Frodsham Solar

Outline Operational Environmental Management Plan

March 2026

Cubico SUSTAINABLE INVESTMENTS

PINS Ref: EN010153
Document Ref: EN010153/DR/7.5
Planning Act 2008; and Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations Regulation 5(2)(q)

Revision P06

Document Control

Revision	Date	Prepared By	Reviewed / Approved By
P01	May 2025	A Russell	D Adams
P02	November 2025	A Russell	D Adams
P03	December 2025	A Russell	D Adams
P04	January 2026	A Russell	D Adams
P05	March 2026	A Russell	D Adams
P06	March 2026	A Russell	D Adams

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

CONTENTS

TABLES

1.0 INTRODUCTION

1.1 Background

1.1.1 This outline Operational Environmental Management Plan (oOEMP) has been prepared for the operational phase of the Frodsham Solar Project (hereafter referred to as 'the Proposed Development').

1.1.2 The Proposed Development is classified as a Nationally Significant Infrastructure Project (NSIP) and therefore Frodsham Solar Limited ('the Applicant') is applying for a Development Consent Order (DCO) to construct, operate and decommission the Proposed Development. The Proposed Development is 'EIA development' as defined by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the 'EIA Regulations')[i], requiring an Environmental Impact Assessment (EIA).

1.1.3 The purpose of this oOEMP is to set out how the necessary environmental mitigation and monitoring, identified as part of the EIA and set out in the Environmental Statement (ES), will be delivered during the operation of the Proposed Development, and ensure that this mitigation is secured and embedded into project delivery.

1.1.4 This oOEMP is concerned with the operational phase of the Proposed Development, the following documents cover the separate construction and decommissioning phases:

- Construction phase – **Outline Construction Environmental Management Plan** (oCEMP) **[EN010153/DR/7.5]**; and
- Decommissioning phase – **Outline Decommissioning Environmental Management Plan** (oDEMP) **[EN010153/DR/7.7]**.

1.1.5 If the DCO is granted, prior to the date of final commissioning for any phase of the Proposed Development this oOEMP will be developed into a final

Operational Environmental Management Plan (OEMP) for that phase[i]. Any OEMP brought forward will be substantially in accordance with this oOEMP as set out by Requirement 13 of the **draft DCO [EN010153/DR/3.1]** and submitted to and approved by Cheshire West and Chester Council.

1.1.6 Requirement 3(4) of the draft DCO requires the relevant planning authority to be notified within 15 working days of the date of final commissioning for that phase. The detailed OEMPs will require that the gross electrical output capacity / export capacity of that phase (and the cumulative total from any previous phases) shall be confirmed as part of the notice.

1.1.7 Nothing in this oOEMP will prevent the modification or omission of the control measures set out in section 4 and 5 where the methodology means that the measures can be so modified or omitted. This will be confirmed (including confirming that the absence or change to such control measures will not lead to any materially new or materially different effects which are worse than those reported in the ES) at the time of submission of the final OEMP for approval.

1.2 Document Structure

1.2.1 This oOEMP is structured as follows:

- **Introduction** – provides an introduction to the document and defines the structure of the oOEMP;
- **Description of Development** – provides a summary of the Site and Site Context, a description of the Proposed Development, and sets out a summary of the expected operational activities;
- **Roles & Responsibilities** – sets out the roles and responsibilities that will need to be defined at the operational phase, and identifies stakeholders relevant to the environmental management of the operational phase;

[i] As such, references to 'the OEMP' within this oOEMP should be considered as meaning any OEMP that is brought forward.

- **Operational Environmental Management** – sets out principles and site rules to be applied in the operation of the Proposed Development, and how communication with third parties will be undertaken during operation;
- **Environmental Mitigation Measures** – sets out the environmental management and mitigation measures that are required to address the effects of the Proposed Development during the operational phase, as relied on or identified in the ES;
- **Implementation of Management Plan** – provides a summary of the key requirements that must be within the final OEMP to ensure successful implementation of this oOEMP; and
- **Monitoring and Maintenance** – sets out the procedures for monitoring and ensuring compliance with the OEMP, as well as requirements for record keeping.

1.3 Relationship with Other Management Plans

1.3.1 This oOEMP is part of a framework of environmental management documents that will be implemented during the operational phase of the Proposed Development. The final OEMP will work alongside several other specific management plans, which provide further details on mitigation and management measures.

1.3.2 The following will be developed separate to the final OEMP, pursuant to DCO Requirements: :

- **Surface Water Drainage Strategy**: This strategy will detail site-wide measures for drainage, rainfall runoff management, and groundwater interaction, including flood risk mitigation and the containment of firewater runoff from the Battery Energy Storage System (BESS).
- **Public Rights of Way Management Plan (PRoWMP)**: This plan will ensure the maintenance of existing PRoWs, the implementation of new permissive paths, and the provision of wayfinding signage to guide public access across the site.

- **Landscape and Ecology Management Plan (LEMP):** This plan will set out measures for landscape planting, habitat management, and biodiversity net gain, ensuring that mitigation planting and screening vegetation are effectively maintained.
- **Non Breeding Bird Mitigation Strategy:** This plan will set out the detail of the management measures for the Non Breeding Bird Mitigation Area. It will also include a New Zealand Pygmyweed control and management strategy.
- **Battery Safety Management Plan (BSMP):** To outline fire safety, containment measures, and emergency response procedures for the BESS system during its operation. This will be accompanied by an Emergency Response Plan.
- **Soil Management Plan (SMP)**: This plan will ensure the sustainable management of soils and materials by setting out strategies for handling, storage, reuse, and disposal, minimising waste, preventing contamination, and protecting soil health throughout the construction, operation, and decommissioning phases of the project.
- **Skills, Supply Chain and Employment Plan (SSCEP)**: This plan will ensure local economic benefits by setting out strategies for local job creation, workforce training, and engagement with regional suppliers throughout the construction, operation, and decommissioning phases of the project.

1.3.3 The following plans will form part of the final OEMP, or be submitted alongside it:

- **Invasive Non-Native Species Management Plan (INNSMP):** This plan will outline monitoring and control measures for invasive species, ensuring that species such as New Zealand Pygmyweed, Himalayan balsam and American Mink are effectively managed to protect biodiversity.
- **Environmental Incident Management and Pollution Prevention Plan (EIMP):** This plan will provide a structured response framework for fuel or

chemical spills, unexpected contamination events, and pollution control measures to prevent impacts on watercourses and groundwater.

- **Unexpected Contamination Protocol (UCP):** If unexpected contamination is encountered during operation, this protocol will detail the procedures for risk assessment, reporting, remediation and verification.
- **Flood Warning and Evacuation Plan (FWEP):** This plan will set out flood preparedness measures, warning systems, and emergency response actions in the event of extreme weather-related flooding.
- **Waste Management Plan (WMP):** This plan will set out procedures for the management of operational waste, ensuring compliance with the Waste Hierarchy and regulatory requirements.

1.3.4 Each of these plans will contain specific monitoring and reporting requirements, which will be reviewed regularly by the Site Manager, Environmental Manager, and relevant regulatory authorities. Monitoring results will be documented as part of the compliance framework for the operational phase.

1.3.5 If the DCO is granted, each of the above plans will be developed into a final document prior to the operational phase commencing, with approval by Cheshire West and Chester Council (following consultation on each plan as set out in the DCO).

1.3.6 The final OEMP and the associated management plans will be reviewed and updated periodically to ensure continued compliance with regulatory requirements and best practice standards.

2.0 THE PROPOSED DEVELOPMENT

2.1 The Proposed Development

2.1.1 The Proposed Development comprises a new solar energy generating station and an associated on-site Battery Energy Storage System (BESS) on land at Frodsham Marsh, Frodsham, Cheshire West and Chester ('the Site'). The Proposed Development also includes the associated infrastructure for connection to the local electricity distribution network, as well as a private wire electricity connection that would enable local businesses to utilise the renewable energy generated by the Proposed Development.

2.1.2 The current design for the Proposed Development would enable the generation of approximately 147 megawatts (MW) of electricity, as well as the storage of approximately 100 MW of electricity in a BESS. The precise generating capacity and storage capacity would be subject to detailed design, but it should be noted that at present the grid connection offer from the District Network Operator (DNO) is for 100 MW export and 50 MW import. As noted above the Proposed Development would also be capable of exporting electricity directly to local businesses.

2.1.3 Subject to obtaining the necessary consents, construction is anticipated to commence in early 2028 and be completed in mid-2030. The Proposed Development comprises a temporary development with an operational phase of up to 40 years. Decommissioning activities would therefore commence in 2070, 40 years after final commissioning or at an earlier date should the Proposed Development stop generating electricity and the provisions set out in Section 2.5 below be engaged.

2.1.4 A more detailed description of the Proposed Development is provided within **ES Vol 1 Chapter 2: The Proposed Development [EN010153/DR/6.1]**.

2.2 The Site

2.2.1 The Site is located approximately 500 m to the north of the centre of Frodsham Town Centre within the administrative area of Cheshire West and Chester Council (CWaCC).

2.2.2 The Site is defined by a single red line boundary that covers all land expected to be included within the Proposed Development, which in total is approximately 337.5 ha and is shown on **ES Volume 3 Figure 1-1 Site Location [EN010153/DR/6.3]**. This is also referred as the 'Order Limits'.

2.2.3 The Site contains all of the principal elements of the Proposed Development which are illustrated on **ES Volume 3 Figure 1-2 Proposed Development Areas [EN010153/DR/6.3]** and includes:

- **'Solar Array Development Area'** – which would include solar photovoltaic modules and support frames, internal access tracks, cabling, inverters, transformers, the solar array substation (known as the 'Frodsham Solar Substation') and the BESS;
- **'Main Site Access'** – which would be routed from the west via the Pool Lane roundabout and the access tracks used for the Frodsham Wind Farm. There would be no access to the Site from Frodsham during construction, operation or decommissioning other than for emergency vehicles, and access to a potential new public car parking area proposed on Moorditch Lane, subject to National Highways first having been satisfied that it is appropriate for vehicles to cross the M56 overbridges leading to the Site;
- **'SPEN Frodsham Substation'** – which is included along with access into the substation in order to provide the Grid Connection;
- **'SPEN Grid Connection'** – which would link the on-site Frodsham Solar Substation to the Scottish Power Energy Networks ('SPEN') Frodsham Substation;

- **'Private Wire Connection'** – which includes land to facilitate future electricity connections to businesses located south-west of the Proposed Development;
- **'Non-Breeding Bird Mitigation Area'** – which includes land that would be used to mitigate for the potential impacts of the Proposed Development on wetland bird species; and
- **'Skylark Mitigation Area'** – which includes land that would be used to mitigate for the potential impacts of the Proposed Development on skylark.

2.3 Site Context

2.3.1 In the eastern half of the Solar Array Development Area (i.e. the area to the east of Brook Furlong), fields tend to be enclosed by dense hedgerows and tree belts. In the western half of the Solar Array Development Area, the Site is more open, with only occasional trees and remnant sections of hedgerow. There are areas of scrub and woodland present on the embankments of the Manchester Ship Canal (MSC) dredging deposit cells.

2.3.2 The landform across the Site is largely flat and low-lying alongside the Mersey Estuary, however, engineered embankments associated with flood defences and the M56 motorway are present around and through the Site. The eastern half of the Site lies within an area at potential risk of flooding, but which benefits from flood defences along the River Weaver. There are a series of drains which dissect the agricultural and former agricultural land in the eastern half of the Site.

2.3.3 There are large areas of industrial development along this section of the River Mersey corridor, including power stations, oil refineries, chemical and manufacturing sites, and Frodsham Wind Farm.

2.3.4 The closest settlement to the Site is Frodsham on the south side of the M56 motorway. To the south-west of Frodsham lies Helsby, approximately 2 km from the Solar Array Development Area. Both Frodsham and Helsby lie at the

foot of the northern extent of the Cheshire Sandstone Ridge, which rises to a height of approximately 150m to the south of Frodsham and Helsby.

2.3.5 To the north and north-east of the Site, on the north bank of the River Weaver / Weaver Navigation, lies Runcorn and the settlements of Weston and Beechwood, located approximately 1km from the Solar Array Development Area.

2.3.6 The nearest residential properties to the Solar Array Development Area are within Frodsham beyond the M56 motorway to the south / south-east. Properties on Hawthorn Road and Wayford Mews are located approximately 140m from the Solar Array Development Area. Other properties within 350m of the Solar Array Development Area include those on Williams Way (230m distant) and Waterside Drive (290m distant). Two residential caravan sites are also located off Brook Furlong to the north-west of Frodsham (north of the M56). These lie adjacent to the draft Order limits. Both sites have been developed without planning permission.

2.3.7 A series of Public Rights of Way (PRoW) cross the Site. The PRoW network includes footpaths and restricted byways, which allow access by foot, horseback and cyclists. A national cycle route runs along a section of the Main Site Access and along part of the southern edge of the Site.

2.3.8 The Site is crossed by a series of utilities. The utilities that cross the Site include several above and below ground high voltage electricity transmission lines, high pressure gas lines, water distribution mains, telecommunication lines and private pipelines associated with nearby petrochemical plants. There are also proposals for new utilities across the Site which include a Carbon Dioxide pipeline and a Hydrogen pipeline. The Applicant is in discussion with the developer of these projects to ensure that none of the schemes will prevent the physical development of the others.

2.3.9 The Solar Array Development Area is designated as a Local Wildlife Site and lies within the Green Belt.

2.3.10 The Mersey Estuary to the north of the Site is designated as a Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), and Ramsar site. The SSSI also covers a strip of land approximately 100m wide on the southern side of the Manchester Ship Canal, the eastern 500m of which lies within the Non-Breeding Bird Mitigation Area within the Site.

2.4 Operational Activities

2.4.1 The Proposed Development comprises a temporary development with an operational phase of up to 40 years currently anticipated to be from 2030 to 2070. Decommissioning activities would commence no later than 40 years following the date of final commissioning of the solar array or if any part of the Proposed Development stops generating electricity then decommissioning activities must commence in accordance with the provisions set out in Section 2.5 below.

Operational Workforce and Activities

2.4.2 During the operational phase, access to the Site would principally be to the Frodsham Solar BESS and Substation, and to the wider site for routine maintenance operations, cleaning/replacement of equipment, habitat management, and farming activities. It is expected that there would be 10 full time equivalent (FTE) roles during the Operational Phase covering site maintenance, management and administrative roles, and land management including landscape maintenance and agriculture. Additional employment is likely to be required for the management of the NBBMA.

2.4.3 At times when major repairs are required, such as the replacement of transformers, more staff and specialist equipment (cranes and low loaders) would be required. Table 2-1 below sets out assumptions regarding the operational lifespan of key individual components of the Proposed Development.

Table 2-1: Indicative Operational Lifespan of Proposed Development Components

Scheme Component	Indicative Operational Lifespan
Solar Modules	15 – 30 years (a single replacement per installed panel and 10% contingency is assumed)
Mounting Structures	40 years
DC Cable	40 years (20% replacement anticipated due to defects)
AC Cables	40 years
Trident Poles	40 years
Solar Balance of Plant (Transformers/Inverters/Switchgear)	20 years (Replacement only for performance or health and safety reasons)
Battery Storage Unit and associated PCU	10 - 20 years (50% replacement anticipated due to defects)
Substation Equipment	40 years
Fencing	10 years
Meteorological monitoring equipment	5 – 15 years
Communication and CCTV	10 – 20 years

2.4.4 Maintenance access to the Site would be by a small van or similar. An operations / spares building would be provided within the Frodsham Solar Substation compound. It would contain changing rooms and welfare facilities for site operatives, offices and storage areas for spare parts and maintenance equipment. Where necessary, temporary welfare units may be used across the Site to service specific maintenance activities.

Periodic Replacements

2.4.5 As set out above, during the operational phase of the Proposed Development, periodic replacement of equipment will be necessary to maintain operational efficiency and reliability. Routine inspections and assessments will be conducted to determine the condition and performance of solar panels, solar balance of plant, battery storage units, and other associated infrastructure set out in Table 2-1. Equipment identified as reaching the end of its functional lifespan or showing reduced operational performance will be scheduled for replacement.

2.4.6 Given that replacement activities will not be a frequent occurrence; large scale replacement activities will not form part of the routine operation of the Proposed Development. The characteristics of the Site mean that impacts

(including to highways) from replacement activities will be limited and can be controlled predominantly by the measures set out in this oOEMP. As such it is not proposed that the final OEMP submitted for approval will include details of specific measures to be put in place for large scale replacement activities.

2.4.7 Instead, the OEMP will provide that, prior to any replacement activities which involve replacement of more than 50%[ii] of the solar panels within the Proposed Development over a 12 month period within either a single campaign or over multiple campaigns, a notification must be submitted to Cheshire West and Chester Council for approval with details of the management measures that are proposed to be put in place for those replacement activities, that are consistent with the principles of the CEMP, PROWMP, CTMP and OEMP that had been approved for the construction for the Proposed Development, but are also commensurate to the scale of activity proposed.

2.4.8 During replacement campaigns, works will be undertaken using a phased and sequential approach. While more than one works crew may be operating at any one time, each crew will progress gradually and systematically through the panel areas rather than working across the entire Site simultaneously.

2.4.9 This approach ensures that the area of activity is minimised as much as practicable, with disturbance confined to a limited area at any given time. Following completion of works within a panel area, the ground shall be reinstated in accordance with the Soil Management Plan and Landscape and Ecological Management Plan.

[ii] Given the conclusions of the construction assessments for the Proposed Development and that replacement activities will cause less effects (e.g. ornithology would be habituated to the extant solar farm and the NBBMA will be in operation, there would be no new below ground impacts) this is considered to be a reasonable figure for replacement activities to be considered 'large scale' such that they may require the identification of more extensive management measures.

2.4.10 The replacement works shall be scheduled so that work activities avoid replacement activities closest to the NBBMA during the core non-breeding bird period, accounting for the controls set out in Table 5-9.

2.4.11 The notification provided for replacement activities which involve the replacement of more than 50% of the solar panels shall include a programme of the replacement works proposed.

2.4.12 If Cheshire West and Chester Council at any time notifies the Applicant that it has received a scheme for the demolition and removal of Frodsham Wind Farm under Condition 48 of the Frodsham Wind Farm consent, or that it has granted planning permission for re-powering of Frodsham Wind Farm then:

i) if such notification occurs prior to the submission of a notification under paragraph 2.4.7, then that notification must take account of the information provided in the scheme/planning application submitted by Frodsham Wind Farm; and
ii) if such notification occurs after the submission of a notification under paragraph 2.4.7 and the Proposed Development replacement activities have not yet taken place, the Applicant must resubmit the paragraph 2.4.7 notification to take account of the scheme/planning application submitted by Frodsham Wind Farm for additional approval prior to commencing the Proposed Development replacement activities.

Panel Cleaning

2.4.13 Solar PV panels generally require little maintenance, as natural weather conditions help keep them clean. Any reduction in efficiency due to dust or dirt accumulation is usually negligible, however, site-specific conditions can influence the need for cleaning. The Site is in a relatively exposed position located proximate to the Mersey Estuary, and with significant bird populations nearby. The Site is therefore likely to require specific panel cleaning.

2.4.14 Since performance loss from dust and dirt accumulation is typically low, the decision to clean panels must be balanced against operational costs, with annual cleaning generally not considered cost-effective. It is therefore assumed as a precautionary worst-case scenario that the panels will be cleaned on a biennial basis. The precise cleaning requirements will however only become clear once the Proposed Development is operational, and it is reasonably likely that this requirement will be less frequent than a biennial basis.

2.4.15 Although cleaning technologies are advancing, it is currently assumed that a tractor mounted system would be used, as this is the most commonly used method. A tractor mounted system features a soft rotating brush, similar to those found in car washes. Water for cleaning would be delivered to the site in 1,000-litre (1 m^3) containers and carried on the tractor, and no chemical cleaning agents will be used. Data from comparable projects suggests that each panel would require up to 250 ml of water, leading to an estimated total usage of 72,150 litres (72.5 m^3) per full cleaning cycle. The water will be sourced from the existing mains supply.

2.4.16 To prevent damage, cleaning will typically take place at night or when the panels are cool, reducing the risk of damage to the panels. If undertaken at night, the process will be illuminated using tractor-mounted lights, similar to those used in night-time agricultural work.

Vehicular Access

2.4.17 Vehicular access to the Site would be the same as for construction i.e. access would be from the west via Pool Lane, Grinsome Road and on to the Frodsham Wind Farm access track. Vehicles would not access the Site via Frodsham.

2.4.18 Emergency access to the Site would be via the above route. Brook Furlong and Marsh Lane may be identified as a secondary emergency access route to the Site subject to National Highways first having been satisfied that it is

appropriate for them to do so. These access points would only be used by emergency service vehicles.

2.4.19 The on-site access roads used for emergency access to the BESS and Substation Compound shall be maintained to a standard that allows access by emergency vehicles, such as fire tenders and ambulances. The condition of the access roads shall be reviewed annually throughout the operational period, and any necessary improvements shall be documented within the Site's monitoring and maintenance records, as outlined in Section 7.0.

2.4.20 Brook Furlong and Moorditch Lane would also be available for public vehicles to access the potential new car park along Moorditch Lane discussed in the oLEMP. Subject to the other triggers set out in the oLEMP the car park will only be delivered if National Highways has agreed that Brook Furlong Bridge can be used by cars to access the car park, pursuant to their Protective Provisions in the DCO.

2.4.21 There would be maintenance vehicles retained onsite, most likely tractors, trailers and bulk tankers, along with smaller light goods vehicles (LGVs). These would be used to transport spare components, tools and equipment around the Site, and to undertake landscape maintenance and solar PV module cleaning. These would be stored in the Frodsham Solar Substation compound within parking areas adjacent to the operations / spares building, or within the operations building store area.

2.4.22 There would be no requirement for any regular heavy good vehicle (HGV) access, with the vast majority of the routine maintenance, and associated deliveries, undertaken by LGV.

Public Rights of Way

2.4.23 During the operational phase, all existing PRoW would be maintained on their existing alignment and it is not expected that any diversions or stopping-up of PRoW is required. The **outline PRoWMP [EN010153/DR/7.9]** describes how

the PRoW within the Order limits, and newly created permissive paths, would be managed over the operational lifetime of the Proposed Development.

2.4.24 The detailed OEMP will set out the PROW mitigation measures that will be deployed during regular maintenance measures (such as banksmen), consistent with the measures set out in the PROWMP approved for the construction phase.

Biodiversity and Vegetation Management (including grazing and Permissive Paths)

2.4.25 A range of different habitat and land management prescriptions would be required to deliver the landscape outcomes envisaged for the Proposed Development. These are set out within the **outline Landscape and Ecology Management Plan (oLEMP) [EN010153/DR/7.13]** which supports the DCO application. Post-consent, this outline plan will be developed into a full plan which must be in substantial accordance with the outline and will be submitted to and require approval from CWaCC. The Proposed Development must be operated in accordance with the approved plan. This is secured via a Requirement in Schedule 2 of the **draft DCO [EN010153/DR/3.1]**.

2.4.26 The oLEMP sets out the management prescriptions and target habitat conditions for the various landscape features identified on the Indicative Environmental Masterplan (see **ES Vol 3 Figure 2-3: Illustrative Environmental Masterplan [EN010153/DR/6.3]**). Monitoring processes are also prescribed to record the progress of establishing target habitats and implement remedial measures. This ensures that the Proposed Development meets the BNG targets for the Site and the various embedded Landscape and Ecology design measures. The **oLEMP [EN010153/DR/7.13]** contains specific detail for the management of the NBBMA. This includes the Non-Breeding Bird Mitigation Strategy contained at Appendix B to the **oLEMP [EN010153/DR/7.13]**. This defines a series of specific criteria and habitat objectives to ensure the NBBMA delivers suitable habitat for the target SPA species it is being designed to cater for.

2.5 Provisions for Decommissioning if the Proposed Development Stops Generating Electricity

2.5.1 The full operational environmental management plan must include the following provisions.

2.5.2 The Applicant must provide notice to the relevant planning authority (for the part of the authorised development in question) once any phase of the authorised development stops generating electricity for a period of greater than 14 days for non-maintenance or replacement activities reasons.

2.5.3 If within 36 continuous months of the date of the notice, that phase of the authorised development does not re-generate electricity, decommissioning works for that part of the authorised development must commence, having in that period had a decommissioning environmental management plan approved by the relevant planning authority as required by the DCO.

2.5.4 Paragraph 2.5.3 does not apply if it was a force majeure event, SPEN undertaking any activities to Frodsham SPEN Substation, National Grid undertaking any activities to the Frodsham NGET substation, or woks to the transmission or SPEN distribution network, that cause that phase of the authorised development to stop generating electricity.

2.5.5 Where paragraph 2.5.4 applies, the Applicant must provide 3 monthly updates (starting 3 months from the date of the notification given pursuant to paragraph 2.5.2) to the relevant planning authority which must confirm either:

(a) the latest programme for that part of the authorised development to re-commence generating electricity as understood at that time; or

(b) that it does not intend to re-commence generating electricity for that part of the authorised development.

2.5.6 Where paragraph 2.5.5 (b) is the case, the Applicant must within 36 months of that confirmation being given, commence decommissioning works for that part of the authorised development (having in that period had a

decommissioning environmental management plan approved by the relevant local planning authority as required by the DCO).

2.5.7 The period to commence decommissioning works given in paragraphs 2.5.3 and 2.5.6 can be extended if:

(a) the relevant planning authority agree as such in approving the Decommissioning Environmental Management Plan pursuant to the DCO; or

(b) a force majeure event occurs within that 36 month period, in which case the Applicant and the relevant planning authority must agree following that event the time period in which decommissioning works should take place.

2.5.8 For the purposes of this section of the oOEMP (and the detailed OEMPs that follow), a 'force majeure event' means an event or circumstance which is beyond the reasonable control of the Applicant which will include but is not limited to an act of God, war, civil disturbance, statutory prohibition, Government intervention, order or act of Government or local/public authority, acts of terrorism, fire, lightning, flood, adverse weather conditions, prevention of access to any site as a consequence of any local, regional or national restriction on movement in consequence of a health emergency, or otherwise to prevent the spread of any communicable disease, explosion, accident, theft, vandalism or national strike action.

3.0 ROLES AND RESPONSIBILITIES

3.1 Site Team

3.1.1 The following are key Site roles during the operational phase that will have responsibility for management of environmental impacts, with responsibilities for each role also set out (this list is not definitive and additional roles and responsibilities may be added to the final OEMP):

- **Site Manager** – A Site Manager will be identified who will have overall responsibility for implementation of the OEMP and all other DCO and legislative requirements.
- **Quality Manager** – The Quality Manager will have responsibility for quality assurance and compliance, document management and record keeping, inspections for quality control, management of risks, and process improvement related to quality control and assurance. For the OEMP, they will have responsibility for quality assurance of procedures and for management of documentation, records, and monitoring of the systems relating to the same.
- **Health and Safety Manager** – responsible for the monitoring and control of health and safety, and the rules and regulations arising from this.
- **Environmental Manager** – The Environmental Manager has responsibility for management of environmental matters related to the operational phase of the Proposed Development, including ensuring compliance with legislation, ensuring that mitigation, management and monitoring measures are implemented, and that best practice is applied during works. The Environmental Manager will be a point of contact with environmental bodies and other third parties as required to perform their duties.
- **Environmental Clerk of Works** – The Environmental Clerk of Works (ECoW) will be a suitably qualified environmental professional responsible for on-site management and monitoring of environmental impacts.

- **Ecological Clerk of Works** – The Ecological Clerk of Works (EcoCoW) will be a suitably qualified ecologist responsible for on-site managing and monitoring of the works in relation to habitats, protected species, and other wildlife.
- **Flood Warden** – The Flood Warden will be responsible for preparation, management, and response to flood incidents, inclusive of reacting to flood warnings and alerts.
- **Community Liaison Officer** – The Community Liaison Officer will be the point of contact for the Community Liaison Group (CLG), ensuring that updates are issued during operation of the Proposed Development.

3.1.2 These roles and responsibilities are indicative and will be confirmed in the final OEMP.

3.2 Stakeholders

Community Liaison Group

3.2.1 A Community Liaison Group (CLG) will be formed prior to construction (per the **outline Construction Environmental Management Plan [EN010153/DR/7.5]**) and will continue through its operations until the decommissioning of the Proposed Development.

3.2.2 During the operational phase, the purpose of the CLG will be to allow interested community members and bodies to be updated on maintenance, periodic replacements and other such activities. The Community Liaison Officer will provide updates on upcoming and current work taking place on site, any changes that may occur (e.g. to due unforeseen circumstances), and other useful information (e.g. movement of large loads etc.). The Applicant will fund the administration of the CLG. The CLG will allow local residents to raise issues with the Community Liaison Officer and to act as a forum to discuss relevant issues for the operation of the Proposed Development. Membership will be open to the following non-exhaustive groups:

- Town/Parish Councils;

- Local Businesses; and
- Local Community Groups.

4.0 OPERATIONAL ENVIRONMENTAL MANAGEMENT

4.1.1 This section of the oOEMP sets out the general principles and control measures that will be employed on Site during the operational phase, which are applicable to all aspects of the Proposed Development.

Operational Hours of Work

4.1.2 The Proposed Development would operate 24/7, with the solar farm generating electricity during daylight hours, and the BESS with the potential to operate overnight.

4.1.3 During the operational phase, maintenance activities will generally be limited to from 08:00 to 18:00hrs Monday to Friday and from 08:00 to 13:00hrs Saturday, with no work on Sundays or Bank Holidays.

4.1.4 There may be occasional instances where operations are required outside the above times e.g. for emergency repairs or for panel cleaning (covered further below).

4.1.5 In such instances, it may be necessary to notify CWaCC of the planned modification to the working hours.

Site Security

4.1.6 The Site will be secured during operation by the security fencing surrounding the site which will remain in-situ throughout the period of operation of the Proposed Development. All plant and materials will be secured to prevent theft or vandalism. The Site will be monitored through CCTV and other monitoring systems, which will allow monitoring of the Site to identify security or other similar issues. Any additional security measures / deterrents shall be considered such as use of forensic marking and the use of established crime prevention principles.

4.1.7 The potential visitor car park on Moorditch Lane will be provided within two years following the commissioning of the Proposed Development, unless it

has been agreed in writing with CWaCC that there has not been a demonstrable increase in cars informally parking along Moorditch Lane or Brook Furlong, such that any parking along Moorditch Lane or Brook Furlong does not cause access/egress issues for other users of Moorditch Lane or Brook Furlong.

4.1.8 If it is agreed that a car park is not required, then this position will be reviewed every two years or until such time a car park is deemed necessary.The demand for parking, and whether informal parking on Moorditch Lane is causing access/egress issues for other users of Moorditch Lane will be included as an agenda item on any CLG meetings during the operational period.

4.1.9 The Site Manager will address any unforeseen access/egress issues on Moorditch Lane that are caused by the Proposed Development, either by constructing the car park or via alternative measures. If delivered, the car park will include security features (e.g. height-restricting barriers and a lockable gate). If it gives rise to persistent anti-social behaviour, the car park will be removed. Suitable evidence of such behaviour would first be presented to CWaCC and potential solutions discussed.

4.1.10 The security fencing and CCTV and monitoring systems will be regularly inspected to ensure that they are in a good state of repair and operating properly. Where issues are found they will be swiftly rectified.

4.1.11 If any of the proposed permissive paths lead to persistent anti-social behaviour or security issues that cannot be otherwise managed (for instance, if a permissive path is misused in a way that threatens wildlife in the NBBMA or the security of the solar farm), the permissive access may be reviewed and potentially removed in the interest of safety and conservation. Any such decision would involve consultation and agreement with CWaCC.

Protection of the Public

4.1.12 When maintenance, repair, or replacement activity takes place in addition to the responsibilities set out under Construction (Design and Management) Regulations 2015, the Site Manager will be alert to the risk of works being accessed by unauthorised members of the public and will ensure that site security is maintained at a high standard across the Site to ensure that the risk of access by trespassers is minimised.

4.1.13 A high standard of 'housekeeping' will also be maintained across the Site to reduce risks to trespassers in the event that they do gain access to the site. The operations / spares building will be fully secured, and all materials, equipment, and plant will be fully secured when not in use, and in particular at the end of each working day.

4.1.14 Where public rights of way cross the Site or interact with operational activity (e.g. vegetation maintenance activity or where they cross access roads) then activity will be suitably managed to protect the public as per the **outline Public Rights of Way Management Plan [EN010153/DR/7.9]**.

4.1.15 During the operational phase, all public rights of way and permissive routes within the Order limits would be maintained in accordance with the **outline Landscape and Ecology Management Plan [EN010153/DR/7.13]**, to allow access to occur without impediment, unless maintenance requires temporary obstructions/closures.

4.1.16 Any temporary closures or diversions to public rights of way during the operational phase must be agreed with CWaCC.

4.1.17 It is proposed that new permissive pathways through the Proposed Development site would be created to link up existing routes, filling gaps in the existing network and creating loops where possible, to enhance appeal to users and to improve connectivity. The programme for the implementation of the permissive paths will be included within the LEMP but permitted paths located within a phase (as defined pursuant to Requirement 3 of Schedule 2

of the draft DCO) shall be made available for use by the public on the date of final commissioning of that phase.

4.1.18 Wayfinding signage and information about the variety of routes available within the Order limits, and in respect of onward connections, will be provided. Information to be provided would consist of both physical signage on Site and published material (such as on the project website) to provide guidance to potential visitors.

4.1.19 Signage shall comprise waymarking signs mounted on timber posts (or attached to fenceposts) located at each route intersection. The purposes of signage shall be to indicate the direction that each route follows, and to provide any other information pertinent to the health and safety of users.

4.1.20 It is also proposed to design and install interpretative material along access routes, providing information regarding the social and natural history of the Order limits and its present use for generating energy.

4.1.21 All signage and interpretation material shall be maintained in good condition, so that the information that they show is unobscured and easy to read. Any damage shall be made good as soon as feasible.

4.1.22 An **outline Public Right of Way Management Plan [EN010153/DR/7.9]** has been prepared and submitted with the application for development consent. This document sets out the principles by which PRoW will be managed during the construction and operation phases, with a final Public Right of Way Management Plan to be produced following grant of the DCO and prior to the start of construction pursuant to a Requirement of the draft DCO.

Management of Vegetation and Planting

4.1.23 An **Outline Landscape and Ecology Management Plan [EN010153/DR/7.13]** (oLEMP) has been prepared and provided as part of the DCO application. This provides a framework for the delivery of the landscape strategy and the successful establishment and management of the landscape

works proposed as part of the Proposed Development, through short and long-term measures for the establishment, monitoring, and management of the measures it covers. This will ensure that the landscaping measures and the ecological mitigation and enhancement (biodiversity net gain) measures that have been integrated into the Proposed Development are successfully delivered.

4.1.24 If the DCO is granted, the oLEMP will be developed into a final Landscape and Ecology Management Plan (LEMP) once a contractor is appointed. The LEMP will be in substantial accordance with the oLEMP, and as set out by a Requirement of the **draft DCO [EN010153/DR/3.1]** for submission and approval by the CWaCC prior to construction.

4.1.25 The LEMP will operate alongside the final OEMP, with both ensuring the proper management and maintenance of their respective aspects of the Proposed Development.

Signage

4.1.26 Within the Site and at access points, signage will be erected setting out required conduct within the Site's boundaries (e.g. speed limits, warning of possible hazards etc.). Signage will also be erected at any point where an access road crosses or meets a PRoW or a similar route to advise Site Operatives of the risk of pedestrians or other non-motorised traffic being present.

4.1.27 Signage will be affixed to site fencing at regular intervals indicating that the operational parts of the site may not be accessed by the public and setting out the risks of entry. Signage will be inspected at regular intervals and maintained or replaced as necessary to ensure visibility, legibility, and continued good working order.

4.1.28 Where necessary, and to ensure the safety of the public and site operatives, temporary signage may be erected along the PRoW and permissive paths to warn users of planned or ongoing maintenance works.

Inductions

4.1.29 All site visitors and operatives will be directed in the first instance to an operations / spares building within the Frodsham Solar Substation compound, here they will be required to sign in and undergo a suitable induction.

4.1.30 Inductions will be completed as appropriate for the role and in accordance with best practice approaches prior to commencing work or visiting the site. Records of inductions and competencies will be held on site.

4.1.31 Risk assessments and methods statements will be produced for all activities and they will be site-specific. Operatives will be briefed on method statements and risk assessments relevant to their work prior to their commencing work. Copies of the Risk Assessments and Method Assessments will be held on site and will be available for use and inspection.

4.1.32 Operatives and visitors will be required to sign in and out every day.

Deliveries

4.1.33 Parking will be provided for staff and visitors within the Frodsham Solar Substation compound. All deliveries and collections of material from the site will be from this compound except where the nature of maintenance/repair activity requires that materials are best delivered to or collected from the area of work. When the site is not open for deliveries, vehicles will not be permitted to circulate, queue, or wait on the public highway. As set out at paragraph 2.4.7 specific measures would be developed for any significant periodic replacements, which would include traffic control or management measures as deemed necessary through consultation with Cheshire West and Chester Council.

Health and Safety

4.1.34 The requirement for comprehensive health and safety assessments is an essential part of any operational business activity.

4.1.35 Regular meetings will be held to review matters related to health and safety. The Health and Safety Manager will ensure that they or a suitably qualified member of their organisation regularly visits the Site to monitor health and safety matters. Monitoring reports will be produced and provided after these visits.

4.1.36 Reportable accidents and dangerous occurrences will be reported in accordance with RIDDOR (or the current equivalent legislation in place during the operation of the Proposed Development).

4.1.37 In line with other requirements in this section, appropriately licensed operatives will be appointed to undertake work, a safe system of working will be established prior to the commencement of any maintenance or replacement works, and Personal Protective Equipment (PPE) / Respiratory Protective Equipment (RPE) suitable for the tasks must be worn by operatives.

4.1.38 The Site lies close to a number of Control of Major Accident Hazards (COMAH) industrial sites and a number of pipelines carrying hazardous substances cross the Site. The necessary site induction and safety instructions must be adopted to ensure staff and visitors are aware of the evacuation and safety procedures in the event of an emergency. The DCO contains protective provisions relating to the pipelines crossing the Site and the limitations / requirements set out must be observed throughout the operational period to ensure the health and safety of site workers, visitors and the public using the PRoW on the Site.

4.1.39 Should the proposed Runcorn Spur CO_2 Pipeline be granted planning permission and constructed the Site Manager will review safety procedures and emergency action plans with Cheshire Fire and Rescue to ensure operatives are aware of any risks arising from that development.

Pollution and Contamination

4.1.40 Should a pollution incident occur, detailed records of the incident will be made and the relevant external organisations would be promptly contacted in accordance with an agreed Environmental Incident Management and Pollution Prevention Plan as part of, or accompanying the final OEMP.

4.1.41 All accidents, incidents and near misses (including spills, dust, noise pollution etc.) will be reported to the Site Manager immediately. These will be recorded and investigated as appropriate. Details to be recorded will include: a description of the incident, potential contributory causes, adverse effects, measures implemented to mitigate adverse effects, and effectiveness of measures implemented to prevent incidents happening again.

Welfare Provision

4.1.42 The Frodsham Solar Substation compound will include welfare facilities and would meet the needs of operatives present on site for the majority of activity. Where maintenance, repair, or other such work is taking place at a notable distance from the Frodsham Solar Substation compound, it may be necessary to provide temporary facilities for welfare. If so, these will be fit for purpose, and at minimum will include toilet facilities and welfare facilities that store foul/wastewater. These will then be collected/emptied by specialist licensed contractors.

Lighting

4.1.43 During operation, no part of the Proposed Development will be continuously lit as this will not be required for its operation.

4.1.44 The Frodsham Solar Substation compound will require artificial lighting in order to provide security and ensure the health and safety of those working on the Site. However, this will be designed and sited to minimise impacts on human and ecological receptors. It would generally only be required at night or during low light levels. The lighting will be manually operated and will not

be turned on when staff are not working in the substation, which would generally be limited to the operational hours of work. Planned maintenance of the substation will take place during daytime hours, thus limiting the need to use lighting to unplanned maintenance or to address site specific safety or security matters.

4.1.45 Lighting will be directional and designed in line with the guidance and principles set out in ILP GN01/2021 ‘Reduction of Obtrusive Light’. This will include use of appropriate luminaires and lighting levels for the purpose of the lighting, and hoods and cowls to reduce light spill beyond the area targeted for lighting.

4.1.46 In other parts of the Site, temporary mobile lighting may be required during maintenance activities during winter months, or during periods where unexpected work must occur. This is not expected to be a regular occurrence. Lighting will be operated to minimise impacts on human and ecological receptors, and would generally not be operated outside of the specified working hours. Lighting will utilise directional fittings to minimise outward light spill and glare.

4.1.47 As set out in Section 2.4 of this oOEMP, the solar PV panels will be cleaned at night using a tractor-mounted system. The tractor will utilise headlights and a spotlight whilst driving up and down each row, which is similar to that used during night-time arable harvest operations that currently take place across the east of the site.

4.1.48 A sensitive lighting strategy to reduce potential impacts on biodiversity will be adopted across the Site as set out in Table 5-3. The sensitive lighting strategy should ensure that lighting is not directed towards the NBBMA. When task lighting is required suitable measures should be implemented to avoid unnecessary lighting spill into adjacent habitats e.g. through the use of appropriate lighting strength, cowls and hoods.

Utilities

4.1.49 Due to the nature of the Proposed Development, it is not anticipated there would be any works that could affect below ground utility infrastructure during the operational phase. However, should maintenance works require excavations, measures in relation to safe working near buried utilities will be in place and detailed in the final OEMP.

4.1.50 The **draft DCO [EN010153/DR/3.1]** includes protective provisions for the protection of existing utilities.

Emergencies, Fire Plan, and Special Site Instructions

4.1.51 Emergency planning will be developed in consultation with the relevant local authority emergency planning officer, emergency services including the local fire and rescue service, as well as the Environment Agency in relation to responding to flood warnings and events.

4.1.52 An Emergency Response Plan will detail the procedures for responding to incidents and emergencies on site, and any reporting arising from them.

4.1.53 A notice displaying emergency contact details will be displayed in a prominent location onsite – such as within the Frodsham Solar Substation compound. External notices providing emergency contact details will be placed at prominent locations around the perimeter of the Site.

4.1.54 At site induction all personnel must be advised of the firefighting equipment on site and the escape routes and procedures.

Certification of Mobile Plant

4.1.55 All plant will have the appropriate certification and checks with copies held on file. All plant will be regularly inspected and maintained, and records of these inspections will be held on file on site.

Waste management

4.1.56 The Waste Hierarchy must be applied by any person who produces, keeps or manages waste per the duty set out in the Waste (England and Wales) Regulations 2011[ii]. The Waste Hierarchy requires any person managing waste to first consider waste prevention, then preparing material for re-use or recycling, and only then use waste recovery methods (i.e. firstly energy recovery, and then waste disposal as the last option). Thus, the waste hierarchy must be applied when managing the operational phase of the Proposed Development.

4.1.57 Detail of measures to minimise, re-use, and control waste are set out later in this document and will be detailed in the final OEMP prior to operation commencing. However, briefly, these will as a minimum include:

- Taking all reasonable steps to minimise the volume of waste generated by the operational phase of the Proposed Development (e.g. reduce and re-use);
- Separating main waste streams and segregate them to maximise opportunities of re-use and recycling; and
- Where waste is to be removed from the Site to a waste facility then fully licensed waste carriers will be used and waste will be taken to licensed facilities.

4.1.58 The Site Manager shall keep under review the availability and capability of recycling and recovery facilities for solar PV panels, BESS units and associated components and other ancillary electrical equipment throughout the operational life of the Proposed Development. This review shall be undertaken at regular intervals (no less than once every five years) and shall consider advances in recycling technologies, changes in market capacity, and relevant legislative or policy updates.

4.1.59 Where viable recycling or recovery routes become available, these shall be prioritised in accordance with the waste hierarchy, with a view to maximising reuse, recycling and recovery of materials and minimising disposal.

4.1.60 Records of waste arisings and their management routes, including quantities reused, recycled, recovered and disposed shall be recorded within the EMS (see section 8.2). These records shall be used to monitor performance against internal recycling targets, which shall be reviewed and updated periodically to reflect industry best practice and emerging market opportunities.

Surface Water Management

4.1.61 A surface water drainage strategy will be prepared that sets out measures for the site wide management of surface water, rainfall run off, and site drainage. It will also detail measures for management of fire water run-off in the event of a fire at the BESS.

Flood Risk

4.1.62 The Proposed Development has been designed to account for flood risk as set out in **ES Vol 2 Appendix 9-1: Flood Risk Assessment and Drainage Strategy [EN010153/DR/6.2]**.

4.1.63 To manage the residual risk of flooding to Site Operatives, a Flood Warning and Evacuation Plan will be developed and a Flood Warden will be appointed, who will be familiar with the Site, and will ensure that Operatives are alerted when there is a risk of flooding and that work in impacted areas is rescheduled or stopped in advance of any such event. The Flood Warden will liaise with the Environment Agency to receive appropriate flood warnings in advance of any potential flood event.

4.1.64 Permissive footpaths proposed as part of the Proposed Development will be closed to the public at times of flood risk, with temporary signage erected at either end of each route to ensure the public are aware.

Liaison with the Public

4.1.65 Neighbouring residents will be informed about any large scale maintenance, repair, or replacement work on the Site throughout the duration of the operational phase of the Proposed Development via the CLG. As appropriate, communications will be sent to them to provide updates on such work, any changes that may occur (e.g. due unforeseen circumstances), and other useful information (e.g. movement of large loads etc.). These will also include details of a contact telephone number and the project website.

4.1.66 A contact telephone number will be maintained throughout the operation of the Proposed Development (including an outside of working hours [out of hours] number for use if required) to allow members of the public, local businesses, and other such parties to make enquiries or raise a complaint. The telephone number provided to local residents and businesses will be maintained at all times during the operational phase in order to respond to any enquiries and complaints.

4.1.67 A project website will be maintained throughout the operation of the Proposed Development to allow members of the public, local businesses, and other such parties to view updates about the Proposed Development, make enquiries or raise a complaint. The project website will be maintained at all times whilst the Proposed Development is in operation in order to respond to any enquiries and complaints.

4.1.68 Any complaints arising from the site during the operational phase will be addressed by the Site Manager. A Complaints Register will be maintained, and this will include the following:

- Complainant's details;
- Date and time of the complaint;

- Cause(s) of the complaint; and
- Action taken to resolve the complaint, and date and time of the same, or reasons for any unresolved complaints (including where no issue is found).

4.1.69 The Complaints Register will be regularly reviewed as part of monitoring of the final OEMP to ensure that it is being followed, that any issues are identified, and to monitor compliance with its Management and Mitigation Measures.

Land Access and Collaborative Working

4.1.70 The Applicant is committed to proactive collaboration throughout the operational phase with Cadent Gas and Eni (HyNet projects) and other developers of major projects that interact with the Order limits, and will co-ordinate where practicable on environmental mitigation measures.

4.1.71 The Site Manager will ensure that operation of the Manchester Ship Canal is not interrupted at any point during the operational phase, and that the Manchester Ship Canal Company always has access to their land.

4.1.72 During each phase of the Proposed Development the Applicant will ensure that the requirements of the Proposed Development do not prevent access being available at all times to Hover Force Limited land.

4.1.73 The Site Manager will ensure that access is available at all times to Marsh Farm, The Lum, the Frodsham Pumping Station, the former sewage outfall, the dedicated Skylark Mitigation Area, and the operational Frodsham Wind Farm, which are to be retained within the Order limits.

Best practice measures

4.1.74 The Considerate Constructors Scheme (CCS), or equivalent at the time of operational phase of the Proposed Development, will be adopted for the Proposed Development for relevant repair or replacement activity. This standard includes best practice measures that go beyond statutory

compliance and thus will further reduce pollution and nuisance from the Proposed Development.

Monitoring & Implementation Arrangements

4.1.75 The Site Manager will be responsible for the day-to-day management of the site and will ensure that all restrictions / provisions noted in this OEMP are undertaken. Detail of general monitoring requirements are set out later in this document.

General Site Condition

4.1.76 The Site Manager must ensure that the authorised solar infrastructure is maintained in a safe, secure and good operational condition for the duration of the consented operational period. No part of the authorised development may be allowed to fall into disrepair such that it results in visual degradation, safety risks, or adverse environmental effects.

Decommissioning

4.1.77 Works undertaken during the operational phase, including general maintenance or replacement activities, will be undertaken with regard to the future decommissioning phase, recognising that decisions made during general maintenance or replacement activities can influence the scale and nature of environmental effects when the infrastructure is ultimately removed. The Applicant is therefore committed to adopting design measures and maintenance practices that facilitate efficient, low-impact decommissioning and reduce environmental effects that may arise at later stages in the development.

4.1.78 As per the initial detailed design and construction phase, the Applicant will consider whether the maintenance or replacement of components can be undertaken in a way that enables their straightforward removal, treatment or recycling at the end of their operational life. This includes, where practicable, selecting methodologies and materials that reduce the need for intrusive

works during decommissioning and that limit the potential for impacts on soil structure and quality, pollution in terms of noise, air and the water environment and biodiversity.

4.1.79 The detailed OEMP shall include a specific section describing how maintenance and replacement methods and decisions will be informed by, and will facilitate, eventual decommissioning. This will set out the measures incorporated into the maintenance and replacement process that will reduce potential environmental effects during decommissioning works.

4.1.80 In accordance with the Construction (Design and Management) Regulations 2015, design work undertaken during the maintenance and replacement phases will fully consider health and safety throughout the entire project lifecycle. Any design work must identify and mitigate foreseeable risks, not only those related to construction activities arising from maintenance and replacement, but also those concerning the ongoing operation, maintenance, and eventual decommissioning of the Proposed Development. These principles may often guide the construction methodology and environmental controls needed to minimise the environmental impacts of the Proposed Development, such design considerations will be outlined in the OEMP.

5.0 ENVIRONMENTAL MITIGATION MEASURES

5.1.1 The following tables set out outline mitigation and management measures that will as a minimum form part of the final OEMP. These have been prepared using detail set out in the ES of required measures for each topic. These measures are secured via the requirements of the **draft DCO [EN010153/DR/3.1]**, and a final OEMP will be prepared prior to the operational phase commencing.

Table 5-1: Summary of the operational mitigation and management measures – Climate change

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Impacts on on-site workers from extreme weather events and conditions	Weather conditions will be actively monitored, with forecasts reviewed daily to inform site operations.	Logging of weather forecasts and distribution to site staff and contractors. Periodic audits of RAMS and staff training compliance.
	Risk Assessment Method Statements (RAMS) will be developed for site activities, ensuring appropriate safety measures are in place for adverse weather conditions.	
	Staff will be provided with climate-appropriate PPE and trained in extreme weather response protocols.	
Damage to equipment from extreme weather events / climate conditions	Equipment, plant, and materials will be selected to meet industry standards for resilience against extreme weather conditions and to withstand the range of climatic conditions predicted to occur in the future.	Routine inspection and maintenance of equipment and drainage infrastructure. Incident reporting for any weather-related damage.
	Regular maintenance checks will be undertaken to ensure there are no defects that could be vulnerable to extreme weather events.	

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
	Drainage systems will be regularly maintained to prevent flooding.	
Increased risk of flooding	This matter is dealt with in Table 5-4 in respect of measures for hydrology and flood risk	Follow monitoring measures set out in Table 5-4.
Release of greenhouse gas emissions from operational activities and periodic replacements	Sustainable methods of working will be adopted for maintenance activities and periodic replacements as far as practicable, including: • Regular planned maintenance of the plant and machinery to optimise efficiency. • Implementing measures to decrease fuel use by maximising efficiencies, and avoiding engine idling. • All members of the supply chain providing a carbon reduction plan where feasible.	Periodic review of operational energy consumption and emissions.
	Staff travel and site operations will be optimised to minimise emissions.	
	The embodied carbon of materials and components will be factored into the procurement process for any repairs and replacements, and where reasonably practicable lower-carbon or locally sourced materials will be selected, in order to minimise the Proposed Development's lifecycle greenhouse gas emissions.	
Fugitive emissions of sulphur hexafluoride (SF6) from gas-insulated electrical equipment	SF6-free electrical components will be prioritised wherever feasible to eliminate emissions from gas-insulated switchgear and transformers.	Regular equipment inspections to ensure SF6 containment integrity.

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
	For any equipment that uses SF6, only sealed-for-life components with extremely low leakage rates will be used to minimise fugitive emissions. Routine inspections of electrical equipment will be conducted to detect and prevent leaks. End-of-life disposal of SF6-containing equipment will follow best practice handling procedures to prevent atmospheric release.	Monitoring and reporting of SF6 usage, leakage rates, and disposal practices.

Table 5-2: Summary of the operational mitigation and management measures – Landscape and visual

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Potential loss of vegetation due to maintenance activities	The **outline Landscape and Ecology Management Plan (oLEMP) [EN010153/DR/7.13]** establishes measures to protect and maintain existing vegetation, ensuring that retained vegetation is safeguarded throughout the operational phase.	Regular surveys to assess vegetation health and compliance with the oLEMP. Records will be kept of any vegetation loss and replanting efforts.
	Any vegetation losses or failure of plants to establish will be replaced in line with the oLEMP and the requirements of the DCO.	
	Routine vegetation management, including hedgerow and tree maintenance, will be conducted to preserve screening effectiveness. Where maintenance activities are undertaken which impact trees, all works shall be undertaken in accordance with BS 5837:2012, Trees in relation to design, demolition & construction.	
Visual impact of the development from surrounding areas	In accordance with the oLEMP: • Existing landscape features such as hedgerows and woodland belts will be retained and enhanced to provide natural screening. • New planting of trees and hedgerows will be carried out where additional screening is required. • Maintenance of screening vegetation to ensure continued effectiveness.	Visual inspections from key viewpoints to confirm the effectiveness of screening. Adaptive planting strategies to reinforce screening where necessary.
Glint and glare from solar panels	Solar PV panels will be fitted with anti-reflective coatings to reduce glint and glare.	

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
	Solar PV panels will be inspected annually to ensure they continue to comply with the angle parameters specified within Table 1 of the **Design Parameters Statement [EN010153/DR/7.1]**	Review of any complaints related to glare and adjustments made if necessary. Record reviews undertaken to ensure tilt and angles of panels comply with the Design Parameters Statement.
	Mature planting / mesh fencing will be used to mitigate residual glare effects, in the locations specified with the oLEMP	
Impact of temporary site lighting during maintenance activities or periodic replacements	Lighting will be designed to minimise light spill, using directional fittings and low-intensity lamps where possible. Mobile lighting will only be used when essential for safety and will be turned off when not required. Maintenance activities requiring lighting will be scheduled during daylight hours where feasible. CCTV will use infra-red technology to minimise potential impacts from lighting.	Monitoring of temporary lighting use to ensure compliance with best practices.
Effects on users of Public Rights of Way during operational maintenance, including for periodic replacements	An **outline Public Right of Way Management Plan [EN010153/DR/7.9]** has been prepared and will be developed into a final Public Right of Way Management Plan prior to the start of construction in accordance with a Requirement of the **draft DCO [EN010153/DR/3.1]**. The measures agreed in the final Public Right of Way Management Plan will be implemented if required during the operational phase as part of any periodic replacement.	Regular inspections of PRoW routes within the site. Monitoring of public feedback regarding accessibility and signage quality.

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
	Signage and interpretation boards will be installed to provide information about the site and its renewable energy function.	

Table 5-3: Summary of the operational mitigation and management measures –Terrestrial Ecology & Ornithology

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Potential habitat loss or disturbance to wildlife through management and maintenance activities or periodic replacements	Any works with the potential to disturb wildlife, such as vegetation clearance, will be scheduled outside of sensitive periods (e.g., bird nesting season). If this is not possible, pre-work surveys will be conducted by the EcoCoW or other suitably qualified ecologist. Any maintenance works undertaken on the solar array or inverters/transformers situated within 180m of the NBBMA between November to February shall be only undertaken following agreement with the ECoW. No works shall be undertaken within the NBBMA without prior agreement with the organisation appointed to manage its conservation objectives.	Surveys of retained habitats and monitoring of compliance with ecological protection measures in the oLEMP. Records to be kept of habitat maintenance and remedial actions taken, in accordance with the requirements of the oLEMP.
	Task-specific lighting will be used to avoid light spill into sensitive habitats (e.g., woodland, hedgerows, and watercourses).	
	Best practice measures will be implemented to control dust, run-off, noise, light, vibration, and vehicle movements throughout the operational phase (including for any periodic replacements), as set out in the air quality, noise, and traffic tables of this oOEMP.	
Potential disturbance to wildlife through increased recreational pressure	The careful routing of new permissive paths, use of bird screening measures such as fences and hides, and signage will be employed to minimise disturbance to wildlife. Monitoring shall be undertaken to assess the effectiveness of these measures. Where monitoring indicates localised pressure or emerging risks to SPA species, access controls and screening measures will be adjusted dynamically. For instance, by amending signage, temporarily redirecting paths, or increasing buffer zones. This adaptive, evidence-based approach will be required to ensure that recreational use remains compatible with the conservation objectives of the Mersey Estuary SPA throughout the operational lifetime of the Proposed	Species monitoring as detailed in the oLEMP, including reporting on observed impact levels. Any incidents reported by members of the public will be recorded and reported to the ECoW.

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
	Development. Where adaptive measures are deemed neccessary the changes shall be reported to CWACC.	
Disturbance to protected and notable species through management and maintenance activities or periodic replacements	Prior to any replacements exceeding 50% of the PV panels, ecological surveys will be carried out for protected species, such as otters, water vole, badgers, roosting bats, great crested newts, and breeding birds. Should any of these protected species be identified, appropriate mitigation measures will be implemented in accordance with relevant legislation and best practice guidelines to ensure their protection throughout operational activities and included in the notification referred to in Section 2 of this oOEMP. A sensitive lighting strategy will be put in place to manage temporary lighting used during the operational phase. Lighting to be used only where required, and if used it is to be task specific and directed away from boundary habitats including woodland, hedgerows and watercourses. The sensitive lighting strategy will be informed by current guidance for bats, *Guidance Note 08/23: Bats and Artificial Lighting at Night (2023).*	Species monitoring as detailed in the oLEMP, including reporting on population trends of key species.
	The **OEMP** will provide details of the Mammal gaps to be incorporated into perimeter fencing to maintain habitat connectivity, as per the **outline Landscape and Ecology Management Plan [EN010153/DR/7.13]**.	
	The Skylark Mitigation Area will be managed and maintained in accordance with the **outline Landscape and Ecology Management Plan [EN010153/DR/7.13]**.	
Impacts on designated sites and functionally linked land	The Non-Breeding Bird Mitigation Area (NBBMA) will be managed in accordance with the requirements of the Non Breeding Birds Mitigation Strategy. Water levels will be managed within the NBBMA to maintain wetland conditions suitable for overwintering and foraging birds.	Ongoing monitoring of bird populations to assess habitat effectiveness in accordance with the oLEMP.

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Spread of Invasive Non-Native Species (INNS) through management and maintenance activities or periodic replacements	An Invasive Non-Native Species (INNS) Management Plan will be developed to control and, where possible, eradicate INNS such as New Zealand Pygmyweed and Himalayan Balsam. Training will be provided to site staff to ensure compliance with biosecurity measures, including cleaning equipment before and after use in affected areas. Any soils containing INNS will be managed in line with regulatory requirements and disposed of appropriately. If herbicide is used to control invasive species, the INNSMP must contain measures to ensure that the use of chemical herbicides do not enter watercourses or groundwater.	Effectiveness of control measures will be reviewed, and adjustments made if necessary.

Table 5-4: Summary of the operational mitigation and management measures – Flood Risk, Drainage and Surface Water

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Impact on water quality from run-off from permanent hardstanding and structures	A Surface Water Drainage Strategy will be prepared pursuant to Requirement 11 of the DCO that sets out measures for the site wide management of surface water, rainfall run off, ground water, and site drainage. It will also detail measures for management of fire water run-off in the event of a fire at the BESS. The Surface Water Drainage Strategy will include a sealed drainage system for the BESS and substation compounds, featuring impermeable barriers beneath the stoned areas to prevent potential accidental release of oils or chemicals. The BESS and substation compounds will be fitted with automatic shut-off valves that close in the event of a leak, spill, or fire, and will also have a manual override. In the event of a fire causing contamination of the stoned surfaces, the stones shall be cleaned or replaced before water is released from the compounds. Tracks within the Site and any other hard surfaces will be kept clean to prevent mud and sediment accumulating on these surfaces that may then mobilise in rainfall events.	Drainage features will be regularly monitored to ensure that they are operating effectively. Specific details of this monitoring will be confirmed in the surface water drainage strategy. Final BSMP to include measures in respect of containing and then treating fire water in the event of a fire at the BESS. Should an event occur then effectiveness of measures will be monitored and reported upon. Final OEMP to include details of regular water quality monitoring to detect sedimentation and contamination impacts shall be undertaken for six months after completion of construction and monthly during any major replacement activities. The monitoring plan should provide details of quantity, location and method of monitoring. Water samples should be sent to a United Kingdom Accreditation Service (UKAS) accredited
Risk of chemical and fuel spillages affecting surface water quality	Equipment and spill kits will be provided to contain and clean up any spills to minimise the risk of pollutants entering watercourses. Where there are instances of either fuel, oil or solvents being stored temporarily on Site, these containers will all be stored within bunded areas located a minimum of 10m from watercourses or site drainage system to prevent leaching of contaminants and covered where possible, to prevent the accumulation of rainwater and to prevent accidental damage. Additional precautions will be taken during plant operation in any areas where there is storage of fuels or chemicals. Machinery and plant to be maintained and regularly checked for oil leaks. An Environmental Incident Management and Pollution Prevention Plan will be produced prior to operation commencing and will be reviewed and updated	

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
	regularly by the Site Manager. Training will be provided to site workers as part of induction processes and will be updated as necessary. This plan will contain information relating to the location of spill kits and any sensitive receptors, as well as the procedure for incident response. In the unlikely event of any incident, the Site Manager will be notified and will work to coordinate remedial actions.	laboratory, and where applicable Monitoring Certification Scheme for Equipment (MCERTs) accredited testing must be carried out. The results of laboratory analysis of water samples should be tabulated, recorded and be able to be provided to the Council or the Environment Agency if requested, or sent automatically in the event of a pollution incident.
Risk of fire at the BESS and consequent impacts to groundwater	Measures to contain and control any potentially contaminated firewater run-off in the event of a fire at the BESS are set out in the **outline Battery Safety Management Plan (oBSMP) [EN010153/DR/7.8]** which will be developed into a final BSMP prior to construction, as secured by a Requirement of the **draft DCO [EN010153/DR/3.1]**.	
Uncontrolled foul drainage discharge	There will be no unapproved discharge of foul drainage from the Site either to groundwater or any surface waters, whether direct or via a soakaway. Sewage and foul water will be collected in appropriate collection tanks. Regular collection and disposal of sewage and foul water will be conducted by a licenced company.	
Risk of flooding from extreme weather events	A Flood Warden will be appointed, who will be familiar with the Site and the risk of flooding in the area, and will ensure that Operatives are alerted when there is a risk of flooding and that work in impacted areas is rescheduled or stopped in advance of any such event. Implementation of a Flood Warning and Evacuation Plan to anticipate potential flood events (e.g. through monitoring of weather forecasts, flood alerts and warnings etc.). Where risk of flooding is high steps will be taken to reduce the potential impacts of flooding.	Flood event monitoring by the Flood Warden, with post-event assessment of mitigation effectiveness.
	After any extreme flood event, any equipment inundated would be isolated and inspected before being returned to service.	

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Damage to flood defences	Flood defences shall be inspected on a yearly basis by walking the assets length within the Site, recording details of damages and defects, general structural commentary, taking a series of photographs and assigning condition grades and weightings to each asset's element. The inspections should be undertaken in accordance with EA T98 accreditation. Any defects shall be reported to the Environment Agency. Access to the flood embankments within the Site along the south side of the River Weaver will be made available to the Environment Agency at all times.	Annual monitoring to be undertaken and reported to the Site Manager.
Damage to bridge crossings following flood events	Bridge crossings shall be inspected following flood events to identify any damage to bridge structures or service ducts following any flood event. Should any damage be identified the bridges will receive a full structural inspection by a chartered structural engineer.	Monitoring undertaken following flood events and records maintained of the inspections.

Table 5-5: Summary of the operational mitigation and management measures – Ground conditions

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Encountering unexpected contamination during operation	An Unexpected Contamination Protocol will be developed and included in the final OEMP as follows: 1. In the event that contaminated land is found at any time during the operational phase of the Proposed Development, which was not previously identified in the environmental statement, then no further development (unless otherwise approved in writing by the relevant planning authority) shall be carried out within the identifiable perimeters of the area in which the suspected contamination is located. It must be reported as soon as reasonably practicable to the relevant planning authority, and where necessary, the Environment Agency, and the Applicant must complete a risk assessment of the contamination in consultation with the relevant planning authority, and where necessary, the Environment Agency. 2. Where the Applicant determines that it intends to continue to undertake development in the identifiable perimeters of the area in which the suspected contamination is located and the relevant planning authority (in consultation with the Environment Agency) determine that remediation of the contaminated land is necessary, a written scheme and programme for the remedial measures to be taken to render the land fit for its intended purpose must be submitted to and approved in writing by the relevant planning authority, following consultation with the Environment Agency. 3. Remediation must be carried out in accordance with the approved scheme under sub-paragraph (2). 4. Following the implementation of the remediation strategy approved under sub-paragraph (2), a verification report, based on the data collected as part of the remediation strategy and demonstrating the completion of the remediation measures must be produced and supplied to the relevant planning authority and the Environment Agency.	Compliance monitoring with the Unexpected Contamination Protocol.

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
	Any unexpected contamination will be logged, and remedial actions taken in accordance with best practice guidelines, including the requirements of Land Contamination Risk Management (LCRM) Guidance.	
Generation of contaminated run-off	Implementation of Environmental Incident Management and Pollution Prevention Plan to be developed to include, amongst other information, contact with appropriate regulatory authorities. Maintenance of existing drainage and SuDS features to ensure proper containment and filtration of run-off. Routine training for site operatives on pollution prevention and emergency response procedures.	Monitoring and sampling as detailed within Environmental Incident Management and Pollution Prevention Plan to be included as part as OEMP.
Leaks and spillages of fuel, chemicals, or hazardous materials	The storage of fuels or chemicals and cleaning agents required during the operational phase will be limited to cleaning agents, fuel for equipment, fuel for diesel generators, and above ground diesel and ad-blue tanks / fuel tankers for re-fuelling Site plant. Fuel storage would be housed appropriately and bunded, refuelling would be limited to designated re-fuelling areas away from sensitive receptors. Where there are instances of either fuel, oil or solvents being stored temporarily on Site, these containers will all be stored within bunded areas located a minimum of 10m from watercourses or site drainage system to prevent leaching of contaminants and covered where possible, to prevent the accumulation of rainwater and to prevent accidental damage. Additional precautions will be taken during plant operation in any areas where there is storage of fuels or chemicals. Machinery and plant to be maintained and regularly checked for oil leaks.	Routine inspections of fuel and chemical storage areas. Incident reporting and follow-up actions for any spills.

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
	Cleaning agents and other hazardous materials will be stored in a suitable bunded location on site, and will be returned to this location in properly sealed containers at the end of each working day. A suitably stocked spill-kit will be retained within the Site, and an Environmental Incident Management and Pollution Prevention Plan will be prepared setting out procedures to respond to a spillage, and for reporting if required to the Environment Agency. Equipment to be regularly inspected to ensure that damage or leaks are identified early and repairs are made or equipment is replaced.	
Soil erosion or ground instability	Soil management measures in line with the principles of the approved Soil Management Plan will be set out in the OEMP. The surface water drainage strategy will ensure drainage measures prevent erosion and protect soil structure.	Periodic inspections of ground stability and erosion-prone areas. Geotechnical assessment if works are required near bund structures.
	The bund separating MSCDDG Cells 3 and 5 is noted to be spalling in some areas. To protect its structural integrity: • No excavation or piling will take place within 10m of the bund toe unless a geotechnical risk assessment is completed. • Surface water drainage will be managed to prevent erosion or weakening of bund materials.	
	Existing and proposed vegetation along embankments will be subject to regular maintenance in accordance with the oLEMP to prevent root destabilisation.	

Table 5-6: Summary of the operational mitigation and management measures – Cultural Heritage and Archaeology

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Impact upon setting of heritage assets outside the site	The oLEMP sets out measures to mitigate the impacts and effects of the Proposed Development upon the landscape, inclusive of the setting of heritage assets outside of the site. Best practice measures will be implemented to control noise, light, vibration, and vehicle movements in accordance with this oOEMP.	Appropriate survey/s undertaken, and compliance with measures regularly recorded via an appropriate method to be determined in the LEMP. The LEMP will detail the frequency. Monitoring of measures to control noise, light, vibration, and vehicle movements will be per detail set out elsewhere within the oOEMP.
Impact to non-designated heritage assets	Any ventilation shafts (Asset 316 in **ES Vol 2 Appendix 11-2: Gazetteer of Heritage Assets and Events [EN010153/DR/6.2]**) which do not need to be lost / damaged to facilitate the construction of the Proposed Development will be retained and permanently fenced to avoid damage from routine operational maintenance works or periodic replacements.	n/a

Table 5-7: Summary of the operational mitigation and management measures – Tourism & Recreation

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Impact upon leisure and recreation businesses utilising adjoining land	Access via Brook Furlong by operational traffic will be strictly prohibited, except in emergencies, to minimise disturbance to leisure businesses and recreational users. Signage will be installed to reinforce this restriction and prevent unauthorised vehicle access.	Regular monitoring of measures to prevent access by traffic to Brook Furlong to ensure access does not take place. Review of any complaints from local businesses regarding unauthorised access.
Disruption to users of Public Rights of Way (PRoW) and National Cycle Network (NCN)	An **outline Public Right of Way Management Plan [EN010153/DR/7.9]** has been prepared and will be developed into a final Public Right of Way Management Plan prior to the start of construction in accordance with a Requirement of the **draft DCO [EN010153/DR/3.1]**. All existing PRoW within the site will be maintained and kept open unless temporary closures are necessary for maintenance work. Any damage to the surfacing of PROW or permissive routes resulting from maintenance activities shall be repaired as soon as reasonably practicable on cessation of the maintenance works that affects a section of PROW or permissive path. An additional 4.7km of permissive footpaths will be created to enhance connectivity and provide new recreational routes for walkers and cyclists. Wayfinding and interpretative signage will be installed to guide visitors and provide information on site history and biodiversity.	The appointed contractor will undertake such monitoring as is necessary. Further details to be confirmed in the OEMP and Public Right of Way Management Plan.
Disruption to local residents, businesses, and community facility use	Landscape planting and screening measures (outlined in Table 5-2) will mitigate visual impacts on tourism and recreation receptors.	Routine inspections of planted screening measures in accordance with the oLEMP to ensure effectiveness.

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
	The Outline Landscape and Ecology Management Plan (oLEMP) will ensure that newly planted screening vegetation is maintained to provide long-term mitigation.	
Disruption to river traffic	It is not expected that the 132kV connection to Frodsham Substation will require replacement during the 40-year operational period, as the components are designed to last for this duration. However, should any maintenance be required then the contractor shall provide at least 3 months' advance notice to the recreational clubs (including the Weaver Sailing and Ski Club and Frodsham Kayaking) on the River Weaver of any closure of the River Weaver. Notices shall also be published in local newspapers and online community resources e.g. Frodsham Town Council newsletters of scheduled closures.	Condition assessments during the operational phase of the development.
Disruption to water-based recreational users (e.g., rowing, sailing, kayaking)	There will be no restriction on access to adjacent watercourses as part of the Proposed Development. Engagement will continue with organisations such as Weaver Sailing & Ski Club and Runcorn Rowing Club to ensure no operational impacts on their activities.	Monitoring of any reported disruptions to water access.

Table 5-8: Summary of the operational mitigation and management measures – Traffic and Transport

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Movement of vehicles for operational maintenance activities and periodic replacements.	The operational phase of the Proposed Development would generally generate a low level of trips (staff vehicles, small number of delivery and service vehicle trips, and occasional access by HGVs during replacement of items such as transformers etc.) for general maintenance activities and for any periodic replacements. Therefore, there is not expected to be any significant effect upon the highway and so no specific mitigation measures are proposed. Traffic will be routed to avoid passing through the urban residential areas of Frodsham, Ince or Elton. The access tracks and parking area at the operations / spares building will be maintained throughout the operational phase of the Proposed Development.	The Site Manager will undertake such monitoring as is necessary. Further details to be confirmed in the OEMP.
Impact upon users of PRoW within the Site.	An **outline Public Right of Way Management Plan [EN010153/DR/7.9]** has been prepared and will be developed into a final Public Right of Way Management Plan prior to the start of construction in accordance with a Requirement of the **draft DCO [EN010153/DR/3.1]**. This will set out measures to maintain safety of PRoW users during the operational phase of the Proposed Development.	The appointed contractor will undertake such monitoring as is necessary. Further details to be confirmed in the OEMP and in a Public Right of Way Management Plan.

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Access to Marsh Lock	The Applicant will liaise with the Canal and River Trust during operation to confirm vehicle numbers and any traffic measurement requirements on the access road to SPEN Frodsham Substation, ensuring that at all times access is able to be made to Marsh Lock.	The appointed contractor will undertake such monitoring as is necessary. Further details to be confirmed in the DEMP.

Table 5-9: Summary of the operational mitigation and management measures – Noise and Vibration

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Impact of noise arising from operation of the Proposed Development at noise sensitive receptors (NSR).	Equipment will be regularly inspected and checked for signs of disrepair or other problems that are creating an increase in volume or change in tonality. Where complaints are received then these will be investigated, where required by a suitably qualified practitioner working to the latest version of BS 4142, to identify the source of any issue. Where an issue is found action will be taken to resolve it within a reasonable timeframe.	Investigation of any noise complaints with appropriate corrective actions taken. Monitoring of plant maintenance records and noise control measures.

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Impact of noise arising from maintenance, repair activities, and periodic replacements at noise sensitive receptors (NSR).	Best practical measures will be employed in accordance with BS5228-1:2009+A1:2014 to control noise generation (e.g. using equipment that is regularly maintained, where practicable use equipment fitted with silencers or acoustic hoods). Operational maintenance will take place only during daytime hours, except in emergencies. Routing of plant and vehicles will be optimised to minimise noise at sensitive locations. Acoustic hoods and silencers will be fitted to noisy plant where required. Non-tonal 'broadband noise' reversing alarms will be used instead of tonal beepers. Local residents will be informed in advance of any planned noisy maintenance works.	
	Any works being undertaken during the core Non-Breeding Bird Period (Nov-Feb) that lie within 180m of the eastern boundary of Cell 3 and within 120m of the SSSI to the north of Cell 2 and Cell 3 could require mitigation (to be determined by the Ecological Clerk of Works), this may include acoustic hoarding around noisy plant or other measures to reduce noise levels. If works are undertaken outside the core Non-Breeding Bird Period (Nov-Feb) within the aforementioned distances the Ecological Clerk of Works should be consulted to determine the need for mitigation.	

Table 5-10: Summary of the operational mitigation and management measures – Air Quality

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Impact of dust arising from maintenance activities or periodic replacements, and movement of vehicles within and outside the site	Best Practice Measures will be set out in the OEMP to control and manage dust emissions during maintenance activities. Measures to be derived from Institute of Air Quality Management (IAQM) guidance. Measures would include:- - Suppression of dust/particulate matter where appropriate, using clean water supply. - Provision and enforcement of internal site speed limit of 10mph within the Main Development Area, NBBMA and internal haulage routes; - Provision and enforcement of internal site speed limit of 20mph along the unbound stretch of the Main Site Access along Marsh Lane; - Ensure the proper maintenance of access roads, clean the highway or access roads where material is tracked onto them. - Ensuring that any material being carried in vehicles is properly secured and contained. - Inspection of vehicles before using public highway and removal of dust/soil where required.	Compliance with measures to be regularly recorded via an appropriate method to be set out in the OEMP. Site inspections and road monitoring to be undertaken as required.

Table 5-11 Summary of the operational mitigation and management measures – Waste

Potential Impact being managed / mitigated	Mitigation and/or management measure to be implemented	Requirement for monitoring
Generation of waste during maintenance activities and periodic replacements	A Waste Management Plan (WMP) will be implemented to ensure compliance with the Waste Hierarchy (prevention, re-use, recycling, recovery, and disposal as a last resort). Waste from operational activity (site offices & welfare facilities, maintenance of construction vehicles, packaging from incoming materials, etc.) to be separated/segregated into main waste streams and stored appropriately prior to collection by an approved waste contractor. Toxic and / or hazardous waste must be treated by an authorised operator. Transportation of hazardous waste will also require an authorised carrier. The volume of waste streams generated by the Proposed Development to be estimated and monitored, and goals set with regards to the waste produced, re-use and recycling, and off-site disposal.	Register of waste loads maintained to track volumes and types of waste generated. Regular audits to assess compliance with waste reduction measures.
End-of-life waste from solar panels and battery storage systems	Any Solar panels that need to be replaced will be dismantled and sent to specialist PV recycling facilities, where materials such as silicon cells, polymers, and metals will be recovered. Battery Energy Storage Systems (BESS) will be refurbished, repurposed, or recycled where feasible, reducing disposal requirements. Any Transformers and inverters that need to be replaced will be either reused or sent for metal recovery at authorised recycling facilities.	Documentation of panel and battery disposal or repurposing. Periodic review of emerging recycling technologies to maximise material recovery.

6.0 IMPLEMENTATION OF MANAGEMENT PLAN

6.1.1 The OEMP will define all responsibilities roles and actions required for implementation of the measures that are set out in this outline OEMP. These will include as a minimum:

i) The team roles and responsibilities, and the named individuals fulfilling those roles. An organogram and contact directory will also be included;
ii) The procedures required for monitoring, inspection and reporting of site operations;
iii) Document control systems and procedures;
iv) Details of the communication strategy (stakeholders and third party);
v) Details of the required training for key personnel on environmental topics relevant to the Proposed development and OEMP. This will include details on toolbox talks and on-site briefings required to ensure that relevant staff and Site Operatives are aware of the requirements for environmental control and procedures for the same, and that they have the required level of knowledge to deliver them;
vi) Details of measures to ensure that staff and personnel are advised of changes to circumstances as work progresses on the Proposed Development; and
vii) Procedures for environmental emergencies.

7.0 MONITORING AND MAINTENANCE

7.1 Monitoring

7.1.1 To ensure and demonstrate compliance with the measures set out in the OEMP, monitoring and reporting will take place throughout the operational phase of the Proposed Development. This process will also include oversight of the resulting reporting to ensure that corrective action is taken where necessary. Details of monitoring, inspection and audits to be undertaken will be provided in the OEMP.

7.1.2 The Environmental Manager will regularly observe site activities and in particular will attend when new activities first occur, to ensure compliance with the OEMP, raise deviations where they occur, and to monitor actions and conditions on the site. They will also undertake regular walkover surveys of the site to monitor compliance with the OEMP. They will also undertake regular inspections as required by the OEMP and overall audits of the OEMP to ensure compliance with its requirements. They will also meet regularly with the Site Manager to discuss the operation of the Proposed Development and any issues arising from that or their inspection/monitoring activities. They will also undertake day-to-day contact with relevant local authorities and other regulatory agencies such as the Environment Agency.

7.1.3 All activities observed by the Environmental Manager, the results of surveys and inspections undertaken by them, and reports produced by them will be documented and logged.

7.1.4 Where complaints are received from members of the public these will be logged by the Site Manager in a record keeping system. These logs will include details of the complaint, and actions arising from the same.

7.1.5 Similarly, where matters or complaints are raised by the CLG, these will be logged by the Community Liaison Officer in a record keeping system. These logs will include details of the matter/complaint, and actions arising from the same.

7.1.6 All complaints will be reviewed by the Site Manager, Community Liaison Officer, and Environmental Manager, and the result of the review and any corrective actions taken will be logged. The Complaints Log will be reviewed by the Site Manager for signs of wider on-going issues and where these are identified corrective action will be taken.

7.2 Record keeping

7.2.1 A Quality and Safety Management Systems (QMS) and Environmental Management System (EMS) will be provided. These will be certified in line with the ISO 14001 standards (or any equivalent standard in place during the operational phase).

7.2.2 Those systems will ensure that records are kept of monitoring, recording, and implementing of environmental management measures for the Proposed Development. This is vital to ensuring that the Proposed Development is delivered with a high standard of environmental control throughout the operational phase, and that corrective actions are undertaken.

7.2.3 A central record keeping system will be established (by the Quality Manager, or a suitable person with delegated responsibility for the same) which will provide a repository for procedures, checklists, reports and other such measures required for the EMS and QMS. This will include maintaining records of inspections, audits, or other such activity undertaken by internal or external parties undertaking audit of the OEMP and measures therein. These would include the following records as a minimum:

i) Licences, approvals, and other similar regulatory documentation;
ii) Environmental surveys;
iii) Environmental equipment test records;
iv) Records of routine site inspections; and
v) Details of incidents, breaches of the OEMP, or complaints from third parties, and corrective action taken in respect of the same.

7.2.4 A full review of the OEMP will be undertaken at regular intervals and as required to respond to specific issues that may arise. Where a review identifies an issue that requires additional control measures or mitigation be added to the OEMP, or amendment to an existing control measure or mitigation, then these changes will be made only after the agreement of Cheshire West and Chester Council has been obtained, in consultation with the Environment Agency.

7.2.5 The records held in respect of the OEMP will be made available for the purposes of monitoring compliance with the OEMP where a request is made by Cheshire West and Chester Council and if necessary, by the Environment Agency.

8.0 REFERENCES

[i] HMSO (2017). Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. Available at: https://www.legislation.gov.uk/uksi/2017/572 [Last Accessed: 17 September 2024]

[ii] HMSO (2011). Waste (England and Wales) Regulations 2011. Available at: https://www.legislation.gov.uk/uksi/2011/988 [Last Accessed: 17 September 2024]