



**For the attention of Kerry Crowhurst-Kozlova**

Secretary of State for Energy Security and Net Zero c/o  
Head of Planning  
Department for Energy Security and Net Zero  
1 Victoria Street  
London  
SW1H 0ET  
United Kingdom

Date  
26 March 2024

**By Email**

Dear Sir or Madam

**LIGHTHOUSE GREEN FUELS LIMITED**

**LIGHTHOUSE GREEN FUELS PROJECT, LAND AT PORT CLARENCE, STOCKTON-ON-TEES,  
TEESSIDE**

**REQUEST TO VARY A DIRECTION OF 25 OCTOBER 2022 UNDER SECTION 35 OF THE  
PLANNING ACT 2008 RELATING TO THE LIGHTHOUSE GREEN FUELS PROJECT**

We, Lighthouse Green Fuels Limited (hereafter referred to as the 'Applicant'), hereby write to request a variation to the Section 35 direction made by the Secretary of State ('SoS') for Business, Energy & Industrial Strategy ('BEIS') on 25 October 2022 ('the existing direction'), in relation to the Lighthouse Green Fuels project (the 'Project').

Since receiving the existing direction, the Applicant has appointed consultants to advise on the front-end engineering design ('FEED'). This has resulted in some refinements to the Project requiring a variation to the existing direction. The primary function and purpose of the Project has not changed. The refinements are required for various reasons, primarily for spacing, design optimisation and safety reasons as well as to facilitate constructability and logistical improvements.

The key difference between the existing direction and this request is that the Project no longer has a 150MW CCGT generating station. Instead, the Project is relying on importing electricity via the grid, and is making use of its existing up to 49.9MW TV1 generating station, and a new up to 49.9MW auxiliary boiler and associated generating equipment.

The existing direction states that: "*The Secretary of State considers that, if the details of the Proposed Development change, before submitting any application to The Planning Inspectorate, the Applicant may wish to seek confirmation from the Secretary of State that the development that is the subject of the proposed application is the same as that for which the Direction is hereby given.*"

As such, the Applicant requests that the SoS of the Department for Energy Security and Net Zero ('DESNZ') varies the existing direction to enable the Project, as now designed, to continue to be treated as a project of national significance for which development consent is required. This request falls under Section 233(2) of the Planning Act 2008 ('PA 2008') which confers a power on the SoS to vary a direction and constitutes a "qualifying request" in accordance with section 35ZA(11) of the PA 2008.

For ease of reference and to avoid duplication, the Applicant has only included key aspects of its request for a direction dated 6 October 2022 ('the existing request') in order to provide contextualisation to the proposed refinements of the Project. Given that this is an application for a revised direction, the Applicant considers that the existing request continues to be materially relevant to the Project as a whole, subject to the revisions set out below.

We should be grateful if you would confirm safe receipt of this letter.

The structure of this request is set out as follows:

1. Overview
2. The Applicant
3. Background to the Project
4. Refined Project Site
  - a. Changes to the Project Site
5. Refined Project Description
  - a. Changes to the Project Description since the existing direction
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6. Operational Process
  - a. Changes to the Operational Process
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7. Reasons for seeking a variation to the existing direction
8. 'Qualifying Request' under Section 35
9. National Significance of the Project
  - a. Providing the infrastructure urgently needed to meet the Government's energy objectives towards Net Zero
  - b. Overarching National Policy Statement for energy (EN-1)
  - c. Update to aviation policy since the existing direction
10. Summary of Policy Objectives
11. Size and scale of the Project
12. National need for securing consent via the PA 2008 regime
13. Summary

This request appends the following to facilitate understanding of the proposed refinements:

- a Project description (Schedule 1);
- a draft section 35 direction (tracked change version of the existing direction) (Schedule 2);
- a plan illustrating the draft order limits boundary (Appendix 1);
- a plan identifying the proposed primary use for each area of land (Appendix 2); and
- a plan highlighting the changed areas between the existing direction and this request and their primary use (Appendix 3).

## 1 Overview

- 1.1 The Applicant is proposing to apply for development consent pursuant to Section 37 'Applications for orders granting development consent' of the PA 2008 from the SoS for DESNZ to allow it to construct, operate and maintain the relevant elements of the 'Project' on land at Port Clarence, near Stockton-on-Tees, Teesside (the 'Project Site'). The current iteration of the Project Site redline boundary is identified at Appendix 1.
- 1.2 The Project is anticipated to be the UK's first commercial scale advanced 2<sup>nd</sup> generation sustainable aviation fuel ('SAF') project utilising waste and biomass feedstocks to be constructed and would comprise of the components listed in Schedule 1 (Project Description) to this letter. To enable the SoS's clear understanding of the refinements made to the Project, the Applicant has enclosed Appendix 2 which illustrates the key elements of the scheme, and Appendix 3 which illustrates the areas that have been further developed since the existing direction and sets out their primary purpose.
- 1.3 Other associated infrastructure within the scope of the Project would include a range of administration buildings, kiosks and accommodation and welfare facilities, boundary treatments, security infrastructure, temporary and permanent laydown areas, hard and soft landscaping, drainage, cables, pipelines, plant and equipment will also be required.
- 1.4 The proposed application for development consent would relate to all elements of the Project within the limits on Appendix 1, incorporating all changes since the existing direction.
- 1.5 The function and purpose of the Project has not changed. Additional land is required for various reasons, which can be briefly characterised as follows:
- reconfiguration of the process equipment, for spacing, design optimisation and safety reasons; and
  - constructability and logistics improvements, to provide additional means of building and accessing the Project; and
  - additional and wider connection corridors to provide necessary flexibility in relation to existing and proposed developments in the area.
- 1.6 The Applicant asks that the SoS treats this submission as a 'qualifying request' (as defined in Section 35ZA (11)) of the PA 2008 outlining, and as required by that sub-section and sub-section 35ZA(1) this request for a variation to the existing direction sets out:
- the development to which the request relates;
  - how the conditions in Section 35(2)(a) and (b) are met; and
  - that no applications for consent or authorisations listed in Section 33 'Effect of requirement for development consent on other consent regimes' (1) or (2) have been made in relation to the development to which this request relates.
- 1.7 Compliance of this submission with Section 35ZA(1) and (11) is confirmed below.

## **2 The Applicant**

- 2.1 The Applicant remains Lighthouse Green Fuels Limited. The Applicant is a company wholly owned by Alfanar Global Development Company ('Alfanar'). Alfanar (and its affiliates) is a global project development, manufacturing, and engineering group founded in 1976 and headquartered in Saudi Arabia, with a presence in 24 countries, mainly in the Middle East, Asia, Africa, and Europe. The group turnover is more than US\$3 billion annually and employs more than 18,000 people, including 2,000 engineers. More information about the company can be found at [www.alfanar.com](http://www.alfanar.com). Information on development and construction projects can be found at [www.alfanarprojects.com](http://www.alfanarprojects.com) and details about the Project can be found at the Project specific website [www.lighthousegreenfuels.co.uk](http://www.lighthousegreenfuels.co.uk).
- 2.2 The Project represents an investment of approximately £1.5 billion in domestic SAF production within the UK. It is anticipated that approximately over 240 permanent jobs will be supported by the Project and associated infrastructure, with a further >1,000 jobs anticipated during the construction phase. Development of domestic SAF production will bring significant economic benefit to the UK; the Gross Value Added (GVA) arising from the Project is estimated to be in excess of £470m.
- 2.3 Alfanar have a long-term investment strategy for the UK. In addition to the Project, Alfanar has plans for additional SAF facilities within the UK and, moreover, the UK entity Alfanar Energy Limited (AEL) has been established to be the Decarbonization Process Centre of Excellence for Alfanar Group, supporting renewable fuels projects globally.

## **3 Background to the Project**

- 3.1 The background to the Project remains as set out in the existing direction request.

## **4 Refined Project Site**

- 4.1 The Project Site is located within the administrative areas of Stockton-on-Tees Borough Council and Redcar and Cleveland Borough Council. The main part of the Project Site was partially developed by Air Products Plc pursuant to planning permissions for energy generation facilities (using plasma gasification technology) granted in 2011 and 2013. Air Products developed part of the Project Site (previously referred to as TV1) and Air Products were in the process of developing a second adjacent part of the Project Site (previously referred to as TV2) until construction works were suspended in November 2015. In April 2016 Air Products announced that it would be exiting the energy from waste market in the UK and that the TV1 and TV2 sites would not be progressed to become operational. The Project Site remains subject to those extant implemented planning permissions (as varied and amended). The Project will be constructed on the existing TV1 and TV2 sites but will now extend beyond the limits set out on the existing direction.
- 4.2 In 2018, Alfanar, following several years of research into appropriate technologies, acquired certain interests in the Project Site with a plan to redevelop it to create a facility capable of producing liquid fuels from waste and biomass. The Project Site was particularly attractive to Alfanar owing to the existing planning permissions for waste processing, the existing on-site infrastructure and services, the proximity of the Project Site to key supporting / complementary

infrastructure within the Teesside region, and the potential for use of rail and water transport to move products into and out of the Project Site.

- 4.3 As part of the Project, the Applicant will be seeking to refurbish / modify / rebuild and maintain the existing up-to-49.9MW combined cycle gas turbine (CCGT) power plant located on TV1, and to run it on any or a combination of the following fuels: natural gas, process off gases, naphtha. The Applicant requires powers which will enable it to operate the existing CCGT power plant flexibly during the operational lifetime of the Project including but not limited to: provision of power in circumstances where the main electrical Grid connection temporarily unavailable or where the electricity connection is temporarily not commercially viable.

#### Changes to the Project Site

- 4.4 Following the refinements, the proposed Project Site has extended from 75 Hectares (185 acres) to approximately 274.5 hectares (678.3 acres) in area. Appendix 3 illustrates the difference between the boundaries of the existing direction and the present request. These are due to the changes set out in the table below, but have also been influenced by the following:

- further area has been taken outside of the existing TV1/TV2 (original Air Products) sites due process unit footprint growth, design optimisation for process flow, safety and constructability;
- the heavy haul road has been expanded in order to provide flexibility on equipment transport routes;
- extension of pipeline / utility corridors to major substations / grid supply points local to the Site;
- increased space for routing of Utilities and electrical supplies;
- Increased space for construction facilities (including laydown, fabrication yards and accommodation) and service roads;
- options for pipeline routings to Navigator as an alternative to the Sembcorp corridor if congested;
- widened areas adjacent to Sembcorp corridor due to uncertainty of other new projects using this route; and
- requirement to increase capacity of wastewater connection across River Tees to an existing waste water treatment facility utilising new and existing pipework.

- 4.5 All changes to the Project Site have been illustrated within Appendix 3 which highlights these changes and the specific areas numbered 1-14. Change number 1 on Appendix 3 (increase to LGF site dimensions) is not specified on the drawing as this change covers the whole site whereby the Order Limits were slightly adjusted in accordance with more detailed land boundary information being available since the existing direction request.

## **5 Refined Project Description**

- 5.1 The Project is anticipated to be the UK's first, commercial scale, advanced 2<sup>nd</sup> generation SAF project, having the potential to convert waste and/or waste biomass and/or biomass residues into aviation fuel to be used by UK airports. The Project will still utilise the Fischer-Tropsch process to create the SAF; this is a proven technology and is already in use around the world. Large-scale examples of the technology can be found in Nigeria (Escravos Project), Qatar (Pearl & Oryx Projects), and Uzbekistan (UzGTL Project).

5.2 The Project is the most advanced, and largest planned SAF project in the UK utilising gasification and Fischer-Tropsch technology. The Applicant recently announced the appointment of a Front-End Engineering Design (FEED) engineering company to commence the FEED process. The FEED commenced in H2 2022 and is anticipated to continue until early 2025. This request for a variation is a result of design refinements from this process. Following completion of the FEED, the Applicant expects a ~3 - 4 year construction period with commercial operations commencing in 2028.

Changes to the Project Description since the existing direction

5.3 The Project (which it is proposed would be the subject of the application for development consent, subject in part to receiving the variation of the direction now being sought) comprises the following elements:

<b>Project description as per existing direction request</b>	<b>Changes to Project Description</b>
<p>Main gasification facility (x4 gasifier units and associated primary gas clean up units) to treat the input waste feedstock and produce a raw syngas. Major contaminant species (such as particulate matter, ammonia, and sulphur species) are removed in the primary gas clean-up units, producing a partially cleaned syngas.</p>	<p>Up to 4 gasifier 'trains' (units) are now being considered. As the Project has developed, it is possible that the efficiency of the units could be increased resulting in fewer being required.</p>
<p>Syngas clean-up apparatus and water gas shift reactor; to remove residual contaminant species (such as sulphur, mercury, halides, etc), alter the ratio of hydrogen and carbon monoxide in the syngas, and produce an ultra-clean syngas suitable for conversion in the downstream Fischer-Tropsch reactor. An acid gas removal unit is contained within the syngas clean-up section of the plant. This unit removes carbon dioxide ('CO<sub>2</sub>') and hydrogen sulphide species from the syngas. High purity CO<sub>2</sub> from the unit will be compressed and directed to permanent storage.</p>	<p>No change although it is relevant to note that (as highlighted in the Scoping Opinion) if the Net Zero Teesside (NZT) project (or alternative) and associated geological storage is not available then this (biogenic) CO<sub>2</sub> stream would be vented to atmosphere.</p>
<p>Fischer-Tropsch process units; ultra-clean syngas from the gasifiers is catalytically converted in the Fischer-Tropsch reactor into long chain hydrocarbon waxes and other light hydrocarbon species.</p>	<p>No change.</p>

Project description as per existing direction request	Changes to Project Description
<p>Hydro-processing units; long-chain hydrocarbon waxes from the Fischer-Tropsch unit are cracked into shorter chain hydrocarbons. The resultant mixed hydrocarbon stream is separated in a fractionation column to yield the final product synthetic paraffinic kerosene (FT-SPK; SAF) and green naphtha by-product. Light hydrocarbon species are recycled or used to generate power for the SAF plant.</p>	<p>The light hydrocarbon species are used to generate steam and power for the SAF plant, or be recycled to within the process.</p>
<p>SAF product storage units; small, buffer storage is to be installed on the facility for the final product SAF and by-product naphtha. Large-scale bulk-liquid storage will be provided by a neighbouring tank-farm facility. Products will be transferred to the off-site storage facility via pipelines.</p>	<p>SAF and green naphtha will be sent to a small buffer storage onsite where it will be tested and quality checked before being transferred to offsite bulk liquid storage via separate pipelines.</p> <p>Existing bulk liquid storage within the existing adjacent tank farm operated by a third party, will also be provided. Pipeline infrastructure for the SAF and green naphtha will also be installed between the bulk liquid storage terminal and the rail terminal. Third party liquid handling facilities may also be used for the export of product by road. The Project therefore will incorporate export facilities via rail, road and marine infrastructure.</p>
<p>CCGT power plant with capacity up to 150MW.</p>	<p>This large power plant has been removed from the design following value engineering reviews, carbon intensity assessments and lack of access to the local carbon capture and storage infrastructure (i.e. NZT) until after 2030.</p> <p>A proportion of the power required for the Site will be supplied from the electricity Grid via a new connection to existing National Grid substations.</p> <p>Part of the power required for the Site will be provided by the existing up to 49.9MW CCGT power plant, refurbished / modified / rebuilt to operate on low-carbon processes off-gases and/or naphtha and/or natural gas.</p> <p>An auxiliary boiler will be installed with the option to install associated generation equipment to generate up to 49.9MW of power for use on the Site. The auxiliary boiler will use biocarbon and/or</p>

Project description as per existing direction request	Changes to Project Description
	low-carbon process off-gases and/or natural gas to generate high pressure steam for use in the SAF process and/or generating equipment.
Waste feedstock storage silos; vertical silos will be provided for the storage of waste feedstock on the Lighthouse Green Fuels site.	The Project will feature a feedstock storage and pre-processing area. This area will include intermediate feedstock storage facilities with three options being considered – silos or bays or storage bunkers.
Carbon capture units; CO <sub>2</sub> is removed from the main syngas stream via the acid gas removal unit (described above). CO <sub>2</sub> from this unit will be compressed and sent to permanent off-site storage. Post-combustion carbon capture will also be installed on the integral CCGT power plant to further reduce emissions from the LGF plant, and help to reduce the carbon intensity of the final SAF product. Captured carbon emissions from the power plant will be compressed and directed to permanent storage.	<p>CO<sub>2</sub> is removed from the main syngas stream via the acid gas removal unit (described elsewhere). CO<sub>2</sub> from this unit will be directed to the carbon dioxide compression unit where it is purified / dehydrated, compressed and sent to permanent off-site storage. This is likely to be in the NZT CCS infrastructure (subject to operation and access) but alternative CO<sub>2</sub> transport options are being explored.</p> <p>Capturing CO<sub>2</sub> emissions will reduce emissions from the Site and help to reduce the carbon intensity of the final SAF and green naphtha products.</p>
High pressure and low-pressure gas flares will be provided for emergency / abnormal operation scenarios.	No change.
Combined heat and power (CHP) connections to the existing adjacent materials recycling facility (MRF). This will include pipework running between the Project and neighbouring MRF to provide low-grade heat for drying the waste feedstock. Pipework will also be installed for the returned heating fluid post utilisation. Electrical cables will be installed between the Project and neighbouring MRF facility to provide power (generated by the Project's integral CCGT power plant).	Combined heat and power (CHP) connections to the existing adjacent materials recycling facility (MRF) may be installed subject to commercial and technical viability. These connections may include pipework running between the Site and neighbouring MRF. Electrical cables may be installed between the Project and neighbouring MRF facility to provide power.



Project description as per existing direction request	Changes to Project Description
<p>Other associated infrastructure. This will include an air separation unit (ASU) for the production of oxygen and nitrogen required by the LGF plant. Associated pipelines are required to transport gaseous oxygen and nitrogen from the new build ASU to the LGF plant. Conveyor infrastructure is also required to link the main SAF facility with the existing rail terminal (approximately 1 km to the west of the main site). Pipelines are required to transfer final products (SAF and green naphtha) to and from the waterside bulk liquid storage terminal. Pipelines are also required to transfer final products from the waterside bulk liquid storage terminal to the existing inland rail / freight terminal. A new CO<sub>2</sub> pipeline is also required to connect the project into the Net Zero Teesside carbon capture and storage infrastructure.</p>	<p>This description remains accurate. Further detail is available relating to the associated infrastructure, which will include:</p> <p>Transfer of products (SAF and green naphtha) will be to and from the existing tank farm and the new onsite buffer storage to existing waterside bulk liquid storage terminal &amp; inland rail / freight terminal.</p> <p>Other ancillary pipelines.</p> <p>General utilities i.e. new natural gas pipeline, raw/potable water and wastewater, nitrogen auxiliary oxygen supply from 3rd party ASU infrastructure.</p> <p>Electrical cables between the existing CCGT, auxiliary boiler and SAF plant and onsite substation.</p> <p>Other ancillary electrical cables for internal power.</p> <p>Conveying equipment will be used to transfer feedstock from the rail terminal to Site (and vice versa if required).</p>
<p>Rail terminal development and conveyor infrastructure. It is proposed that bulk solid material handling and storage infrastructure will be constructed at the neighbouring inland rail terminal. Handling and storage equipment is required to receive the waste feedstock via rail. To facilitate receipt of bulk solid material (i.e. waste feedstock) an additional rail track must be added to the rail terminal. Buffer bulk storage will be installed at the terminal to receive and store large quantities of waste. Above-ground conveyors will transfer the pelletised waste material from the rail terminal to the Project site.</p>	<p>The method of conveying biomass feedstock is yet to be determined but equipment/infrastructure will be required for storage, and to move feedstock or pre-processed materials.</p> <p>Buffer bulk storage will be installed at the rail terminal to receive and store biocarbon feedstock. Above ground conveying equipment will transfer the densified feedstock material from the rail terminal to the Project site.</p>
<p>Additional feedstock storage. It is anticipated that a second bulk solid material feedstock storage facility will be constructed adjacent to the Project site. This facility will provide buffer storage to</p>	<p>Additional feedstock storage is no longer required. All feedstock storage requirements are contained within the on-site feedstock storage and pre-processing area, and at the existing rail</p>

Project description as per existing direction request	Changes to Project Description
<p>accommodate operational regime differences between the LGF plant and associated MRF facilities. The storage facility will allow the LGF plant to build up suitable buffer capacity to maintain operations while the MRF facilities are shut down for maintenance, and <i>vice versa</i>. The storage will be provided by bunkers. These bunkers will be covered for inclement weather protection, or alternatively, constructed within a dedicated building.</p>	<p>terminal (see Appendix 2). Feedstock storage facilities will be provided – either silos, bays or storage bunkers.</p>
<p>Facility off-site car parking; the Project intends to construct permanent off-site parking facilities for full-time employees and contractors of the LGF plant. In accordance with typical refinery norms, this parking is best provided off-site from the main biorefinery facility. This plot space will be utilised for the construction village during construction.</p>	<p>No change.</p>
<p>N/A</p>	<p>Utilisation of hydrogen: The Applicant is exploring connections to hydrogen sources and would require a new hydrogen pipeline to be connected via existing pipeline corridors and bridges (constructed as part of the Project)</p>

Summary of the refined Project Description

5.4 The elements of the refined Project comprise the following:

- Feedstock: waste, waste biomass or biomass residue feedstocks will be sourced nationally, and potentially some quantities internationally (subject to the feedstock meeting appropriate sustainability criteria) and delivered to feedstock processing facilities (FPF) located across the UK. Raw waste / biomass feedstocks will be thermally treated to produce a carbon-rich feedstock (“biocarbon”). Biocarbon will be densified at the remotely located FPFs before being shipped to the Site via rail and/or road in pelletised form;
- Feedstock storage and pre-processing area: the Project will feature a feedstock storage and pre-processing area. This area will include intermediate feedstock storage facilities with three options being considered – silos or bays or storage bunkers;
- Rail terminal development and conveying infrastructure: It is proposed that bulk solid material handling and storage infrastructure will be constructed at the neighbouring inland rail terminal operated by Navigator Terminals. Handling and storage equipment is required to receive the biocarbon feedstock via rail. To facilitate receipt of bulk solid material additional rail track(s)

must be added to the rail terminal. Buffer bulk solid storage is anticipated at the rail terminal to receive and store large quantities of biocarbon feedstock prior to transfer to the main SAF Site. Above-ground conveying equipment will transfer the pelletised biocarbon material from the rail terminal to the Project site;

- The main gasification facility: up to x4 gasifier units and associated primary gas clean up units to treat the input biocarbon feedstocks and produce a raw syngas. Major contaminant species (such as particulate matter, ammonia, and sulphur species) are removed in the primary gas clean-up units, producing a partially cleaned synthesis gas (or 'syngas');
- Syngas clean-up apparatus and water gas shift reactor: to remove residual contaminant species (such as sulphur, mercury, halides, etc), alter the ratio of hydrogen and carbon monoxide in the syngas, and produce an ultra-clean syngas suitable for conversion in the downstream Fischer-Tropsch reactor. An acid gas removal unit is contained within the syngas clean-up section of the plant. This unit removes carbon dioxide and hydrogen sulphide species from the syngas. High purity carbon dioxide from the unit will be compressed and directed to permanent storage in the Net Zero Teesside (NZT) carbon capture and storage infrastructure. If NZT is not available, the (biogenic) carbon dioxide stream from the acid gas removal unit will be vented to atmosphere;
- Fischer-Tropsch process units: ultra-clean syngas from the gasifier(s) is catalytically converted in the Fischer-Tropsch reactor into long chain hydrocarbon waxes and other light hydrocarbon species;
- Hydro-processing units: long-chain hydrocarbon waxes from the Fischer-Tropsch unit are cracked into shorter chain hydrocarbons. The resultant mixed hydrocarbon stream is separated in a fractionation column to yield the final product synthetic paraffinic kerosene (FT-SPK; SAF) and green naphtha by-product. Light hydrocarbon species are recycled or used to generate power for the SAF plant;
- SAF product storage units: SAF and green naphtha will be sent to a small buffer storage onsite where it will be tested and quality checked before being transferred to offsite bulk liquid storage via separate pipelines. Existing bulk storage within the adjacent tank farm, operated by a third party, will also be provided. Pipeline infrastructure for the SAF and green naphtha will also be installed between the bulk liquid storage terminal and the rail terminal. Third party liquid handling facilities may also be used for the export of product by road. The Project therefore will incorporate export facilities via rail, road and marine infrastructure;
- Carbon capture units (Acid Gas Removal Unit): CO<sub>2</sub> is removed from the main syngas stream via the acid gas removal unit (described elsewhere). CO<sub>2</sub> from this unit will be directed to the carbon dioxide compression unit where it is purified / dehydrated, compressed and sent to permanent off-site storage in the NZT CCS infrastructure (subject to availability). Alternative export CO<sub>2</sub> transport options are also being explored. Capturing CO<sub>2</sub> emissions will reduce emissions from the Site and help to reduce the carbon intensity of the final SAF and green naphtha products;
- High pressure and low-pressure gas flares: these will be provided for plant start-up, shutdown and emergency / abnormal operating scenarios;
- Power supply and on-site power generation: A portion of the power required for the Site will be supplied from the electricity Grid via a new connection to existing National Grid substations. A

portion of the power required for the Site may be provided by the existing up to 49.9MW CCGT power, refurbished / modified / rebuilt to operate on low-carbon processes off-gases and/or naphtha and/or natural gas. An auxiliary boiler will be installed with the option to install associated generation equipment to generate up to 49.9MW of power for use on the Site. The auxiliary boiler will use biocarbon and/or low-carbon process off-gases and/or natural gas to generate high pressure steam for use in the SAF process and/or generating equipment;

- Combined heat and power (CHP): CHP connections to the existing adjacent materials recycling facility (MRF) may be installed subject to commercial and technical viability. These connections may include pipework running between the Site and neighbouring MRF. Electrical cables may be installed between the Project and neighbouring MRF facility to provide power;
- Other associated infrastructure: this will include an air separation unit (ASU) for the production of oxygen and nitrogen required by the LGF plant. Associated pipelines are required to transport gaseous oxygen and nitrogen from the new build ASU to the LGF plant. Conveying equipment is also required to link the LGF project site with the existing rail terminal (approx. 1 km to the west of the main site). Pipelines are required to transfer final products (SAF and green naphtha) to and from the waterside bulk liquid storage terminal. Pipelines are also required to transfer final products from the waterside bulk liquid storage terminal to the existing inland rail / freight terminal. A new CO<sub>2</sub> pipeline is also required to connect the project into the Net Zero Teesside carbon capture and storage infrastructure. Since the existing direction, further detail is available relating to the associated infrastructure, which will include:
  - Transfer of products (SAF and green naphtha) will be to and from the existing tank farm and the new onsite buffer storage to existing waterside bulk liquid storage terminal & inland rail / freight terminal.
  - Other ancillary pipelines for internal use.
  - General utilities i.e. new natural gas pipeline, raw/potable water and wastewater, auxiliary oxygen supply from 3<sup>rd</sup> party ASU infrastructure
  - Electrical cables between the existing CCGT, auxiliary boiler and SAF plant.
  - Electrical cables between the existing CCGT, auxiliary boiler and onsite substation.
  - Other ancillary electrical cables for internal power
- Facility off-site car parking: the Project intends to construct permanent off-site parking facilities for full-time employees and contractors as far as reasonably practicable from the main biorefinery facility. This plot space will be utilised for the construction activities (i.e. laydown, fabrication facilities, temporary construction offices) during construction.
- Utilisation of hydrogen: The Applicant is exploring potential connections to hydrogen. No additional feedstock volumes will be required and no additional power requirements will be needed. The necessary land for the hydrogen import equipment is already within the scope of the proposed Project boundary. The utilisation of hydrogen will increase production volumes of SAF and therefore off-gases, which in turn will be used to power the existing CCGT facility and/or auxiliary boiler. This is considered to be more sustainable as it will reduce reliance on the grid import of electricity. The Applicant is also exploring the potential utilisation of hydrogen as a fuel in the existing CCGT facility or auxiliary boiler.

## 6 Operational Process

- 6.1 The operational process of the Project broadly remains as that set out in the existing direction request, subject to the below.

### Changes to the Operational Process

- 6.2 As above, up to 4 gasifier ‘trains’ (units) are now being considered rather than precisely 4 units. This is because, as the Project has developed, it is possible that the efficiency of the units could be increased resulting in fewer units being required.
- 6.3 The Applicant notes the following adjustment to the operational process, as a result of the refinements to design: The feedstock to the process will now include waste and/or waste biomass and/or biomass residues. These “raw” or “as received” feedstocks will be received to feedstock processing facilities (FPF) located across the UK. Within the FPFs, feedstock will be thermally treated and densified to create a biocarbon suitable for shipping to the Site via rail and/or road.

### Possible utilisation of hydrogen

- 6.4 The Applicant is currently exploring options with surrounding projects to utilise hydrogen produced off site within the operational production of SAF. This opportunity recognises the prospects within surrounding hydrogen production and transport projects (both publicly announced and anticipated future projects) in proximity to the Project, and which would provide multiple benefits, e.g. to productivity, if implemented.
- 6.5 The Applicant notes that connections to hydrogen may be made close to the natural gas connections in the north of the site or alternatively in the eastern extent of the Site boundary, where a new Above Ground Installation is proposed.

## 7 Reasons for seeking a variation to the existing direction

- 7.1 The SoS noted in the existing direction that:

*‘The Secretary of State considers that, if the details of the Proposed Development change, before submitting any application to The Planning Inspectorate, the Applicant may wish to seek confirmation from the Secretary of State that the development that is the subject of the proposed application is the same as that for which the Direction is hereby given.’*

- 7.2 The Applicant has modified its Project Description and Project Site since the existing direction.
- 7.3 Following the design evolution of the Project the Applicant considers that the following changes to the Project (as detailed above) require a variation to the existing direction:
- changes to the Project description;
  - changes to the Project site; and
  - new elements of the Project that were not formerly part of the existing direction.

## 8 'Qualifying Request' under Section 35

- 8.1 While the Applicant is making a request to vary the existing direction, the Applicant notes the requirements in section 35 of the PA 2008, specifically that a direction may only be made following a qualifying request. This request for a variation comprises such a request.
- 8.2 Section 35(1) of the PA 2008 states that the SoS may give a direction for development to be treated as development for which development consent is required subject to the provisions set out in that section and also Section 35ZA. Those relevant to the Project are as follows:
- Section 35(2)(a)(i) – the development forms part of a project (or proposed project) in the field of energy, transport, water, wastewater or waste.
  - Section 35(2)(b) & (3)(a) – the development will (when completed) be wholly in England or waters adjacent to England up to the seaward limits of the territorial sea.
  - Section 35(2)(c)(i) – the SoS thinks the project (or proposed project) is of national significance, either by itself or when considered with (in the case of paragraph (a)(i)) one or more other projects (or proposed projects) in the same field.
- 8.3 Following further assessment into the commercial and technical viability of the larger power plant, the refined Project no longer includes a large, new CCGT power plant with capacity up to 150MW. In order to operate as part of the SAF plant the large CCGT power plant must utilise CCS, and therefore requires access to the local NZT (or other) CCS infrastructure. The Applicant believes that delays in delivering the NZT infrastructure, as well as concerns over the final available carbon dioxide storage capacity within the offshore portion of NZT, negatively impact the business case for the large CCGT power plant. Furthermore, the Applicant is concerned about the expected timeframe to obtain a large Grid export connection in the Teesside region.
- 8.4 This Project includes the existing TV1 up to 49.9MW CCGT power plant and an up to 49.9MW auxiliary boiler (including associated generation equipment). However, these elements are distinct and not interconnected. Accordingly, the Applicant does not consider that they amount to a single generating station for the purposes of the PA 2008.
- 8.5 The Applicant emphasises that whilst the existing TV1 up to 49.9MW CCGT and the proposed SAF facility are close geographically it does not consider the Project to be an extension of an existing generating station. The existing TV1 up to 49.9MW CCGT has already been constructed and is capable of operation. This plant will be refurbished / modified / rebuilt under the current proposals so that it can operate on a mixture of fuels, including those derived from the SAF process. The auxiliary boiler is a distinct up to 49.9MW generating station. It will use biocarbon and/or low-carbon process off-gases to generate high pressure steam for use in the SAF process and/or generating equipment.
- 8.6 The variation to the existing direction is sought to ensure that the SAF facility (which includes generating capacity of up to 49.9MW owing to the auxiliary boiler) is able to use the DCO process given its national significance.
- 8.7 The Project remains a facility that in many respects is similar to a major >50MW energy-from-waste (EfW) or biomass power facility; it will use a significant amount of waste and/or waste biomass or biomass residue feedstocks (that would be sufficient to power a conventional EfW

or biomass power facility with an output capacity well in excess of 100MW) and then converts that sustainable feedstock into energy / energy vectors. The energy products that are created from the gasification and related processes are as follows:

- **Sustainable Aviation Fuel (FT-SPK) to power aircraft**
  - This is an energy vector to be used in the aviation industry as an alternative to fossil-fuel derived kerosene fuel.
  - The LGF process will generate Fischer Tropsch synthetic paraffinic kerosene (FT-SPK) which can be blended up to 50% with conventional kerosene (in accordance with ASTM D7566 Annex A1). In the coming years it is expected that 100% SAF usage in aircraft will be allowed once current engine testing campaigns are completed.
  - SAF demand is predicted to grow near exponentially across the globe – up to 500 Mtpa by 2050. The UK is well placed to become a hub for low carbon intensity SAF considering its access to suitable feedstocks (waste and biomass) and carbon capture and storage infrastructure.
  
- **Off-gases for energy generation purposes**
  - The Fischer-Tropsch and product upgrading / hydrocracking processes produce off-gases which are then directed to one of the two gas turbines within the on-site existing generating station or auxiliary boiler, to produce steam and/or electricity for the on-site processes;
  
- **Naphtha for sustainable chemical production or energy generation purposes.**
  - Green naphtha is a by-product of the SAF production process. Low-carbon “green” naphtha is expected to be sold for use as a feedstock for the chemical industry, enabling the transition to low-carbon, sustainable chemical production.
  - Green naphtha can also be used as a low-carbon gasoline blend stock.
  - Based on the two above uses, the naphtha by-product can be considered an important energy vector, similar to the main SAF product.
  - It is anticipated, subject to green naphtha demand, that a portion of the by-product liquid naphtha could be used within the existing CCGT to produce low-carbon power for the SAF plant; up to 100% of the produced naphtha may be used for power generation purposes.

8.8 Accordingly, the project, as a whole, should be considered to be an ‘energy’ scheme, and therefore falls within one of the qualifying infrastructure fields listed in Section 35(2)((a)(i). The term ‘field of energy’ is not defined within the PA 2008 but it is reasonable to conclude that this encompasses at least the types of infrastructure covered under ‘Energy’ at Sections 15 to 21 of the PA 2008.

8.9 Second, the Project site is wholly within England or adjacent waters up to the seaward limits of the territorial sea, meeting the criteria of Sections 35(2)(b) and 35(3)(a) of the PA 2008.

8.10 Section 35(2)(c) requires the project (subject of a request for a direction under Section 35) to be of national significance. As explained in detail below, the Project is without question of national significance. It is anticipated to be the UK’s first and largest commercial scale SAF project, it will utilise UK-sourced sustainable feedstocks, including waste / recycled biomass, biomass residues and household and commercial waste. The Applicant also anticipates the Project will utilise biomass feedstock currently being exported to Europe - onshoring valuable feedstock for domestic UK energy production. The Project will increase the UK’s energy security

whilst also decarbonising the UK's aviation sector. The Project is particularly well located to provide SAF to local and national airports, and is particularly close to Teesside Airport.

- 8.11 Section 35ZA(1) states that the power in Section 35(1) to give a direction in a case within Section 35(2)(a)(i) (projects in the field of energy etc) is exercisable only in response to a qualifying request if no application for a consent or authorisation mentioned in Section 33(1) or (2) has been made in relation to the development to which the request relates. We can confirm that no application for consent or authorisation mentioned in Section 33(1) or (2) has been made by it in relation to the elements of the Project to which this request relates. Section 35ZA(11) defines a 'qualifying request' as meaning a written request for a direction under Section 35(1) that:

*'(a) specifies the development to which it relates, and*

*(b) explains why the conditions in section 35(2)(a) and (b) are met in relation to the development;'*

- 8.12 This request represents a 'qualifying request' as it is made in writing and specifies the development to which it relates (see Refined Project Site and Refined Project Description above and the enclosed plans). In addition, as confirmed above, the conditions in Section 32(2)(a) and (b) are fully met.

## **9 National Significance of the Project**

- 9.1 The Project is anticipated to be the UK's first and largest commercial scale, SAF project. The Project is of national significance given its size and scale. It has the potential to make a significant contribution to decarbonising the UK's aviation sector and act as a catalyst to further SAF developments coming forward in the UK and beyond. The Project is considered a complex biorefinery and will represent the first refinery-scale facility to be constructed in the UK for decades.

### *Providing the infrastructure urgently needed to meet the Government's energy objectives towards Net Zero*

- 9.2 A detailed summary of the national significance of the Project is set out in the existing direction request and this remains accurate for the Project as varied. The Project would clearly help achieve a range of Government ambitions.
- 9.3 On 17 January 2024 the SoS for Energy Security and Net Zero 'designated' the five revised energy National Policy Statements EN-1 to EN-5. These set out the Government's policy for delivery of major energy infrastructure and are the primary policy for Secretary of State decision making on projects in the field of energy for which a direction has been given under section 35 of PA 2008. The Applicant has considered these carefully and it is clear that these provide further support for the urgent need of the Project.
- 9.4 The Applicant requests notes from paragraph 1.3.10 of the Overarching National Policy for Energy (EN-1) that EN-1 will be the primary policy for the SoS decision making on projects in the field of energy when a direction has been given under section 35. This assists in ensuring that the application would be treated in a manner consistent with that which governs other applications for Nationally Significant Energy Projects considered under the PA 2008.



## Overarching National Policy Statement for energy (EN-1)

- 9.5 EN-1 sets out the urgent and critical need for the Project. The Applicant notes that EN-1 recognises that novel technology that helps achieve Government objectives should be encouraged:

Paragraph 2.3.5: *'The sources of energy we use are changing. Since the industrial revolution, our energy system has been dominated by fossil fuels. That remains the case today. Although representing a record low, fossil fuels still accounted for just over 76 per cent of energy supply in 2020. We need to dramatically increase the volume of energy supplied from low carbon sources.'*

Paragraph 2.3.9: *'To ensure that supplies remain reliable and to keep our energy affordable we will also need to reduce the amount of energy we waste, using new and innovative low carbon technologies and more energy efficiency measures.'*

Paragraph 3.2.1: *'The government's objectives for the energy system are to ensure our supply of energy always remains secure, reliable, affordable, and consistent with net zero emissions in 2050 for a wide range of future scenarios, including through delivery of our carbon budgets and Nationally Determined Contributions.'*

Paragraph 3.2.2: *'We need a range of different types of energy infrastructure to deliver these objectives. This includes the infrastructure described within this NPS but also more nascent technologies, data, and innovative infrastructure projects consistent with these objectives.'*

Paragraph 3.2.3: *'It is not the role of the planning system to deliver specific amounts or limit any form of infrastructure covered by this NPS. It is for industry to propose new energy infrastructure projects that they assess to be viable within the strategic framework set by government. This is the nature of a market-based energy system. With the exception of new coal or large-scale oil-fired electricity generation, the government does not consider it appropriate for planning policy to set limits on different technologies but planning policy can be used to support the government's ambitions in energy policy and other policy areas.'*

Paragraph 3.2.4: *'It is not the government's intention in presenting any of the figures or targets in this NPS to propose limits on any new infrastructure that can be consented in accordance with the energy NPSs. A large number of consented projects can help deliver an affordable electricity system, by driving competition and reducing costs within and amongst different technology and infrastructure types. Consenting new projects also enables projects utilising more advanced technology and greater efficiency to come forward. The delivery of an affordable energy system does not always mean picking the least cost technologies. A diversity of supply can aid in ensuring affordability for the system overall and relative costs can change over time, particularly for new and emerging technologies. It is not the role of the planning system to compare the costs of individual developments or technology types.'*

## Update to aviation policy since the existing direction

- 9.6 Since the existing direction, an update to the Jet Zero strategy has been published: Jet Zero Strategy: One Year On (Department of Transport, 2023).
- 9.7 This policy paper sets out the progress made in a year against the initial Jet Zero Strategy. It also re-affirms the national support and need for SAF and emphasises the importance of SAF

for the aviation industry. The following quotes from the “one year on” update’s executive summary sets out the continued importance of progressing the production of SAF.

*“We are focusing our efforts on unlocking the potential of a UK SAF industry and growing the UK’s aerospace sector through continued R&D support to develop more efficient and zero emission aircraft through the Aerospace Technology Institute (ATI) programme.”*

*“Sustainable aviation fuel (SAF) is crucial to our efforts to decarbonise, and we want the UK to be a global leader in its development, production and use. Some key successes this year include launching the £165m Advanced Fuels Fund to support the development of commercial scale SAF plants within the UK, publishing the second SAF mandate consultation, and publishing Phillip New’s report on ‘developing a UK SAF industry’ alongside a government response, all as part of our efforts to support investment in UK SAF production.”*

*“Reaching our goal relies on emerging technologies with varying degrees of uncertainty around their commercialisation and deployment; the production of SAF and hydrogen will rely on significant supplies of feedstock and green electricity”*

- 9.8 The update places the utmost importance on the development of SAF to reach net zero by 2050. It is abundantly clear that the urgent development of SAF-producing facilities is of national and international significance in the pursuit of aviation sector decarbonisation so as to help the UK meet its statutory obligation to achieve net zero by 2050. In addition, the significant economic and socioeconomic benefits that are expected to arise from a UK SAF industry will be felt locally, regionally, nationally and internationally. This demonstrates the crucial, urgent need for the Project.

## **10 Summary of Policy Objectives**

- 10.1 The policy objectives of the Project are set out in the existing direction request and these remain accurate for the Project as varied:
- produce significant quantities of SAF, an energy vector, to help decarbonise the aviation sector;
  - produce significant quantities of low-carbon “green” naphtha to help decarbonise the chemicals sector
  - capture carbon from industrial facilities and permanently store such carbon
  - encourage the creation of jobs in the green economy;
  - deliver sustainable development that has the potential to utilise rail transport to minimise emissions from transporting waste or biomass feedstock;
  - ‘level-up’ the UK by supporting the development of nationally and internationally significant infrastructure and jobs in the north-east of England; and
  - divert waste from landfill;
- 10.2 The Applicant notes that policy support for the Project has strengthened since the submission of the existing direction request, as set out above.

## **11 Size and Scale of the Project**

- 11.1 As set out in the existing direction request, the size and scale of the Project, combined with its complexity, cost and potential contribution to the local, regional, and national economy, is considered to be such that it is clearly of national significance.
- 11.2 The Project would involve a major investment by the Applicant in Teesside in the region of £1.5 billion (revised upwards from £1.4 billion from the existing direction). The Project would therefore make a very significant contribution to Teesside's economy during both the construction phase and during operation, in terms of employment and local economy spend. Once operational, the Project will employ approximately 120 direct full-time employees (FTE) at the SAF Plant, in addition, there will be approximately 120 FTEs at other facilities forming part of the Project (such as the FPFs elsewhere in the UK, or feedstock supply facilities) and approximately 600 FTEs from indirect jobs at other locations in the UK.

## **12 National need for securing consent via the PA 2008 regime**

- 12.1 Details of the national need for securing consent via the PA 2008 are substantially set out in the existing direction request.
- 12.2 As noted above, the new total area of the Project is approximately 261.84 hectares, an increase of 186 hectares (from 75 in the existing direction). These changes are reflected in the appended plans and reflect developments to the design process.
- 12.3 The need for the main SAF facility is critical. The UK Government has committed to introducing a sustainable aviation fuel (SAF) mandate equivalent to at least 10% (around 1.5 billion litres) of jet fuel to be made from sustainable sources by 2030. The "Sustainable aviation fuels mandate: summary of consultation responses and government response" (DfT, July 2022) confirms that:
- the mandate will operate as a greenhouse gas emission reduction scheme with tradeable certificates
  - the mandate will apply to jet fuel suppliers and will begin in 2025, outside of the Renewable Transport Fuel Obligation (RTFO)
  - eligible fuels will be waste-derived biofuels (incl. waste biomass or biomass residues), recycled carbon fuels (making use of unrecyclable plastic and waste industrial gases) and power to liquid (PtL) fuels
  - SAF must meet strict sustainability criteria including making at least 50% greenhouse gas savings relative to fossil jet fuel
  - SAF derived from hydroprocessed esters and fatty acids will be capped to encourage strategically important SAF pathways using waste-derived feedstocks, such as Gasification+FT.
  - A PtL subtarget will be introduced to encourage the development of these nascent fuels.
- 12.4 The UK SAF mandate is intended to secure and grow UK SAF demand and complement our ongoing work to kick start a domestic SAF industry. The alignment of the Project with Government objectives demonstrates the urgent need for the Project and the securing of consent via the PA 2008 regime. The Applicant has made significant progress in adapting its scheme in order to ensure it is in a position to help the Government and the aviation industry

achieve the 2030 targets set out in the SAF Mandate. The DCO process, with its clear timescales and certainty is vital in ensuring that the Project can be delivered.

### **13 Summary**

- 13.1 The Applicant is seeking a variation of the existing direction made by SoS to ensure that all of the relevant elements of the Project are development for which development consent is required. Since the existing direction, there have been various refinements to the Project, as set out above due to the development of the design process.
- 13.2 This letter represents a 'Qualifying Request' under Section 35. The Project is within the field of energy (and also involves waste, but it should be considered primarily a project in the field of energy) and would be wholly within England. The Project is also of national significance by virtue of its size, scale and complexity and in terms of how it would support key Government objectives, strategies and policies for decarbonising the aviation sector, diverting waste from landfill, implementing carbon capture infrastructure and, importantly, it would provide significant local, regional and national benefits in terms of the creation of new construction and operation jobs and it would contribute to the 'levelling up' of the UK.
- 13.3 We should be grateful if you would confirm safe receipt of this letter. Please do not hesitate to contact us if you require any further information in relation to the Project.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Noaman Al Adhami', written in a cursive style.

Noaman Al Adhami

**Lighthouse Green Fuels Limited**

## SCHEDULE 1

### Project Description

The Project is expected to be the UK's first, commercial scale, advanced 2<sup>nd</sup> generation SAF project, converting waste or biomass (commercial and/or industrial, non-recyclable and non-hazardous waste and/or waste biomass and/or biomass residues) into SAF for ongoing sale. The Project will utilise the Fischer-Tropsch (FT) process to create the SAF.

The main components of the Project are as follows:

- SAF Plant including the following but not exhaustively
  - Feedstock Storage & Pre-Processing Area
  - Gasification Plant
  - Syngas Clean-up
  - FT Reactor
  - Product Upgrading Unit
  - Future FT Reactor
  - Future Product Upgrading Unit
  - Miscellaneous Tankage
  - Wastewater Treatment Plant
  - Flare Area
  - Auxiliary Boiler & Generating Equipment (up to 49.9 MW)
  - Surface Water Pond
  - Utilities
  - Air Separation Unit
  - Process Waste Storage
  - Consumables Storage Facilities
  - General Administration & Storage Facilities
  - Car Parking
- Refurbished / modified / rebuilt existing up-to-49.9MW combined cycle gas turbine power plant located on TV1;
- Bulk liquid storage (for SAF and Naphtha);
- Pipeline and Cable Connections (import and export) and Utility Corridors;
- Heavy Haul Road (for construction phase only);
- Conveying Corridors;
- Rail Terminal;
- Marine Transport Infrastructure (for construction and operational usage); and
- Other associated infrastructure.

**Schedule 2**

**Draft Section 35 Direction**

## DIRECTION BY THE SECRETARY OF STATE UNDER SECTION 35 OF THE PLANNING ACT 2008 RELATING TO THE LIGHTHOUSE GREEN FUELS PROJECT

By letter to the Secretary of State received on ~~7 October 2022~~ 26 March 2024 (“the Direction Request”), Lighthouse Green Fuels Limited (“the Applicant”) formally requested that the Secretary of State exercise the power vested in ~~him~~ her under section 233(2) of the Planning Act 2008 to vary a direction made under section 35(1) of the Planning Act 2008 dated 22 October 2022 (“~~the Existing Direction~~”) (“the Existing Direction”) to direct that the ~~following elements of the~~ Lighthouse Green Fuels Project (“the Proposed Development”) as set out in the Direction Request be treated as development for which development consent under the Planning Act 2008 is required.

In its Direction Request, the Applicant requested a revised direction in respect of the following elements of the Proposed Development: the main gasification facility (up to x4 gasifier units) to treat inputted waste and/or biomass feedstock; syngas clean-up apparatus; Fischer-Tropsch process units; hydro-processing units; sustainable aviation fuel and green naphtha product storage units; refurbished / modified / rebuilt up to 49.9MW CCGT generating station; auxiliary boiler with up to 49.9MW generating capacity; waste feedback feedstock storage areasilos; carbon capture units; high pressure and low pressure gas flares; pipelines to transfer final products from the main facility to the storage terminal and from the storage terminal to the existing inland rail/freight terminal, and a new CO<sub>2</sub> pipeline to connect the Proposed Development project to the proposed Net Zero Teesside carbon capture and storage infrastructure or alternative CO<sub>2</sub> transport options; and rail terminal development; and other associated infrastructure as described in Schedule 1 to the Direction Request. (“the Proposed Development”).

The Secretary of State is satisfied that:

- The Proposed Development is in the field of energy and development;
- The Proposed Development will be wholly within England and waters adjacent to England up to the seaward limits of the territorial sea and the Renewable Energy Zone when completed;
- The Proposed Development does not currently fall within the existing definition of a “nationally significant infrastructure project” and therefore it is appropriate to consider use of the power in section 35(1) of the Planning Act 2008; and
- The Applicant’s request constitutes a “qualifying request” in accordance with section 35ZA(11) of the Planning Act 2008.

~~The Secretary of State notes that the Proposed Development forms part of a wider proposal, with the wider proposal including a Combined Cycle Gas Turbine (“CCGT”) plant with a capacity of 150MW.~~

The Secretary of State notes that the main gasification facility element of the Proposed Development will produce sustainable aviation fuel used to power aeroplanes, and off-gases and naphtha for sustainable chemical production and/or energy generation purposes. The Applicant anticipates that approximately up to 50/100% of the naphtha and off-gases produced will by the SAF plant may be used to fire the second gas turbine within the CCGT plant mentioned above for power generation purposes. Any naphtha not used in the SAF process for power generation will be sold as a product. The Applicant expects the naphtha to be used in the chemicals industry as a sustainable feedstock, thereby helping to decarbonise the sector.

Having considered the details of the Applicant's proposals as set out in their letter received on 26 March 2024 ~~7 October 2022~~ the Secretary of State is of the view that the Proposed Development is continues to be nationally significant; the reasons for this are included in the Annex below.

The Secretary of State considers that, if the details of the Proposed Development change, before submitting any application to The Planning Inspectorate, the Applicant may wish to seek confirmation from the Secretary of State that the development that is the subject of the proposed application is the same as that for which the Direction is hereby given.

The Secretary of State has taken the decision within the conditions as required by sections 35A(2) and (5) of the Planning Act 2008, and issues this variation to the Existing Direction under section 233(2) of the Planning Act 2008. ~~a~~ Accordingly this Direction is to be treated being made under sections 35(1) and 35ZA of the Planning Act 2008.



THE SECRETARY OF STATE DIRECTS that the Proposed Development is to be treated as development for which development consent is required.

The Secretary of State further directs in accordance with sections 35ZA(3)(b) and (5) of the Planning Act 2008 that:

- ~~An application for a consent or authorisation mentioned in section 33(1) or (2) of the Planning Act 2008 or similar to that described in the Request to the Secretary of State for Business, Energy and Industrial Strategy for a Direction under Section 35 of the Planning Act 2008 made by the Applicant and received on 7 October 2022~~ Direction Request for the Proposed Development is to be treated as a proposed application for which development consent is required.
- To the extent that any consultation carried out by the Applicant prior to the date of this direction complies with the requirements of Part 5 of the Act (or any legislation made under that Part), those consultation requirements shall be treated as having been complied with notwithstanding that the consultation was carried out prior to the date of this direction.
- In accordance with paragraph 1.3.10 of the Overarching National Policy for Energy (EN-1), EN-1 in conjunction with any relevant technology specific National Policy Statement will be the primary policy for the Secretary of State's decision making on the Proposed Development.

This Direction is given without prejudice to the Secretary of State's consideration of any application for development consent which is made in relation to the Proposed Development.

Signed by

[NAME]

[DATE]

## ANNEX

### REASONS FOR THE DECISION TO ISSUE THE DIRECTION

The Secretary of State is of the opinion that the Direction should be issued because:

- The Proposed Development will use waste and biomass which it converts into energy / energy vectors;
- From the gasification and related processes the Proposed Development will produce:
  - 1) Sustainable Aviation Fuel (FT-SPK) to power aeroplanes, which is an energy vector to be used in the aviation industry as an alternative to kerosene fuel;
  - 2) Off-gases for energy generation purposes - the Fischer-Tropsch process also produces off-gases which are then directed to one of the two gas turbines within the on-site ~~150MW~~ existing up to 49.9MW CCGT generating station and/or the separate up to 49.9 MW auxiliary boiler, to produce electricity for the on-site processes;
  - 3) Naphtha for sustainable chemical production or energy generation purposes – the Applicant anticipates that the second gas turbine within the generating station will be fired on on-site byproduct liquid naphtha - approximately up to 50100% of the produced naphtha and off-gases will may be used for this power generation purposes;-. Naphtha is a by-product of the SAF production process. Low-carbon “green” naphtha is expected to be used as a feedstock for the chemical industry, enabling the transition to low-carbon, sustainable chemical production. Green naphtha can also be used as a low-carbon gasoline blend stock. Based on the these uses, the naphtha by-product can be considered an important energy vector, similar to the main SAF product;
- On 19 July 2022 the government published its Jet Zero Strategy which sets out how the UK will achieve net zero in the aviation industry by 2050. The document also explains the ‘critical role [aviation] plays in boosting trade, tourism and travel’ in the UK. The Strategy states: sustainable aviation fuels are a key lever

to accelerate the transition to Jet Zero, and represent an industrial leadership opportunity for the UK. The Proposed Development will make an important contribution to the aims set out in the Jet Zero Strategy;

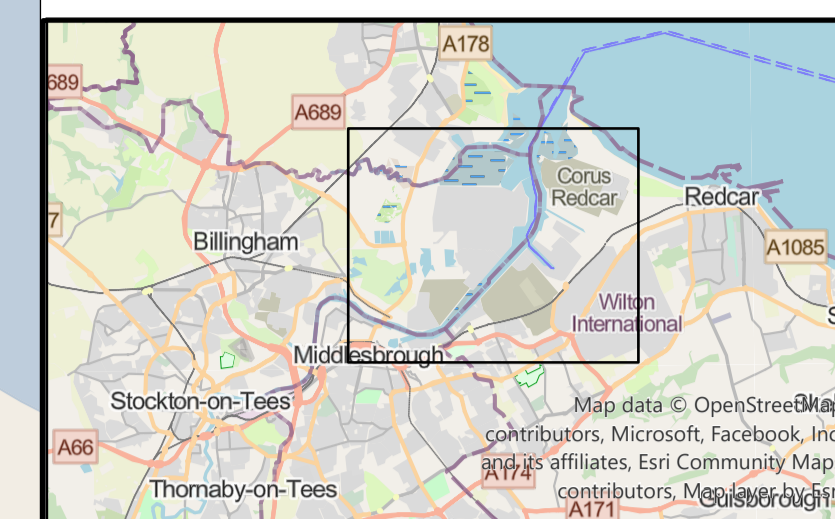
- On 20 July 2023 the government published its Jet Zero Strategy: One Year On which re-affirmed support for the SAF industry.
- The urgent development of sustainable aviation fuel-producing facilities, like the Proposed Development, is of national and international significance in the pursuit of aviation sector decarbonisation so as to help the UK meet its statutory obligation to achieve net zero by 2050.

# Appendix 1



DO NOT SCALE

### Location Plan



### Key

PROPOSED DCO APPLICATION BOUNDARY

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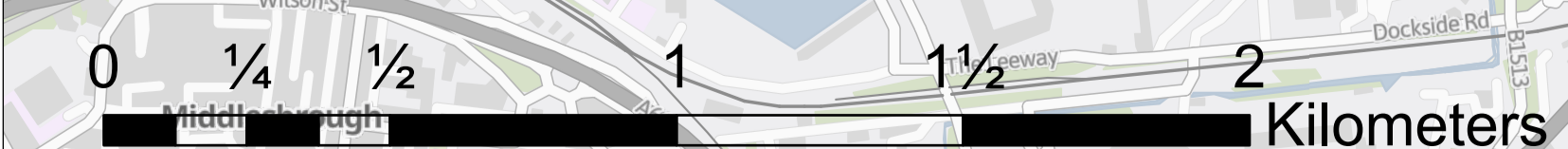
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PROJECT:	Lighthouse Green Fuels Project
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TITLE:	Section 35 Request – Red Line Boundary
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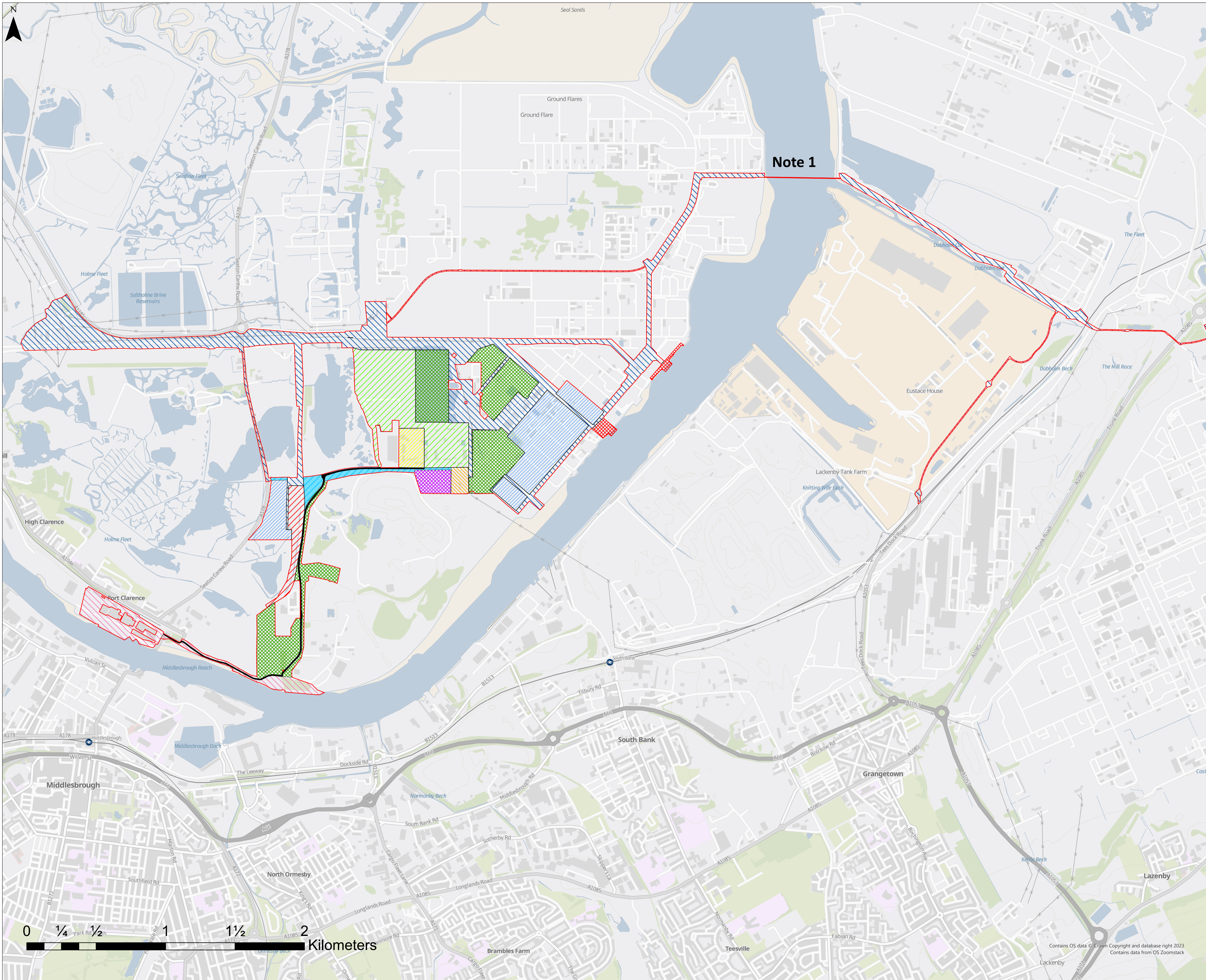
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PROJECT NO.:	EK00001	DESIGNED:	Ardent	DRAWN:	JT
				DATE:	22/03/2024

DRAWING NO.:	EK0001-AE-PM-DLP-00-0001	REV:	4
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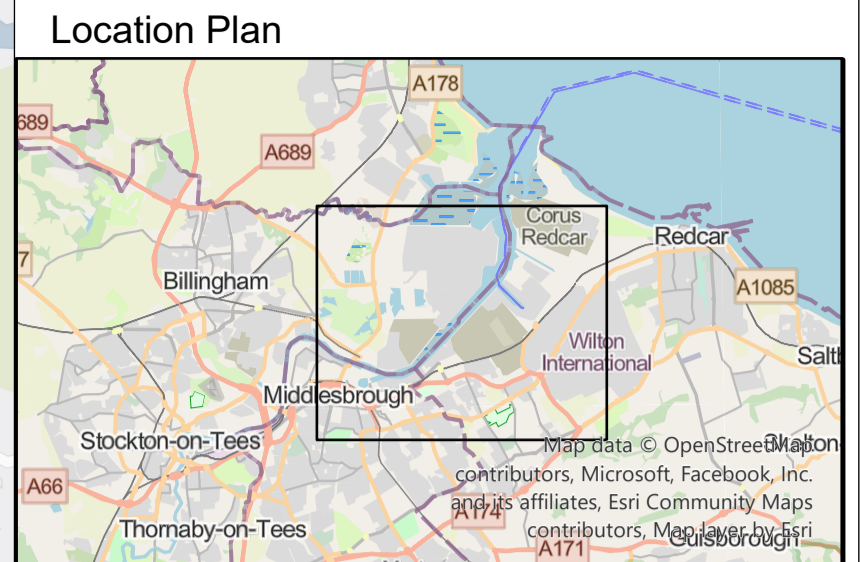
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# Appendix 2



**Note 1**

DO NOT SCALE



- Key**
- PROPOSED DCO APPLICATION BOUNDARY
  - LIGHTHOUSE GREEN FUELS SAF PLANT
  - FEEDSTOCK STORAGE / PROCESSING
  - UTILITY /PIPELINE CORRIDORS/ ACCESS
  - BULK LIQUID STORAGE (SAF/ NAPHTHA)
  - AIR SEPARATION UNIT
  - CONSTRUCTION COMPOUND
  - MARINE OFF-LOADING FACILITY & EQUIPMENT HANDLING
  - FEEDSTOCK CONVEYING CORRIDOR
  - RAIL TERMINAL
  - EXISTING JETTIES
  - CONSTRUCTION COMPOUND/ PERMANENT PARKING
  - PROVISIONAL HEAVY HAUL ROUTE

**NOTE 1 - TEES CROSSING VIA EXISTING PIPELINE**

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DRAWING STATUS: FOR INFORMATION

**Lighthouse Green Fuels**

1 Cornhill, London, England, EC3V 3NR

APPLICANT: Lighthouse Green Fuels Limited

PROJECT: Lighthouse Green Fuels Project

TITLE: SECTION 35 REQUEST: KEY AREAS

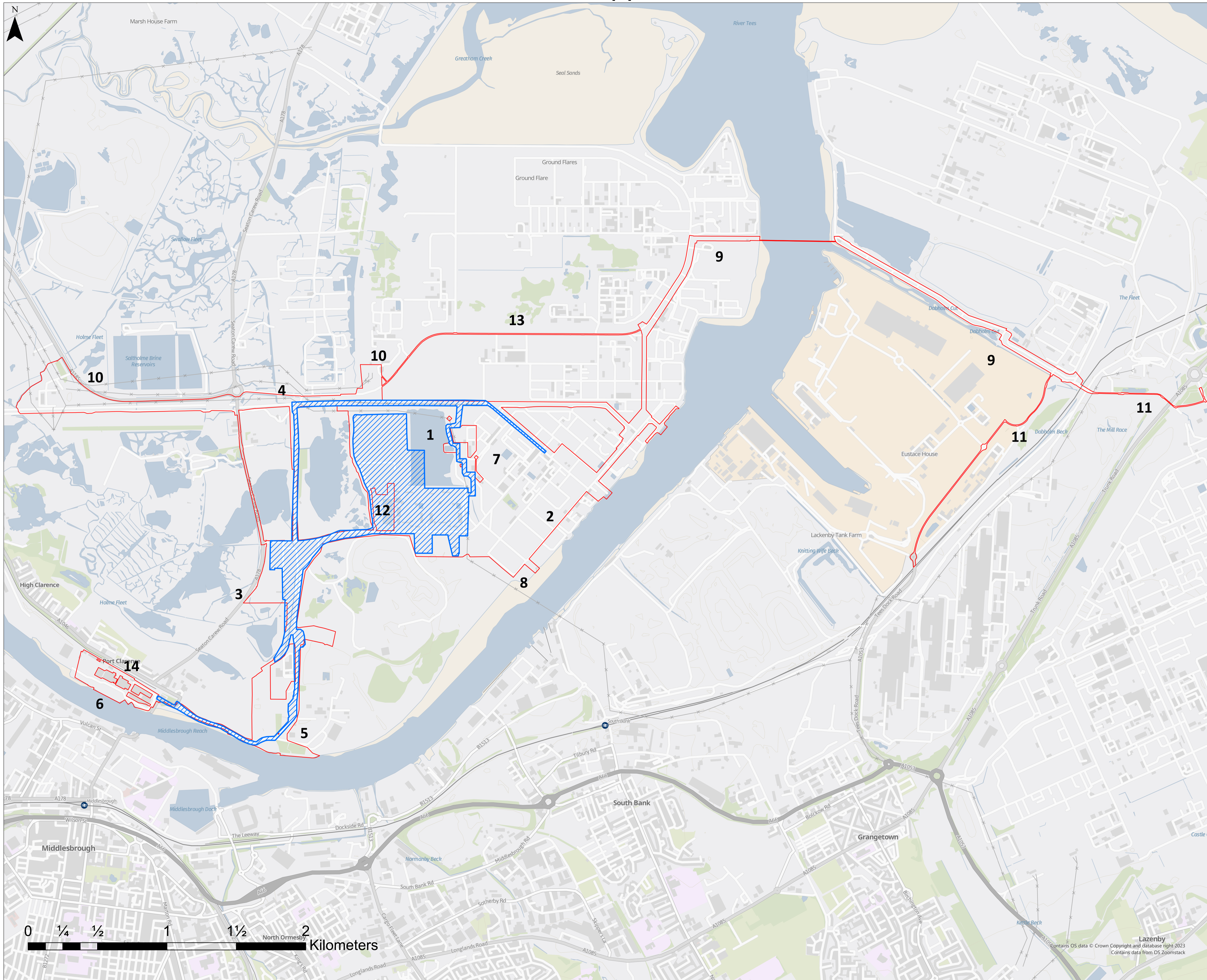
SCALE @ A1: 12,500	CHECKED: J.W	APPROVED: J.W	
PROJECT NO: EK00001	DESIGNED: Ardent	DRAWN: JT	DATE: 22/03/2024

DRAWING NO: EK00001-AE-PM-DLP-00-0002	REV: 4
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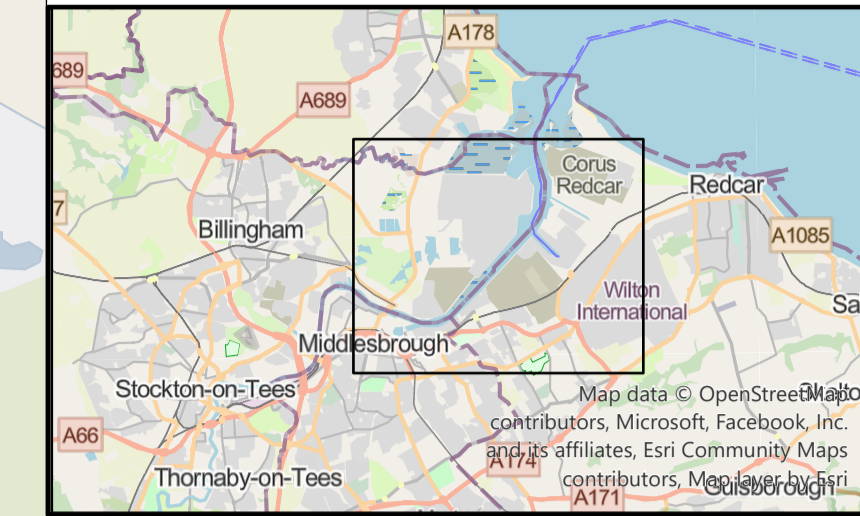
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# Appendix 3



DO NOT SCALE

### Location Plan



### Key

- EXISTING DIRECTION BOUNDARY
- PROPOSED DCO APPLICATION BOUNDARY

This plan provides a general description of the main changes compared to the existing direction.

- 1) Increase to LGF site dimensions.
- 2) Inclusion of Navigator Marine Terminal, pipe corridors and jetties.
- 3) Inclusion of Navigator Rail Terminal.
- 4) Extension of utility/pipeline corridors and access.
- 5) Addition of staging areas and widening of heavy haul route to include Clarence Wharf.
- 6) Inclusion of Wilton Quayside.
- 7) Addition of construction laydown areas.
- 8) Surface water drains and outfall added.
- 9) Waste water pipeline route.
- 10) Inclusion of indicative locations for power supplies & cable routes.
- 11) Waste water pipeline construction access roads.
- 12) Removal of Existing Materials Recovery Facility.
- 13) Inclusion of Seal Sands road for access purposes.
- 14) Removal of industrial buildings.

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DRAWING STATUS:	FOR INFORMATION
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**Lighthouse Green Fuels**

1 Cornhill, London, England, EC3V 3NR

APPLICANT:	Lighthouse Green Fuels Limited
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PROJECT:	Lighthouse Green Fuels Project
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TITLE:	SECTION 35 REQUEST - RED LINE BOUNDARY FOLLOWING CHANGES TO EXISTING DIRECTION
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SCALE @ A1:	12,500	CHECKED:	J.W.	APPROVED:	J.W.
PROJECT No:	EK00001	DESIGNED:	Ardent	DRAWN:	JT
				DATE:	22/03/2024

DRAWING No:	EK00001-AE-PM-DLP-00-0003	REV:	4
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Lazenby  
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