

HyNet North West Hydrogen Pipeline

Delivering clean growth



Draft Outline Lighting Strategy

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1. Introduction

1.1 Overview of This Document

- 1.1.1 This Draft Outline Lighting Strategy has been prepared to provide consultees and ultimately the relevant local authorities with the assurance that the lighting proposed both for construction and operation of the Project will be managed by the Applicant to ensure that it is not excessive and that it does not significantly affect adjoining occupiers of land and/or protected species. The purpose of this lighting strategy therefore is:
- To ensure the safety of construction and operational personnel by ensure adequate illumination of construction and operational areas;
 - Ensure that an adequate quantity of illumination is provided;
 - To ensure that lighting does not disturb adjoining landowners and land users; and
 - To ensure that lighting does not detrimentally affect the natural environment.
- 1.1.2 This Draft Outline Lighting Strategy is a live document and will be updated as the elements of the Project are finalised and following feedback from Stage 3 Statutory Consultation. The final Outline Lighting Strategy will be submitted as part of the Development Consent Order application and it will be secured by a DCO requirement.

1.2 Overview of the Project

- 1.2.1 The Project includes the construction and operation of approximately 100km of new pipeline to distribute hydrogen to industry in the North West. A number of Hydrogen Above Ground Installations (HAGIs), including Block Valve Installations (BVIs) are required to control the flow and pressure of hydrogen at key points along the proposed pipeline.
- 1.2.2 The Project connects the Hydrogen Production Plant at the Stanlow site, as the source of hydrogen, for onward distribution to the Network. The pipeline transports hydrogen to the Central Hub at the centre of the Network, which then serves as the connection and onward distribution point to the North, East and South corridors, which would extend to St. Helens, Partington and Northwich respectively. Branching off from each main corridor would be pipeline spurs connecting hydrogen customers to the main pipeline. Infrastructure has also been included which supports the potential blending of hydrogen with methane in the existing gas network, should government support this activity.
- 1.2.3 The presently anticipated maximum extent of land in which the Project may take place, which is assessed in this Draft ES, is defined by the 'Draft Order Limits', land within which is hereafter referred to as 'land within the Draft Order Limits'.

- 1.2.4 A proportionate degree of flexibility has been incorporated into the project design so that unforeseen issues that may be encountered following consent can be sufficiently mitigated. For example, previously unidentified poor ground conditions may require a pipeline section to be re-routed slightly for geotechnical reasons. Therefore, to allow for this, new infrastructure would be constructed within specified Draft Order Limits, which identify a maximum distance or measurement of variation within which the works must be constructed.

1.3 Codes and Standards

- 1.3.1 The following codes and standards will be followed.

Table 1.1 Lighting Codes and Standards

Code/Standard	Reference Number	Revision
CIBSE Lighting Guide 1: The Industrial Environment	N/A	2018
BSI Standards Publication, Light and Lighting – Lighting of workplaces Part 2: Outdoor Working Places	BS EN 12464-2:2014	2014
BSI Standards Publication, Emergency Lighting – part 1: Code of Practice for the emergency lighting of premises	BS-5266-1:2016	2016
Cadent Engineering management Procedure of the selection and Installation of Luminaires and Lamps	GD/PM/EL12018	
SLL Lighting Handbook	N/A	2018
Light and Lighting – Maintenance factor determination – Way of Working	BSI PD ISO/CIE TS 22012:2019	2019
Bat Conservation Trust/Institute of Lighting Professionals Guidance Note 08/23 Bats and artificial lighting at night	08/23	2023
Institute of Lighting Professionals GN01/21 The Reduction of Obtrusive Light	01/21	2021

2. Construction Lighting

2.1 Introduction

- 2.1.1 Construction of the pipeline will take place outside of winter months, apart from trenchless crossing works. Standard construction working hours will be 10 hours per day (08:00 to 18:00) from Monday to Saturday, with no works on Sundays or Bank Holidays. Consequently, other than in early Spring and late Autumn, construction lighting should not be required.
- 2.1.2 There may be a requirement for extended working hours in some situations whilst construction at the HAGI and BVI sites may take place in winter months, but to the same working hours. Extended working hours, (which will be subject to agreement with the relevant local authority), may be required at trenchless crossings where there is a need for a Horizontal Directional Drill (HDD) to operate continuously. There may also be occasions where the open cut crossing of minor roads is agreed with the relevant local authority to take place overnight so as to avoid disruption to road users.

2.2 Construction Lighting Best Practice

- 2.2.1 The following mitigation and best practice will be implemented:
- Adequate lighting of working areas (including HAGI, BVI, trenchless crossing, pipeline and some storage areas) is an essential safety consideration and lighting units will be placed in such a way as to pose minimal risk of light disturbance;
 - Lighting will be suitable for the works being undertaken;
 - Unnecessary lighting will be avoided and lighting will be directed towards the working area;
 - Lights will be switched off when they are not needed; this will include periods outside of site working hours;
 - Any security lighting (of equipment compounds) will be kept to a minimum at all times and powered by mains supply where possible; and
 - Checks will be made each evening to ensure no lights are left on in error.
- 2.2.2 The construction site is required to be adequately lit to ensure safe working conditions, however all lighting would be positioned and adjusted so that it does not cause a nuisance to neighbouring properties and/or users of land.
- 2.2.3 Night-time illumination, outside of working hours, would be reduced to a minimum commensurate with the need to maintain the site security requirements, this minimisation is to reduce the environmental impact and to reduce light pollution.

- 2.2.4 Lighting arrangements will take into consideration the potential disturbance of wildlife and ecology. The lighting design will minimise the impacts of light spillage on adjacent retained habitats through the attachment of directional hoods to lights. Non-essential lighting will be fitted with automatic cut-off switches.
- 2.2.5 With respect to wildlife and ecology the placement and levels of lighting proposed will follow the principles of the Bat Conservation Trust/Institute of Lighting Professionals Guidance Note 08/23 and Institute of Lighting Professionals Guidance Note 01/21, as required. Dark corridors will be identified in the detailed Lighting Strategy where required to avoid or minimise disturbance of sensitive ecological features in locations where night-time working is proposed.

3. Operational Lighting

3.1 Introduction

- 3.1.1 It is intended that only the HAGIs will require operational lighting (any requirement to illuminate the BVIs would be in emergencies only). This lighting will only be required when maintenance activities are required to be undertaken in low lighting and night-time conditions.
- 3.1.2 Consistent with the approach to construction lighting, the external lighting of the HAGIs will be designed to ensure a safe working environment in all relevant areas of the compounds during night-time, whilst avoiding unnecessary light pollution and minimising the visual impact on adjoining landowners and land users.
- 3.1.3 All necessary external lighting will be provided by means of column mounted LED light units designed with appropriate deflectors and hoods and positioned to achieve the necessary illumination levels whilst minimising light spill and glare. The lighting levels and the type, quantity and arrangement of the external lights will be designed generally in accordance with HSG 38, BS EN 12464-2, and the Society of Light and Lighting (SLL) guidance. The lighting would be shielded to avoid light spill on habitats within and surrounding the Site (notably linear features such as tree lines, nearby water courses, etc.), which can be used by commuting animals at night and to decrease the potential displacement effects on light sensitive fauna such as bats. Permanent lighting will be consistent with the Bat Conservation Trust/Institute of Lighting Professionals Guidance Note 08/18, as required.
- 3.1.4 The lighting will be controlled by photocells for automatic switching depending on ambient light levels with programmable time controls to ensure that lighting remains on permanently when maintenance staff are on site at night-time or during low level lighting conditions.
- 3.1.5 The photocells will ensure that the lights only switch on when it is getting dark with the timer ensuring the switching of circuits for the required time periods.
- 3.1.6 Minimum measured illuminance levels for internal and external areas are given in **Section 3.2** below.

3.2 Required Lux Levels

- 3.2.1 Based upon the above codes, standards and design requirements minimum mean illuminance has been developed for internal (E&I Kiosk) and external areas.

E&I Kiosk

- 3.2.2 Minimum mean illuminance of 200 lux and uniformity of 0.4:
- (based upon BS EN 12464-1 Table 1.1 – general areas inside buildings – control rooms, reference 11.1 – Plant rooms and switch gear rooms).

External areas

3.2.3 Minimum mean illuminance of 20 lux and uniformity of 0.25:

- (based upon BS EN 12464-2 Table 5.10 – oil and other chemical industries reference 5.10.1 – Handling of servicing tools, utilisation of manually regulated valves and starting and stopping motors and Table 5.11 – Power, electricity, gas and heat plants reference 5.12).

Perimeter lighting

3.2.4 Minimum mean illuminance of 5 lux and uniformity of 0.25:

- (based upon BS EN 12464-2 Table 5.11 - Power, electricity, gas and heat plants reference 5.11.1 – Pedestrian movements within electricity safe areas).

Emergency Lighting

3.2.5 For the E&I kiosk a minimum mean illuminance of 15 lux is required:

- (based upon BS 5266-1 Emergency lighting – Part 1: Code of practice for emergency escape lighting of premises).

3.3 Detailed Design

3.3.1 Based upon the above parameters detailed design will be undertaken post consent. This design will confirm the final lighting arrangements including the lighting numbers, positions and lux.

4. Conclusion

- 4.1.1 This Outline Lighting Strategy establishes the project objectives relevant to the illumination of construction and operational working areas. It is informed by established industry standards concerned with ensuring the safety of the workforce whilst also reflective of standards designed to minimise the effects upon habitats and species. Design controls necessary to comply with the later will also ensure that the amenity of nearby land uses and users will not be detrimentally affected.
- 4.1.2 This strategy will be secured by a requirement of the DCO in relation to the development of a Final Lighting Strategy which will be prepared for the relevant local planning authorities.

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