Westwood Global Energy Group

Licensing & infrastructure upside

Westwood Global Energy Group

September 2025

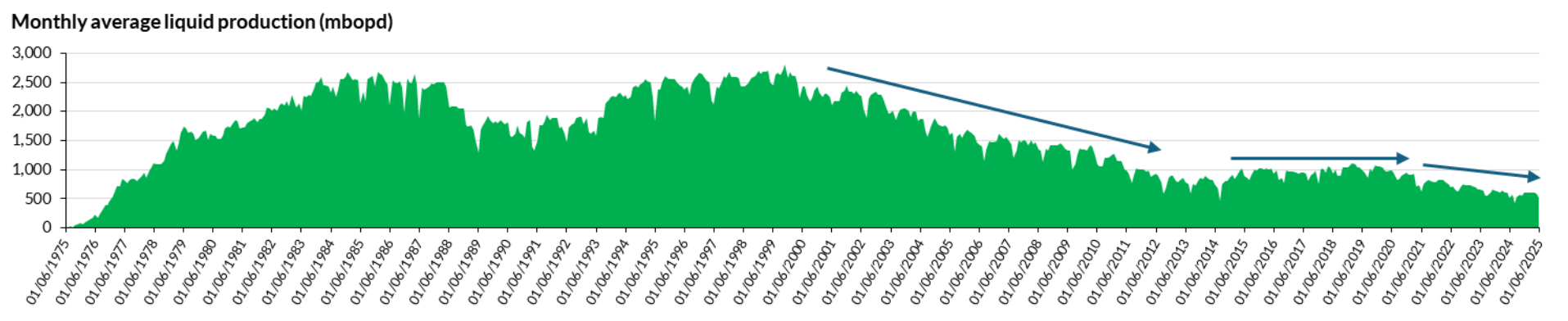
For OEUK

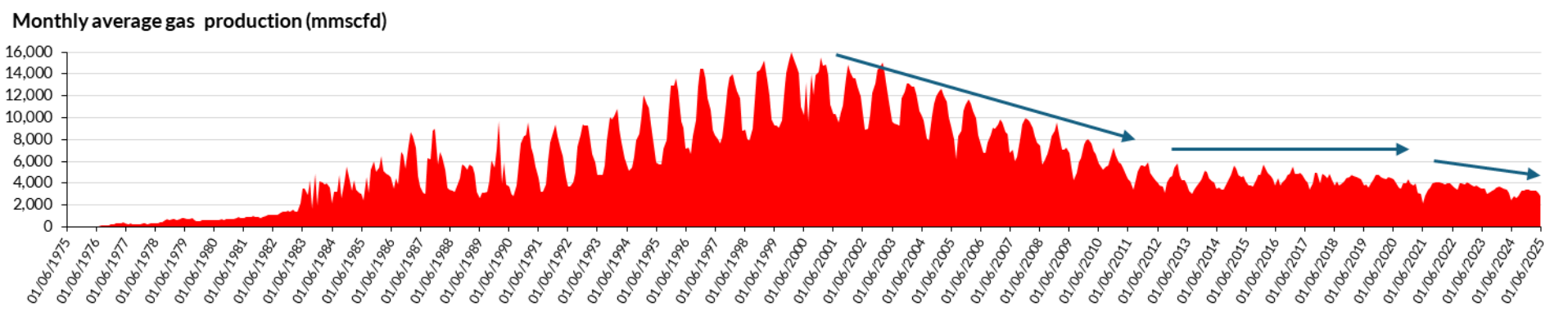
UKCS production history

In 2010, investments in oil & gas increased which resulted in the UK production decline to be arrested in 2013. Since 2019, investment levels have dropped, and production is again declining

Introduction

UK offshore production peaked in 1999 for liquids and 2000 for gas. Production then declined until 2013, where a combination of high oil prices and favourable government position led to an increase in investment in the sector to deliver projects which arrested the decline. Production levels were maintained relatively flat until circa 2021/2022, when the sector struggled to recover from COVID, a second commodity price crash in six years, compounded by fiscal uncertainty and changes to political priorities.





Westwood Global Energy Group

Source: NSTA liquids and produced gas production

Source: Westwood Energy Atlas

Summary

The rate of UK production decline will be determined by investment levels. A managed decline is needed to maximise revenues for government (company taxes, employee taxes and offsetting decommissioning liability commitments)

- Production forecasts are driven by E&P companies investment appetite. Based on current plans, Westwood considers the UKCS to be in an unmanaged decline scenario. Many E&P companies are holding back on investment, and some have cancelled investment plans completely.
    - An unmanaged decline could result in UK-wide job losses, greater reliance on imports, loss of strategic infrastructure leading to premature cessation and untapped potential becoming stranded.
- If it is not produced domestically, it will be produced elsewhere and imported to the UK. Imports have a larger emissions burden resulting in higher global emissions.
- Licensing plays a significant role in investment appetite. Norway E&A is becoming more challenging as the sector matures, but the Norwegian Government supports ongoing E&A with plans for future annual licensing rounds announced. Without ongoing licensing for exploration, investment will continue to fall, accelerating decline.
- Progression of new field developments has largely stalled due to political and fiscal uncertainties.
- The R/P* ratio for four pipeline systems is <6, two of these are critical for the UK with a high number of field entrants.
    - Flotta Pipeline System - relies on production throughput from three hubs (seven producing fields). Although infill drilling and workover activity is ongoing at the hubs, the R/P ratio is 5.5. The progression of the Marigold discovery as a tieback to the Piper hub would change the current outlook. Roughly 40% of the resource upside within 50 km is unlicensed.
    - Forties Pipeline System - a critical liquids pipeline system for the UK, with 71 field entrants via 17 hubs, accounting for c. 23% of UK liquids throughput in 2025. Seven hubs, could cease before 2030, including the namesake Forties. There is one tieback under development and infill drilling at some hubs, but due to the relatively high current throughput rates vs the reserves replacement the R/P ratio is 5.5. Three hubs are expected to contribute 45% of 2025 throughput. Delivery of upside opportunities, such as an infill well at Elgin, additional drilling at ETAP and progression of new developments such as Birgitta, Fotla and Leverett, would improve the outlook for this system. Over half of the resource upside within 50 km is unlicensed.
    - CATS Pipeline System - a critical gas pipeline system for the UK, with c. 42 field entrants via nine hubs, contributing c. 25% of UK gas throughput in 2025 but due to the relatively high current throughput rates vs the reserves replacement, the R/P ratio is 5.0. Two hub entrants account for 68% of 2025 forecast throughput. Strong performance from a development well being drilled at Culzean (largest entrant), the progression of ongoing drilling opportunities at J-Block and ETAP, and development of tieback opportunities at Birgitta will be impactful on the outlook. There is high upside potential within proximity of the hub entrants.
    - Ninian Pipeline System - the most northerly pipeline system in the UK feeds liquids production from three hubs via 12 fields. The Ninian hub has commenced decommissioning activities, with only one of the three original platforms still operating. The pipeline, however, feeds into the Sullom Voe terminal which also receives oil from Clair and Clair Ridge and therefore supports economics. Over 80% of the resource upside within 50 km of the Ninian Pipeline System is unlicensed.
- All but one pipeline system in the UK has appreciable levels of upside opportunities.

**Reserves/Production ratio – a measure of how long an asset could produce at current rates, given remaining reserves and 2025 production estimates*

Source: Westwood Energy Atlas

Decline scenarios

A managed and balanced transition of energy sources, maximising the domestic production business case is needed to provide an economic, secure and sustainable energy solution for the UK

1. **Unmanaged production decline**
    1. Companies moving capital investment outwith the UK, bringing forward the cessation of production from fields, hubs and terminals. Some companies actively seeking early exits from the UK.
    2. General reluctance from many companies to invest in UK oil and gas fields, from small marginal gains investments to larger new field developments. Impacts the service providers.
    3. Production declines more quickly.
    4. More fields become uneconomic around the same time period. Reduced production revenue and tax payments.
    5. Pipelines and terminals becoming uneconomic due to reduced throughput. 'Shock shutdown' scenario which results in the cessation of fields entrants which are otherwise economic, more major impact on UK domestic production.
    6. Loss of fields, hubs and pipelines results in loss of tieback hosts for new field developments and hosts for renewables projects such as carbon or hydrogen storage.
    7. Demand for decommissioning increase with a 'too much too soon' scenario in play. Likelihood of increased decommissioning costs, which impacts HMRC tax relief.
    8. Early cessation of hubs and terminals results in substantial job losses before the ramp up of renewable energies.

2. **Managed production decline**
    1. Companies' investment sentiment shifts to maximise economic recovery from existing fields. This includes infrastructure led exploration to access opportunities.
    2. New field developments move forward. Standalone developments include plans for electrification, to enable production with low emissions.
    3. Companies manage cessation of production (CoP) of different fields/hubs in line with maximising recovery of other fields.
    4. No 'rush to exit' scenarios where companies CoP hubs early. Mature fields can maximise economic recovery for a more phased CoP outlook on a UKCS level.
    5. More manageable decommissioning outlook for supply chain and service sector to support. Keeps decommissioning costs down.
    6. Planned phase down of pipeline systems with alternative export sources planned.
    7. Greater scope for reuse of infrastructure in the energy transition.
    8. Jobs across the UK are supported.
    9. Continued oil and gas tax revenues, service company corporate tax and employee taxes continue to feed into HMRC. Supports renewables subsidies and decommissioning tax liabilities.

Source: Westwood Energy Atlas

Overview

Unlicensed acreage holds opportunities

Gas and oil terminals support jobs across the UK. Investing in upside opportunities could boost offshore production and extend operations and services at terminals

Westwood estimates that there is 26.5 bnboe of reserves, undeveloped discoveries and prospectivity on the UKCS

Roughly 19 bnboe* of this potential lies within 50 km of an existing production hub, including:

- c. 1.3 bnboe in potentially commercial discoveries
- c. 4.9 bnboe in technical discoveries (47% unlicensed)
- c. 9.7 bnboe in prospectivity (76% unlicensed)

**includes 3.1 bnboe from sanctioned reserves*

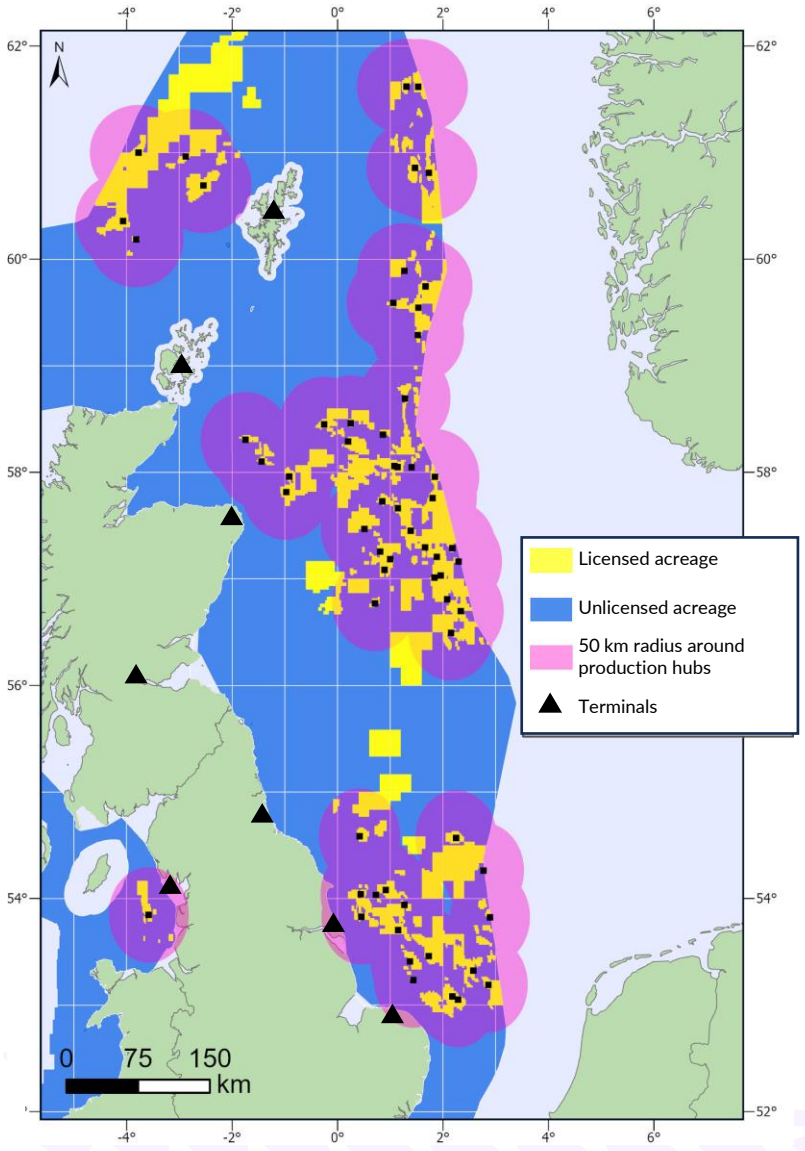
A large area remains unlicensed, even surrounding producing hubs

Terminals

- 11 gas terminals receive gas from the UKCS pipeline network across six locations
- 5 terminals process 75% of gas throughput
- 11.3% of gas throughput originates from Norwegian fields, through three pipelines

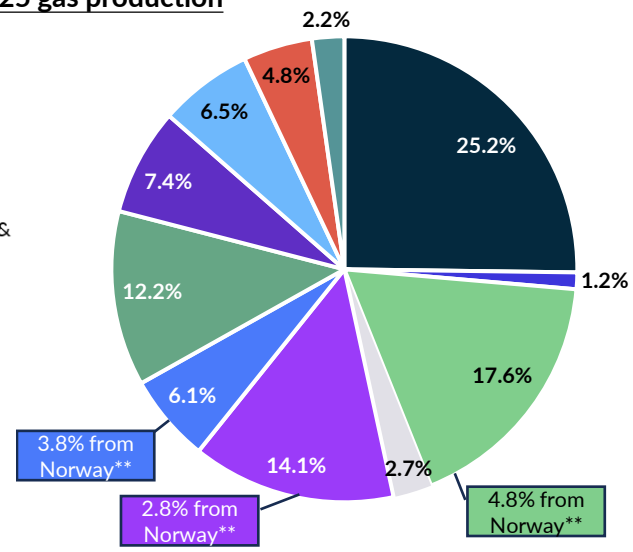
- Four oil terminals receive oil from the UKCS liquids pipeline network accounting for 70% of liquids production
- Forties Pipeline System is the largest transport system for UK produced liquids, with three production hubs accounting for 55% of FPS throughput
- 25% of liquids throughput originates from Norwegian fields via Norpipe to Teesside

Westwood Global Energy Group

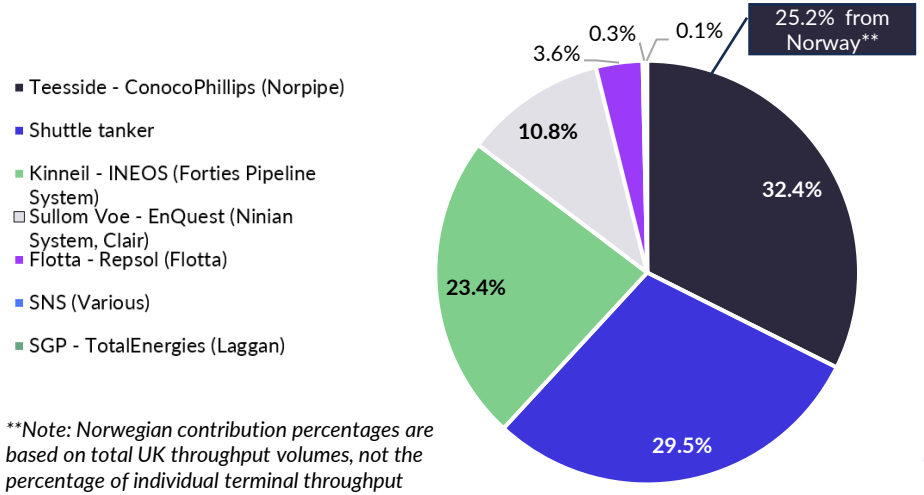


Source: Westwood Energy Atlas

Terminal % share of 2025 gas production



Terminal % share of 2025 liquids production



***Note: Norwegian contribution percentages are based on total UK throughput volumes, not the percentage of individual terminal throughput volumes*

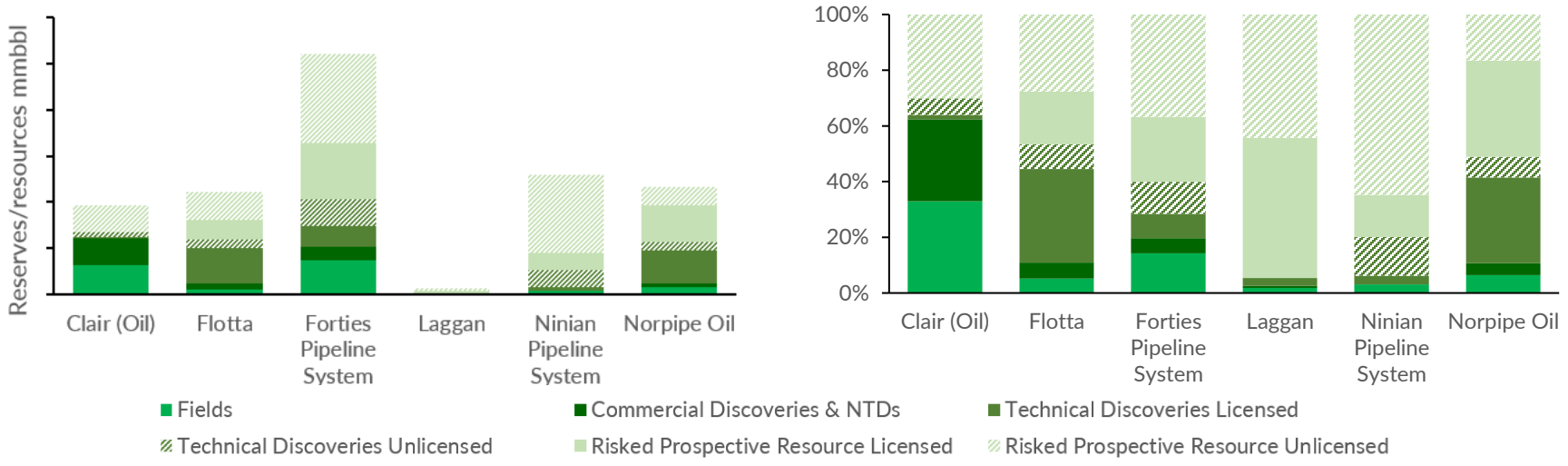
Source: Westwood Energy Atlas

Substantial upside remains in unlicensed acreage

Continued licensing signals the UK is open for investment and enables operators to access opportunities to extend the lifespan of existing infrastructure

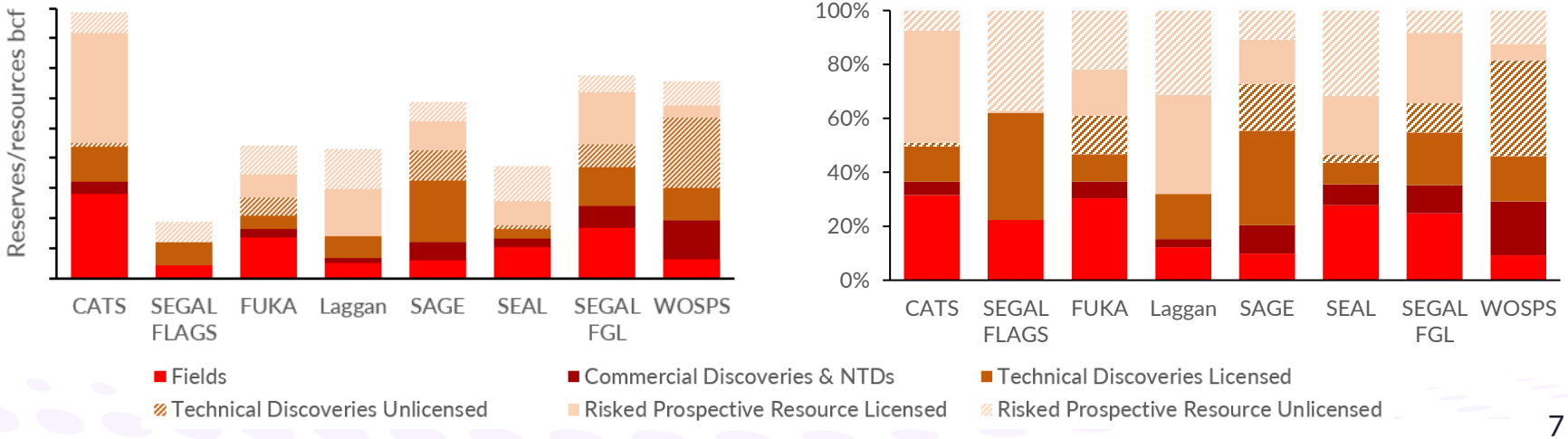
Liquids potential surrounding export routes

- Only 12% of reserves & resources within 50 km of liquids export routes are currently sanctioned
- 46% of liquids resources lie in unlicensed acreage and could offer significant upside to support infrastructure longevity



Gas potential surrounding export routes

- Of the eight gas export routes shown, five have >30% of the reserves & resources in unlicensed acreage
- CATS is the only export route (liquids or gas) of the 14 in this study that has <15% of its reserves & resources in unlicensed acreage. (Successful level of awards recent licensing rounds)



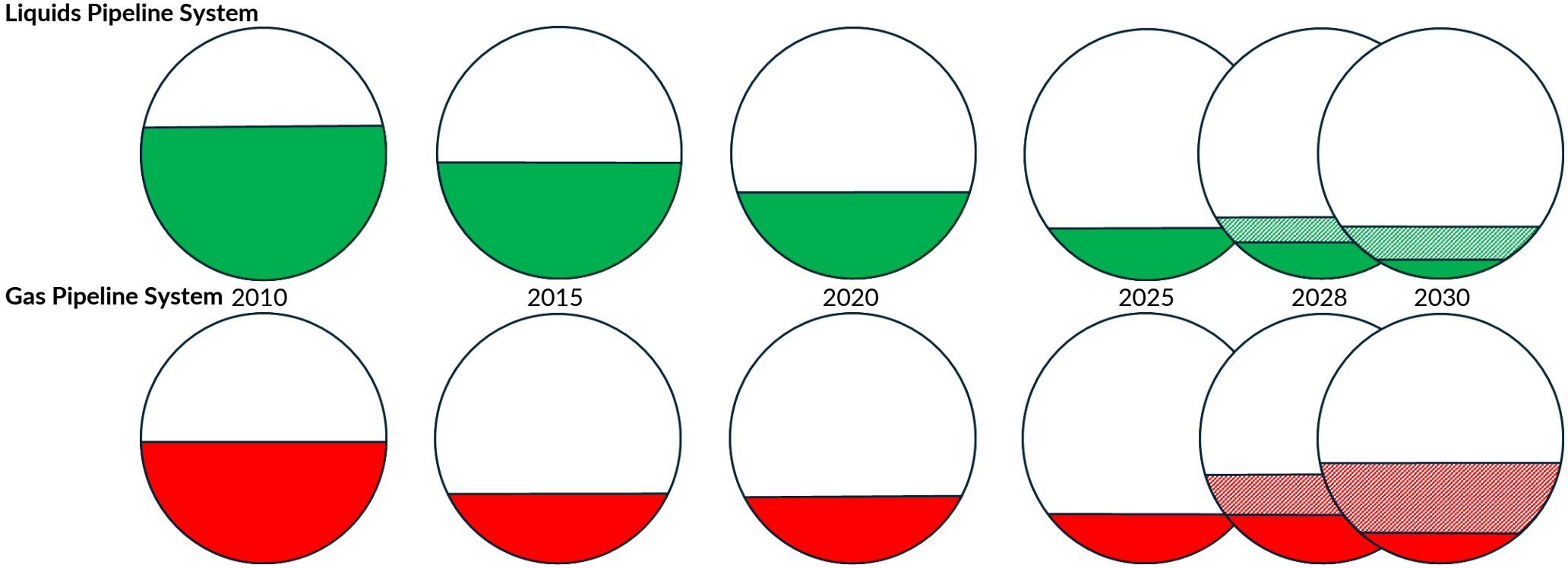
Note: Reserves and resource upside from Norwegian hubs have been excluded from this analysis

Source: Westwood Energy Atlas

Westwood Global Energy Group

Pipeline throughput upside

Systems were designed for much higher throughputs and may struggle to stay economic at lower levels



Schematic pipeline models

Circular diagrams represent pipeline throughput for selected pipeline systems.

Historic years (2010 - 2020) show actual throughput levels.

Forecast years (2025 - 2030) include two projections:
- **Base case** (solid fill)
- **Upside case** (hashed fill)

Each circle is filled proportionally to indicate throughput relative to peak capacity. For example, a half-filled circle represents 50% of peak throughput.

Legend

Base case production throughput

Possible upside production throughput

- Significant upside potential remains that could secure the future for midstream infrastructure, and associated jobs
- A third of the upside surrounding the Gas Pipeline System is in currently unlicensed acreage
- Half of the upside surrounding the Liquids Pipeline System is in currently unlicensed acreage
- The upside demonstrated relies upon a major change to investor sentiment, driven by a competitive fiscal policy, supportive political environment, long-term commitment to ongoing licensing and favourable commodity prices

Source: Westwood Energy Atlas

Pipeline upside based on No Constraints Case volumetric contribution assumptions
Pipeline System may include more than one pipeline

Infrastructure '*Tube*' map

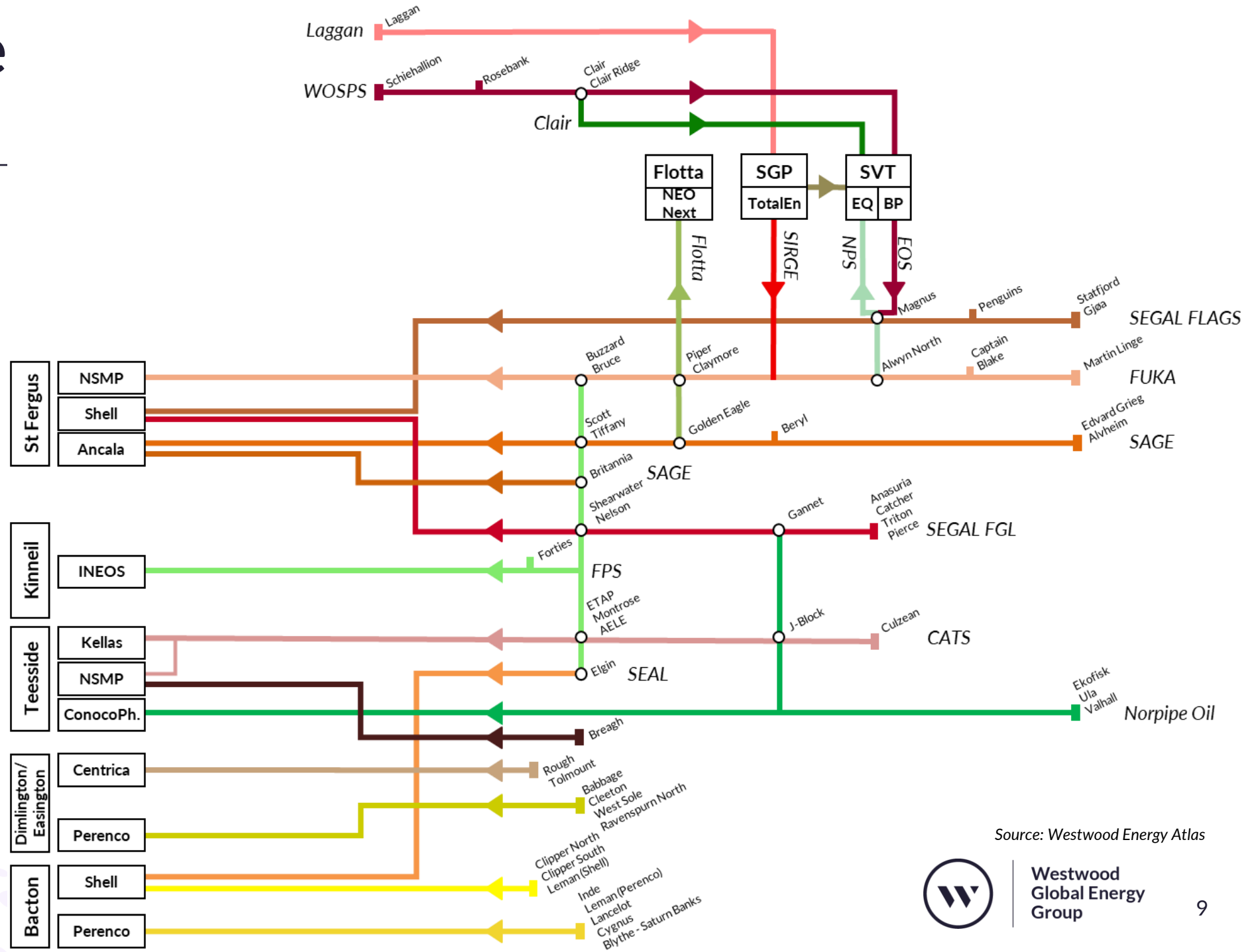
Liquids Pipelines

- Clair
- Flotta
- FPS (Forties Pipeline System)
- Norpipe Oil
- NPS (Ninian Pipeline System)
- SGP to SVT condensate

Gas Pipelines

- Bacton, Shell – various
- Bacton, Perenco – various
- Breagh
- CATS
- Dimlington, Perenco - various
- Easington, Centrica - various
- EOS
- FUKA
- Laggan
- SAGE
- SEAL
- SEGAL FLAGS
- SEGAL FGL
- SIRGE
- WOSPS

Note: Graphic does not accurately represent geographical relationships between hubs or pipeline routes, instead it shows interconnectivity and relational significance of pipelines and hubs.
Hubs expected to cease production before 2028 are not included on this graphic
Pipelines with no input from UK fields (e.g. Langeled) are excluded from this diagram.
Diagram shows terminal and operator.
TotalEn = TotalEnergies, EQ = EnQuest, ConocoPh. = ConocoPhillips

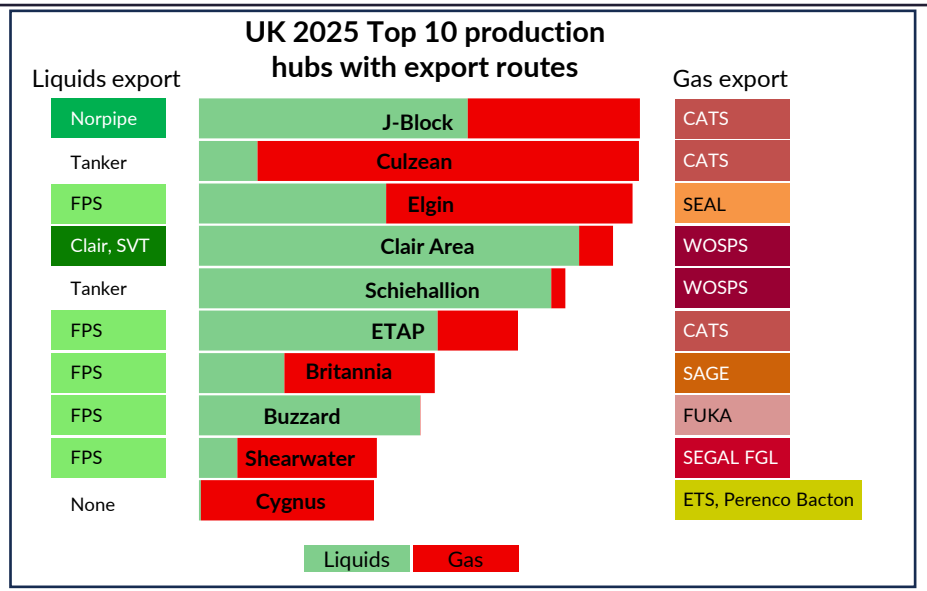


Source: Westwood Energy Atlas

Westwood Global Energy Group

Infrastructure '*Tube*' map

Systems are hugely interdependent. Many fields rely on more than one pipeline to continue production



- Of the top 10 UK production hubs, no two have the same liquids and gas export route
- Liquids and gas export routes are intrinsically linked. Changes to one export route can impact many other export routes
- The interdependency means that if one system becomes uneconomic, it could lead to a domino effect and forced cessation of other systems
- Once infrastructure ceases, the upside surrounding that infrastructure could be left stranded, effectively rendering certain areas of the North Sea inaccessible for future development

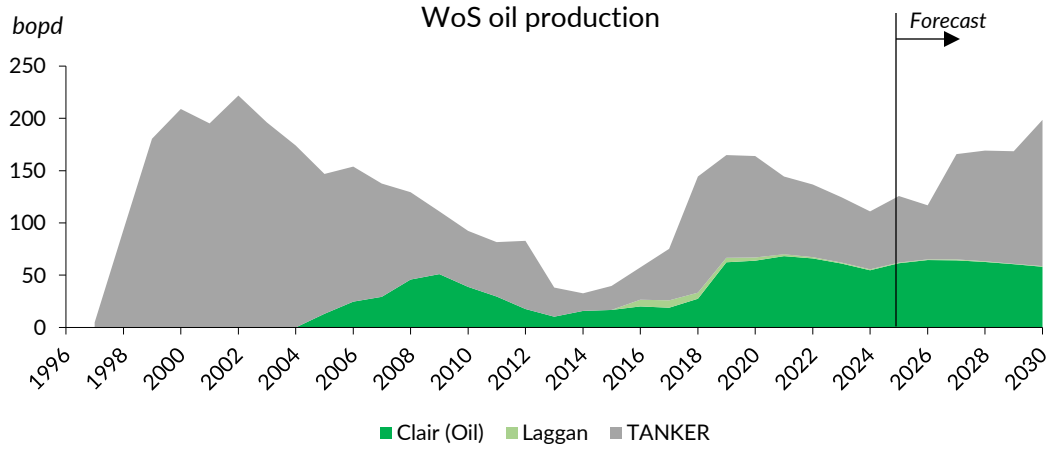
Source: Westwood Energy Atlas

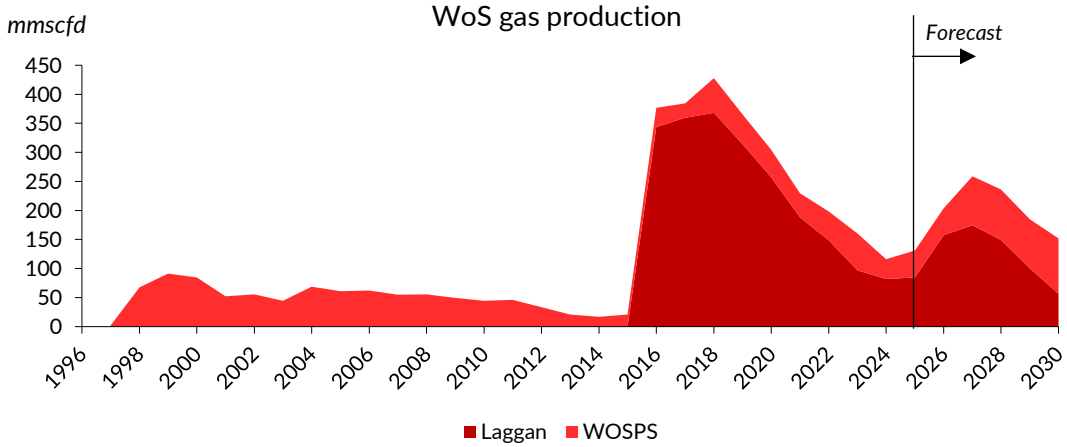
Note: Graphic does not accurately represent geographical relationships between hubs or pipeline routes, instead it shows interconnectivity and relational significance of pipelines and hubs. Hubs expected to cease production before 2028 are not included on this graphic

Westwood Global Energy Group

West of Shetland (WoS)

Contrary to common perception of UK, WoS is under-explored, under-developed, and is not a mature basin. New gas processing terminal and export route was constructed in 2010s to support regional development, but now at risk of premature closure





The West of Shetland basin has longevity and could be producing well into the 2040s

- Individual developments can materially shift regional output
- Large individual unsanctioned discoveries and undrilled prospects still exist
- Rosebank due to start production in 2027. Cambo near-term development, Clair South, Rosebank Phase 2 and Tornado could all be developed in the near-mid term

Substantial undeveloped resource potential remains

Resources near to WoS pipelines:

- c. 1.5 bnboe in discovered and prospective resources lie within 50 km of existing WoS infrastructure (49% unlicensed)

Significant upside beyond 50 km:

- c. 0.2 bnboe in technical discoveries (3% unlicensed)
- c. 1 bnboe in risked prospective resources (75% unlicensed)

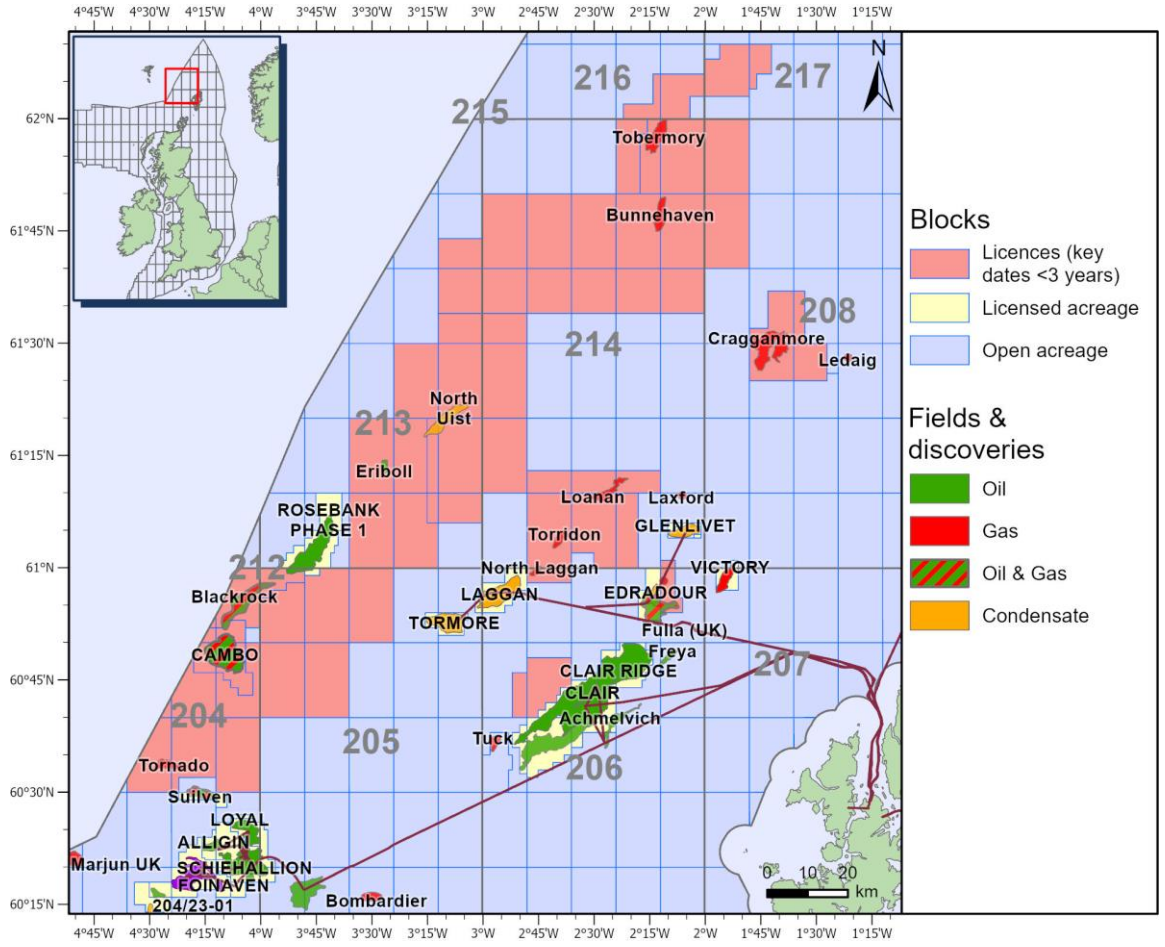
Challenges remain

- Without new tiebacks, some of the infrastructure is at risk of ceasing by c. 2030
- Recently, potential developments have faced political headwinds
- Continued licensing is essential to ensure opportunities are in the best hands to be progressed to prolong current infrastructure lifespan

Source: Westwood Energy Atlas

West of Shetland (WoS)

Early relinquishment of licences threatens future developments, longevity of current hubs, and risks the premature decline of the WoS which would leave domestic resources stranded



Licences are awarded with phased commitment terms to encourage progress or relinquishment after each licence term. The initial term is generally associated with geological assessment, the second term generally requires progression of plans for field development and the third term is the production phase, with no specific 'end' date. The relinquishment process allows others the opportunity to assess the acreage through a new licence award. However, poor investment conditions mean many operators may be forced to relinquish licences before their potential can be fully assessed. Without a mechanism to relicense these areas and attract new investment, substantial resources could be lost.

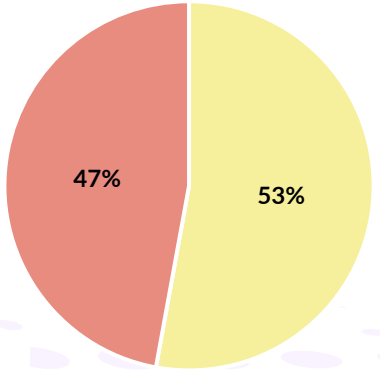
Licensing risk - resources at risk of relinquishment in next 3 years:

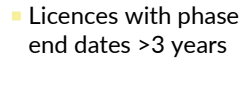
- c. 0.6 bnboe of discovered resources (47% of licensed WoS discoveries)
- c. 0.6 bnboe of risked prospective resources (91% of licensed WoS prospects)
- A redevelopment opportunity at Foinaven could also be lost if it is relinquished

Impact of not awarding new licences:

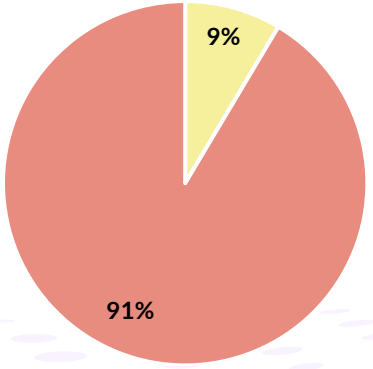
- Without continued licensing, a substantial portion of upside in WoS could be lost within 3 years, including resources in commercial discoveries, e.g. Cambo, Tornado and Suilven
- The WoS is an under-explored region, particularly compared to the rest of the UK. Advances in technology, particularly seismic processing techniques, could unlock Yet-To-Find resources.

WoS Discovered resources





WoS Prospective resources



Source: Westwood Energy Atlas

Pipeline summaries

Selected infrastructure overview

Summary of outlook, upside potential and risks for some of the UK transportation pipelines

Legend		
Current outlook		• Reserves/Production ratio >9.0 • Investments currently ongoing (infill drilling, fields under development, EOR etc.) that are making a material difference to reserves/production
		• Reserves/Production ratio between 6.0 and 8.9 • Current investment ongoing but marginal impact on pipeline throughput. Investment plans and infill drilling may have been postponed in recent years
		• Reserves/Production ratio <6.0 • Limited or no investment. Or where investment is ongoing, the scale of drilling/tiebacks has relatively minimal impact on reserves/production of the system as a whole
Upside potential for UKCS entrants		• New development planned • Infill drilling planned, with appreciable impact on throughput • Healthy volumes in near-term development/ significant commercial discoveries • Total risked upside potential >80 mmboe (see glossary for risking)
		• Healthy volume of commercial discoveries • Infill drilling opportunities exist but not in plans • Technical discoveries and/or prospectivity within catchment area • Total risked upside potential between 30 and 80 mmboe (see glossary for risking)
		• Limited infill drilling opportunities • Limited discovered resource/majority unlicensed • Limited prospective resource/majority unlicensed • Total risked upside potential <30 mmboe (see glossary for risking)

Note: The assigned red-amber-green (RAG) rating has been based on:
Current outlook - uses the R/P rating of the combined hub entrants and view on firm investment plans
Upside potential - uses a risking to assess likelihood of recovery for upside volumes. See glossary for details
Colour ratings are Westwood's view and subject change based on investment plans of field entrants

Pipeline system	Current outlook	Upside potential
Flotta Pipeline System		
Forties Pipeline System		
Norpipe Oil Pipeline System		
SVT Oil and Gas Terminal		
CATS Pipeline System		
FUKA Pipeline System		
Laggan, SGP and SIRGE		
SAGE Pipeline System		
SEAL Pipeline System		
SEGAL FGL Pipeline System		
SEGAL FLAGS Pipeline System		
WoS Gas Pipeline System		

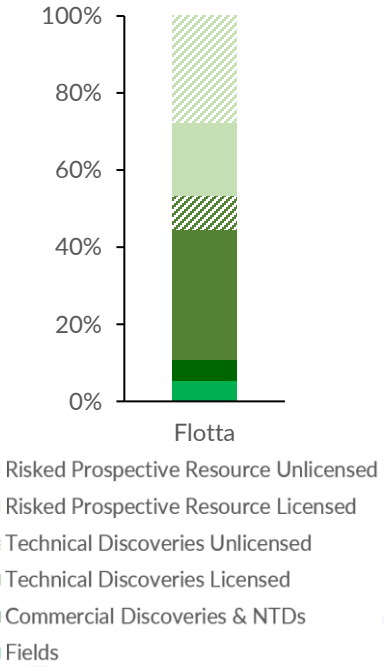
Note: the Ninian Pipeline System is included in the Sullom Voe Terminal summary

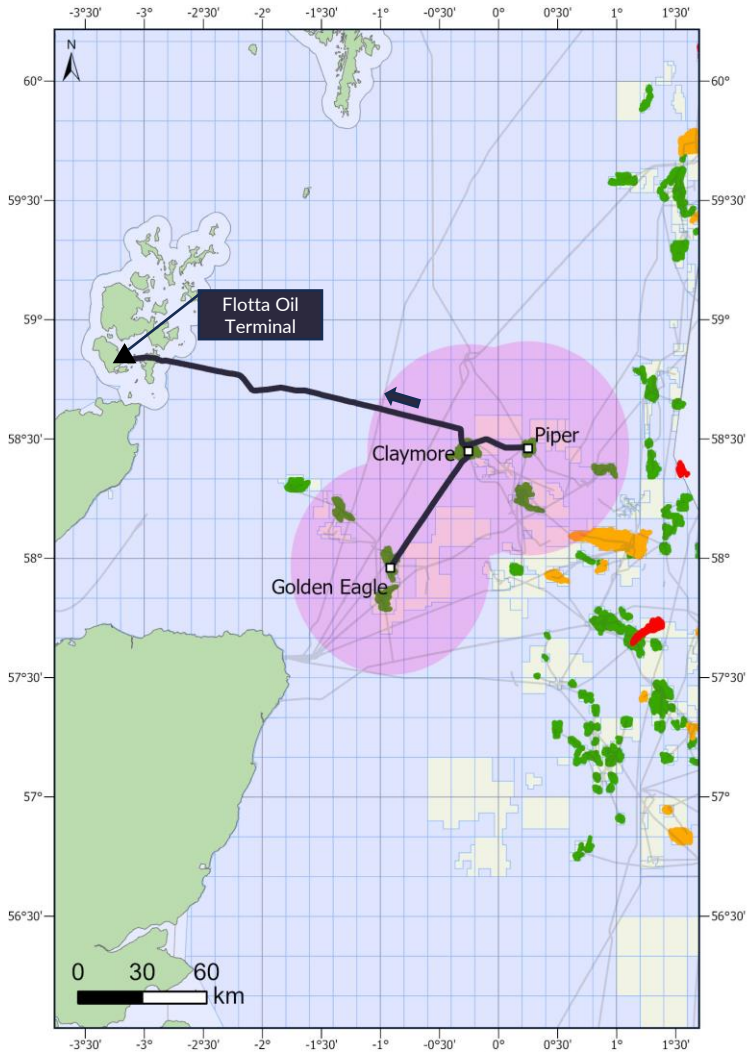
Source: Westwood Energy Atlas and analysis

Flotta Pipeline System (liquids)

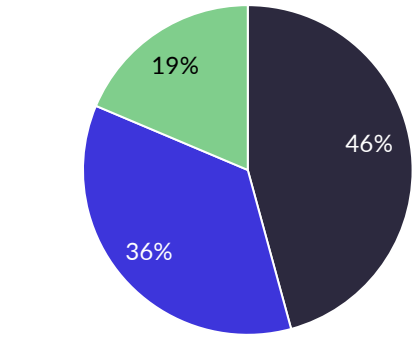
In 2022, partners in the fields entering the system pledged production volumes beyond 2030. This could be at risk if investment at the hubs is not continued. Flotta accounts for c. 11% of UK liquids throughput

Operator	Repsol Resources UK (now NEO NEXT)
Terminal	Flotta Terminal, Orkney
Overview	The Flotta Terminal receives oil from seven producing fields across three hubs in the Central North Sea, through a 30" subsea pipeline. Orkney was selected as the site for an oil handling terminal in 1973, ahead of seven other possible locations, and first oil arrived from the Claymore field in 1977. The terminal covers a 395-acre site, c. 18% the area of Flotta Island, which is located c. 16 km southwest of Kirkwall. In 2014, throughput volumes were boosted with the start-up of the CNOOC-operated Golden Eagle area fields. After 29 job losses in 2025, the terminal has a workforce of 156 people.
Upside potential summary and risks	
Current outlook	Despite ongoing infill drilling at Piper and Claymore, R/P is just below the threshold at 5.5. Future throughput is reliant on investment and securing tiebacks, such as the progression of Marigold back to Piper Bravo. No current plans for further drilling at Golden Eagle.
Upside potential	Marigold near term development could support commerciality of other nearby discoveries Infill drilling opportunities.
Risks	Only 3 hubs feed Flotta pipeline. Risk if infill drilling programmes are shelved or future tiebacks aren't secured.

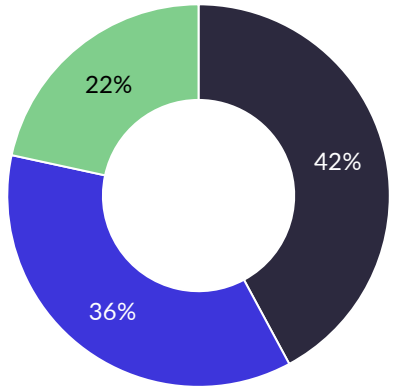




Remaining liquid reserves



2025 liquid production share



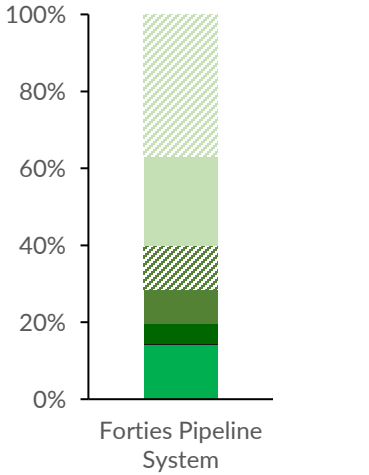
Source: Westwood Energy Atlas

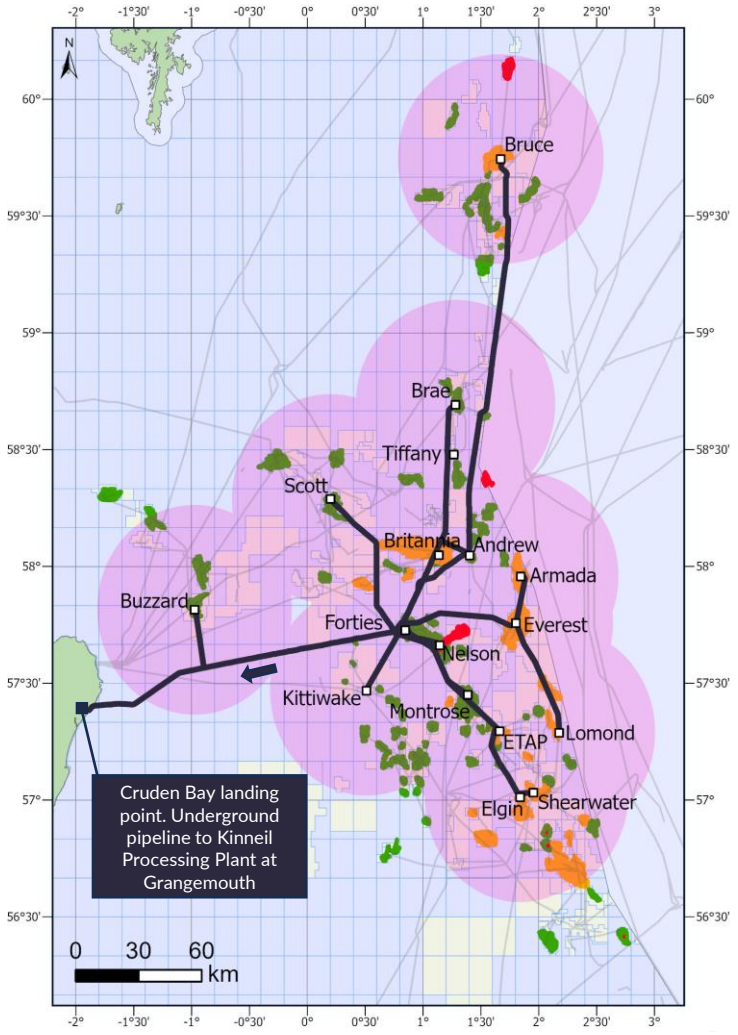
Westwood Global Energy Group

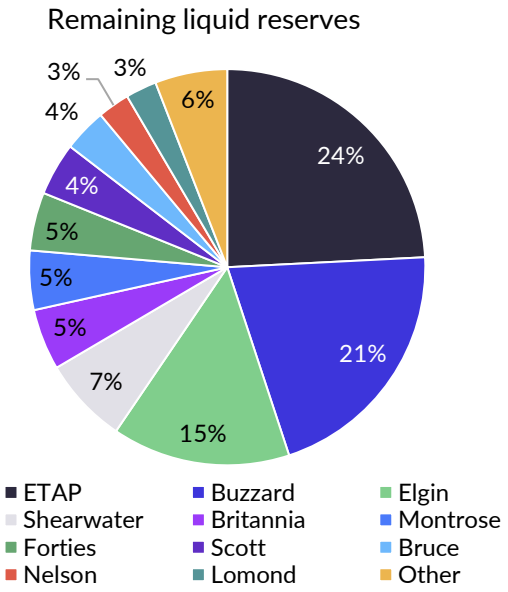
Forties Pipeline System (liquids)

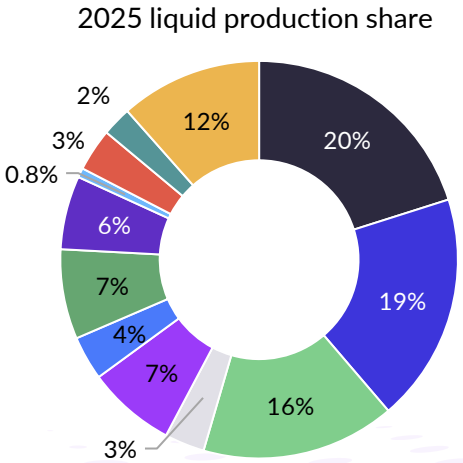
FPS is the largest liquids transport system in the UK, accounting for c. 23% of UK liquids throughput (c. 38% UK liquids production). The hub entrants export their associated produced gas to a variety of gas export routes

Operator	INEOS FPS
Terminal	Kinneil, Grangemouth
Overview	FPS is the largest liquids pipeline in the UK North Sea, transporting oil and natural gas liquids ("NGLs") from 71 producing fields (17 hubs) to Cruden Bay, with two fields under development. NGLs delivered from ExxonMobil's SAGE and NSMP's St Fergus facilities join the FPS landline at Cruden Bay. Liquids are then transported to the Kinneil Terminal to be processed. INEOS FPS acquired FPS from BP in 2017. Since 2019, INEOS FPS has significantly invested in the Forties Pipeline System with the hope of prolonging the life of the infrastructure into the 2040's.
Upside potential summary and risks	
Current outlook	Despite tiebacks of Murlach and Jackdaw expected onstream in 2025 and 2026, respectively, the system is just below the R/P ratio threshold. Drilling levels reduced significantly in last 3 years. Shelved investment plans on several key hubs. Seven hubs could cease production before 2030. Due to high volumes, relatively high reserves additions are needed to change R/P ratio.
Upside potential	Near term developments at Fotla, Leverett and Birgitta. Infill drilling opportunities at multiple fields, including those where no further investment planned. High level of opportunities to maximise economic recovery from hub entrants (licensed and unlicensed)
Risks	Three hubs have majority of production. Reliant on 5 different gas export routes. Risk of closure in early 2030s. Much of the upside is unlicensed.









Source: *Westwood Energy Atlas*

Westwood Global Energy Group

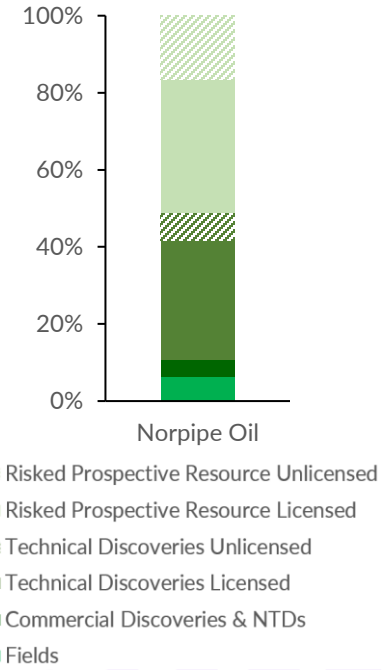
Norpipe Oil Pipeline System (liquids)

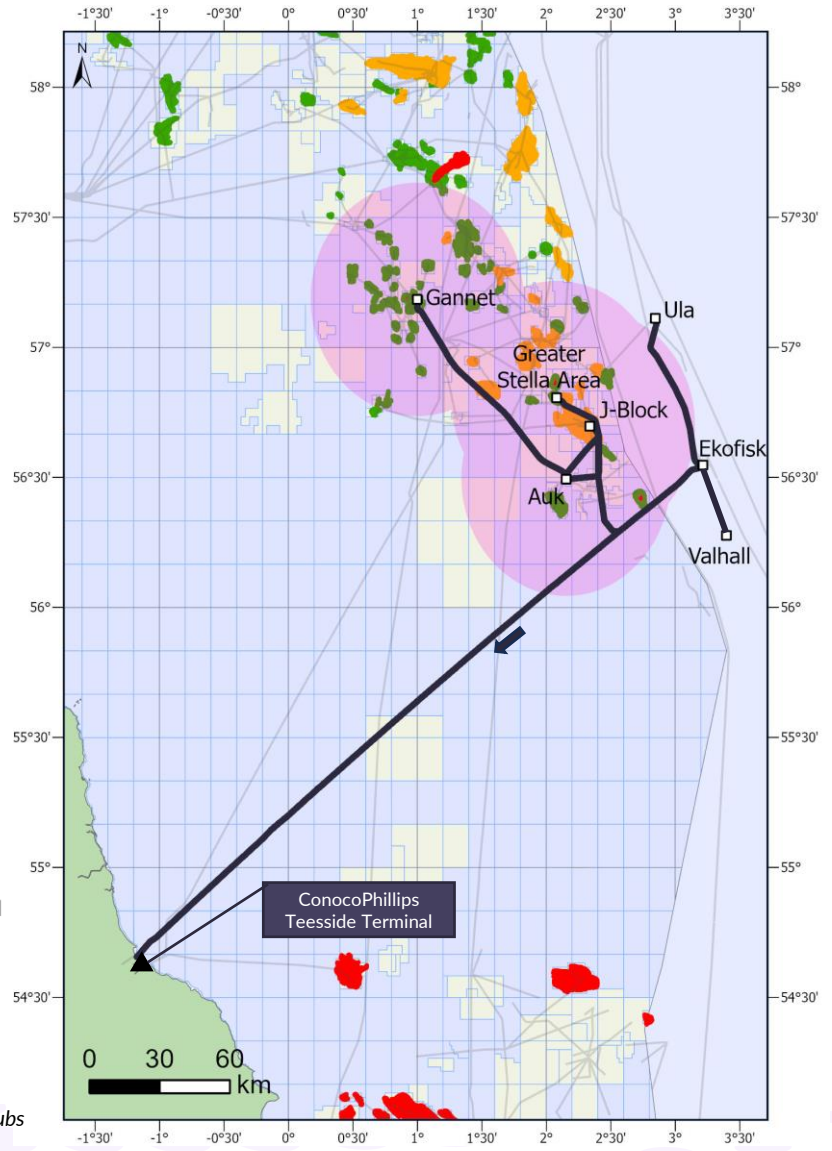
Norpipe is heavily reliant on throughput from Norwegian hubs. It accounts for 32% of UK liquids throughput to Teesside, based on 2025 production forecasts. The bulk of its volumes are from Norway

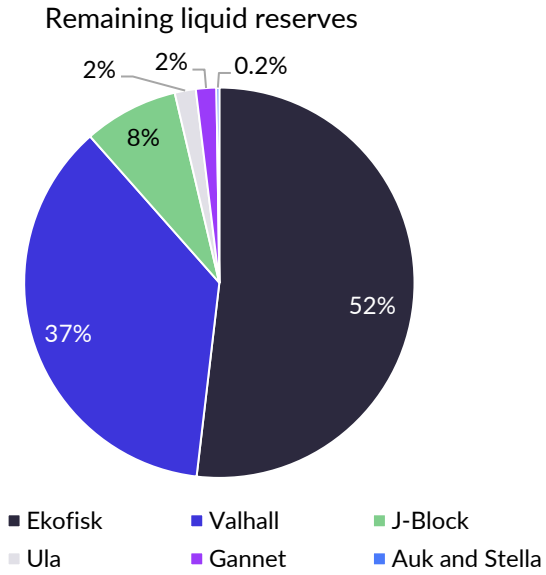
Operator	ConocoPhillips
Terminal	ConocoPhillips Teesside Terminal
Overview	The Norpipe Oil Pipeline is a 34", 354 km pipeline running from the Ekofisk hub, located in the Norwegian North Sea, to Teesside. In total 12 fields, across three hubs, enter the pipeline from Norway, with the under development Fenris field expected to use the pipeline from 2027. In the UK, 17 producing fields (four hubs) use the pipeline system. Total throughput capacity is 830,000 bopd. The UK fields tie in via a Y connection and 24" pipeline to Norpipe. The pipeline and terminal is owned by Norpipe Oil AS, a Norwegian conglomerate. The pipeline has been operational since 1975 and production from the Norwegian entrants is expected to maintain operations until the mid-2040s.

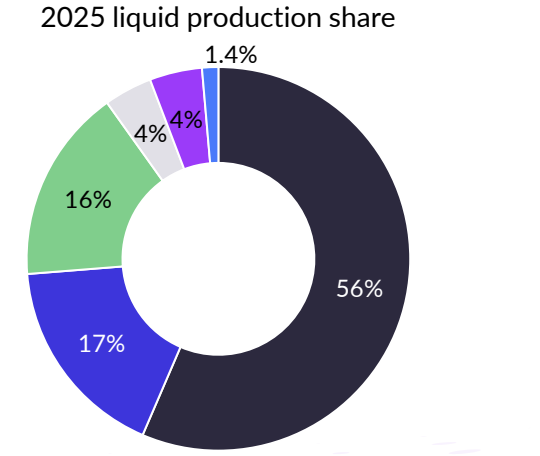
Upside potential summary and risks

Current outlook	Infill drilling ongoing at J-Block. R/P ratio is just below threshold for green rating. Reliant on throughput from Norway hubs of Ekofisk, Ula and Valhall.
Upside potential	Infill drilling ongoing at J-Block. Further opportunities in area. Greater Stella Area and Auk are expected to cease within 18 months, as such limited upside. Upside potential at Norwegian hubs.
Risks	Reliant on Norwegian throughput, but as this is the only oil export route viable for the three Norwegian hubs, the UK hubs should be supported.









Note: Reserves and resource upside from Norwegian hubs have been excluded from these graphs

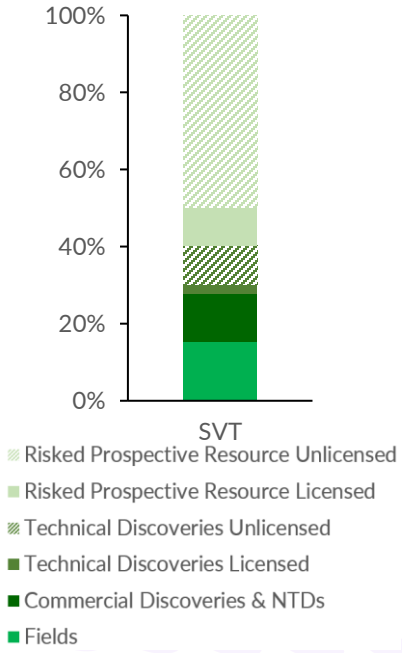
Source: Westwood Energy Atlas

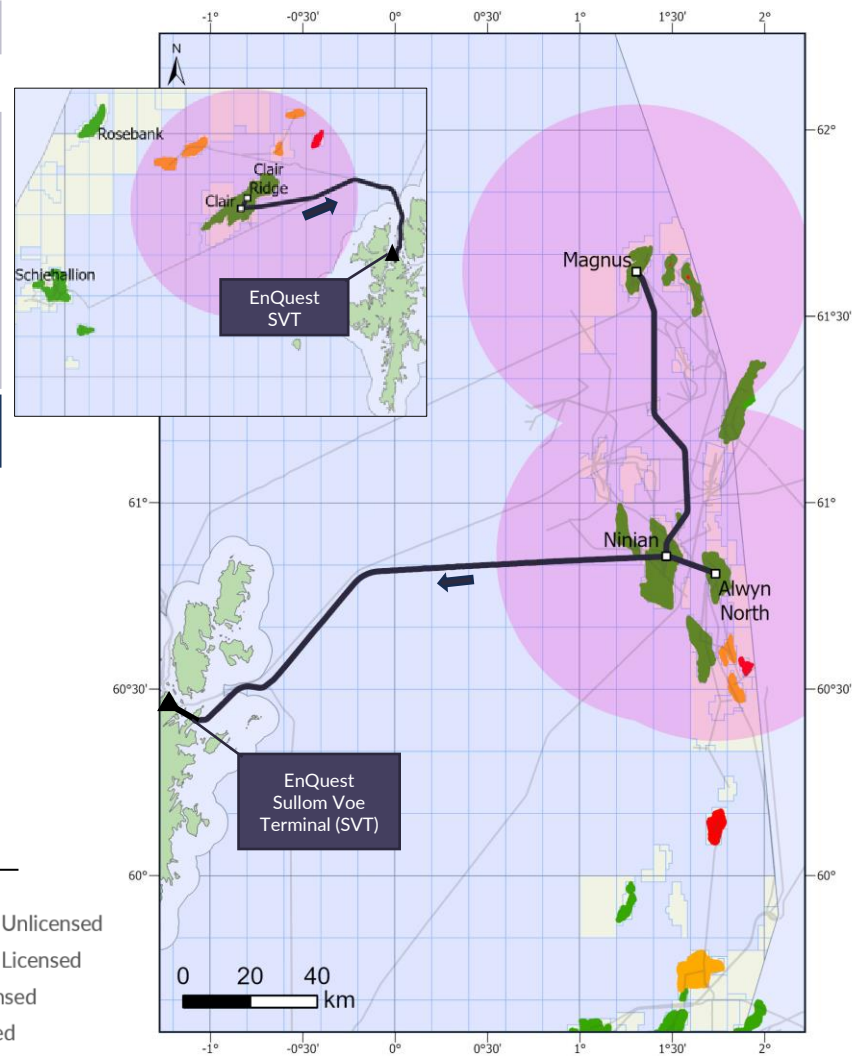
Westwood Global Energy Group

SVT Oil and Gas Terminal

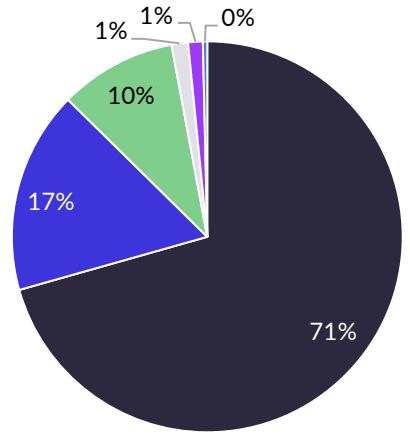
The EnQuest operated Sullom Voe Terminal (SVT) processes oil from the Ninian Pipeline System and from the Clair Area assets located in West of Shetlands. For the gas systems entering SVT, see WOSPS

Operator	EnQuest
Terminal	Sullom Voe Terminal (SVT), Shetland
Overview	SVT processes liquids from the NNS, through the Ninian Pipeline System (NPS), and from the WoS, through the Clair Oil pipeline. SVT also receives separated condensate from the TotalEnergies Shetland Gas Plant (Laggan). The terminal operations support 150 - 200 jobs. The 175 km long, 36" diameter NPS system was laid in 1975 - 1976 and had first throughput in in 1978. It is used by 12 producing NNS fields via three hubs. The Clair Oil pipeline is used by the Clair and Clair Ridge fields. The 106 km long, 22" pipeline was laid in 2003 and Clair started production in 2005. EnQuest major modification and improvements to SVT including the installation of new stabilisation facilities, which will improve operations and reduce costs at the plant. There are c. 300 people working on these projects, in addition to the core crews.
Upside potential summary and risks	
Current outlook	Infill drilling ongoing at Clair Ridge and at Magnus. Project ongoing to improve SVT operations and reduce costs.
Upside potential	Infill drilling opportunities with plans for further drilling at Clair/Clair Ridge and Magnus. Rosebank to export gas via WOSPS. BP continues evaluating Clair South development (c. 300 mmboe). EnQuest (Veri Energy) evaluating renewables opportunities for terminal.
Risks	Reliant on Clair and Clair Ridge production, particularly in the long term (late 2030s). Much of the upside is unlicensed.

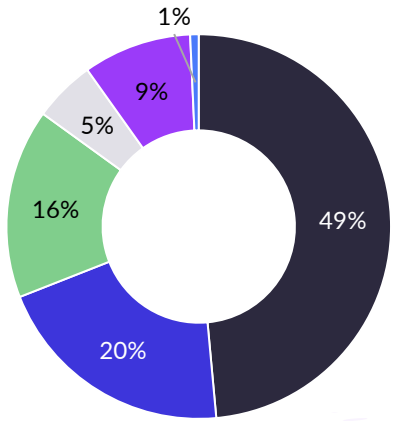




Remaining liquid reserves



2025 liquid production share



Westwood Global Energy Group

Note: Reserves and resource upside included from Ninian Pipeline System, Clair Oil Pipeline and Laggan Liquids

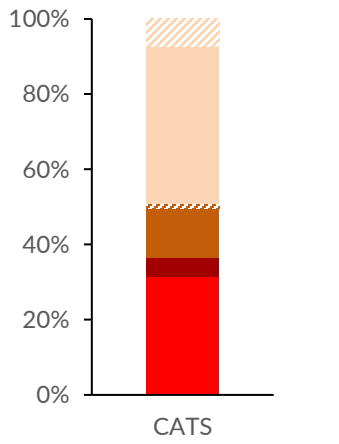
Source: Westwood Energy Atlas

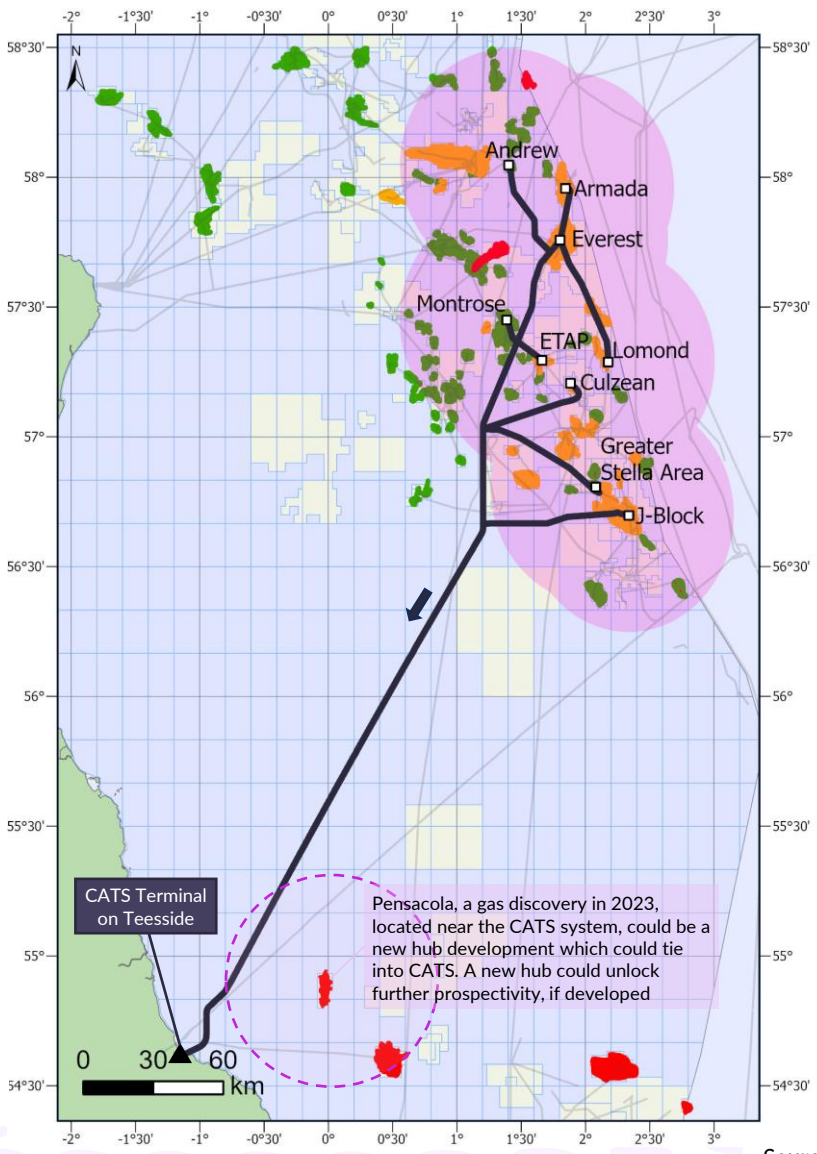
CATS Pipeline System (gas)

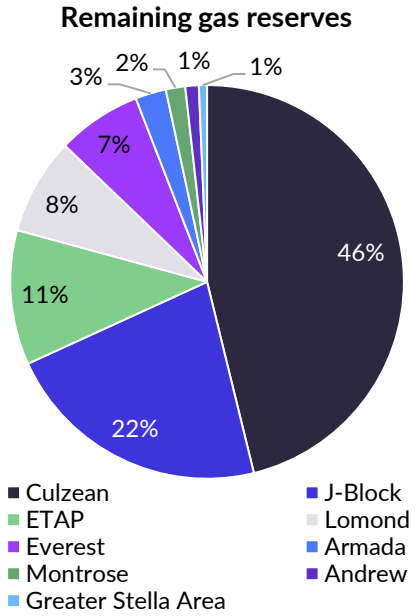
CATS (Central Area Transmission System) is the largest gas transport system in the UK, accounting for c. 25% of gas throughput volumes (30% of UK gas production)

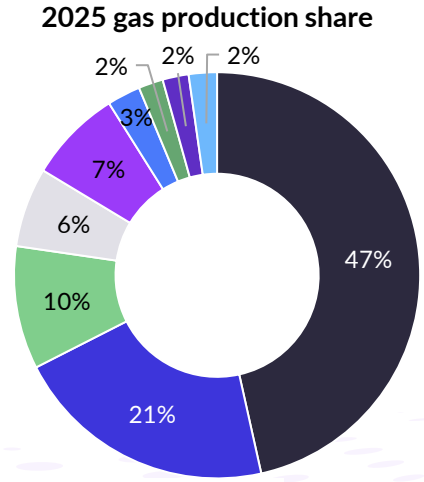
Operator	Kellas Midstream
Terminal	CATS terminal, Teesside
Overview	CATS pipeline transports gas from 41 fields on the UKCS and one Norwegian field to the CATS terminal in Teesside and and also into a dedicated processing train at the NSMP Teesside Gas Processing Plant (TGPP). A new gas condensate route was commissioned in 2024 which transports condensate from the CATS terminal to TGPP. The infrastructure includes the CATS riser platform (CRP), which is located at the north end of the CATS pipeline, and is bridge-linked to the North Everest platform. The CRP receives and aggregates gas and condensate which is sent to Teesside, along the 36" diameter, 396 km long CATS pipeline, which has a capacity to flow 1,695 mmscfd.

Upside potential summary and risks	
Current outlook	Throughput rates are currently high as Culzean is still producing at plateau rate, leading to lower R/P ratio. There is ongoing drilling at Culzean, ETAP and J-Block. Murlach (tie-back to ETAP) is under development, expected onstream in 2025. Due to high volumes, relatively high reserves additions are needed to change R/P ratio.
Upside potential	Infill drilling, including well at Culzean, and tieback opportunities exist at several hubs. Drill ready exploration prospects within hub catchments. Significant upside potential was licensed in the 33rd Licensing Round (2023 - 2024). Additional upside exists along the pipeline route, including at Pensacola, a recent gas discovery.
Risks	68% of current throughput is from 2 hubs. Risk of closure in mid 2030s, which would impact UKCS.









Source: Westwood Energy Atlas

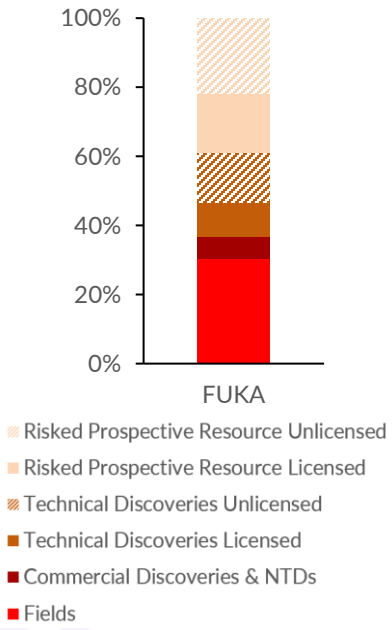
Westwood Global Energy Group

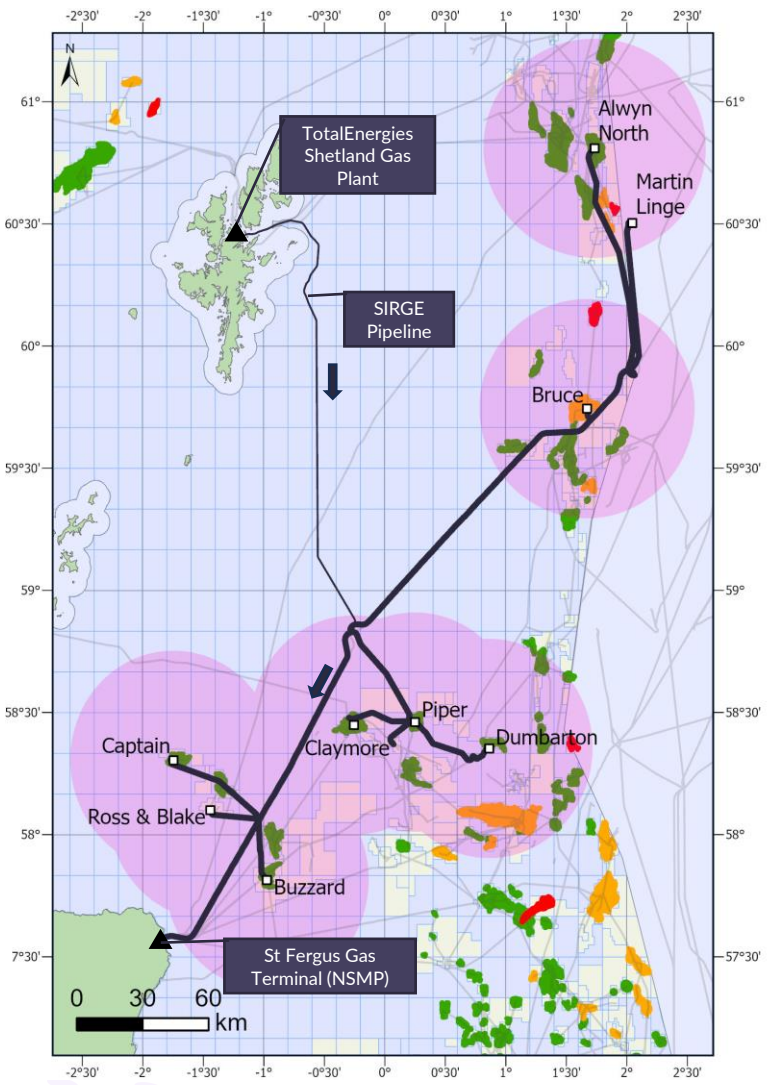
FUKA Pipeline System (gas)

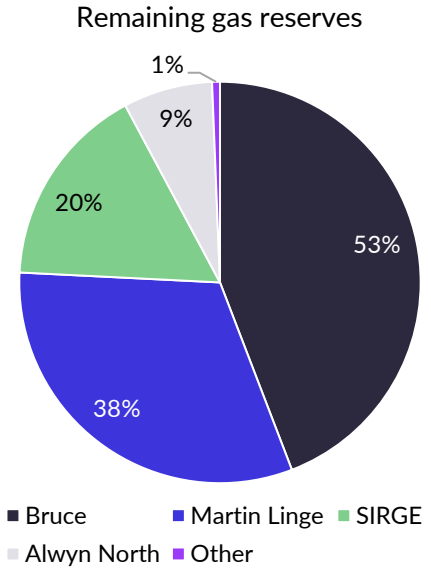
Frigg UK Association (FUKA) system has been operational since 1977 and in 2025, is expected to account for c. 18% of UK gas throughput

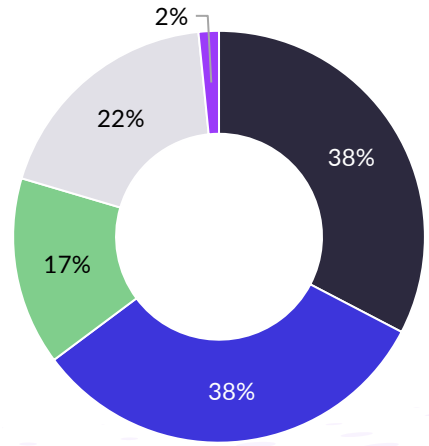
Operator	North Sea Midstream Partners (NSMP)
Terminal	Frigg Terminal, St. Fergus
Overview	The Frigg UK Association (FUKA) system is a 362 km, 32" diameter pipeline, which connects the TP-1 bypass spool close to the Norwegian Frigg field (decommissioned) to the Frigg Terminal at St Fergus (now operated by NSMP). It was commissioned in 1977. A separate 110 km, 24" diameter pipeline, which is operated by TotalEnergies, connects the Alwyn North field to the TP-1 bypass spool. It now has 19 UK field users (8 hubs), as well as one Norway field entrant (Martin Linge). The Shetland Islands Regional Gas Export (SIRGE) pipeline runs from the Shetland Gas Plant to a tie-in point on the FUKA pipeline. In the future, there is an option for gas from the Sullom Voe Terminal to export via SIRGE rather than its existing route, the EOS pipeline, via Magnus to SEGAL FLAGS.

Upside potential summary and risks	
Current outlook	Infill drilling at several hubs planned. Enhanced oil recovery (EOR) project ongoing at Captain but limited gas volumes. R/P ratio is moderate despite ongoing investment and does not include volumes from Laggan area which enter via SIRGE.
Upside potential	Infill opportunities in Bruce area. Commercial discovery opportunities. Further EOR at Captain expected, but limited gas volumes. Opportunities for SVT to route through SIRGE and into FUKA in the future. Additional upside exists WoS (see next slide).
Risks	Risk of early closure of SGP and SIRGE throughput. Reliant on future production from Bruce and Norwegian Martin Linge hubs for post 2030 volume. Martin Linge has alternate export routes nearby.









Westwood Global Energy Group

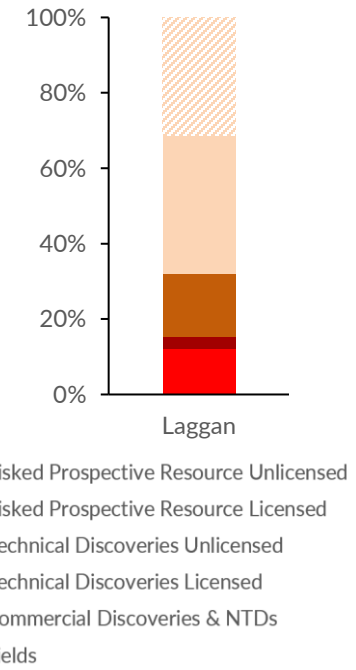
Note: Reserves and resource upside from Norwegian hubs have been excluded from these graphs. Laggan reserves and resources (production routed through SIRGE into FUKA) are displayed on next slide

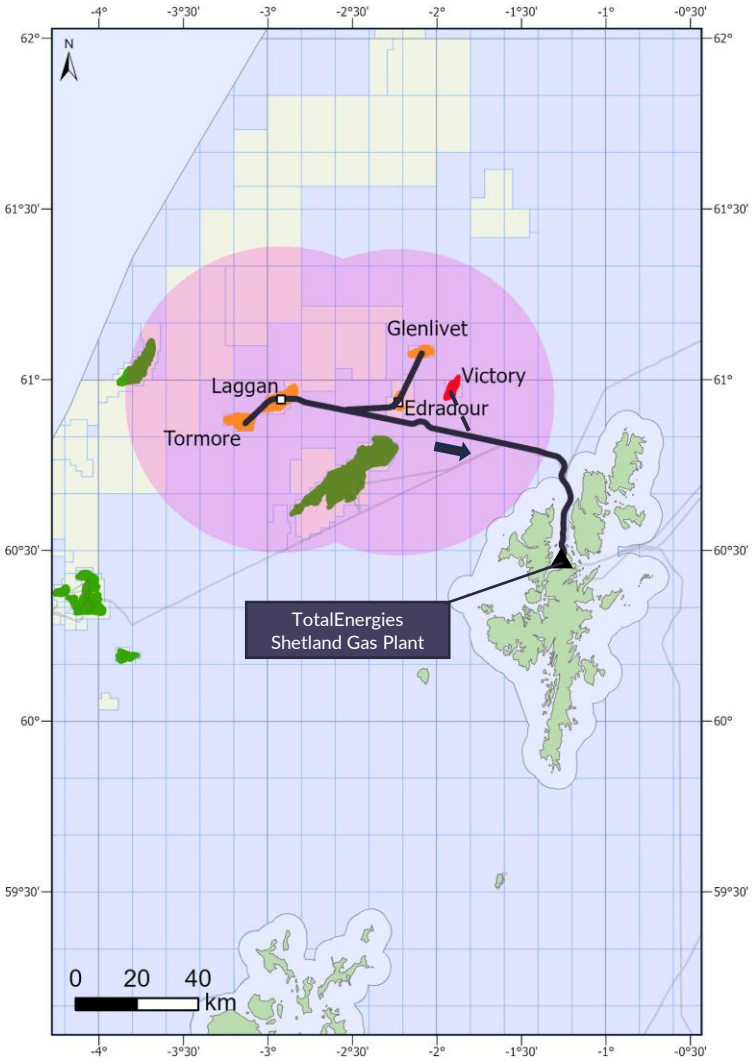
Source: Westwood Energy Atlas

Laggan, SGP and SIRGE

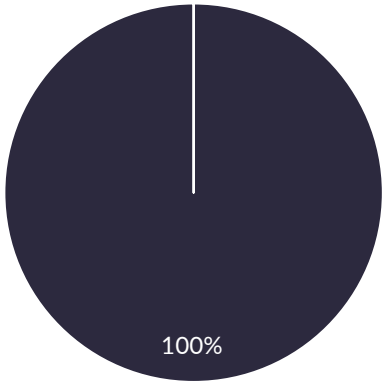
The Laggan area is a unique development in the UK, transporting hydrocarbons from the wells 143 km to the Shetland Gas Plant for processing. SGP is the newest onshore gas processing facility in the UK, sanctioned in 2010

Operator	TotalEnergies
Terminal	Shetland Gas Plant (SGP), then routed to NSMP St Fergus via SIRGE and FUKA
Overview	The Laggan pipeline transports unprocessed gas, with associated liquids, via duel 18" diameter, 143 km flowlines to the SGP for processing. Gas is then exported via the Shetland Island Regional Gas Export System (SIRGE) which ties into the FUKA system. Condensate is transported via a 0.8 km pipeline to the SVT where it is comingled with SVT oil for export to market. Four fields tie into the Laggan system, with a fifth under development (Victory). The construction of the SGP and the SIRGE pipeline was sanctioned in 2010 as part of the Laggan area development and sized for future WoS tie-in opportunities. The terminal started operations in February 2016.
Upside potential summary and risks	
Current outlook	Victory development expected to start-up in late 2025, which significantly improves throughput outlook. Proposed deal for Prax Group to acquire TotalEnergies equity (and operatorship) at risk following Prax Group's parent company entering administration.
Upside potential	Development of Glendronach and drilling of Edradour West shelved in recent years. Infill drilling opportunities. Tornado discovery offers upside potential and being evaluated by Ithaca for development. Development of a Northern Gas Hub could tie-back licensed and unlicensed prospectivity in area.
Risks	Uncertainty surrounding ownership future. Current operator TotalEnergies has shelved investment plans in recent years. Victory field does not deliver expected volumes. Tiebacks required to maintain production.

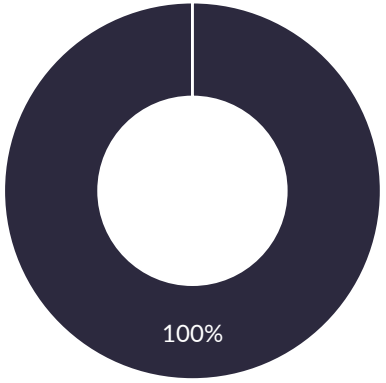




Remaining gas reserves



2025 gas production share



Westwood Global Energy Group

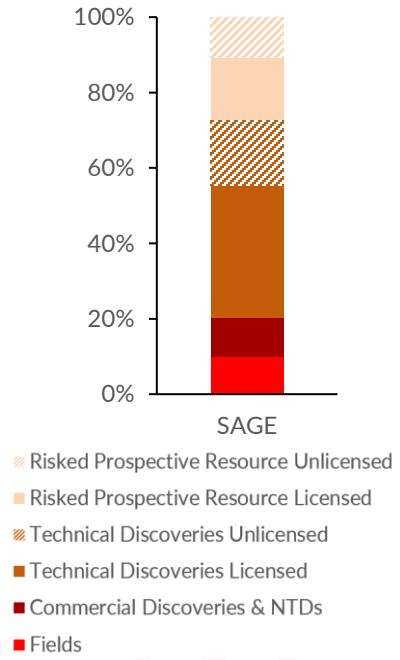
Source: Westwood Energy Atlas

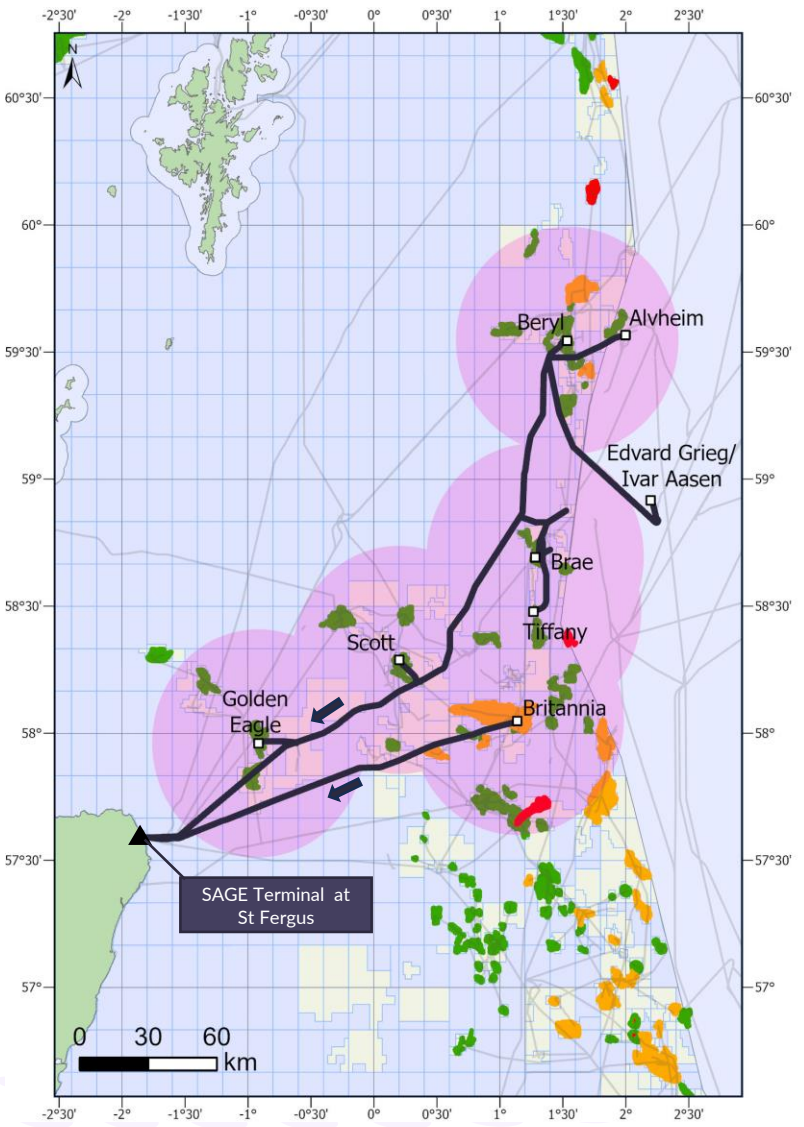
SAGE Pipeline System (gas)

The SAGE system transports gas from the NNS, CNS and Norway through two pipelines. It is expected to account for c. 6% of UK gas throughput in 2025.

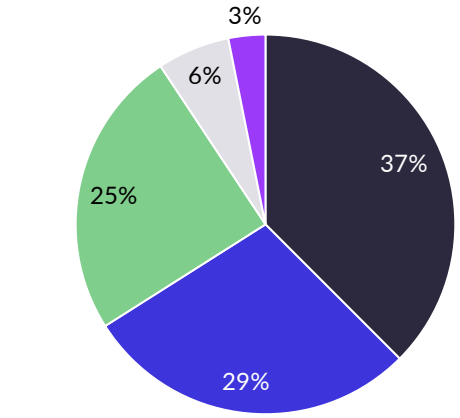
Operator	Ancala Midstream
Terminal	SAGE Terminal, St Fergus
Overview	The Scottish Area Gas Evacuation (SAGE) System comprises the SAGE and Beryl offshore pipelines and the SAGE gas processing terminal onshore at St. Fergus. The 323 km, 30" diameter pipeline was commissioned in 1992 and has a capacity of 1,190 mmscfd. It transports gas from 23 UK fields and 11 Norway fields. The second pipeline is a 195 km, 26" line which delivers gas from the Britannia hub to the SAGE terminal. Ancala acquired the SAGE System from Apache in 2017.

Upside potential summary and risks	
Current outlook	Investment and new developments ongoing at Norwegian hubs and Britannia in UK. Scott infill drilling is limited. Beryl hub production to cease in 2029. Several hubs expected to economically cease production before 2030.
Upside potential	Near term developments at Buchan and Fotla. Multiple commercial discoveries, including Leverett. Untapped gas in Quad 9. Infill drilling opportunities UK. Upside potential around Norway hubs.
Risks	Reliance on Britannia and Norwegian hubs. Norway hubs of Alvheim and Edvard Greig-Ivar Aasen have alternate gas export routes nearby. Risk of closure in mid 2030s.

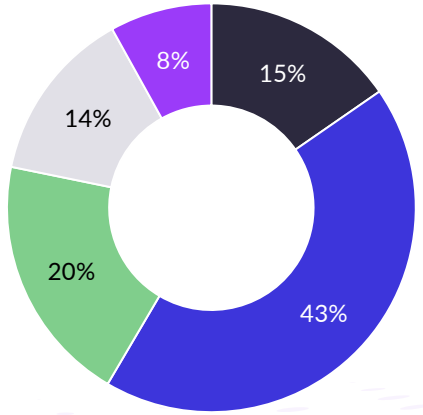




Remaining gas reserves



2025 gas production share



Note: Reserves and resource upside from Norwegian hubs have been excluded from these graphs

Source: Westwood Energy Atlas

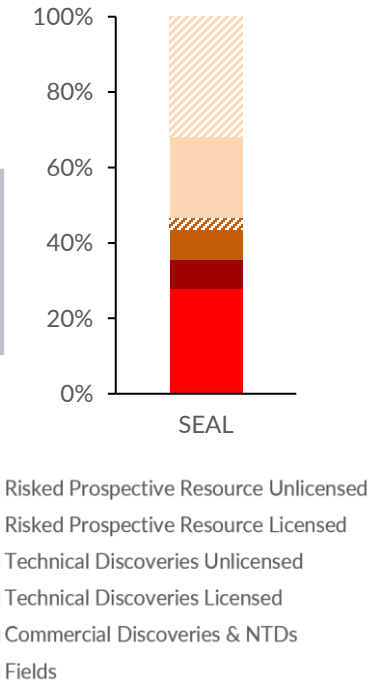
Westwood Global Energy Group

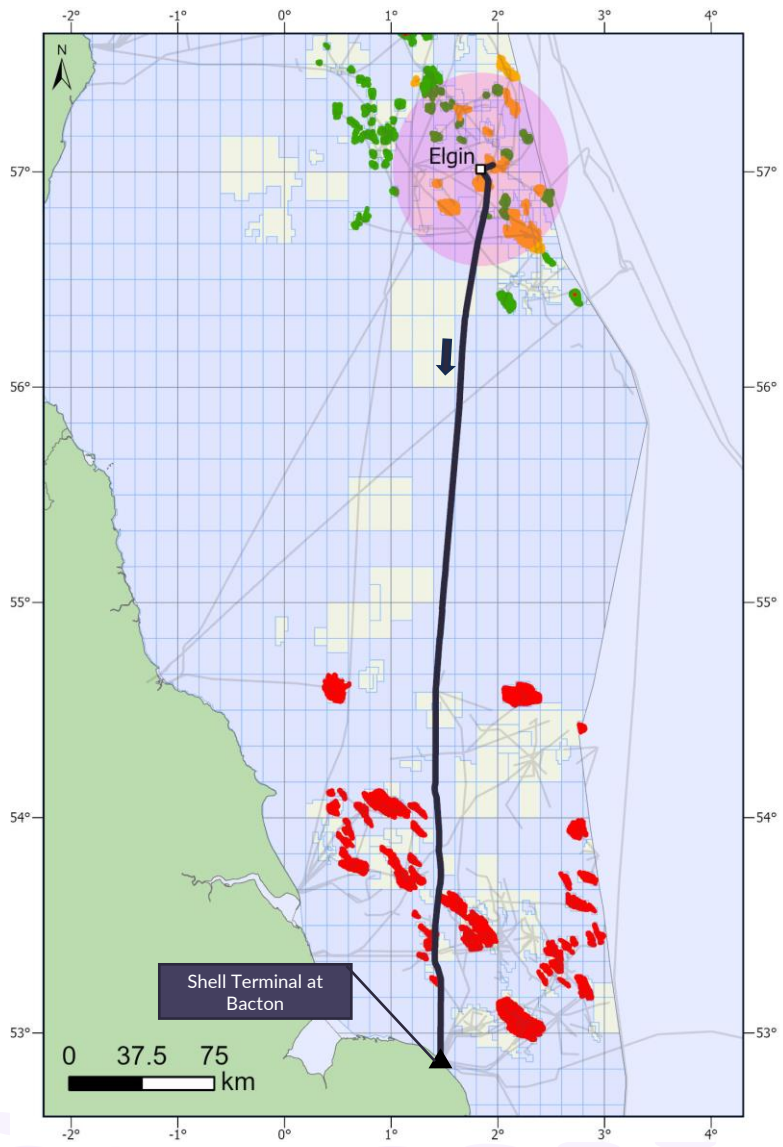
SEAL Pipeline System (gas)

Shearwater and Elgin Area Line relies on production from a single hub with three fields, transported to the Shell Bacton Terminal. SEAL accounts for 62% of the gas entering the Shell Bacton terminal

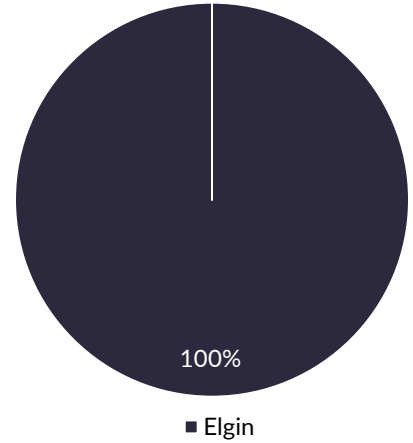
Operator	px Group (subcontracted by TotalEnergies)
Terminal	Shell Terminal, Bacton
Overview	The Shearwater and Elgin Area Gas (SEAL) system is a 474 km, 34" pipeline that transports gas from the Elgin Processing and Utilities (PUQ) platform to the Bacton terminal in Norfolk. The pipeline is used by the Elgin, Franklin and Glenelg gas and condensate fields and has a capacity of 1,236 mmscfd. It was commissioned in 2000. The Shearwater hub previously utilised the SEAL pipeline, but production was rerouted to the SEGAL Fulmar Gas Line (FGL) in 2021. The Shell Bacton Terminal also processes gas from four SNS hubs through three separate pipelines.

Upside potential summary and risks	
Current outlook	Ongoing well intervention work. Potential for infill drilling in near-term.
Upside potential	Infill drilling opportunities. Commercial discoveries, technical discoveries and prospects within tieback range. LPP compression and flare gas recovery projects proposed.
Risks	Only 1 hub - operator TotalEnergies has shelved UK investment plans in recent years. SEAL expected to provide c. 62% of Shell Bacton throughput in 2025.

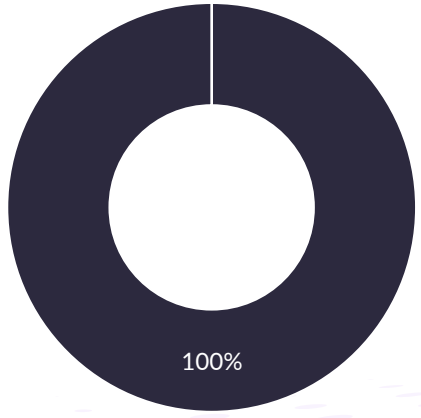




Remaining gas reserves



2025 gas production share



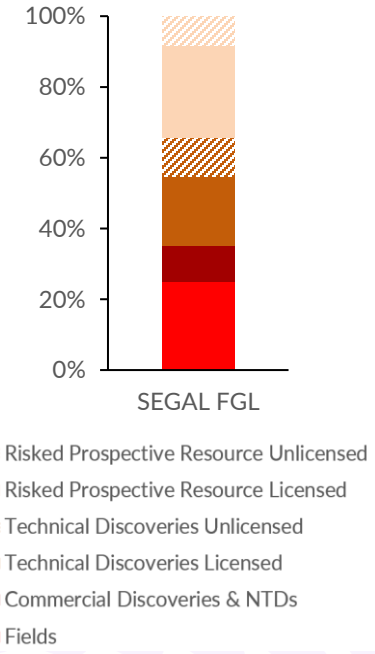
Source: Westwood Energy Atlas

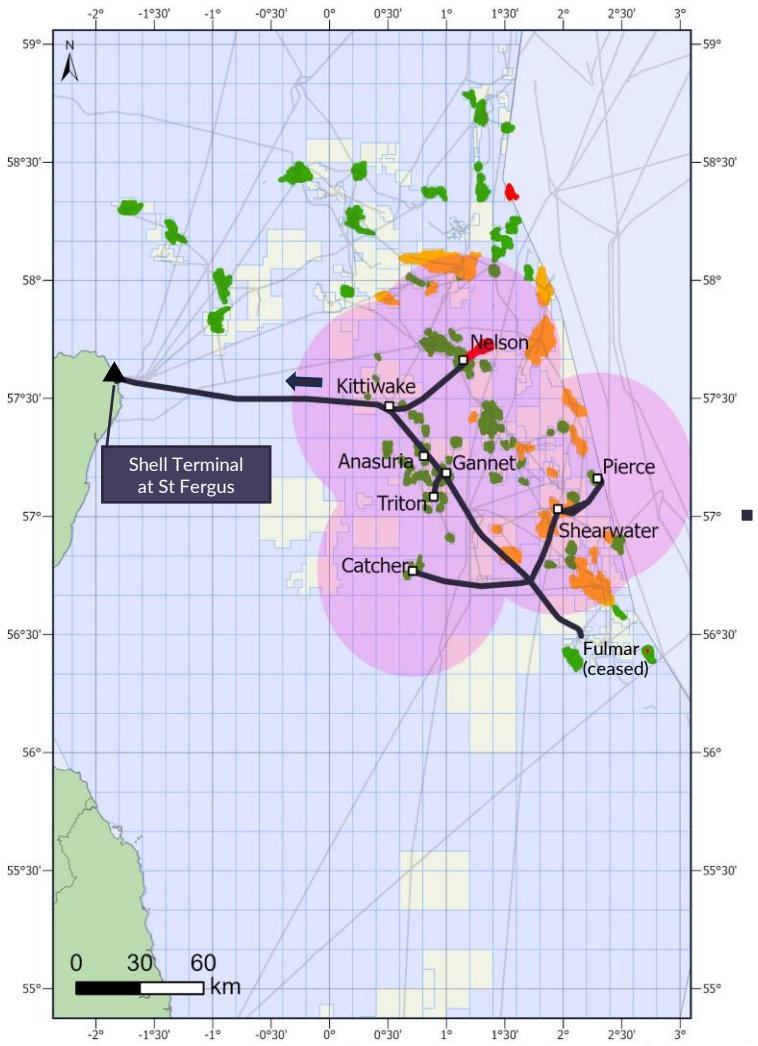
Westwood Global Energy Group

SEGAL FGL Pipeline System (gas)

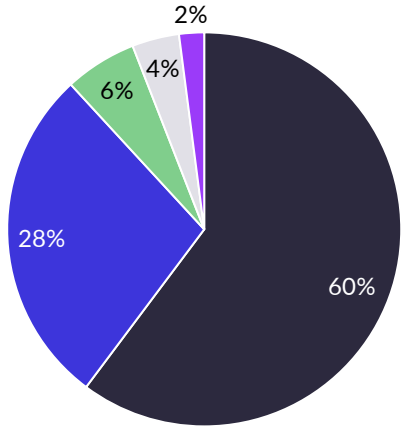
The Fulmar Gas Line (FGL) is one leg of the Shell Esso Gas and Associated Liquids system (SEGAL). The Shell SEGAL terminal at St Fergus is expected to receive c. 14% of UK gas throughput in 2025

Operator	Shell
Terminal	SEGAL Terminal, St Fergus
Overview	The SEGAL (Shell Esso Gas and Associated Liquids) system was commissioned in 1982 to handle wet gas production from Shell's installations in the NNS via the FLAGS pipeline and its facilities in the CNS via the Fulmar Gas Line (FGL). FGL is a 290 km, 20" pipeline that delivers gas from the Fulmar platform in the CNS to the SEGAL St. Fergus terminal and has 33 UK field users. The two pipelines arrive at the Shell St Fergus terminal for processing. Gas is fed to the National Grid at St Fergus and separated condensate is then transported to the Shell Fife NGL terminal at Mossmorran, and the Braefoot Bay tanker loading system. Capacity through SEGAL FGL is 424 mmscfd of wet gas. Gas from the Shearwater hub was rerouted from the SEAL pipeline to the SEGAL FGL pipeline in H1 2021.
Upside potential summary and risks	
Current outlook	Teal West tieback expected online in 2025. Shearwater infill drilling ongoing and Pierce is in gas blowdown phase (post oil production phase).
Upside potential	Infill drilling opportunities at some hubs. Upside in commercial discoveries, technical discoveries and prospective resources within tieback areas, particularly the Shell operated hubs, much of which was awarded in the 33rd Licensing Round (2023 - 2024).
Risks	Reliant on Shearwater and Pierce, but SEGAL terminal is supported by FLAGS as well as FGL. Pierce production from gas blowdown phase (near end of life).

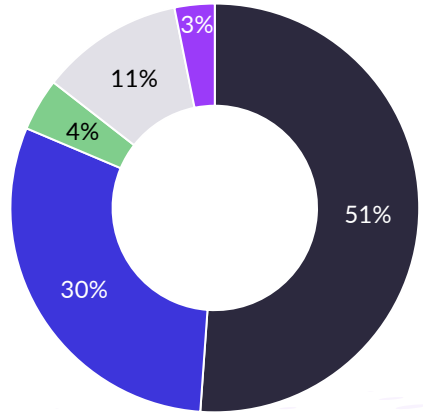




Remaining gas reserves



2025 gas production share

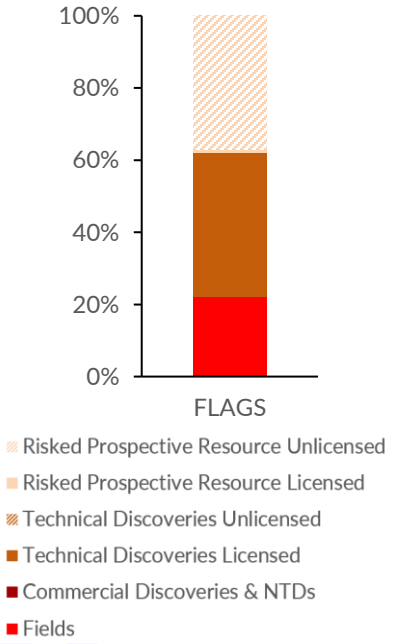


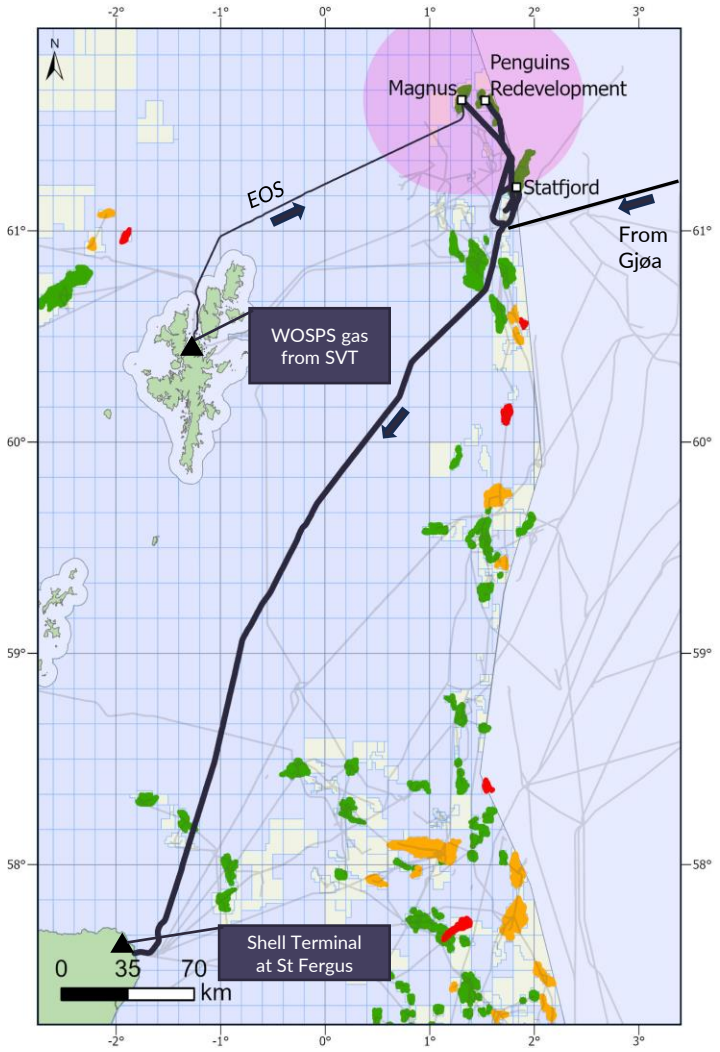
Source: Westwood Energy Atlas

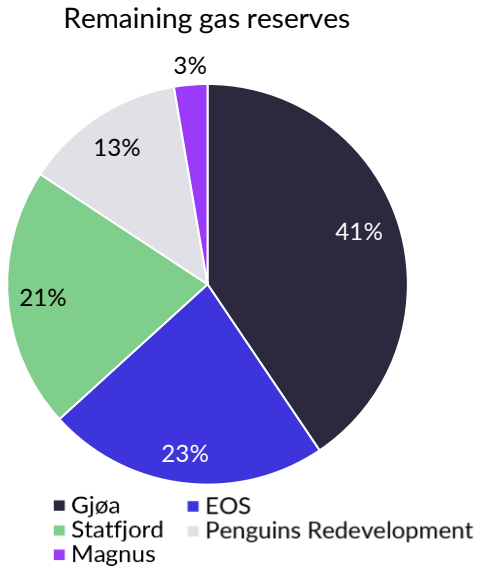
SEGAL FLAGS Pipeline System (gas)

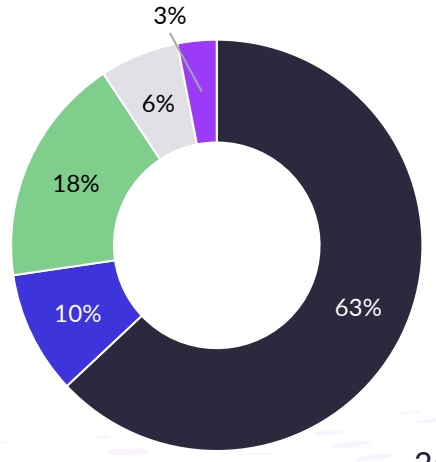
The Far North Liquids and Associated Gas System (FLAGS) is one leg of the Shell Esso Gas and Associated Liquids system (SEGAL). The Shell SEGAL terminal at St Fergus is expected to receive c. 14% of UK gas throughput in 2025

Operator	Shell
Terminal	SEGAL Terminal, St. Fergus
Overview	The Far north Liquids and Associated Gas System (FLAGS) is a 450 km, 36" diameter pipeline, which forms the northern gas transport route of the SEGAL system. It transports gas from the NNS, Norwegian NNS and the WoS to the St. Fergus terminal. The pipeline has been operational since 1982 and has a production capacity of 1,165 mmscfd of wet gas. It carries gas from four producing UK fields and nine producing Norwegian fields. The UK Northern Leg (Magnus/Statfjord hubs) and Western Leg (Cormorant Alpha) line, and Norway Tampen Link (Gassled) and Gjøa (Gassled) pipelines connect into FLAGS. Gas from WOSPS (in West of Shetland) is routed from the Sullom Voe Terminal via the East of Shetland (EOS) pipeline to Magnus and into FLAGS.
Upside potential summary and risks	
Current outlook	Penguins Redevelopment brought online in Q1 2025. Ongoing investment at Statfjord.
Upside potential	Infill drilling opportunities at Magnus & Penguins. Lack of commercial discoveries and near-term developments in UK NNS. Gjøa production forecast to late 2030s, with number of near field opportunities. Substantial upside in licensed technical discoveries and unlicensed prospectivity on UKCS, but risk of not being progressed.
Risks	Reliant on Statfjord and Gjøa (Norway) where alternate export routes could be accessed. Reliant on EOS contribution - this could be rerouted through SIRGE in the future. SEGAL terminal is supported by FGL as well as FLAGS. Much of upside is unlicensed.









Westwood Global Energy Group

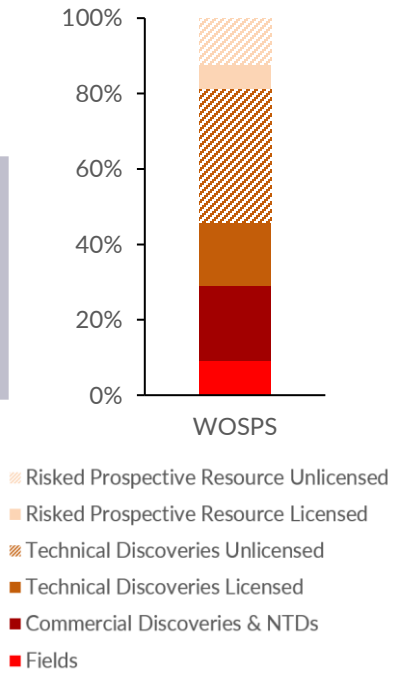
Note: Reserves and resource upside from Norwegian hubs have been excluded from these graphs. WOSPS reserves and resources (production routed through EOS into FLAGS) are displayed on next slide

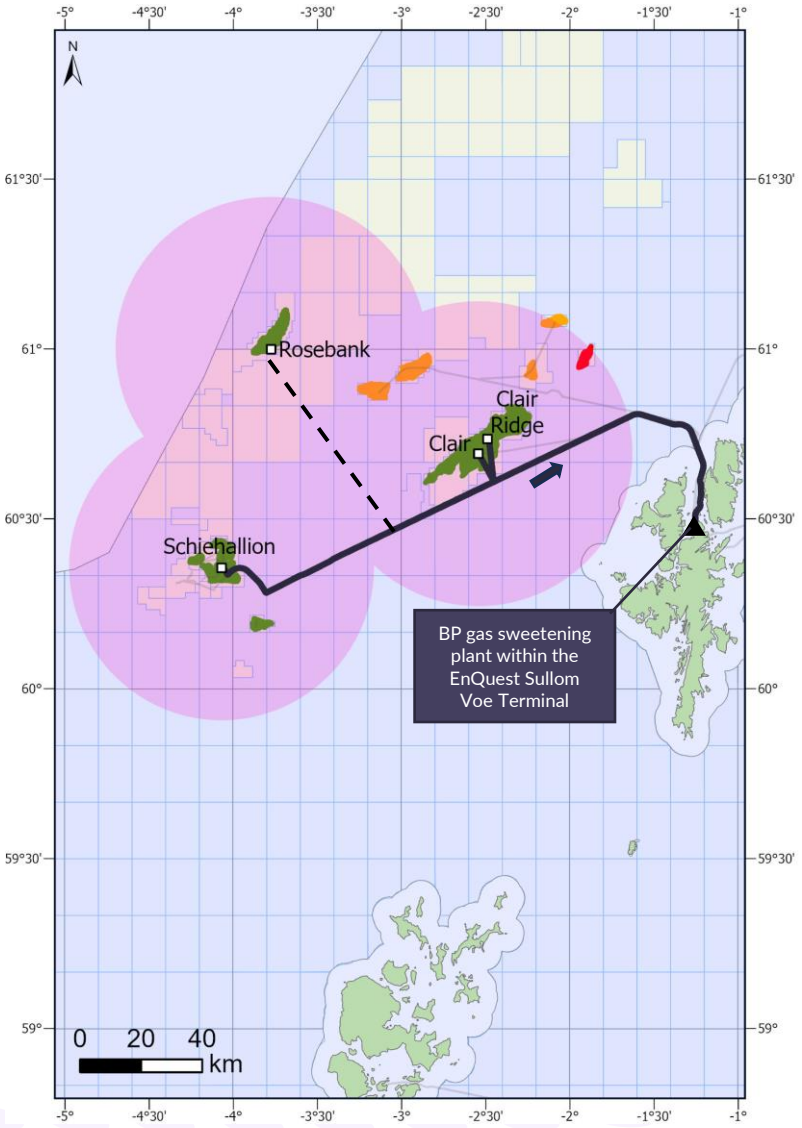
Source: Westwood Energy Atlas

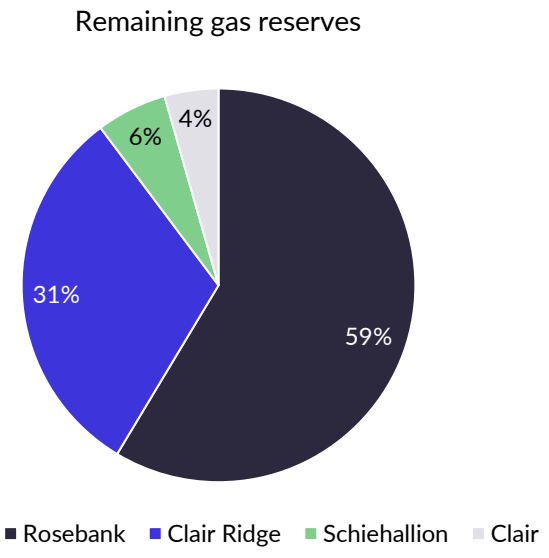
WoS Gas Pipeline System (WOSPS)

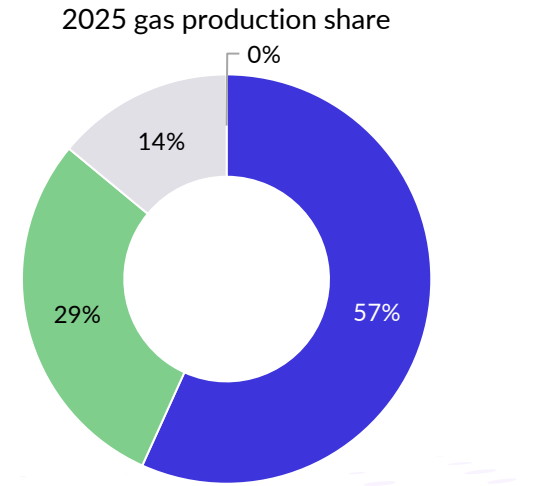
WOSPS transports the associated gas from production at Schiehallion, Clair and Clair Ridge to the Sullom Voe Terminal, then via the East of Shetland pipeline to Magnus and then SEGAL FLAGS

Operator	BP
Terminal	Sullom Voe Terminal (SVT), operated by EnQuest, then routed to Shell SEGAL Terminal at St Fergus via EOS and FLAGS
Overview	There are two main gas pipeline systems in the West of Shetland region. The 20" diameter, 188 km WOSPS pipeline transports export gas from the BP operated Clair, Clair Ridge and Schiehallion, Loyal and Alligin fields to the EnQuest operated SVT. From SVT some gas is routed through the East of Shetlands Pipeline System (EOS) to the Magnus platform. From here gas is routed through the SEGAL FLAGS pipeline to the Shell SEGAL Terminal at St Fergus. There is also a tie-in point for gas to feasibly route into SIRGE and the FUKA system, which could be used in the future for WOSPS gas.
Upside potential summary and risks	
Current outlook	Infill drilling ongoing at Clair Ridge. Rosebank development expected online in 2027.
Upside potential	Plans to resume infill drilling programmes at Clair and Schiehallion. Clair Ridge has a multi-year drilling programme ongoing. Cambo near-term development. Clair South, Rosebank Phase 2 and Tornado commercial discoveries. Significant unlicensed volumes in technical discoveries and prospectivity.
Risks	Rosebank production performance. Reduced infill drilling programmes in the future. Much of upside is unlicensed.









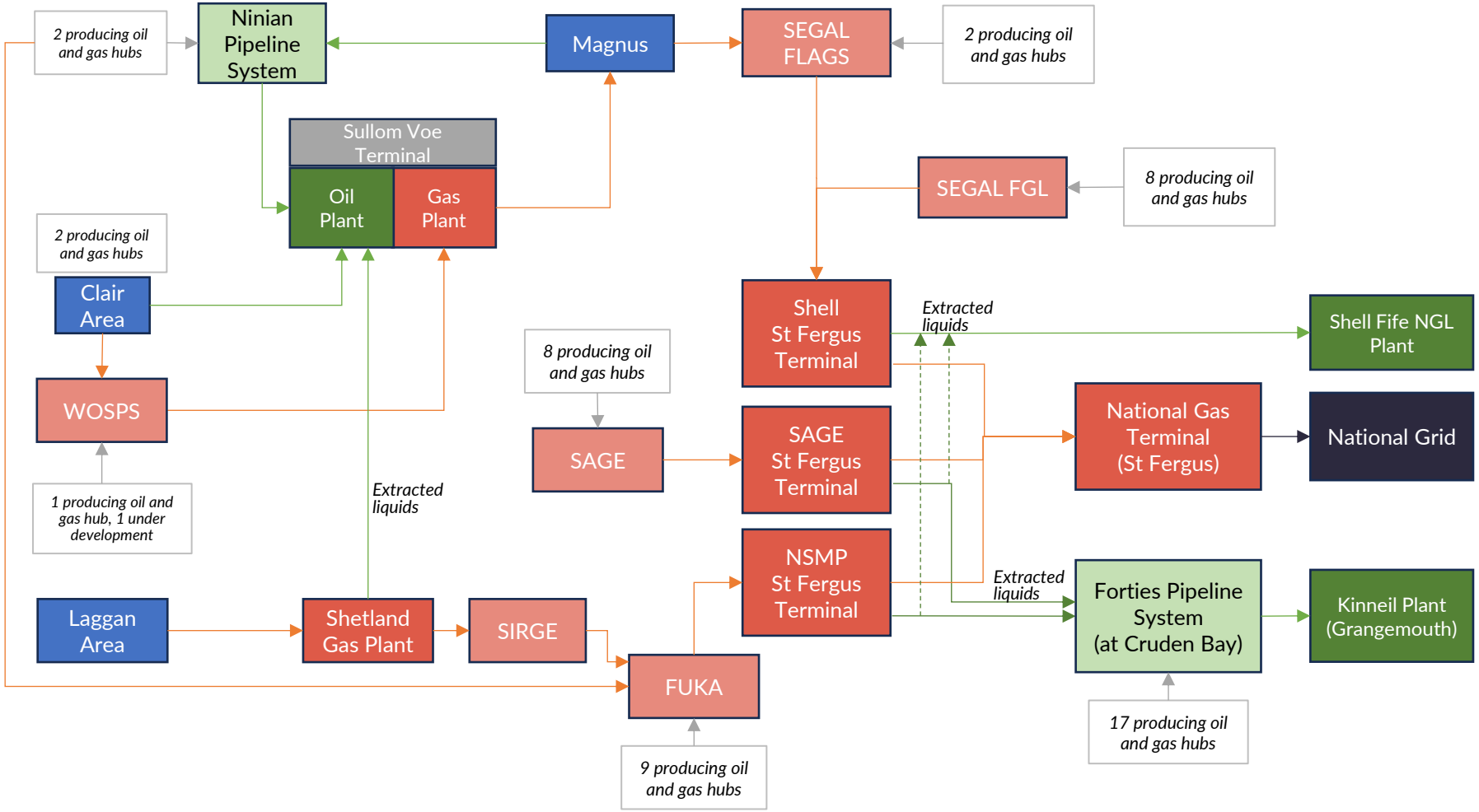
Source: Westwood Energy Atlas

Westwood Global Energy Group

Infrastructure interconnectivity

National Gas Terminal at St Fergus

The northern transport system shown here for gas and oil is expected to deliver 45% of UK produced oil and 32% UK produced gas in 2025



Definitions:

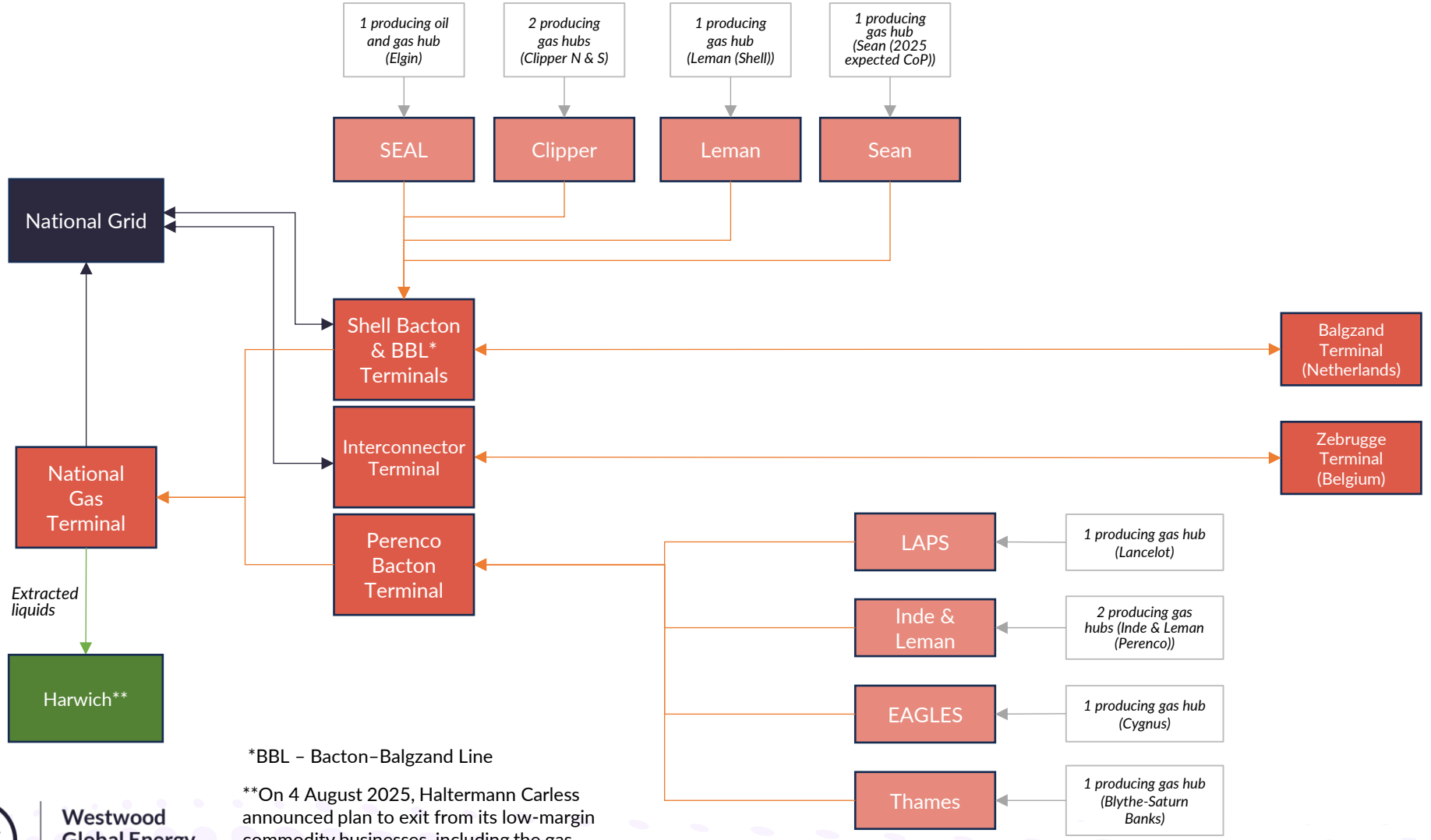
Hub - Manned processing centre for field(s), may be fixed platform(s) or floating facility. These installations support drilling, production, processing and export of the oil and gas and are 'self sufficient' with the accommodation and catering crews to support staff while offshore.

Terminal/Plant - Onshore facility for final processing of oil, gas or gas/liquids ahead of sale and export to refineries or National Grid.

Source: Westwood Energy Atlas

National Gas Terminal at Bacton

National Gas owns and operates two major gas terminals in the UK, at St Fergus and Bacton. The Bacton site sources gas from three main pipeline systems and nine hubs and accounts for c. 21% of UK produced gas in 2025



*BBL – Bacton–Balgzand Line

**On 4 August 2025, Haltermann Carless announced plan to exit from its low-margin commodity businesses, including the gas condensate business with the closure of a production unit in Harwich, UK

Definitions:

Hub - Manned processing centre for field(s), may be fixed platform(s) or floating facility. These installations support drilling, production, processing and export of the oil and gas and are 'self sufficient' with the accommodation and catering crews to support staff while offshore.

Terminal/Plant - Onshore facility for final processing of oil, gas or gas/liquids ahead of sale and export to refineries or National Grid.

Source: Westwood Energy Atlas

Glossary of terms

Glossary of terms

Term	Meaning
Field	A discovery, or a number of discoveries, which have been determined to be sufficiently economic to develop and produce to provide a net income.
Hub	The centralised processing facility, complex or gathering station where hydrocarbons are received from one or more fields. Oil, gas, water and/or solids are then separated, treated and processed before being transported to export terminals, refineries or other end users.
Infrastructure	Pipeline systems and subsea equipment needed to transport hydrocarbons.
Terminal	Receives liquids or gas exported from offshore hubs and provides end-of-line processing, storage and export or distribution.
Condensate	Condensate is a light hydrocarbon liquid that is typically produced along with natural gas from gas-condensate reservoirs. It forms when the pressure and temperature of the gas drop during production, causing heavier hydrocarbons to condense out of the gas phase.
NGL	Natural Gas Liquids are a group of hydrocarbon liquids that are separated from natural gas during processing. They are found in raw natural gas and are extracted at gas processing plants or refineries.
LNG	Liquified Natural Gas is natural gas that has been cooled to a liquid state at approximately -162°C (-260°F) for ease of storage and transportation. In the UK, LNG is imported from overseas gas producers, such as the USA and Qatar. The produced gas is processed and converted to LNG, shipped from the LNG terminal to a UK landing facility and 're-gassed' to enable the gas to be distributed.
Associated gas	Many reservoirs have a mix of hydrocarbon type. Oil reservoirs will have an associated gas content, which can be processed at the hub and exported. The gas may be contained in the reservoir as free gas, as a gas cap over the oil-bearing interval and/or be dissolved in the liquids and be produced as the reservoir pressure drops and the gas comes out of solution.
2025 production	These figures are Westwood estimates, based on published production figures year to date, production history, investment events and analyst knowledge. The figures may therefore be subject to change.
Reserves	The term used to describe the volume of resources that can be that are considered economically feasible to recover. A new reserve can be discovered, but if the resource cannot be extracted by any known technological methods, then it would not be considered part of recoverable reserves. Recoverable reserves can also be categorised as proved reserves, probable reserves or possible reserves.
Resources	There are two types of resources – contingent (or discovered) and prospective. Contingent resources include oil, liquids and gas volumes that have been discovered through the drilling of an exploration well, but they are not yet considered commercial for recovery. Prospective or pre-drill resources are quantities of hydrocarbons that are estimated to exist in undiscovered accumulations. They volumes are yet to be found, but estimated volumes are believed to be present based on geological and geophysical data and analysis.
Near term development	A commercial discovery which is planned for development with an associated timeframe and firm development concept.

Source: Westwood Energy Atlas

Glossary of terms

Term	Meaning
Commercial discovery	A well drilled into a reservoir that is deemed to have encountered adequate quantities of oil/gas to support production.
Technical discovery	A well drilled into a reservoir that is deemed to have not encountered adequate quantities of oil/gas to support production. This may be due to insufficient volumes, technical challenges for economic recovery (e.g. rock properties, hydrocarbon properties, distance from infrastructure) or no longer lying on licensed acreage.
Risked prospective resource	An estimate of the hydrocarbons not yet discovered but believed to exist based on geological data. The unrisked volume estimate is multiplied by the exploration chance of success percentage to give a recoverable resource volume which could be discovered.
Licensed	The defined area that is leased to an oil & gas company by a government entity on which they can explore for and develop oil and gas resources. Can also be referred to as licensed blocks or permit area. Nomenclature for this term changes from country to country.
Unlicensed	Acreage which has never been part of a licence, or which was historically licensed but relinquished. Licences can be relinquished once fields have ceased production and being decommissioned, or when licence phases are complete and companies do not commit to the next licence phase.
Licence term	Production licences generally run over three successive periods or terms, and each term is commonly associated with a particular activity. The durations of the terms are agreed with the North Sea Transition Authority (NSTA).
	Initial term - The licence will automatically expire at the end of its Initial Term unless the Licensee has fulfilled the Work Programme that formed the basis of the licence award. If the Licensee proceeds into the Second Term, they are required to relinquish a specified portion of the licensed area - typically 50%.
	Second term - There is no specific Work Programme associated with the Second Term of the licence. Instead, the licence will lapse at the end of the Second Term unless the Licensee has secured approval for a Field Development Plan. Upon entering the Third Term, the Licensee must relinquish all licensed acreage that lies outside the boundaries of the approved Field Development Area.
	Third term - this is intended for production.
E&A	Exploration and appraisal. Exploration wells target 'new' prospects and appraisal wells are follow-on wells drilled to further evaluate the geology of a discovery, help quantification of volumes, measure reservoir conditions and/or take hydrocarbon samples.
Infill drilling	Drilling wells between known producing wells to exploit the resources of a field to best advantage.
Workover	To perform one or more of a variety of remedial operations on a producing well in efforts to enhance or increase production.
Cessation of Production (CoP)	To cease producing oil and gas from a well, field or hub when it becomes unprofitable
Abandon or decommission	To safely retire an oil or gas installation once it has reached the end of its production life. This includes a series of technical, environmental, and regulatory steps to ensure that the site is left in a safe and clean condition.

Source: Westwood Energy Atlas

Glossary of terms

Term	Meaning
boe	Barrel of oil equivalent (c. 159 litres per barrel)
mmboe	Million barrels of oil equivalent
bnboe	Billion barrels of oil equivalent
boepd	Barrels of oil equivalent per day
mmscfd	Million standard cubic feet per day
bcf	Billion cubic feet
R/P ratio	Remaining gross reserves in producing and under development fields divided by the forecast 2025 gross production.
	R/P ratio greater than 9.0
	R/P ratio between 6.0 and 8.9
	R/P ratio less than 6.0
Upside potential	The volumes lying within opportunities, such as near-term developments, commercial discoveries, technical discoveries and prospects. A risking has been applied based on commercial and technical maturity to give greater weighting to resources in opportunities that are closer to development: Near-term developments: 100% Commercial discoveries: 60% Technical discoveries, licensed: 15% Technical discoveries, unlicensed: 10% Prospective resources, licensed: 10% Prospective resources, unlicensed: 5%
	Upside potential greater than 80 mmboe
	Upside potential between 25 and 79 mmboe
	Upside potential less than 25 mmboe

Source: Westwood Energy Atlas

Disclaimer

This report has been prepared by Westwood Global Energy Limited and its subsidiaries (collectively “Westwood Global Energy Group”) and all rights, whether pertaining to the body of this report or any information contained within it, are reserved. This report is confidential and must not be made available by you to any other person. The information contained in this report is intended for the sole use and benefit of clients of Westwood Global Energy Group, who subscribe to services permitting access to this report.

This report is based on Westwood Global Energy Group’s experience, knowledge, and databases as well as publicly available sources. No representation or warranty, whether express or implied, is made by Westwood Global Energy Group as to the fairness, accuracy or completeness of any information (whether fact or opinion) contained in this report. The information included in this report is subject to change and we do not undertake to advise you of any changes to such information. The report does not constitute (i) an offer or recommendation to buy or sell any securities; or (ii) investment, financial, legal, tax or technical advice. Westwood Global Energy Group does not accept liability in respect of any actions taken or not taken based on any or all of the information contained in this report, to the fullest extent permitted by law. Do not act upon the information contained in this report without undertaking independent investigations and assessments.

© Westwood Global Energy Group
38 Albyn place
Aberdeen
AB10 1YN
United Kingdom
Published August 2025

Westwood Global Energy Group




London:
Mindspace Metro Building
1 Butterwick
Hammersmith
W6 8DL
United Kingdom

Tel: +44 (0)20 3794 5380

Aberdeen:
38 Albyn Place
Aberdeen
AB10 1YN
United Kingdom

Tel: +44 (0)1224 502 640

Houston:
800 Town & Country Blvd
Suite 500
Houston
Texas 77024
USA

Tel: +1 (713) 599 1100

Singapore:
1 Pickering Street
Great Eastern Centre
Singapore
048659

Tel: +65 800 101 3809