

The Lighthouse Green Fuels Order

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Abbreviations

Acronym	In Full / Term
AILs	Abnormal Indivisible Loads
Alfanar	Alfanar Energy Limited
APFP Regulations	The Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009 (as amended)
ASU	Air Separation Unit
CHP	Combined Heat and Power
CSUs	Continuous Ship Unloaders
DCO	Development Consent Order
ES	Environmental Statement
km	Kilometres
m	metres
MWe	megawatts electrical
MW	megawatt
NSIP	Nationally Significant Infrastructure Project
PINS	The Planning Inspectorate
RCBC	Redcar and Cleveland Borough Council
SAF	Sustainable Aviation Fuel
SoS	Secretary of State
STBC	Stockton-on-Tees Borough Council
PA 2008	Planning Act 2008

Executive Summary

- 1.1.1 LGF Projects Limited (the ‘Applicant’) is seeking development consent for the construction, operation, maintenance and decommissioning of the Lighthouse Green Fuels project (the Proposed Development). The Proposed Development comprises a Main Site which would be located on land at Seal Sands Road, Seal Sands, Teesside, TS2 1UB within the administrative boundary of Stockton-on-Tees Borough Council (STBC). Some utility connections will extend south of the River Tees within the administrative boundary of Redcar and Cleveland Borough Council (RCBC).
- 1.1.1.1 The Proposed Development comprises a commercial-scale second-generation Sustainable Aviation Fuel (SAF) production facility and biomass-and waste wood-fired Combined Heat and Power (CHP) plant, and associated infrastructure including construction and operation of a quay in the River Tees.
- 1.1.2 This Harbour Facilities Statement is provided in accordance with Regulation 6(3)(a) and (b) of The Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009 (APFP Regulations) [Ref 2], which requires an application for development consent which involves the construction or alteration of harbour facilities to be accompanied by a statement setting out why the making of the Development Consent Order (DCO) is desirable in the interests of:
- supporting the efficient and economical improvement and management of harbour infrastructure; or
 - facilitating the efficient and economic transport of goods by sea.

2 Introduction

2.1 Overview

- 2.1.1 This **Harbour Facilities Statement (Application Document Ref. 7.3)** has been prepared by Ove Arup and Partners Limited (Arup) on behalf of LGF Projects Limited (the Applicant) to support an application (the Application) seeking development consent for the construction, operation, maintenance and decommissioning of the Lighthouse Green Fuels (LGF) project (the Proposed Development) on land within the administrative boundaries of Stockton-on-Tees Borough Council (STBC) and Redcar and Cleveland Borough Council (RCBC).
- 2.1.2 The Order limits for the Proposed Development are made up of the Main Site and Wider Site, together ‘the Site’. A more detailed description of the Site is set out at Section 2.4.
- 2.1.3 The Application has been submitted to the Planning Inspectorate (PINS), and the decision whether to grant a Development Consent Order (DCO) will be made by the Secretary of State (SoS) for Energy Security and Net Zero pursuant to the Planning Act 2008 (the PA 2008) [Ref 1].
- 2.1.4 The Proposed Development comprises a commercial-scale second-generation Sustainable Aviation Fuel (SAF) production facility and associated infrastructure.

2.2 The Applicant

- 2.2.1 The Applicant is wholly owned by Alfanar Energy Limited (Alfanar). Alfanar is part of a global project development, manufacturing, and engineering group headquartered in Saudi Arabia. Alfanar has developed significant in-house feedstock-to-SAF expertise. This experience will be utilised to construct and operate the Proposed Development.

2.3 Overview of the Proposed Development

- 2.3.1 The Proposed Development is anticipated to be the UK’s first commercial-scale second-generation SAF production facility.
- 2.3.2 The Proposed Development includes the construction, operation, maintenance and decommissioning of a commercial-scale facility that will produce approximately 180 million litres of advanced SAF and approximately 30 million litres of renewable naphtha each year.
- 2.3.3 The Proposed Development includes the following elements (the location of each Work No. is shown on the **Works Plans (Application Document Ref 2.4)**):

Table 2.1 Works Description Summaries

Work Number:	
Work No. 1	SAF production facility comprising: • 1A - feedstock pre-treatment facility including flue gas treatment and stack • 1B - SAF processing facility including thermal oxidiser, flue gas treatment, and stack • 1C - up to two flare structures
Work No. 2	Combined heat and power (CHP) generating station comprising: • 2A - boilers and steam turbine generators • 2B - flue gas treatment and stack
Work No. 3	Feedstock and intermediate and final product handling and storage
Work No. 4	Cooling infrastructure for SAF production facility and CHP plant
Work No. 5	Bridge and culvert crossings of existing infrastructure
Work No. 6	Marine infrastructure comprising: • 6A - construction of permanent quay • 6B - permanent quay • 6C - capital and maintenance dredging
Work No. 7	Electrical connection works comprising: • 7A - underground and overground cable connections to the existing North Bank Supply Point • 7B - electrical connection works
Work No. 8	Modified or new natural gas connection and above ground infrastructure (AGI)
Work No. 9	Supply of industrial gases: Only one of Work No. 9A or Work No. 9B would be developed; • 9A - industrial gases connection works comprising installation of new and repurposing of oxygen and nitrogen pipeline connections, and connection to existing low pressure nitrogen supply • 9B - air separation unit (ASU) facility and connections to Work No. 1
Work No. 10	Modification or removal and replacement of industrial wastewater pipeline connection works
Works No. 11	• Export connection works: 11A - pipeline(s) for the export of SAF and renewable naphtha • 11B or 11C - a pipeline for the export of carbon dioxide (CO₂) connecting to AGI by others (being either AGI C1 or C2 of the Northern Endurance Partnership (NEP) transport and storage pipeline) Only one of Work No. 11B or Work No. 11C would be developed
Works No. 12	Surface water attenuation, and drainage and discharge works
Works No. 13	Laydown areas comprising:

	• 13A - temporary construction compounds and laydown areas • 13B - permanent laydown and storage
Work No. 14	Access works and private street improvements

- 2.3.4 In addition a range of associated development, both specified and unspecified, is proposed in relation to the above.
- 2.3.5 The new quay on the River Tees (**Work No. 6**) will allow delivery of modular plant and construction materials by ship during construction and biomass and waste wood feedstock during operation, reducing reliance on road transport. Feedstock will be stored (**Work No. 3**) then pre-treated at the Main Site and processed into SAF through gasification and gas-to-liquids processes (**Work No.1**).
- 2.3.6 To support operations, the Proposed Development will include a biomass and waste wood-fired CHP plant (**Work No. 2**) with an electrical output capacity of up to 200 megawatts electrical (MWe), providing a low-carbon energy supply for the SAF process. Cooling infrastructure (**Work No. 4**) will be required for the SAF process and the CHP plant. Connections will provide electricity for start-up and to maintain ancillary site supplies (**Work No. 7**), natural gas for start-up and as auxiliary fuel for some processes during operation (**Work No. 8**), and oxygen and nitrogen which will either be delivered to the Site via pipelines or produced by a new ASU in the Main Site (**Work No. 9A or 9B** respectively). Waste materials, including off-specification materials will be exported from the Main Site by road. Finished products (SAF, and a secondary product of the process, renewable naphtha) will be transferred via pipeline(s) (**Work No. 11A**) to local marine loading facilities for marine export or export by road. CO₂ from the acid gas removal unit in Work No. 1B will be exported via pipeline (**Work No. 11B or Work No. 11C**) subject to a suitable agreement to connect to one of two proximate AGIs in the NEP project.
- 2.3.7 The Proposed Development will also include replacement and new wastewater pipeline connection works (**Work No. 10**), surface water drainage systems (**Work No. 12**) and access and street improvements (**Work No. 14**). Space within the Wider Site is identified for temporary construction and laydown and space within the Main Site identified for permanent laydown and storage areas (**Work No. 13**).
- 2.3.8 The preliminary layout of the Proposed Development is shown on **Indicative General Arrangement Plan (Application Document Ref 2.5.1)** and **Indicative General Arrangement Isometric (Application Document Ref 2.5.2)**.

2.4 The Site

- 2.4.1 The Site location and boundary (which is also known as the 'Order limits') are shown on **Site Location Plan (Application Document Ref 2.1)**. The Site is located in Teesside on land to the north and south of the River Tees with connection corridors crossing the Tees.
- 2.4.2 The Main Site is located in the industrial area of Seal Sands approximately 5km east of Billingham town centre and 4km north-east of Middlesbrough town centre, on the north bank of the River Tees in the borough of Stockton-on-Tees). The majority of the Main Site lies south of Seal Sands Road and largely comprises previously developed land formerly used as a chemical plant from the early 1970s. It was last operated by INEOS Nitriles.
- 2.4.3 The Main Site comprises the main SAF facility development area of the Site, lying to the south and north sides of Seal Sands Road and bounded by the proposed quay in the River Tees, with the River Tees to the east.
- 2.4.4 The eastern boundary of the Main Site is formed by the River Tees, where existing jetties will be demolished and a new quay developed.
- 2.4.5 The Wider Site comprises the connection corridors, including land required for road access, pipelines (including under the River Tees), dredging near to the Main Site, and utility connections and construction laydown in both North Tees and (in the borough of Redcar and Cleveland) South Tees.

2.5 The DCO Process

- 2.5.1 Part 3 of the PA 2008 defines which projects constitute a nationally significant infrastructure project (NSIP). Once classed as an NSIP, development consent (in the form of a DCO) is required under Part 4 of the PA 2008.
- 2.5.2 In legislative terms the Proposed Development comprises both a SAF production facility and a CHP generating station together with development associated with the SAF production facility and the CHP generating station.
- 2.5.3 The construction and operation of the main SAF production facility does not automatically fall within the definition of an NSIP. Therefore, on 12 August 2025, the Applicant formally requested a direction by the SoS for Energy Security and Net Zero, pursuant to section 35(1) of the PA 2008, that the following elements be treated as one for which development consent is required. The Section 35 direction request was made in respect of: a main gasification facility to process sustainably sourced biomass; feedstock pre-treatment, syngas clean-up apparatus; Fischer-Tropsch process units; refining units; feedstock, intermediates and finished product storage; quayside with ship loading/ offloading infrastructure; supporting

infrastructure and utility connections (hereafter called the 'Specified Elements').

- 2.5.4 The SoS for Energy Security and Net Zero issued a direction under Section 35 of the PA 2008 [Ref 1] on 08 September 2025 to confirm that the Specified Elements of the Proposed Development, together with any matters/ development associated with them, should be treated as development for which development consent under the PA 2008 is required.
- 2.5.5 The CHP plant (**Work No. 2**) surpasses the 50 Megawatt (MW) threshold for generating stations defined in Section 15 of the PA 2008 and is therefore a NSIP in its own right.
- 2.5.6 An application for development consent for the Proposed Development has been submitted to PINS acting on behalf of the SoS. Subject to the Application being accepted, PINS will then examine it and make a recommendation to the SoS who will then decide whether to grant a DCO.
- 2.5.7 The application for development consent for the Proposed Development supersedes a previous application that was being progressed by Lighthouse Green Fuels Limited centred on a site off Huntsman Drive in Seal Sands, TS2 1TT (PINS ref. EN010150). Statutory consultation on that application took place between 16 May 2024 and 20 June 2024. As shown on the PINS website¹, that application is discontinued.

2.6 The Purpose and Structure of this Document

- 2.6.1 The purpose of this document is to ensure compliance with Regulation 6(3) of APFP Regulations [Ref 2] in relation to the submission of additional information in support of the DCO application where the NSIP relates to construction or alteration of a harbour facility. These requirements are set out in Section 3 and considered in relation to the Proposed Development in Section 4.

¹ <https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN010150>

3 Legislation

3.1 Overview

- 3.1.1 Regulation 5 of the APFP Regulations [Ref 2] sets out what must be submitted as part of the DCO Application. Regulation 5(2)(p) requires that the Application must be accompanied by any of the documents prescribed by Regulation 6 which are relevant to the particular project.
- 3.1.2 Regulation 6(3) of APFP Regulations [Ref 2] sets out certain matters for the construction or alteration of NSIP harbour facilities, and states that:
- “(3) If the application is for the construction or alteration of harbour facilities, it must be accompanied by a statement setting out why the making of the order is desirable in the interests of –*
- (a) securing the improvement, maintenance or management of the harbour in an efficient and economical manner; or*
- (b) facilitating the efficient and economic transport of goods or passengers by sea or in the interests of the recreational use of sea-going ships.”*
- 3.1.3 Although the Proposed Development is not an NSIP by virtue of Section 24 of the PA Act 2008 (which details NSIP thresholds for harbour facilities), it does include the demolition of existing jetties and the construction of a new quay. The Applicant considers that these elements of the Proposed Development require a Harbour Facilities Statement (this Statement) in order to satisfy the APFP Regulations. This Statement is focused specifically on the benefits referred to in Regulation 6(3) and does not consider the wider benefits/effects of the Proposed Development which are addressed in the **Planning Statement (Application Document Ref. 5.2.1)**.
- 3.1.4 This Statement should be read alongside **the Planning Statement (Application Document Ref. 5.2.1)** which draws upon the wider body of evidence presented in the DCO Application and sets out the policy-based need case for the Proposed Development as a whole.

4 The quay

4.1 Overview of the quay

- 4.1.1 The Proposed Development will be located at the former INEOS Nitriles site in Seal Sands, Teesside. A new quay and associated marine works (both capital and maintenance dredging) are required to support construction and operation. The new quay has a long design life so it could also serve other future site occupiers beyond the operational life of the SAF Production Plant.
- 4.1.2 To construct the new quay it will be necessary to demolish two existing jetties and associated infrastructure, plus demolition and reinstatement of existing mooring infrastructure and relocation of an existing navigational buoy.
- 4.1.3 The new quay will feature a berth, sized for a panamax vessel, including topside infrastructure to facilitate the import of feedstock for the Proposed Development. It is intended that this feedstock will be delivered primarily by ship and offloaded at the quay (constructed under **Work No.6**), which is within the Main Site.
- 4.1.4 Feedstocks will be unloaded at the quay and conveyed across the Main Site to designated storage areas, where they will be segregated by type.
- 4.1.5 The quay will also be used during the construction phase for the shipborne import of prefabricated plant modules and large equipment items (Abnormal Indivisible Loads (AILs)) and other construction materials required for construction of the SAF production facility and CHP plant.
- 4.1.6 The berth will be capable of handling a variety of vessels up to Panamax size. These will navigate into the Tees estuary from Tees Bay and berth at the proposed new quay.
- 4.1.7 Continuous Ship Unloaders (CSUs) and harbour crane(s) will be operated on the quay to unload the feedstock during the operational phase.

4.2 *Consideration of APFP Regulation 6(3)(a): “Why the making of the DCO is desirable in the interests of securing the improvement of the port in an efficient and economical manner” [Ref 2]*

4.2.1 The construction of the quay will provide new purpose-built modern infrastructure, replacing two existing jetties that are no longer fit for purpose and thereby enhancing the existing port facilities.

4.2.2 The new quay will provide a sustainable mode of transporting the biomass and waste wood feedstock for the Proposed Development, which is crucial to the achievement of Government objectives to meet climate change reduction targets. As the design life of the quay is likely to be longer than the design life of the SAF production facility, the quay is also anticipated to be available for other beneficial uses by future site occupants in the long term.

4.2.3 The Proposed Development will secure the improvement of the existing port facilities in the River Tees in an efficient and economical manner by:

- replacing two existing jetties, which are designed for liquid deliveries and are not fit for purpose for solid feedstock handling, with a new purpose-built quay, as part of the Main Site for the SAF production facility. This will ensure dependable access for solid feedstock deliveries, and provide a quay that can also be used by future site occupants beyond the life of the SAF Production Plant; and
- creating dependable vessel berthing for Panamax size vessels by capital dredging, providing a significant improvement to the port compared to the existing jetties within the Main Site; and
- enabling the development of a major SAF and renewable naphtha manufacturing facility which will in turn establish new contracts with the ports in Teesside that export bulk liquids, thereby benefitting the wider Tees port.

4.3 *Consideration of APFP Regulation 6(3)(b): “Why the granting of the DCO is desirable in the interests of facilitating the efficient and economic transport of goods or passengers by sea” [Ref 2]*

4.3.1 The fundamental purpose of the new quay is to import construction materials and feedstock for the Proposed Development by sea for the production of SAF.

4.3.2 The Proposed Development does not facilitate the transport of passengers.

4.3.3 The Proposed Development will facilitate the efficient and economic transport of goods in the following ways:

- during construction, the quay will operate as a Marine Offloading Facility, enabling AILs and other construction materials to be brought in by vessel and unloaded directly at the quay;
- Work No. 6 is specifically drafted with three distinct parts. This enables the permanent quay to be constructed separately to the supporting marine infrastructure works (including dredging). This unlocks time-critical AIL import at an early stage in the construction of the Proposed Development;
- provide direct access for ships to the Proposed Development to enable deliveries of feedstock, therefore avoiding double handling of the feedstock prior to use (which would be required if the feedstock was offloaded at another port facility outside the Site). Bulk deliveries by sea directly to the Site reduce dependence on road-based deliveries, subsequently helping to avoid additional traffic impacts on roads;
- enable vessels to unload directly to the quayside, supporting onward transfer to the SAF production facility (via the planned quayside handling and conveyor arrangements); and
- dredging allows larger ships up to Panamax size to use the quay, which is ultimately more efficient than limiting the quay to smaller vessels.

5 Conclusion

- 5.1.1 The Proposed Development includes the demolition of two existing jetties that are not suitable for solid feedstock handling and construction of a new quay on the River Tees to allow delivery of modular plant and construction materials by ship during construction and feedstock during operation. By enabling the development of a major SAF and renewable naphtha manufacturing facility which will establish new contracts with the ports in Teesside for product export, this will in turn benefit the wider Tees port.
- 5.1.2 The Harbour Facilities Statement considers the requirements of Regulation 6(3) of the APFP Regulations [Ref 2], to demonstrate that the Proposed Development is “*desirable in the interests of securing the improvement, maintenance or management of the harbour in an efficient and economical manner, or facilitating the efficient and economic transport of goods or passengers by sea*”.
- 5.1.3 It is concluded that the Proposed Development is desirable in the interests of securing the efficient and economical improvement of the harbour and facilitating the efficient and economic transport of goods.

6 References

- Ref 1 UK Government (2008) Planning Act 2008. Available online:
<https://www.legislation.gov.uk/ukpga/2008/29/contents> [Accessed June 2026]
- Ref 2 UK Government (2009) The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009. Available online:
<https://www.legislation.gov.uk/uksi/2009/2264/contents> [Accessed June 2026]

