

Environmental Statement: Volume 1
Table of Contents, Glossary and Acronyms

May 2025



PINS Ref: EN010153

Document Ref: EN010153/DR/6.1

Planning Act 2008; and Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations Regulation 5(2)(a)

Document Control

Revision	Date	Prepared By	Reviewed / Approved By
P01	May 2025	A Russell	D Adams

© AXIS P.E.D. Ltd 2025. All rights reserved.

This document and its accompanying documents contain information which is confidential and is intended only for the use of the client. If you are not one of the intended recipients any disclosure, copying, distribution or action taken in reliance on the contents of the information is strictly prohibited.

Unless expressly agreed, any reproduction of material from this document must be requested and authorised in writing from AXIS P.E.D. Ltd. Authorised reproduction of material must include all copyright and proprietary notices in the same form and manner as the original and must not be modified in any way. Acknowledgement of the source of the material must also be included in all references.

Prepared For: Frodsham Solar Ltd

Prepared By:



Well House Barns, Chester Road, Bretton, Chester, CH4 0DH 1st Floor, Barfield House, Alderley Road, Wilmslow, SK9 1PL Maling Exchange, Studio 307, Hoults Yard, Walker Road, Newcastle Upon Tyne, NE6 2HL

T: 0344 8700 007 enquiries@axis.co.uk www.axis.co.uk

VOLUME 1

TABLE OF CONTENTS

1.0	INTRODUCTION	1-1
1.1	Background	1-1
1.2	The Proposed Development	1-3
1.3	Site Description	1-4
1.4	Structure of the ES	1-12
1.5	Competent Experts	
1.6	Legislative and Planning Policy Context	1-16
1.7	Consultation	1-21
1.8	Purpose of the ES	1-24
1.9	References	1-28
2.0	THE PROPOSED DEVELOPMENT	2-1
2.1	Introduction	2-1
2.2	The Order Limits	2-4
2.3	Rochdale Envelope and Design Parameters	2-6
2.4	Key Components of the Proposed Development	2-9
2.5	Construction Phase	2-70
2.6	Operational Phase	2-89
2.7	Decommissioning Phase	2-94
2.8	Waste Management	2-96
2.9	References	2-101
3.0	ALTERNATIVES AND DESIGN EVOLUTION	3-1
3.1	Introduction	3-1
3.2	Need for the Proposed Development	
3.3	Alternative Sites	3-5
3.4	Alternative Solar Technologies	3-12
3.5	Scheme Evolution and Alternative Design Considerations	3-16
3.6	References	3-29
4.0	METHODOLOGY	4-1
4.1	Introduction	4-1
4.2	Scope of the Environmental Impact Assessment	
	Coops of the Environmental impact /100000mont	т

4.3	Consultation	4-9
4.4	Approach to Assessment	4-12
4.5	Indirect Effects	4-24
4.6	Cumulative and In-Combination Effects	4-26
4.7	References	4-44
5.0	CLIMATE CHANGE	5-1
5.1	Introduction	5-1
5.2	Legislation, Policy and Guidance	5-3
5.3	Assumptions and Limitations	5-15
5.4	Consultation and Engagement	5-19
5.5	Assessment Methodology	5-27
5.6	Baseline Conditions	5-42
5.7	Incorporated Mitigation and Enhancement Measures	5-47
5.8	Assessment of Likely Impacts and Effects	5-53
5.9	Additional Mitigation, Enhancement and Monitoring	
5.10	Residual Effects	5-67
5.11	In-Combination Climate Change Impacts	5-68
5.12	Cumulative Effects	5-69
5.13	Conclusions	5-70
5.14	References	5-71
6.0	LANDSCAPE AND VISUAL AMENITY	6-1
6.1	Introduction	6-1
6.2	Legislation, Policy and Guidance	
6.3	Assumptions and Limitations	
6.4	Consultation and Engagement	
6.5	Assessment Methodology	
6.6	Baseline Conditions	
6.7	Incorporated Mitigation and Enhancement Measures	6-77
6.8	Assessment of Likely Significant Effects	
6.9	Additional Mitigation, Enhancement and Monitoring	6-139
6.10	Residual Effects	6-140
6.11	Inter-Project Cumulative Effects Assessment	
6.12	Conclusions	
6.13	References	
7.0	TERRESTRIAL ECOLOGY	7-1

7.1 7.2 7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10 7.11 7.12	Introduction Legislation, Policy and Guidance Assumptions and Limitations Consultation and Engagement Assessment Methodology Baseline Conditions Incorporated Mitigation and Enhancement Measures Assessment of Likely Impacts and Effects Additional Mitigation, Enhancement and Monitoring Cumulative Effects Conclusions References	
8.0	ORNITHOLOGY	8-1
8.1	Introduction	8-1
8.2	Legislation, Planning Policy and Guidance	8-5
8.3	Assumptions and Limitations	8-19
8.4	Consultation and Engagement	8-20
8.5	Assessment Methodology	8-22
8.6	Baseline Conditions	8-42
8.7	Incorporated Mitigation and Enhancement Measures	8-77
8.8	Assessment of Likely Impacts and Effects	8-96
8.9	Additional Mitigation, Enhancement and Monitoring	8-120
8.10	Residual Effects	8-122
8.11	Cumulative Effects	
8.12	Conclusions	
8.13	References	8-134
9.0	FLOOD RISK AND SURFACE WATER	9-1
9.1	Introduction	9-1
9.2	Legislation, Policy and Guidance	9-4
9.3	Assumptions and Limitations	9-31
9.4	Consultation and Engagement	9-33
9.5	Assessment Methodology	9-34
9.6	Baseline Conditions	9-44
9.7	Future Baseline	9-61
9.8	Incorporated Mitigation and Enhancement Measures	9-66
9.9	Assessment of Likely Impacts and Effects	9-79

9.10	Additional Mitigation, Enhancement and Monitoring	9-96
9.11	Residual Effects	
9.12	Inter-Project Cumulative Effects Assessment	9-98
9.13	Conclusions	9-103
9.14	References	9-104
10.0	GROUND CONDITIONS	10-1
10.1	Introduction	10-1
10.2	Legislation, Policy and Guidance	
10.3	Assumptions and Limitations	
10.4	Consultation and Engagement	
10.5	Assessment Methodology	
10.6	Baseline Conditions	10-39
10.7	Incorporated Mitigation and Enhancement Measures	10-62
10.8	Assessment of Likely Impacts and Effects	10-68
10.9	Additional Mitigation, Enhancement and Monitoring	10-78
10.10	Residual Effects	10-81
10.11	Inter-Project Cumulative Effects Assessment	10-92
10.12	Conclusions	10-97
10.13	References	10-100
11.0	CULTURAL HERITAGE AND ARCHAEOLOGY	11-1
11.1	Introduction	11-1
11.2	Legislation, Policy and Guidance	
11.3	Assumptions and Limitations	
11.4	Consultation and Engagement	11-9
11.5	Assessment Methodology	11-22
11.6	Baseline Conditions	11-36
11.7	Incorporated Mitigation and Enhancement Measures	11-50
11.8	Assessment of Likely Impacts and Effects	11-51
11.9	Additional Mitigation, Enhancement and Monitoring	11-75
11.10	Residual Effects	11-77
11.11	Cumulative Effects	11-79
11.12	Conclusions	11-88
11.13	References	11-90
12.0	TOURISM AND RECREATION	12-1

10.4	Letter Letter	40.4
12.1	Introduction	
12.2	Legislation, Policy and Guidance	
12.3	Assumptions and Limitations	12-14
12.4	Consultation and Engagement	12-15
12.5	Assessment Methodology	12-23
12.6	Baseline Conditions	12-34
12.7	Incorporated Mitigation and Enhancement Measures	12-42
12.8	Assessment of Likely Impacts and Effects	12-46
12.9	Additional Mitigation, Enhancement and Monitoring	12-68
12.10	Residual Effects	
12.11	Inter Project Cumulative Effects Assessment	
12.12	Conclusions	
13.0	METHODOLOGY	13-1
13.1	Introduction	13-1
13.2	Assessment Methodology	
13.3	In-Combination Intra-Project Assessment	
13.4	Cumulative Inter-Project Assessment	
13.5	References	
10.0	Neierences	10-20
14.0	SUMMARY OF EFFECTS	14-1
14.1	Introduction	14-1
14.2	Summary of Likely Significant Effects	
	, -, - 9	

VOLUME 2 APPENDICES

Appendix 1-1: Frodsham Solar Scoping Report (May 2023)

Appendix 1-2: Planning Inspectorate Scoping Opinion (July 2023)

Appendix 2-1: Indicative Watercourse Crossing Schedule (inc. figures)

Appendix 2-2: Indicative Construction Phasing and Resource Schedule

Appendix 2-3: Permitted Preliminary Works

Appendix 3-1: Alternative Site Assessment

Appendix 4-1: Noise Impact Assessment

Appendix 4-2: Construction Dust Assessment

Appendix 4-3: Glint and Glare Assessment

Appendix 4-4: Long List of other 'reasonably foreseeable' developments

Appendix 4-5: Short List of other 'reasonably foreseeable' developments

Appendix 4-6: Response to Sections 2.1 and 2.2 of the Scoping Opinion

Appendix 5-1: GHG Assessment

Appendix 5-2: Climate Baseline Report

Appendix 5-3: Climate Resilience Assessment

Appendix 5-4: In-combination Climate Change Impacts Assessment

Appendix 6-1: LVIA Methodology

Appendix 6-2: Visualisation Methodology

Appendix 6-3: TN-01 Scope of LVIA – Agreement

Appendix 6-4: Residential Properties

Appendix 6-5: Landscape Character Baseline

Appendix 6-6: Construction Phase Effects

Appendix 6-7: Effects on Landscape Character

Appendix 6-8: Effects on Viewpoints

Appendix 6-9: Effects on M56 Users

Appendix 6-10: Influence of Lighting Conditions

Appendix 6-11: TN-02 Landscape and Visual Implications of Revised Layout

Appendix 7-1: Habitats Baseline Report

Appendix 7-2: Protected Ecological Species Baseline Report

Appendix 7-2: Protected Ecological Species Baseline Report (Confidential Badger

Annex)

Appendix 7-3: Bat Activity Survey Report

Appendix 7-4: Consultation and Engagement

Appendix 7-5: Assessment of Frodsham Helsby Ince Local Wildlife Site

Appendix 8-1: Ornithology Survey Report

Appendix 8-2: Consultation and Engagement

Appendix 9-1: Flood Risk Assessment and Drainage Strategy

Appendix 9-1: Flood Risk Assessment and Drainage Strategy

Appendix 9-2: Water Framework Directive Assessment

Appendix 9-3: Hydraulic Modelling Report

Appendix 9-4: Technical Note Ince and Frodsham Model

Appendix 9-5: Consultation Responses

Appendix 10-1: Stage 1 Geo-Environmental Assessment

Appendix 10-2: Remediation Technical Concept Note – Cell 3

Appendix 11-1: Cultural Heritage Baseline

Appendix 11-2: Gazetteer of Heritage Assets and Events

Appendix 11-3: Historic Map Extracts and Lidar Data

Appendix 11-4: Photographic Plates

Appendix 11-5: Setting Assessment

Appendix 11-6: Policy Tables

VOLUME 3 FIGURES

Figure 6-1 LVIA Study Area

Figure 6-2 Landform and Watercourses

Figure 6-3a Landscape Character (National) and Designations

Figure 6-3b Landscape Character (Local) and Designations

Figure 6-4a Zone of Theoretical Visibility (Solar Array Development Area)

Figure 6-4b Zone of Theoretical Visibility (Solar Array Development Area) (2.5km radius)

Figure 6-4c Zone of Theoretical Visibility with colour banding (Solar Array Development Area)

Figure 6-4d Zone of Theoretical Visibility with colour banding (Solar Array Development Area) (2.5km radius)

Figure 6-4e Zone of Theoretical Visibility (BESS / Substation Option 1)

Figure 6-4f Zone of Theoretical Visibility (BESS / Substation Option 1) (2.5km radius)

Figure 6-4g Zone of Theoretical Visibility (BESS /Substation Option 2)

Figure 6-4h Zone of Theoretical Visibility (BESS / Substation Option 2) (2.5km radius)

Figure 6-4i Zone of Theoretical Visibility (Fencing and CCTV)

Figure 6-4j Zone of Theoretical Visibility (Fencing and CCTV) (2.5km radius)

Figure 6-5a Viewpoint Locations Sheet 1

Figure 6-5b Viewpoint Locations Sheet 2

Figure 6-5c Viewpoint Locations Sheet 3

Figure 6-5d Viewpoint Locations Sheet 4

Figure 6-5e Viewpoint Locations Sheet 5

Figure 6-6 Viewpoint 1 Existing View

Figure 6-7 Viewpoint 2 Existing View

Figure 6-8i Viewpoint 3 Existing View

Figure 6-8ii Viewpoint 3 Existing View

Figure 6-9 Viewpoint 4 Existing View

Figure 6-10 Viewpoint 5 Existing View

Figure 6-11 Viewpoint 6 Existing View

Figure 6-12 Viewpoint 7 Existing View

Figure 6-13 Viewpoint 8 Existing View

Figure 6-14i Viewpoint 9 Existing View

Figure 6-14ii Viewpoint 9 Existing View

Figure 6-14iii Viewpoint 9 Existing View

Figure 6-15 Viewpoint 10 Existing View

Figure 6-16 Viewpoint 11 Existing View

Figure 6-17 Viewpoint 12 Existing View

Figure 6-18 Viewpoint 13 Existing View

Figure 6-19i Viewpoint 14 Existing View

Figure 6-19ii Viewpoint 14 Existing View

Figure 6-20 Viewpoint 15 Existing View

Figure 6-21 Viewpoint 16 Existing View

Figure 6-22i Viewpoint 17 Existing View

Figure 6-22ii Viewpoint 17 Existing View

Figure 6-22iii Viewpoint 17 Existing View

Figure 6-22iv Viewpoint 17 Existing View

Figure 6-23i Viewpoint 18 Existing View

Figure 6-23ii Viewpoint 18 Existing View

Figure 6-23iii Viewpoint 18 Existing View

Figure 6-23iv Viewpoint 18 Existing View

Figure 6-24 Viewpoint 19 Existing View

Figure 6-25 Viewpoint 20 Existing View

Figure 6-26 Viewpoint 21 Existing View

Figure 6-27 Viewpoint 22 Existing View

Figure 6-28iViewpoint 23 Existing View

Figure 6-28ii Viewpoint 23 Existing View

Figure 6-28iii Viewpoint 23 Existing View

Figure 6-29 Viewpoint 24 Existing View

Figure 6-30i Viewpoint 25 Existing View

Figure 6-30ii Viewpoint 25 Existing View

Figure 6-30iii Viewpoint 25 Existing View

Figure 6-30iv Viewpoint 25 Existing View

Figure 6-31 Viewpoint 26 Existing View

Figure 6-32i Viewpoint 27 Existing View

Figure 6-32ii Viewpoint 27 Existing View

Figure 6-33i Viewpoint 28 Existing View

Figure 6-33ii Viewpoint 28 Existing View

Figure 6-33iii Viewpoint 28 Existing View

Figure 6-33iv Viewpoint 28 Existing View

Figure 6-34i Viewpoint 29 Existing View

Figure 6-34ii Viewpoint 29 Existing View

Figure 6-34iii Viewpoint 29 Existing View

Figure 6-34iv Viewpoint 29 Existing View

Figure 6-35 Viewpoint 30 Existing View

Figure 6-36i Viewpoint 3 Existing View

Figure 6-36ii Viewpoint 3 Existing View

Figure 6-36iii Viewpoint 3 Photomontage View Year 0

Figure 6-36iv Viewpoint 3 Photomontage View Year 0

Figure 6-36v Viewpoint 3 Photomontage View Year 10

Figure 6-36vi Viewpoint 3 Photomontage View Year 10

Figure 6-37i Viewpoint 6 Existing View

Figure 6-37ii Viewpoint 6 Photomontage View Year 0

Figure 6-37iii Viewpoint 6 Photomontage View Year 10

Figure 6-38i Viewpoint 8 Existing View

Figure 6-38ii Viewpoint 8 Photomontage View (Year 0)

Figure 6-38iii Viewpoint 8 Photomontage View (Year 10)

Figure 6-39i Viewpoint 9 Existing View

Figure 6-39ii Viewpoint 9 Photomontage View (Year 0)

Figure 6-39iii Viewpoint 9 Photomontage View (Year 0)

Figure 6-40i Viewpoint 11 Existing View

Figure 6-40ii Viewpoint 11 Photomontage View (Year 0)

Figure 6-40iii Viewpoint 11 Photomontage View (Year 10)

Figure 6-41i Viewpoint 13 Existing View

Figure 6-41ii Viewpoint 13 Photomontage View (Year 0)

Figure 6-41iii Viewpoint 13 Photomontage View (Year 10)

Figure 6-42i Viewpoint 14 Existing View

Figure 6-42ii Viewpoint 14 Existing View

Figure 6-42iii Viewpoint 14 Photomontage View (Year 0)

Figure 6-42iv Viewpoint 14 Photomontage View (Year 0)

Figure 6-42v Viewpoint 14 Photomontage View (Year 10)

Figure 6-42vi Viewpoint 14 Photomontage View (Year 10)

Figure 6-43i Viewpoint 15 Existing View

Figure 6-43ii Viewpoint 15 Photomontage View (Year 0)

Figure 6-43iii Viewpoint 15 Photomontage View (Year 10)

Figure 6-44i Viewpoint 17 Existing View

Figure 6-44ii Viewpoint 17 Existing View

Figure 6-44iii Viewpoint 17 Photomontage View Year 0

Figure 6-44iv Viewpoint 17 Photomontage View Year 0

Figure 6-44v Viewpoint 17 Photomontage View Year 10

Figure 6-44vi Viewpoint 17 Photomontage View Year 10

Figure 6-45i Viewpoint 18 Existing View

Figure 6-45ii Viewpoint 18 Existing View

Figure 6-45iii Viewpoint 18 Existing View

Figure 6-45iv Viewpoint 18 Existing View

Figure 6-45v Viewpoint 18 Photomontage View (Year 0)

Figure 6-45vi Viewpoint 18 Photomontage View (Year 0)

Figure 6-45vii Viewpoint 18 Photomontage View (Year 0)

Figure 6-45viii Viewpoint 18 Photomontage View (Year 0)

Figure 6-45ix Viewpoint 18 Photomontage View (Year 10)

Figure 6-45x Viewpoint 18 Photomontage View (Year 10)

Figure 6-45xi Viewpoint 18 Photomontage View (Year 10)

Figure 6-45xii Viewpoint 18 Photomontage View (Year 10)

Figure 6-46i Viewpoint 23 Existing View

Figure 6-46ii Viewpoint 23 Existing View

Figure 6-46iii Viewpoint 23 Existing View

Figure 6-46iv Viewpoint 23 Photomontage View (Year 0)

Figure 6-46v Viewpoint 23 Photomontage View (Year 0)

Figure 6-46vi Viewpoint 23 Photomontage View (Year 0)

Figure 6-46vii Viewpoint 23 Photomontage View (Year 10)

Figure 6-46viii Viewpoint 23 Photomontage View (Year 10)

Figure 6-46ix Viewpoint 23 Photomontage View (Year 10)

Figure 6-47i Viewpoint 25 Existing View

Figure 6-47ii Viewpoint 25 Existing View

Figure 6-47iii Viewpoint 25 Existing View

Figure 6-47iv Viewpoint 25 Photomontage View (Year 0)

Figure 6-47v Viewpoint 25 Photomontage View (Year 0)

Figure 6-47vi Viewpoint 25 Photomontage View (Year 0)

Figure 6-47vii Viewpoint 25 Photomontage View (Year 10)

Figure 6-47viii Viewpoint 25 Photomontage View (Year 10)

Figure 6-47ix Viewpoint 25 Photomontage View (Year 10)

Figure 6-48i Viewpoint 26 Existing View

Figure 6-48ii Viewpoint 26 Photomontage View (Year 0)

Figure 6-48iii Viewpoint 26 Photomontage View (Year 10)

GLOSSARY

Term	Description
Abnormal Indivisible Load	A load that, due to its size, mass, or shape, cannot be divided into smaller parts for transport without compromising its function or incurring excessive cost or risk. Such loads typically require special transport arrangements and permits due to their dimensions or weight exceeding standard legal limits.
Above Ordnance Datum	A vertical measurement system used to denote elevations relative to a fixed reference point, known as the Ordnance Datum. In the UK, the Ordnance Datum is based on mean sea level at Newlyn, Cornwall, and elevations are expressed as being above or below this baseline.
Access Tracks	The roadways within the Site constructed or used to provide a means of access internally around the Proposed Development.
Ancillary Infrastructure	Works to include, but not limited to, boundary fencing, other means of enclosure, security infrastructure, drainage, utilities, access tracks, signage, earthworks, and paths.
Agricultural Land Classification	A system used to grade the quality of farmland based on factors such as soil quality, climate, and drainage. In the UK, it ranges from Grade 1 (excellent quality) to Grade 5 (very poor quality), with higher grades indicating greater suitability for productive agriculture. Best and Most Versatile Land is land with an Agricultural Land Classification of Grade 3a or above.
Auxiliary Transformer	A smaller transformer used in power systems to supply electrical power to equipment such as lighting, cooling systems, or control circuits, within a substation or industrial facility. It typically steps down the voltage from the main supply to the lower levels required for these systems.
Azimuth Angle	The angle from true north measured clockwise in a horizontal plane.
Baseline Conditions	The existing conditions for an environmental receptor or resource before any proposed development or intervention occurs. This serves as a reference point for assessing potential impacts of future projects.
Battery Energy Storage System (BESS)	A facility used to store and manage electrical energy using batteries. BESS allows for the storage of excess energy during periods of low demand, which can then be discharged during peak demand or when electricity generation is low.
Battery Storage Unit	An enclosure or container that houses batteries used to store electrical energy for later use.
Busbars	Conductive strips or bars used to distribute electrical power within a switchboard, panel, or substation. They provide a common connection point for multiple circuits and can handle high current loads, facilitating the efficient transfer of electricity between different components of an electrical system.
Centralised Inverters	Refer to Power Conversion Units.
Circuit Breaker	Safety device which main function is to interrupt an overcurrent flow to protect equipment.
Construction Compound	A laydown area that would include offices, car parking, welfare facilities, and storage for materials and equipment.

Term	Description
Construction Phase	The phase in which the Proposed Development would be built.
Cumulative Effect	The combined impact on the environment resulting from multiple individual projects or activities over time. This effect considers how these interactions may lead to significant changes in environmental conditions, even if each project alone may not result in significant effects.
Decommissioning Phase	The phase in which the Proposed Development would be removed and the land restored in accordance with the development consent order, which follows the Operational Phase.
Design Objective	A series of Design Objectives have been developed to guide and shape the approach to the design of the Proposed Development. Thes Design Objectives seek to meet the Design Vision for the Proposed Development.
Design Parameter	A measurable factor or specification that influences the design of the Proposed Development.
Design Vision	The Design Vision for the Proposed Development is to "To deliver a substantial amount of renewable energy to the local electricity distribution network and to local businesses, to conserve and enhance the local environment, and to be a responsible neighbour to local people".
Development Consent Order	A legal document that grants permission for certain types of large-scale infrastructure projects, such as energy generation, transport, or water management. A DCO combines planning consent and other necessary approvals into a single application, streamlining the decision-making process.
Disconnector	Switching device used to provide safe isolation by de-energising parts of an electrical network for maintenance and service.
EIA Development	A proposed development that requires Environmental Impact Assessment.
EIA Regulations	The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
Enhancement	Initiatives that are not required to mitigate the adverse effects of a proposed development, but which will provide enhancement.
Environmental Impact Assessment (EIA)	A systematic process used to evaluate the potential environmental effects of a project before it is carried out. The EIA aims to identify ways to mitigate adverse effects, ensuring informed decision-making and promoting sustainable development.
Flood Zone	Areas identified by the Environment Agency based on their risk of flooding, typically defined by historical data and hydrological models. Flood Zones indicate the likelihood of flooding, with classifications ranging from low-risk areas (Zone 1) to high-risk areas (Zone 3).
Flood Zone 3a	An area identified with a 1% or greater annual probability of river flooding or a 0.5% or greater annual probability of coastal flooding.
Frodsham Score	A strip of land lying north of the Manchester Ship Canal forming an area of raised ground comprising grassland which leads down to salt marsh within the Mersey Estuary.

Term	Description
Frodsham Solar Ltd	The Applicant for the Proposed Development.
Frodsham Solar Substation	The proposed on-site 132 kV electrical substation that will be co-located with the BESS.
Frodsham Wildfowlers	A local recreational group, Frodsham & District Wildfowlers Club, which own land within the Site and manage land for the purposes of wildfowling, the practice of hunting wild birds such as ducks and geese.
Future Baseline	The projected environmental conditions expected to exist in the future, without the implementation of the development resulting from natural changes from the current baseline.
Green Belt	A designated area of open land surrounding or within urban areas, protected from most types of development to prevent urban expansion.
Green Infrastructure	A network of multi-functional green space, other green features, and landscaping, designed to deliver multiple environmental benefits.
Incorporated Mitigation	Environmental mitigation measures that are integrated into the proposed design and management of a project from the outset.
INEOS Inovyn Deposit Ground	An area of land on the southern banks of the River Weaver, outside the Site boundary, which has been used for the deposit of dredgings from the Weaver Navigation. The deposition of dredgings has now ceased and the area has become vegetated with scrub and grassland. The area is managed under an Environmental Permit.
Inter Project Effect	The cumulative impact that arises when multiple projects in proximity to each other interact or influence one another, potentially leading to combined environmental effects that are greater than the sum of their individual impacts.
Intra Project Effect	Where the environmental impacts of the Proposed Development can interact and combine to potentially increase the level of effect on a particular receptor.
Inverters	Inverters convert direct current (DC) electricity into alternating current (AC).
Cable Jointing Chamber	Underground structure constructed at intervals along the grid connection to join sections of cable and facilitate maintenance.
Local Wildlife Site	An area recognised for its wildlife and habitat value at a local level.
Likely Significant Effect	The potential impacts of the Proposed Development that are expected to have a substantial effect on the environment, based on initial assessments.
Magnitude of Impact	A measure of the scale or intensity of an impact on the environment. It considers factors such as severity, duration, reversibility, and extent of the impact.
Manchester Ship Canal Deposit Ground	A series of engineered cells within and adjacent to the Site used for the deposit of dredgings from the Manchester Ship Canal. Cells 1 – 5 are no longer used and have become vegetated with grassland and reedbed. Cell 6 remains in operational use.
Mitigation	Actions or measures taken to avoid, reduce, remediate, or compensate adverse impacts on the environment.

Term	Description
Monitoring	The process of tracking and evaluating the effectiveness of mitigation measures. This ongoing evaluation ensures that mitigation measures achieve their intended goals and allows for adjustments as needed to ensure compliance with commitments made during the planning process.
National Landscape	A designated area recognised for its landscape and scenic value, protected for the purpose of conserving and enhancing its natural beauty. Formerly known as Areas of Outstanding Natural Beauty.
National Policy Statement (NPS)	A document that sets out the Government's policies for specific sectors, such as energy, transport, or waste management, in the context of planning and development in the UK. NPSs provide a framework for decision-making.
Nationally Significant Infrastructure Project (NSIP)	A category of large-scale projects in the UK that are subject to a specific planning regime under the Planning Act 2008. NSIPs include projects such as energy generation facilities, transport infrastructure, and water management schemes, and they require a Development Consent Order (DCO) for approval, involving public consultation and examination processes.
New Zealand Pygmyweed	An invasive aquatic plant species that spreads rapidly in ponds, lakes, rivers, and wetlands, forming dense mats that can outcompete native vegetation.
Non Breeding Bird Mitigation Area (NBBMA)	An area of land within the Site that will be engineered to provide wetland habitats for birds from the Mersey Estuary, specifically to mitigate effects of the Proposed Development. The NBBMA would be managed for the benefit of wetland birds for the life of the Proposed Development.
Non-Statutory	Refers to processes, designations, or recommendations that are not legal requirements or set out by law. Non-statutory requirements can still influence decision-making but do not carry the same legal weight as statutory requirements.
Operational Phase	The phase in which the Proposed Development would be generating and exporting electricity to the National Grid, which follows the Construction Phase.
Order Limits	The defined boundary within which all development and associated works authorised by a Development Consent Order must take place.
Photomontage	A visual representation created by superimposing an image of a proposed development upon a photograph or series of photographs to depict how the development will look in its actual environment.
Planning Inspectorate	A UK government agency responsible for examining applications for Nationally Significant Infrastructure Projects (NSIPs). The Planning Inspectorate ensures that planning decisions are made fairly and transparently, conducting the DCO examination and providing a recommendation to the Secretary of State based on evidence gathered during the examination process.
Power Conversion System (PCS)	A technology that converts electrical power from one form to another, typically from direct current (DC) to alternating current (AC) or vice versa. The PCS is essential for managing an energy within the BESS as electricity flows into and out of the battery storage units.
Power Conversion Unit (PCU)	Inverters, switchgear and transformers that are housed in containers and distributed through the Proposed Development, associated with the solar arrays.

Term	Description
Preliminary Environmental Information	A preliminary assessment of the potential environmental effects likely to result from the Proposed Development.
Preliminary Environmental Information Report (PEIR)	The Applicant must prepare and consult on 'preliminary environmental information' as part of the statutory consultation. The PEIR presents the preliminary environmental information.
Private Wire Connection	A connection directly from the Frodsham Solar Substation to a private electricity user. This enables electricity generated from Frodsham Solar to be directly used by a local business.
Protos	A development site close to Ince and Elton which is promoted for energy generation and resource management. Protos is allocated within the Local Development Plan for industrial development.
Public Right of Way	A designated path or route that the public is legally entitled to use. Public rights of way can include footpaths, bridleways, byways open to all traffic, and restricted byways.
Ramsar Site	A wetland of international importance designated under the Ramsar Convention, an international treaty aimed at conserving and sustainably managing wetlands. Ramsar Sites are recognised for their ecological significance, particularly as habitats for waterfowl and other wildlife.
Receptor	A component of the natural or man-made environment that is affected by an impact, including people.
Requirements	Conditions that must be fulfilled as part of a DCO for Nationally Significant Infrastructure Projects in the UK.
Residual Effect	The remaining effect on the environment after all proposed mitigation measures have been implemented.
Rochdale Envelope	An approach that allows for flexibility in the design of a proposed project by outlining a broad range of parameters within which the project can be developed. This concept is particularly used in the context of Environmental Impact Assessments (EIAs) to assess potential impacts based on the worst-case scenario, while allowing for adjustments in design and implementation as the project evolves. It enables developers to adapt to changing circumstances without requiring a complete re-evaluation of environmental impacts.
Scoping	The process of determining the specific environmental topics and potential impacts that should be assessed in an Environmental Impact Assessment (EIA) for a proposed project.
Scottish Power Energy Networks (SPEN)	Scottish Power Energy Networks is a division of Scottish Power responsible for the transmission and distribution of electricity in parts of Scotland, North Wales, and North West England. SPEN manages and maintains power infrastructure, including substations, overhead lines, and underground cables, ensuring the safe and reliable delivery of electricity to homes and businesses.
Site of Special Scientific Interest (SSSI)	A SSSI is a legally protected area designated for its exceptional biological, geological, or ecological features
Skylark Mitigation Area	An area of arable land that would be used to mitigate for the potential impacts of the Proposed Development on skylark . Within the Skylark Mitigation Area bare patches, typically 16m2, are created in cereal fields, these are referred to

Term	Description
	as skylark plots and area designed to help skylarks to forage. These plots are proven to help improve productivity for skylarks.
Solar Array Development Area (SADA)	The area of the Proposed Development which would include solar PV modules and support frames, internal access tracks, cabling, inverters, transformers, the solar array substation (known as the 'Frodsham Solar Substation) and the BESS.
Special Protection Area (SPA)	A protected site of international importance designated to safeguard habitats critical for the conservation of wild bird species.
Solar PV array	A PV array is a grouping of solar PV modules which are connected together to single transformer or substation.
Solar PV mounting structure	A PV mounting structure is the metal frame on which solar PV modules are mounted. Collectively, the solar PV modules and PV mounting structure are referred to as a solar PV table.
Solar PV modules	A PV module is a series of solar photovoltaic cells that are combined into a single unit and which converts sunlight directly into electricity. This can also be referred to as a solar PV panel.
SPEN Frodsham Substation	The existing substation on the north bank of the River Weaver which is used to distribute power into the local electricity distribution network.
SPEN Grid Connection	The proposed 132kV connections from the Frodsham Solar Substation to the SPEN Frodsham Substation
Surge Arrester	Protective device used for limiting voltage by redirecting a surge current away from the equipment.
Statutory Consultation	A formal process required by law that involves seeking the views of stakeholders, including government agencies, local authorities, and the public, regarding a proposed development. This consultation is mandated by legislation and ensures that relevant parties have the opportunity to express their opinions, concerns, and suggestions, which must be considered in the decision-making process.
Statutory Designation	An official designation granted to a site, area, or feature by Government or a regulatory body, often to protect its legal status due to its historical, cultural, or environmental significance. Examples include Scheduled Monuments, Sites of Special Scientific Interest (SSSIs), and National Parks.
Statutory Environmental Body	A UK Government agency responsible for enforcing environmental regulations, conducting assessments, and ensuring compliance with environmental standards. In the UK, examples include the Environment Agency, Natural England, and Historic England.
Statutory Undertaker	An organisation that has been granted specific legal powers to provide essential services or infrastructure, such as water supply, electricity, gas, or transportation.
String Inverters	Inverters located throughout the Proposed Development which are mounted on the PV mounting structures underneath the PV panels.

Term	Description
Study Area	The area that is the focus of assessment. The study area is defined to encompass the relevant area that may be significantly affected by the Proposed Development.
SuDS	A range of techniques and approaches designed to manage surface water drainage in a sustainable way. SuDS aim to reduce flooding, improve water quality, and enhance biodiversity.
Switchgear	Switchgears are the combination of electrical disconnect switches, fuses or circuit breakers used to control, protect and isolate electrical equipment.
the Applicant	The Applicant is Frodsham Solar Ltd.
Tranquillity	A state of calm and quietude associated with peace, often associated with natural landscapes. Tranquillity encompasses both the visual and auditory aspects of a landscape, including the absence of intrusive sounds and sights, which contribute to a serene environment.
Transformer	A structure serving to transfer electricity from one circuit to another, either stepping-up or stepping-down the electrical voltage.
Wind Farm Mitigation Areas	Areas of land which are currently managed to provide mitigation for the effects of Frodsham Wind Farm under the terms of the Frodsham Wind Farm planning consent.
Work Plans	The plans submitted with the application which set out where the Proposed Development would occur.
Zone of Influence	The area for the assessment of cumulative effects. Zones of Influence (ZoIs) are variable depending on the environmental topic being assessed.

ACRONYMS

Acronym	Definition
AADT	Annual Average Daily Traffic
AAWT	Annual Average Weekday Traffic
AC	Alternating Current
ACIEEM	Associate of the Chartered Institute of Ecology and Environmental Management
AEL	Avian Ecology Limited
AEP	Annual Exceedance Probability
AGI	Above Ground Infrastructure
AIL	Abnormal Indivisible Load
ALC	Agricultural Land Classification
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
APEx	Aerial Photographic Explorer
ASCV	Area of Special County Value
ATC	Automatic Traffic Count
AWB	Artificial Water Body
BASC	British Association for Shooting and Conservation
ВСТ	Bat Conservation Trust
BESS	Battery Energy Storage System
BGS	British Geological Survey
BMFA	British Model Flying Association
BMV	Best and Most Versatile (Agricultural Land)
BNG	Biodiversity Net Gain
CAMS	Catchment Abstraction Management Strategy
CAPAS	Cheshire Archaeology Planning Advisory Service

Acronym	Definition
ccc	Committee on Climate Change
CCF	Carbon Capture Facility
CCGT	Combined Cycle Gas Turbine
CCRA	Climate Change Risk Assessment
ccs	Carbon Capture and Storage
ccs	Considerate Constructors Scheme
ССТУ	Closed-Circuit Television
CDA	Critical Drainage Area
CEA	Cumulative Effects Assessment
СЕМР	Construction Environmental Management Plan
CFA	Continuous Flight Auger (piling)
CFB	Coastal Flood Boundary
CFRS	Cheshire Fire and Rescue Service
CIEEM	Chartered Institute of Ecology and Environmental Management
CIfA	Chartered Institute for Archaeologists
CIRIA	Construction Industry Research and Information Association
CIWEM	Chartered Institution of Water and Environmental Management
CL:AIRE	Contaminated Land: Applications in Real Environments
CMLI	Chartered Member of the Landscape Institute
CO2	Carbon Dioxide
СОР	Conference of the Parties
CPRE	Campaign to Protect Rural England
CRT	Canal & River Trust
cSAC	candidate Special Area of Conservation
CSM	Conceptual Site Model
СТМР	Construction Traffic Management Plan

Acronym	Definition
CWaCC	Cheshire West and Chester Council
cwcc	Cheshire West and Chester Council
DAD	Design Approach Document
DCMS	Department for Culture, Media and Sport
DCO	Development Consent Order
DDCMS	Department for Digital, Culture, Media and Sport
DEFRA	Department for Environment, Food and Rural Affairs
DEMP	Decommissioning Environmental Management Plan
DESNZ	Department for Energy Security and Net Zero
DfR	Deposit for Recovery
DfT	Department for Transport
DLL	District Level Licensing (Great Crested Newt licensing scheme)
DLUHC	Department for Levelling Up, Housing and Communities
DMRB	Design Manual for Roads and Bridges
DoWCoP	Definition of Waste Code of Practice
DSM	Digital Surface Model
DTM	Digital Terrain Model
EA	Environment Agency
EcIA	Ecological Impact Assessment
ECoW	Ecological Clerk of Works
eDNA	environmental DNA (environmental genetic material in samples)
EfW	Energy from Waste
EIA	Environmental Impact Assessment
ELC	European Landscape Convention
EN-5	National Policy Statement for Electricity Networks Infrastructure
EPSML	European Protected Species Mitigation Licence

Acronym	Definition
EQS	Environmental Quality Standards
EQS	Environmental Quality Standard
EQSD	Environmental Quality Standards Directive
ERF	Energy Recovery Facility
ES	Environmental Statement
EU	European Union
EV	Electric Vehicle
FMP	Flood Modeller Pro
FNP	Frodsham Neighbourhood Plan
FP	Footpath
FRA	Flood Risk Assessment
FTE	Full Time Equivalent
FWEP	Flood Warning and Evacuation Plan
GAC	Generic Assessment Criteria
GBC	Green Belt and Countryside
GCN	Great Crested Newt
GHG	Greenhouse Gas
GLTA	Ground Level Tree Assessment
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GLVIA3	Guidelines for Landscape and Visual Impact Assessment, 3rd Edition
GWDTE	Groundwater Dependent Terrestrial Ecosystem
HAGI	Hydrogen Above Ground Infrastructure
НВС	Halton Borough Council
HCVs	Human Critical Values (for human health)
HE	Historic England
HER	Historic Environment Record

Acronym	Definition
HES	Historic Environment Scotland
HGV	Heavy Goods Vehicle
HPI	Habitat(s) of Principal Importance
HPP	Hydrogen Production Plant
HRA	Habitats Regulations Assessment
HSI	Habitat Suitability Index
ICCI	In-Combination Climate Change Impacts
ICOMOS	International Council on Monuments and Sites
IEMA	Institute of Environmental Management and Assessment
IHT	Institute of Highways and Transportation
IMHCC	Implementing the Mitigation Hierarchy from Concept to Construction
INNSMP	Invasive Non-Native Species Management Plan
INP	Ince Neighbourhood Plan
IRZ	Impact Risk Zone
ISO	International Organization for Standardization
JNCC	Joint Nature Conservation Committee
LBAP	Local Biodiversity Action Plan
LBCCS	Liverpool Bay Carbon Capture and Storage
LCA	Landscape Character Area
LCRM	Land Contamination Risk Management
LCT	Landscape Character Type
LEMP	Landscape and Ecological Management Plan
LGV	Light Goods Vehicle
LHA	Local Highway Authority
LI	Landscape Institute
LIDAR	Light Detection and Ranging

Acronym	Definition
LITGN	Landscape Institute Technical Guidance Note
LNR	Local Nature Reserve
LOD	Limit of Detection
LP	Listening Point (survey point in bat activity surveys)
LP1	Local Plan (Part One)
LP2	Local Plan (Part Two)
LPA	Local Planning Authority
LVIA	Landscape and Visual Impact Assessment
LWS	Local Wildlife Site
MAGIC	Multi Agency Geographic Information for the Countryside
MCIEEM	Member of the Chartered Institute of Ecology and Environmental Management
MHCLG	Ministry of Housing, Communities and Local Government
MMP	Materials Management Plan
MRes	Master of Research
MRF	Materials Recycling Facility
MSC	Manchester Ship Canal
MSc	Master of Science
MSCDDG	Manchester Ship Canal Dredging Deposit Ground
MSOA	Middle Super Output Area
MW	Megawatt
NAP	National Adaptation Programme
NAP3	Third National Adaptation Programme
NBBMA	Non-Breeding Bird Mitigation Area
NBBMS	Non-Breeding Bird Mitigation Strategy
NCA	National Character Area

Acronym	Definition
NCAP	National Collection of Aerial Photography
NCN	National Cycle Network
NCN5	National Cycle Network (Route 5)
NE	Natural England
NERC	Natural Environment and Rural Communities Act 2006
NG	National Grid
NGR	National Grid Reference
NHLE	National Heritage List for England
NMP	National Mapping Programme
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NPS EN-1	Overarching National Policy Statement for Energy (EN-1)
NPS EN-1	Overarching National Policy Statement for Energy
NPS EN-3	National Policy Statement for Renewable Energy Infrastructure (EN-3)
NPS EN-3	National Policy Statement for Renewable Energy Infrastructure
NPS EN-5	National Policy Statement for Electricity Networks Infrastructure (EN-5)
NRW	Natural Resources Wales
NSIP	Nationally Significant Infrastructure Project
NTM	National Transport Model
NVZ	Nitrate Vulnerable Zone
NZPW	New Zealand Pygmy Weed
NZPW	New Zealand Pigmyweed
oBSMP	Outline Battery Safety Management Plan
оСЕМР	Outline Construction Environmental Management Plan
ОСТМР	Outline Construction Traffic Management Plan
oDEMP	Outline Decommissioning Environmental Management Plan

Acronym	Definition
OEMP	Operational Environmental Management Plan
OHL	Overhead Line
oLEMP	Outline Landscape and Ecological Management Plan
оОЕМР	Outline Operational Environmental Management Plan
oPROWMP	Outline Public Rights of Way Management Plan
os	Ordnance Survey
oSMP	Outline Soils Management Plan
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PCS	Power Conversion System
PCU	Power Conversion Unit
PEA	Preliminary Ecological Appraisal
PEI	Preliminary Environmental Information
PEIR	Preliminary Environmental Information Report
PFRA	Preliminary Flood Risk Assessment
PIA	Personal Injury Accident
PINS	Planning Inspectorate
POW	Prisoner of War
PPA	Planning Performance Agreement
PPE	Personal Protective Equipment
PPG	Planning Practice Guidance
PRA	Preliminary Risk Assessment
PRA	Piling Risk Assessment
PRF	Potential Roost Feature
PRoW	Public Rights of Way
PROW	Public Right of Way

Acronym	Definition
pSPA	potential Special Protection Area
PV	Photovoltaic
RAMs	Reasonable Avoidance Measures
RAMS	Risk Assessment Method Statements
RB	Restricted Byway
RCP	Representative Concentration Pathway
RECORD	Local Environmental Records Centre for Cheshire, Halton, Warrington and Wirral
RPG	Registered Parks and Gardens
RPS	Regulatory Position Statement
RRC	Runcorn Rowing Club
RRP	Resource Recovery Park
RVAA	Residential Visual Amenity Assessment
RVAT	Residential Visual Amenity Threshold
SAC	Special Area of Conservation
SADA	Solar Array Development Area
SFRA	Strategic Flood Risk Assessment
SGP	Smith Grant LLP
SNH	Scottish Natural Heritage
SoCC	Statement of Community Consultation
SPA	Special Protection Area
SPEN	Scottish Power Energy Networks
SPI	Species of Principal Importance
SPZ	Source Protection Zone
SR	Sandstone Ridge
SRMP	Soil Resource Management Plan

Acronym	Definition
SRN	Strategic Road Network
SSSI	Site of Special Scientific Interest
STEAM	Scarborough Tourism Economic Activity Monitor
STGO	Special Types General Order
SuDS	Sustainable Drainage Systems
SWMP	Surface Water Management Plan
ТА	Transport Assessment
TCPA	Town and Country Planning Act
TEMPRO	Trip End Model Presentation Program
TEP	The Environment Partnership
TGN	Technical Guidance Note
TRICS	Trip Rate Information Computer System
TS	Transport Statement
UK	United Kingdom
UK BAP	United Kingdom Biodiversity Action Plan
UKCP09	UK Climate Projections 2009
UKCP18	UK Climate Projections 2018
UKHab	UK Habitat Classification
UNFCCC	United Nations Framework Convention on Climate Change
UXO	Unexploded Ordnance
VP	Viewpoint
VSC	Very Special Circumstances
WeBS	Wetland Bird Survey
WEEE	Waste Electrical and Electronic Equipment
WER	Water Environment (Water Framework Directive) Regulations 2017
WFD	Water Framework Directive

Acronym	Definition
WMF	Waste Management Facility
WPZ	Water Protection Zone
WSC	Weaver Sailing and Ski Club
WSI	Written Scheme of Investigation
WWI	World War I
WWII	World War II
Zol	Zone of Influence
ZTV	Zone of Theoretical Visibility

Document Reference: EN010153/DR/6.1 May 2025

Environmental Statement