Build less:*** *realise potential for re-using and/or refurbishing existing assets to reduce the extent of new construction required;*
- ***Design clever:*** *apply low carbon solutions (including technologies, materials and products) to minimise resource consumption and embodied carbon during the construction, operation, user's use of the project, and at end-of-life;*
- ***Construct efficiently:*** *use techniques (e.g., during construction and operation) that reduce resource consumption and associated GHG emissions over the life cycle of the project; and*
- ***Offset and remove emissions:*** *as a complementary strategy to the above, adopt off-site or on-site means to offset and/or sequester GHG emissions to compensate for GHG emissions arising from the project*.'

3 Calculated Emissions

3.1 Overview

3.1.1 An assessment of emissions associated with the Project has been completed and reported within Volume 1, Chapter 14: Climate change of the ES **[EN010147/APP/6.3]**, considering a maximum design scenario that represents a conservative assessment of associated emissions. Such emissions represent a business-as-usual scenario with no emissions reduction measures. The Outline GHG Reduction Strategy seeks to define an approach to reduce these emissions.

3.1.2 Emissions associated with the construction, operation and maintenance, and decommissioning phases are detailed within sections 3.2, 3.2.1, and 3.4

below. Each stage of a project can be attributed to the following life cycle analysis (LCA) stages, which have been referenced throughout the sections below:

- materials and construction: LCA stages A1 - A5;
- operation and maintenance: LCA stages B1 - B5; and
- decommissioning: LCA stages C1 - C4.

3.1.3 As the Project is currently still progressing through stages of design and development, data related to specific metrics for site-specific design details are currently at various stages. As such, emissions associated with the Project have been calculated via a range of methodologies, including provided indicative design information, published benchmark carbon intensities and LCA literature, and the application of material or fuel emission intensities to material or fuel quantities. Detailed methodology for the assessment of emissions resulting from the Project can be found within Volume 3, Appendix 14.2: Greenhouse Gas Calculations of the ES **[EN010147/APP/6.5]**.

3.1.4 GHG emissions caused by an activity are often categorised into 'scope 1', 'scope 2' or 'scope 3' emissions, following the guidance of the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol suite of guidance documents (WRI and WBCSD, 2004) where:

- Scope 1 emissions: direct GHG emissions from sources owned or controlled by the Applicant, e.g., from combustion of fuel at an installation.
- Scope 2 emissions: caused indirectly by consumption of purchased energy, e.g., from generating electricity supplied through the national grid to an installation.
- Scope 3 emissions: all other indirect emissions occurring as a consequence of the activities of the Applicant, e.g., in the upstream extraction, processing and transport of materials consumed or the use of sold products or services.

3.1.5 This Outline GHG Reduction Strategy includes emissions from all three scopes, where this is material and reasonably possible from the information and emissions factors available, to capture the impacts attributable to the Project. These emissions are not separated out by defined scopes (Scopes 1, 2 or 3) in the assessment.

3.2 Construction

3.2.1 The estimated GHG emissions arising from the consumption of materials and fuels to construct the Project are presented in Table 3.1 . These values are presented in Volume 3, Appendix 14.2 **[EN010147/APP/6.5]** and Volume 1, Chapter 14 **[EN010147/APP/6.3]** of the ES. Additional details on the data, calculations and methodology can be sought from both these documents.

Table 3.1: Estimated construction stage Project GHG emissions

LCA Stage	Item	Project emissions (tCO_2e)	Percentage contribution to construction stage emissions for the Project
A1 – A5	PV Modules	506,000	71%
	PV Frames	98,131	14%
	Fence and Gates	570	<1%
	Cables	16,933	2%
	Steel strip grounding	8,780	1%
	Substation, PCS and Central Inverters	43,808	6
	Transport	40,261	6
	Site Activity	2,523	<1%
	Total	717,006	

3.2.2 Emissions arising from embodied carbon associated with the materials used to construct the Project have been assessed to comprise the majority of construction stage GHG emissions arising from the Project. Emissions resulting from the use of fuel (i.e., from traffic movements) have also been assessed as resulting in a minor contribution to construction phase emissions.

3.2.3 Specifically, emissions associated with the following items comprise the largest contributors to construction stage emissions:

- PV Modules, comprising 71% of construction stage emissions; and
- PV Module Mounting Structures, comprising 14% of construction stage emissions.

3.2.4 Emissions associated with the PV modules have been calculated to arise from the raw material supply of an example environmental product declaration (EPD) for a monocrystalline module. The majority of emissions are associated with solar glass element of the module.

3.2.5 Emissions associated with the PV Module mounting structures have been calculated based on a provided EPD.

3.2.6 These elements are the key emissions sources that should be focussed on when looking to implement GHG reductions, as these have the greatest potential to impact construction phase emissions. Reduction opportunities are further detailed within section 4.

3.2.7 The impact of the construction of the Project on existing land use has also been addressed within Volume 1, Chapter 14: Climate change of the ES **[EN010147/APP/6.3]**. This accounts for the land use change within Project site area. Key consideration has been given to land with high carbon stock such as woodland and peat, and the potential for its disturbance by construction activities. Given that it was determined that no such areas would be disturbed by the Project due to no significant carbon stores were found within the site area (Volume 1, Chapter 17: Agricultural land use and Public

Rights of Way of the ES **[EN010147/APP/6.5]**). Emissions arising from changing land use have not been considered further.

3.3 Operation and Maintenance

3.3.1 The estimated GHG emissions arising from the replacement and maintenance of materials and consumption of fuels throughout the operational lifetime of the Project (which has been assumed to be 37.5 years for the purpose of the climate change assessment) are presented in Table 3.2. These values are presented in Volume 3, Appendix 14.2 **[EN010147/APP/6.5]** and Volume 1, Chapter 14 of the ES **[EN010147/APP/6.3]**. Additional details on the data, calculations and methodology can be sought from both these documents.

Table 3.2: Estimated operation and maintenance stage Project GHG emissions

LCA Stage	Item	Project emissions (tCO_2e)	Percentage contribution to construction stage emissions for the Project
B1 – B5	PV modules	506,000	95%
	Inverters	4,629	<1%
	Transport	20,042	4%
	Site Activity	4,029	<1%
	Total	534,699	

3.3.2 Emissions arising from replacement of PV modules have been assessed to comprise the majority of operation and maintenance stage GHG emissions arising from the Project (95% of all operation and maintenance phase emissions). As such, this is the key emissions source that should be focussed on when looking to implement GHG reductions.

3.4 Decommissioning

3.4.1 The estimated GHG emissions arising from the decommissioning stage of the Project are presented in Table 3.3. These values are presented in Volume 1, Chapter 14: Climate Change **[EN010147/APP/6.3]** and Volume 3, Appendix 14.2 of the ES **[EN010147/APP/6.5]**. Additional details on the data, calculations and methodology can be found in both these documents.

Table 3.3: Estimated decommissioning stage Project GHG emissions

LCA Stage	Item	Project emissions (tCO_2e)	Percentage contribution to construction stage emissions for the Project
C1 – C4	PV Modules	24,013	99%
	Inverters	192	<1%
	Frames (Piles + Mounting Structure)	76	<1%
	Total	24,281	
D	Benefits	-274,074	

3.4.2 Emissions arising from disposal of PV modules have been assessed to comprise the majority of decommissioning stage GHG emissions arising from the Project (99% of all decommissioning phase emissions). As such, this is the key emissions source that should be focussed on when looking to implement GHG reductions.

4 Reduction Opportunities

4.1 Overview

4.1.1 As outlined within section 2, GHG reduction opportunities identified below follow the GHG management hierarchy (i.e., eliminate, reduce, substitute, and compensate), as visualised below in Figure 1. Priority should be given to emissions removal, followed by carbon and energy reductions (through the optimisation of project design), and then to substitution measures (through the procurement of low carbon products and engaging with suppliers with a low carbon footprint). Finally, having considered and implemented the above steps, offsetting is recommended as a final point of emissions reduction.

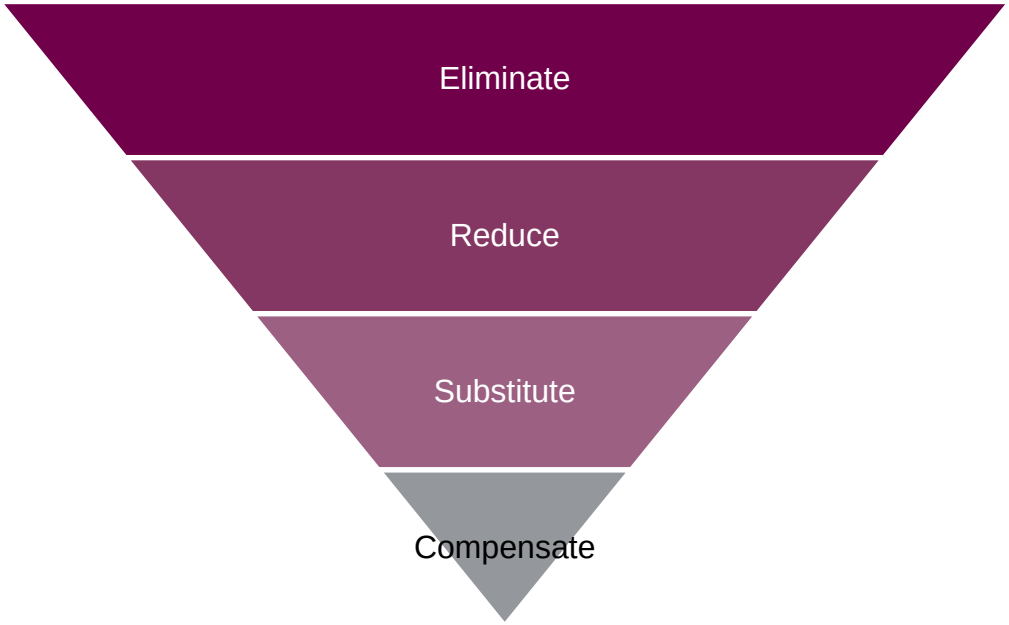

Figure 1: IEMA and PAS 2080 GHG Management Hierarchy

4.1.2 The GHG reduction opportunities identified within the following sections can be applied largely to both the construction, and operation and maintenance phases of the Project, with some also applicable to the decommissioning phase. To avoid repetition, the GHG reduction opportunities have not been separated into those applicable to each phase; additional detail for each phase will be provided within the Final GHG Reduction Strategy.

4.2 Reduction Opportunities

4.2.1 The following are considered the main reduction opportunities available to reduce emissions associated with the Project, where the opportunities may be available, and practicable:

- seeking to optimise project design resulting in reduced demand for goods and services;
- considering purchasing decisions to favour low-carbon products or services;
- purchasing from suppliers with a low carbon footprint; and
- engaging with suppliers to reduce emissions across the value chain.

4.2.2 Each of the above are further detailed within the sections below.

4.2.3 Opportunities for enhancement identified, but not considered within the current GHG assessment within the climate change chapter (Volume 1, Chapter 14 **[EN010147/APP/6.3]**), are further considered and explored below. This is not exhaustive and shall be further explored through the design evolution. Opportunities to reduce GHG emissions will be considered based on whole life impact across the Project.

Optimising project design

4.2.4 Where the quantities of materials used are significant, resulting in a large magnitude of estimated emissions, effort would be made to reduce such emissions where practicable, through optimising project design. For example, choosing substation building designs that are less material intensive.

4.2.5 Further, efficiencies in logistics should be explored to include: consideration of journey distances for material procurement, reducing the distance that goods travel through intelligent route planning systems and intermediate storage.

4.2.6 Design workshops hosted by relevant specialists could be run throughout key stages of the design and procurement phases of the project, to generate GHG emissions savings opportunities during detailed design. These workshops could consider whole life carbon impacts of the project design and the following design areas, where feasible:

- Use of locally sourced materials;
- Consideration of life cycle assessment (LCA) to a product level;
- Consideration of materials able to be recycled at the end of the project lifetime; and
- Consideration of options to maximise carbon sequestration on site in collaboration with other topics such as ecology, land-use etc, where this does not impact their requirements (e.g. achievement of biodiversity net gain).

4.2.7 Examples to be explored where feasible include but are not limited to:

- consolidation of traffic movements in conjunction with a Final Construction Traffic Management Plan (refer to the Outline Construction Traffic Management Plan, submitted as an annex to the Outline Code of Construction Practice **[EN010147/APP/7.6.1]**);
- use of 'green transformers' – i.e. those which are more energy efficient, require lower maintenance, and have an enhanced lifecycle;
- use of less material intensive substation building designs (e.g., screw-pile foundations);
- use of geotextiles (using recycled plastics) in ground reinforcement and drainage;
- use of exposed concrete finishes in substation buildings; and
- use of sulphur hexafluoride-free switchgear, where commercially viable.

Procurement of low carbon products

4.2.8 There are two main options for reducing emissions through procurement. These are to purchase from suppliers with a low carbon footprint, and /or to shift towards low-carbon alternatives. These are discussed further within this section, and within the section below.

4.2.9 In order to make the greatest impact when implementing a purchasing strategy that prioritises suppliers and materials with a low carbon footprint, suppliers and materials that have the highest contribution to project emissions should be prioritised, where practicable. As detailed within section 3, the construction of the PV modules results in the greatest quantity of emissions. It is these areas where the greatest reductions can be achieved should they be targeted with emissions reduction measures.

4.2.10 The Project is limited by market availability of low carbon resources and it is not possible to predict the level of decarbonisation for many necessary products for the delivery of the Project. As has been detailed in section 3.2, the Project has sought to procure materials with EPD's to drive down GHG emissions associated with the manufacturing of large GHG emission sources, PV modules and inverters). As the Project progresses, the Applicant will seek to explore further opportunities of low carbon criteria within procurement activities, in partnership with the supply chain.

4.2.11 Measures to be explored to inform procurement decisions may include but are not limited to:

- source Environmental Product Declarations and preferentially procure products with fewer reported emissions;
- use alternative low carbon fuels such as biofuel, electric and hydrogen seeking to avoid fossil fuel combustion sources;
- use low energy solutions for the temporary site compounds, offices, and welfare facilities, such as:

  - renewable energy (e.g., on site solar PV, renewable procurement such as power purchase agreement or obtaining Renewable Energy Guarantees of Origin (REGO) certificates);
  - battery storage; and
  - biofuels in place of diesel within generators.
- use low carbon materials, such as:
  - low carbon recycled steel;
  - low carbon concrete (i.e., concrete that includes a greater proportion of fly ash, ground granulated blast-furnace slag and silica fume); and
  - recycled plastics (i.e., in drainage infrastructure).
- Maximise the reuse of materials throughout the life cycle of the Project.

Suppliers with a low carbon footprint

4.2.12 Differentiating suppliers when procuring products based on GHG emissions generated by their goods and services can be an effective reduction strategy for a development project. Where possible, at the contract tendering stage consideration will be given to suppliers' strategies towards decarbonisation strategies and trajectories aligned with science-based targets consistent with necessary reductions to achieve UK Nationally Determined Contribution.

Supply chain engagement

4.2.13 Suppliers should be engaged during the procurement process to ensure emissions reduction opportunities are applied to relevant materials throughout the contract length. The following measures could be adopted:

- set and communicate emissions intensity targets for the Project (i.e., tCO_2 per m^2);
- request supplier carbon footprints and net zero targets;
- require contractors to report their carbon footprint;
- implement minimum requirements for suppliers, for example with a code of conduct or section in the contract;
- require contractors to report material procurement practices, including quantities of material purchased and its specifications, to enable monitoring of adherence to procurement requirements;
- prioritise giving high-performing suppliers priority in contract biddings, or making environmental performance part of the procurement decision;
- recommend contractors use fuel efficient vehicles and practices (telematics and start/stop technology) to optimise fuel consumption; and
- implementation of an improvement programme to measure and reduce the climate impact of the supplier.

Offsetting

4.2.14 The nature of the Project is to generate renewable electricity, to be transmitted to the UK grid, contributing to national electricity decarbonisation. By facilitating the expansion of renewable energy supply, the Project would assist the UK Government target of achieving a fully decarbonisation power system by 2035 and aim to become net zero by 2050.

4.2.15 As outlined in paragraph 4.1.1, offsetting is recommended as a final point of emissions reduction strategy following the implementation of all other feasible measures to reduce absolute emissions arising from the Project.

4.2.16 The assessment of emissions arising from the Project (see Volume 1, Chapter 14 of the ES **[EN010147/APP/6.3]** identifies that the magnitude of calculated avoided emissions over the life time of the Project results in significant avoided emissions, which exceeds emissions arising from the construction, operation and maintenance, and decommissioning of the Project.

4.2.17 As such, offsets will not be considered as a part of the GHG Reduction Strategy going forwards.

5 Monitoring and Next Steps

5.1.1 The climate change assessment presented within Volume 1, Chapter 14 of the ES **[EN010147/APP/6.3]** and supporting technical reports has detailed the initial quantification of GHG emissions associated with the early design considerations of the Project.

5.1.2 As detailed in paragraph 1.1.7, this Outline GHG Reduction Strategy is intended to be a live and evolving document. The Applicants, alongside the appointed contractors, will use the information in this Outline GHG Reduction Strategy to prepare the Final GHG Reduction Strategy.

5.1.3 The implementation of, and updates to, the Strategy will integrate the Applicant's commitment to continuously improve their environmental management..

6 References

British Standards Institution (2023) PAS 2080 – Carbon Management in Buildings and Infrastructure.

Department for Energy Security & Net Zero (DESNZ, 2023) Overarching National Policy Statement for Energy (NPS EN-1). Available: EN-1 Overarching National Policy Statement for Energy (publishing.service.gov.uk)

IEMA (2022) Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance. 2nd Edition. [Online] Available: assessing-greenhouse-gas-emissions-and-evaluating-their-significance (iema.net)

IPCC (2013) Climate Change 2013: The Physical Science Basis. Available: https://www.ipcc.ch/report/ar5/wg1/

WRI and WBSCD (2004) A Corporate Accounting and Reporting Standard.