

SPIRIT ENERGY

INFRASTRUCTURE CODE OF PRACTICE



ASSET: MORECAMBE HUB

The Spirit Energy-operated Morecambe Hub comprises six fields in the East Irish Sea (in the UKCS). North Morecambe, South Morecambe and Rhyl are operated by Spirit Energy. The other three fields are Calder, Millom and Dalton, operated by Harbour Energy. Despite producing for over 30 years, it remains a cornerstone operated asset in the Spirit Energy portfolio.

Gas from all the fields is processed at Barrow Gas Terminals, located near Barrow-in-Furness in Cumbria, before entry into the National Transmission System.

KEY FACTS (SPIRIT ENERGY-OPERATED FIELDS):

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|--------------------------------|--|
| LICENCE | P.153, P.251, P.1483 |
| BLOCK | 110/2a, 110/3a, 110/8a, 113/27b |
| SECTOR | East Irish Sea (UKCS) |
| OWNERS / OPERATOR | Spirit Energy Production UK Limited (Op), 100% |
| APPROX DISTANCE TO LAND | 25km |
| WATER DEPTH | 17-35m |
| HYDROCARBONS PRODUCED | Condensate, gas |
| EXPORT METHOD | Pipeline |
| MANNED / UNMANNED | Manned <ul style="list-style-type: none"> • CPC, South Morecambe Unmanned <ul style="list-style-type: none"> • DP3, DP4, South Morecambe decommissioning ongoing • DP6, DP8, South Morecambe • DPPA, North Morecambe |
| FIRST PRODUCTION | 1985 |
| ACCOMMODATION ON BOARD | Yes - Central Processing Complex (CPC) comprises three bridge linked platforms, including Accommodation Platform 1 (AP1) with max POB 174. |

INFRASTRUCTURE INFORMATION:

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| ENTRY SPECIFICATION | Design conditions for CPC: Max 6 mol% CO ₂ 5-10 ppmv H ₂ S |
| EXIT SPECIFICATION | N/A – processing carried out onshore to meet NTS entry specification and to separate condensate to merchantable quality. |

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| OUTLINE DETAILS OF PRIMARY SEPARATION PROCESSING FACILITIES | Offshore, Manned: Slug catcher & two-phase production separator. Offshore, Unmanned: None Onshore: Nitrogen removal, CO ₂ removal, dewatering, condensate separation |
| OUTLINE DETAILS OF GAS TREATMENT FACILITIES | Wet gas exported from the hub is treated through Barrow Terminal where H ₂ S, N ₂ and CO ₂ is removed to redeliver NTS specification sales gas and condensate for road tanker lifting. |

HIGH LEVEL CAPACITY INFORMATION - SOUTH MORECAMBE, CPC

| PLATFORM FIRM PROCESSING CAPACITY AVAILABLE: SOUTH MORECAMBE, CPC | ULLAGE AS % OF SYSTEM CAPACITY | | | | | COMMENT |
|--|--------------------------------|------|------|------|------|---|
| | 2022 | 2023 | 2024 | 2025 | 2026 | |
| OIL EXPORT CAPACITY | N/A | N/A | N/A | N/A | N/A | Do not export crude oil, but do export liquid hydrocarbon condensate. 40m ³ /h max reinjection capacity. |
| GAS COMPRESSION CAPACITY | ● | ● | ● | ● | ● | Design capacity is 1800 MMScfd. |
| GAS EXPORT CAPACITY | ● | ● | ● | ● | ● | 860 MMScfd. |
| GAS LIFT CAPACITY | N/A | N/A | N/A | N/A | N/A | No gas lift. |
| PRODUCED WATER HANDLING CAPACITY | ● | ● | ● | ● | ● | |
| DEHYDRATION CAPACITY | N/A | N/A | N/A | N/A | N/A | Dehydration system decommissioned. |
| H₂S REMOVAL CAPACITY | N/A | N/A | N/A | N/A | N/A | No H ₂ S removal. |
| WATER INJECTION CAPACITY | N/A | N/A | N/A | N/A | N/A | No water injection. |

HIGH LEVEL CAPACITY INFORMATION - NORTH MORECAMBE, DPPA

| PLATFORM FIRM PROCESSING CAPACITY AVAILABLE: NORTH MORECAMBE, DPPA | ULLAGE AS % OF SYSTEM CAPACITY | | | | | COMMENT |
|---|--------------------------------|------|------|------|------|--|
| | 2022 | 2023 | 2024 | 2025 | 2026 | |
| OIL EXPORT CAPACITY | N/A | N/A | N/A | N/A | N/A | No separation – wet gas export. |
| GAS COMPRESSION CAPACITY | N/A | N/A | N/A | N/A | N/A | No compression. |
| GAS EXPORT CAPACITY | ● | ● | ● | ● | ● | Design capacity of export is 588 MMScfd. |
| GAS LIFT CAPACITY | N/A | N/A | N/A | N/A | N/A | No gas lift. |
| PRODUCED WATER HANDLING CAPACITY | N/A | N/A | N/A | N/A | N/A | No separation – wet gas export. |
| DEHYDRATION CAPACITY | N/A | N/A | N/A | N/A | N/A | No dehydration. |

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| H₂S REMOVAL CAPACITY | N/A | N/A | N/A | N/A | N/A | No H ₂ S removal. |
| WATER INJECTION CAPACITY | N/A | N/A | N/A | N/A | N/A | No water injection. |
| OUTLINE DETAILS OF GAS TREATMENT FACILITIES | | | | | | Gas is being treated through Barrow Terminal where H ₂ S, N ₂ and CO ₂ is removed |

HIGH LEVEL CAPACITY INFORMATION – NORTH TERMINAL

| TERMINAL FIRM PROCESSING CAPACITY AVAILABLE: | ULLAGE AS % OF SYSTEM CAPACITY | | | | | COMMENT |
|--|--------------------------------|------|------|------|------|--|
| | 2022 | 2023 | 2024 | 2025 | 2026 | |
| GAS COMPRESSION CAPACITY | ● | ● | ● | ● | ● | Capacity of FGC is ~238 MMSCFD |
| GAS EXPORT CAPACITY | ● | ● | ● | ● | ● | Design capacity is 1800 MMScfd. |
| H₂S REMOVAL CAPACITY | N/A | N/A | N/A | N/A | N/A | No H ₂ S removal. H ₂ S Removal can be provided through Rivers Terminal (3rd Party) |
| N₂ REMOVAL | ● | ● | ● | ● | ● | 2x Nitrogen Removal Units that can be run in parallel if required, but this is not standard operating practice |
| CO₂ REMOVAL | ● | ● | ● | ● | ● | CO ₂ Capacity used by producing field with high CO ₂ content |
| DEWPOINT CONTROL | ● | ● | ● | ● | ● | Capacity available is dependent on composition |
| CONDENSATE PROCESSING | ● | ● | ● | ● | ● | Constrained by road tanker loading operations |

| ULLAGE AS % OF SYSTEM CAPACITY | | | |
|--------------------------------|----|-----|---|
| RED | < | 5% | ● |
| AMBER | 5% | 25% | ● |
| GREEN | > | 25% | ● |

CONTACT INFORMATION

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