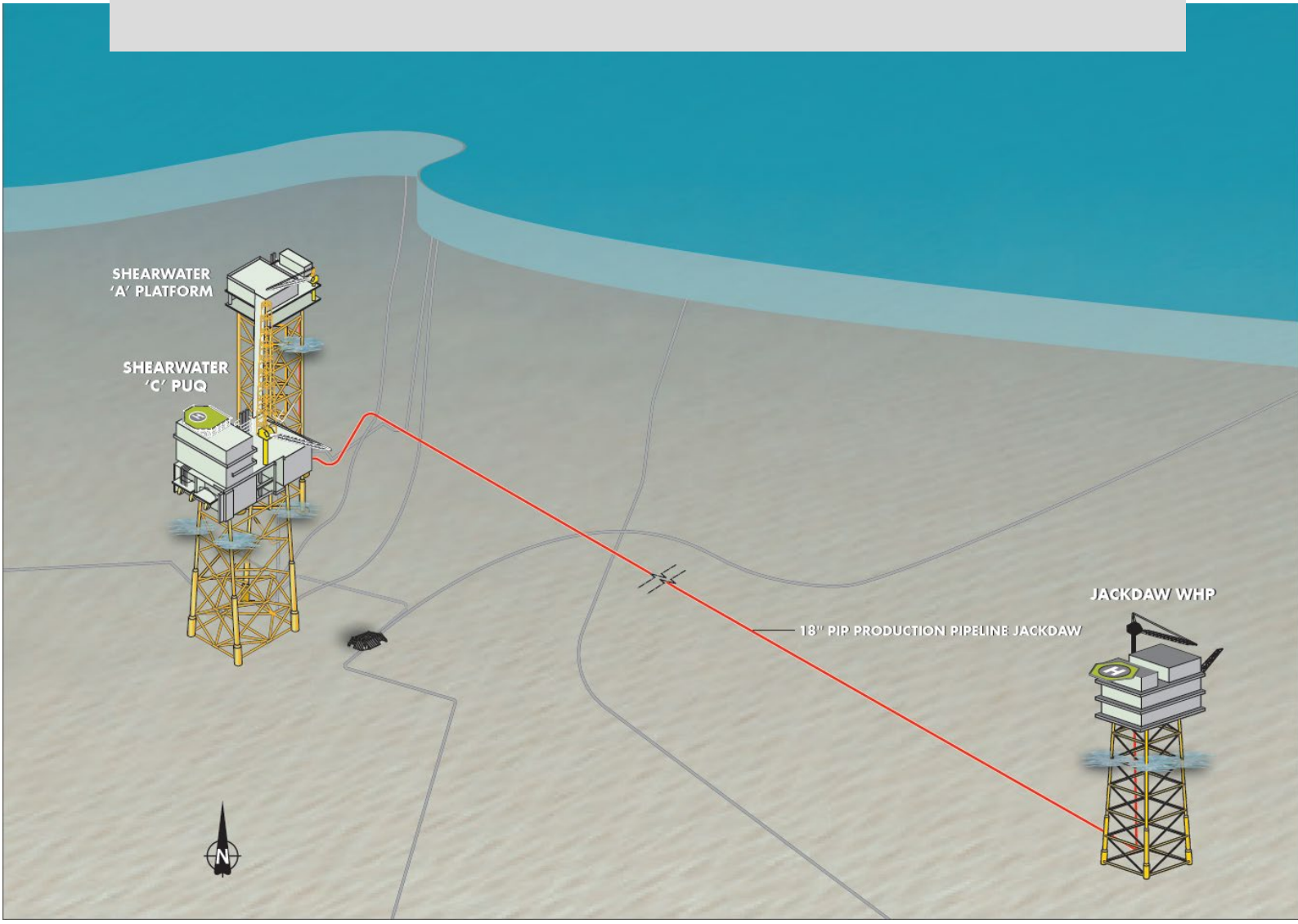
Jackdaw Field Development

Further Information Required Under DESNZ Regulation 12(1) Notices dated 21st July and 22nd September 2025

Part 3: Relevant Information to the Project

November 2025

ES Ref: D/4260/2021 (February 2022)



Cautionary Note

The companies in which Shell plc directly and indirectly owns investments are separate legal entities. In this document "Shell", "Shell Group" and "Group" are sometimes used for convenience to reference Shell plc and its subsidiaries in general. Likewise, the words "we", "us" and "our" are also used to refer to Shell plc and its subsidiaries in general or to those who work for them. These terms are also used where no useful purpose is served by identifying the particular entity or entities. ''Subsidiaries'', "Shell subsidiaries" and "Shell companies" as used in this document refer to entities over which Shell plc either directly or indirectly has control. The terms "joint venture", "joint operations", "joint arrangements", and "associates" may also be used to refer to a commercial arrangement in which Shell has a direct or indirect ownership interest with one or more parties. The term "Shell interest" is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in an entity or unincorporated joint arrangement, after exclusion of all third-party interest.

Shell's net-zero emissions target

Shell's operating plan and outlook are forecasted for a three-year period and 10-year period, respectively, and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next three and ten years. Accordingly, the outlook reflects our Scope 1, Scope 2 and NCI targets over the next 10 years. However, Shell's operating plan and outlook cannot reflect our 2050 net zero emissions target, as this target is outside our planning period. Such future operating plans and outlooks could include changes to our portfolio, efficiency improvements and the use of carbon capture and storage and carbon credits. In the future, as society moves towards net-zero emissions, we expect Shell's operating plans and outlooks to reflect this movement. However, if society is not net zero in 2050, as of today, there would be significant risk that Shell may not meet this target.

STANDARD INFORMATION SHEET

Project Name		**Jackdaw Field Development**			
OPRED Reference No		D/4260/2021			
Shell Contact Details		Contact Name	Contact Title		
Developer		UK North Sea Limited Withheld	Jackdaw Opportunity Manager		
Further Information Contact		Withheld	Projects Environmental Specialist		
Further Information Preparation		Job Title	Relevant Qualification/Experience		
Shell U.K. Limited		Withheld	17 years' working in oil and gas.		
		Withheld	>20 years' working in oil and gas.		
Licence Nos		licences P.98, P.111 and P.672			
Licensees/ Owners		UK North Sea Limited 100% holding.			
Short Description		Jackdaw is a gas condensate field that will be developed with a not permanently attended Wellhead Platform (WHP) and drilling of four wells. Jackdaw produced fluids will be exported via a subsea pipeline to the Shearwater platform where these will be processed before onward export via the Fulmar Gas Line and the Forties Pipeline System. The proposed development may be summarised as follows: ■ Installation of a new WHP; ■ Drilling of four production wells; ■ Installation of a new approximately 31 km pipeline from the Jackdaw WHP to the Shearwater platform; ■ Processing and export of the Jackdaw hydrocarbons via the Shearwater host platform; and ■ First production expected between Q3 - Q4 2026.			
Quadrant/Block Nos.		Blocks 30/02a, 30/03a DEEP, and 30/02d			
Platform Location		Latitude	56° 54' 01.37" N (WGS84)	Longitude	02° 22' 45.45" E (WGS84)
Pipeline	**Start**	Latitude	56° 54' 01.37" N (WGS84)	Longitude	02° 22' 45.26" E (WGS84)
	End	Latitude	57° 01' 53.57" N (WGS84)	Longitude	01° 57' 13.71" E (WGS84)
Distance to UK		Approximately 250 km to Aberdeen, Scotland.			
Distance to Median Line		Approximately 5 km from UK/Norway median line.			
Previous Applications		Jackdaw Environmental Statement (D4260/2021) (Shell UK, 2022) submitted in February 2022 for which the Secretary of State agreed to the grant of a production consent for the Jackdaw project in May 2022.			

ABBREVIATIONS

%	Percent	**Mtoe**	Million tonnes oil equivalent
CCC	Climate Change Committee	**NC**	National Certificate
CCS	Carbon Capture and Storage	**NDC**	Nationally Determined Contributions
CO_2	Carbon Dioxide	**NSTA**	North Sea Transition Authority
CO_2/boe	CO_2 Per Barrel of Oil Equivalent	**NSTD**	North Sea Transition Deal
CO_2e/ CO_2eq	Carbon Dioxide equivalent	**OEUK**	Offshore Energies UK
COP28	28th Conference of the Parties	**OGA**	Oil and Gas Authority
DESNZ	The Department for Energy Security & Net Zero	**OPRED**	Offshore Petroleum Regulator for Environment and Decommissioning
ES	Jackdaw Environmental Statement (D4260/2021) (Shell UK, 2022) submitted in February 2022 for which the Secretary of State agreed to the grant of a production consent for the Jackdaw project in May 2022	**PEO**	Performing Engineering Operations
EV	Electric Vehicle	**PV**	Photovoltaic
EU	European Union	**RGU**	Robert Gordon University
GB	Great Britain	**SEGAL**	Shell Esso Gas and Associated Liquids System
GDP	Gross Domestic Product	**STEM**	Science, Technology, Engineering, and Maths
GHG	Greenhouse Gas	**SVQ**	Scottish Vocational Qualification
GVA	Gross Value Added	**UK**	United Kingdom
LNG	Liquefied Natural Gas	**UKCS**	United Kingdom Continental Shelf
MER	Maximising Economic Recovery	**US**	United States (of America)

CONTENTS

EXECUTIVE SUMMARY

This document provides relevant information for the Secretary of State to consider when reaching its decision on whether agreement should be given to the grant of consent for the Jackdaw project. This document is provided as Part 3 of the response to OPRED's Regulation 12(1) Notice dated 21st July 2025 ("OPRED's Regulation 12(1) July Notice") and OPRED's subsequent Regulation 12(1) Notice dated 22nd September 2025 ("OPRED's Regulation 12(1) September Notice").

Jackdaw is being developed in accordance with UK government policy to reach net-zero targets, to achieve maximum economic recovery and in line with the North Sea Transition Deal (NSTD).

SUPPORTING JOBS, INVESTMENT AND ENERGY INFRASTRUCTURE

Shell has invested over £1 billion in executing the Jackdaw project to date. This investment has been with 30 supply chain companies, supporting over 1,000 jobs, the majority of which are in the UK. This builds UK industrial capability and expertise, valuable for the domestic and international market, and, importantly, an asset base subject to UK taxes.

Beyond the direct spend with UK suppliers and paying of UK wages, the gas produced by Jackdaw plays a significant role in sustaining production at the Shearwater offshore gas hub into the 2030s, whereas Shearwater would otherwise become uneconomic in [redacted]. This means that Jackdaw gas will safeguard 300 direct jobs on Shearwater.

Offshore oil and gas production is at the heart of Shell's economic contribution to the UK. Shell, through programmes like the UK SkillsTransition initiative, Energy Transition Skills Hubs and Girls in Energy, is also helping thousands of people gain skills and access to jobs in energy, both today and in the future.

ENERGY SECURITY

The delivery of Jackdaw is critical to strengthening UK energy security by maximising domestic gas production, supporting the longevity of vital infrastructure in the Shearwater gas hub and the SEGAL System, and contributing to the secure supply of energy during the transition.

At peak production, Jackdaw is expected to contribute around 6.5% of UK Continental Shelf (UKCS) gas production, which will produce an amount of energy equivalent to heating over 1.4 million homes.

LOWER EMISSIONS

According to the Committee on Climate Change's (CCC) 7th carbon budget, UK gas demand during Jackdaw's expected production period will exceed domestic supply. Without Jackdaw, any additional shortfall will be met by imports – primarily LNG. While imported LNG can be expected to have equivalent Scope 3 emissions as natural gas, the emissions intensity of producing gas domestically (28 $kgCO_2e$/boe) is on average approximately three times lower compared with importing gas in LNG form (85 $kgCO_2e$/boe), according to NSTA analysis[1]. Therefore, the net effect on emissions from replacing Jackdaw gas with an alternative imported source of gas is that overall emissions would be likely to increase.

THE CASE FOR DOMESTIC GAS

Shell believes that while demand for gas remains, the UK should strive to produce as much as possible from domestic resources. Projects such as Jackdaw provide tangible benefits to the country, by supplying gas to meet UK gas demand with lower emissions intensity than imported

[1] 2024 Emissions intensity of producing natural gas

LNG, while also supporting national energy security, economic resilience, jobs and safeguarding the skills necessary for the energy transition.

1. INTRODUCTION

This document provides relevant information for the Secretary of State to consider when reaching its decision whether agreement should be given to the grant of consent for the Jackdaw project. This document is provided as Part 3 of the response to OPRED's Regulation 12(1) July Notice and OPRED's Regulation 12(1) September Notice.

On 19 June 2025, OPRED published its supplementary guidance for assessing the effects of downstream Scope 3 emissions on climate from offshore oil and gas projects (the "Supplementary Guidance"). The Supplementary Guidance states: "the Secretary of State will usually consider, amongst other matters, the severity, extent, understanding and duration of the significant effects, the Government's overall energy and environmental objectives, and the potential economic and other advantages of the project proceeding. This includes an assessment of the extent to which the project aligns with the Government's stated objectives for the future of the North Sea."[2]

The Department for Energy Security & Net Zero (DESNZ)'s Building the North Sea's Energy Future consultation document issued in March 2025[3] stated the following objectives:

- "Overarching objective: to foster an internationally-leading offshore clean energy industry, which ensures good, long-term jobs, growth and investment in communities across the North Sea, in tandem with a sustainable transition in oil and gas – boosting the country's economy and energy security, in line with our climate obligations.
- Supporting objective 1: to ensure our oil and gas workers and supply chain can take advantage of the opportunities of our clean energy transition, creating a global blueprint for a transition which supports prosperity, jobs, growth, communities and energy security.
- Supporting objective 2: to take a globally standard-setting, 1.5°C and climate science-aligned approach to future oil and gas production."

This document sets out the alignment of Jackdaw with UK government policy, the economic and social value that Jackdaw delivers to the UK and the role of Jackdaw in the UK energy system and energy transition.

The aim of this document is to support the Secretary of State, in accordance with the Supplementary Guidance, with a view of the overall balance of advantage of the Jackdaw project, when reaching its decision as to whether agreement should be given to the grant of consent.

A separate document, "Part 1: Scope 3 Emissions Assessment" has been presented which contains an assessment of the effects of downstream scope 3 emissions from the Jackdaw project on climate in response to item 1 of OPRED's Regulation 12(1) July Notice.

A separate document, "Part 2: Updated Assessment of the Project" has been presented which contains a revised and updated assessment of the likely significant effects of the project on the environment that is not limited to downstream scope 3 emissions' in response to item 2 of OPRED's Regulation 12(1) July Notice.

Finally, in the context of the Shell U.K. Limited and Equinor Production UK Limited transaction to form Adura and, following NSTA consent on 1 October 2025 to the assignment of interests in the Jackdaw field and the Licences from BG International Limited to UK North Sea Limited (Company number 16203210), as of 1 November 2025, UK North Sea Limited is now the Jackdaw developer for the purposes of the Jackdaw Environmental Statement (ES Ref: D/4260/2021).

[2] Supplementary guidance for assessing the effects of downstream scope 3 emissions on climate from offshore oil and gas projects.
[3] Building the North Sea's Energy Future: consultation document

2. JACKDAW'S ALIGNMENT WITH UK ENERGY POLICY

For the duration of the Jackdaw project, from its discovery in 2005 to Shell's final investment decision in 2022, UK Government policy has consistently treated the domestic oil and gas sector as a strategic national asset. While evolving in response to climate change, energy security concerns and market dynamics, successive governments have supported investment and production in the UK North Sea as a means to ensure energy resilience, economic contribution and a managed transition to net zero.

Policy documents such as the 2006 Energy Review emphasised the importance of maximising economic recovery from the UKCS, recognising fossil fuels "*will continue to be the predominant source of energy for decades to come*"[4]. These policies acknowledged the need to balance environmental goals with the strategic imperative of securing domestic energy supplies and maintaining competitiveness in global energy markets.

The 2007 White Paper on energy[4] reinforced this approach, stating that fossil fuels would continue to supply most of the UK's energy needs through 2020 and beyond. It called for a supportive regulatory environment to attract investment and unlock untapped reserves, particularly in challenging areas such as West of Shetland. This was echoed in the 2013 UK Oil and Gas Industrial Strategy[5], which set out aims to maximise economic production, strengthen the supply chain and promote collaboration between industry and government.

The strategic rationale was clear: domestic oil and gas production enhances energy security, supports jobs and contributes significantly to public finances. These priorities led to the commissioning of the Wood Review in 2013[6] , which resulted in the creation of the Oil and Gas Authority (OGA, now the North Sea Transition Authority, (NSTA)) and the statutory obligation to maximise economic recovery from the UKCS.

Legislation passed in 2015 and 2016 embedded these principles into law[7], establishing maximising economic recovery (MER UK) as a central obligation, and empowering the regulator to steward the basin effectively. Even as the UK committed to net-zero emissions by 2050, the revised NSTA Strategy in 2020[8] retained the obligation to recover maximum value from UK petroleum resources, while introducing requirements to reduce emissions from operations.

Recent policy documents, including the 2020 Energy White Paper[9] and the 2023 "Powering Up Britain" policy paper[10] , reaffirm the role of domestic oil and gas in maintaining energy security and affordability. The Government continues to support responsible production. In its October 2025 Carbon Budget and Delivery Plan[11], it recognised that oil and gas will continue to play an important role in our energy system mix for decades to come.

Development of the Jackdaw project is fully aligned with this policy trajectory and, specifically, it is consistent with MER UK. Developing Jackdaw will play a crucial role in the UK's energy security, acting as a partner to renewables through the energy transition, while supporting jobs, investment and the UK's strategic interests.

[4] Meeting the energy challenge: a White Paper on energy - GOV.UK
[5] UK oil and gas industrial strategy: business and government action plan - GOV.UK
[6] Wood Review Implementation - GOV.UK
[7] Infrastructure Act 2015
[8] The OGA Strategy
[9] Energy white paper: Powering our net zero future - GOV.UK
[10] Powering up Britain - GOV.UK
[11] Carbon budget and growth delivery plan - GOV.UK

3. JACKDAW'S ECONOMIC AND SOCIAL CONTRIBUTION TO THE UK

JACKDAW SUPPORTS JOBS AND SKILLS

As well as securing domestic energy supply and economic contribution, Jackdaw can play a key role in sustaining and transforming the UK's offshore energy workforce. According to Robert Gordon University's (RGU) 2025 report *Striking the Balance*[12], the UK offshore energy sector currently supports around 154,000 jobs. However, without continued investment in oil and gas projects, the workforce could shrink to as few as 125,000 by 2030, with the oil and gas segment alone falling from 115,000 to between 57,000 and 71,000.

Jackdaw can provide a platform for upskilling and reskilling the workforce for the future.

Shell has invested over £1 billion in executing the Jackdaw project to date. This investment includes contracts with 30 supply chain companies, supporting over 1,000 jobs, the majority of which are in the UK. A detailed breakdown of these jobs by project scope and type can be found in Appendix 1.

These are direct jobs employed by Shell or its contractors and the numbers do not include projections for indirect or induced jobs. For the period 2023-present these are realised job numbers rather than anticipated. For the future looking jobs until mid-2026, when Jackdaw is anticipated to commence production, these jobs are contracted and therefore come with a high degree of confidence.

Beyond the direct spend with UK suppliers and paying of UK wages, the gas produced by Jackdaw plays a significant role in sustaining production at the Shearwater offshore gas hub into the 2030s, whereas Shearwater would otherwise become uneconomic in [redacted]. Jackdaw gas could safeguard 300 direct jobs on Shearwater. A detailed breakdown of the Shearwater jobs safeguarded by Jackdaw production can be found in Appendix 2.

RGU's modelled decline[14] in the sector overall risks not only job losses but also the erosion of critical skills needed for the clean energy transition. RGU's research[14] highlights that the UK's offshore renewables sector currently lacks the capacity to absorb the volume of skilled workers displaced by a steep hydrocarbon decline. Jackdaw helps mitigate this risk by preserving employment in the short term, while enabling a managed and just transition. It supports the retention of high-value skills in engineering, operations and safety – skills that are directly transferable to offshore wind, carbon capture and hydrogen projects.

In this way, supporting Jackdaw is not a contradiction of climate goals but a necessary step towards achieving them in a way that is economically and socially responsible.

RGU's report[14] suggests that without coordinated action, the UK could lose tens of thousands of jobs to overseas markets where governments are actively investing in both fossil fuels and low-carbon growth. Countries like Norway and Denmark are sustaining domestic oil and gas production to maintain workforce continuity while scaling renewables. Advancing the Jackdaw project aligns with this pragmatic approach, ensuring the UK remains competitive and avoids offshoring its energy expertise.

JACKDAW'S ECONOMIC CONTRIBUTION

In 2024 Offshore Energies UK (OEUK) worked with independent economic consultancy Experian to estimate the direct, indirect and induced employment and Gross Value Added (GVA)

[12] RGU_ETI_Report_2025.pdf

contribution that the oil and gas industry makes nationwide. As part of this analysis[13] Experian estimated that every £1 million of investment by the oil and gas industry generated £2.1 million of GVA in 2022. If we assume this multiplier holds for the period of Jackdaw construction (2023-2025) then the £1 billion Shell has invested in Jackdaw to date has already resulted in an economic contribution of £2.1 billion.

Offshore oil and gas production is at the heart of Shell's wider economic contribution to the UK. For well over a century, Shell has played a major role in powering and fuelling the UK's industries, transport and homes. Since the early 1960s, Shell's offshore oil and gas business in the UK has been a source of significant economic growth – the Brent field alone has contributed over £20 billion[14] in Government revenues and sustained tens of thousands of jobs over the course of its life.

In the most recent analysis available, Oxford Economics quantifies the substantial annual socio-economic impact of Shell UK's footprint in the UK[15]:

- £11.8 billion contribution to GDP[16]
- 78,000 jobs supported by Shell business activities, 1 in every 460 jobs in the UK
- 18,000 jobs supported in Scotland, 1 in every 140
- £5.4 billion stimulated in payments to government[17]

This substantial contribution to the UK's economy, a contribution which has been sustained over decades, is reliant on continued production in the UK North Sea, which includes projects like Jackdaw. If Jackdaw does not move into production, UK Treasury will not receive the significant expected tax receipts that a project such as Jackdaw would generate (noting the current "Energy Profits Levy" is set at a 78% tax rate for assets inside the oil and gas sector "ringfence").

SUSTAINING CRITICALLY IMPORTANT NATIONAL ENERGY INFRASTRUCTURE

Gas from Shearwater (where Jackdaw gas will be transported) supports continued operation of the St Fergus gas terminal and the SEGAL System[18], which together process around one-third of the UK's gas demand. This is a nationally important piece of energy infrastructure for the UK and at the heart of Scotland's industrial base. This part of the UK gas system, which would be supplied by Jackdaw, is reliant on ongoing investment in gas supplies to ensure it has suitable feed gas for its operations. With decades of gas demand to come, domestically produced gas plays a critical role in energy security, which the UK Government acknowledges[19] is a matter of national interest and security.

Jackdaw gas is transported through the Fulmar gas line where it is processed onshore at St Fergus gas terminal and then physically enters the National Gas Transmission Network. At the St Fergus gas plant, Jackdaw gas is sold together with other gas in the Shell UK portfolio into the UK market on a daily basis under UK National Balancing Point contracts. This means that Jackdaw gas will be used mainly to heat UK homes and business, provide energy for industries and generate electricity.

[13] Experian-Oil-and-Gas-Economic-Impact-Summary-Final-1.pdf
[14] The Brent Story | About Shell UK
[15] Oxford Economics
[16] The GDP of a country is defined as the total market value of all final goods and services produced within a country in a given period of time (usually a calendar year).
[17] Shell UK's payments to the government include income tax paid; VAT, fuel duties, and excise duties paid and collected; employment taxes paid and collected; and fees.
[18] SEGAL System | Business
[19] Powering Up Britain: Energy Security Plan

4. THE ROLE OF JACKDAW GAS IN THE UK ENERGY SYSTEM

ENERGY SECURITY WITHIN A BALANCED PATHWAY USING DOMESTIC GAS

UK gas demand is structurally inelastic and largely independent of domestic production levels. Empirical evidence and official modelling[20] show that demand barely changes even under large price swings, and that the UK system adjusts via trade flows, not consumption change.

DESNZ noted in the Statutory Security of Supply Report 2024[21] "*As domestic gas production declines, GB will continue to benefit from a diverse set of import routes and the second largest liquified natural gas (LNG) import infrastructure capacity in Europe.*" Seasonal variation in demand is largely driven by domestic heating requirements - there are estimated to be 23 million domestic gas boilers in the UK[22]. Any increase in domestic supply would therefore displace imports and not increase overall gas use in the UK. It is therefore reasonable to conclude that an absence of Jackdaw gas would result in substitution of international hydrocarbon supplies into the UK. What would happen to the UK's avoided imports depends on choices made by suppliers and competition in the international market, which are outside both Shell and the UK's control.

Gas plays a fundamental role in the UK energy system. Gas continues to remain critical to powering and heating the UK, especially in winter, and in 2024 made up 35% of total UK energy demand'[23]. Most recent data show 85% of households in the UK remain connected to the gas grid[24].

Figure 4-1 plots domestic gas production forecast (NSTA), forecasted gas demand (DESNZ Net Zero Scenario) and anticipated gas demand (Committee for Climate Change's Balanced Pathway: an emissions reduction pathway from 2025 to Net Zero by 2050 in the 7th carbon budget). This chart shows that gas will continue to play a critical role and that gas demand will continue to be greater than domestic gas production at least until 2050[25], importantly, within the Committee for Climate Change's Balanced Pathway to net zero.

[20] Fiscal risks and sustainability, July 2023, Office for Budget Responsibility
[21] Statutory Security of Supply Report 2024, DESNZ
[22] UK boiler statistics 2023 - Uswitch
[23] Digest of UK Energy Statistics Annual data for UK, 2025
[24] Midstream gas system: update to the market - GOV.UK
[25] DESNZ Net Zero Strategy and CCC Carbon Budget 7 Demand and NSTA March 2025 Production Projections

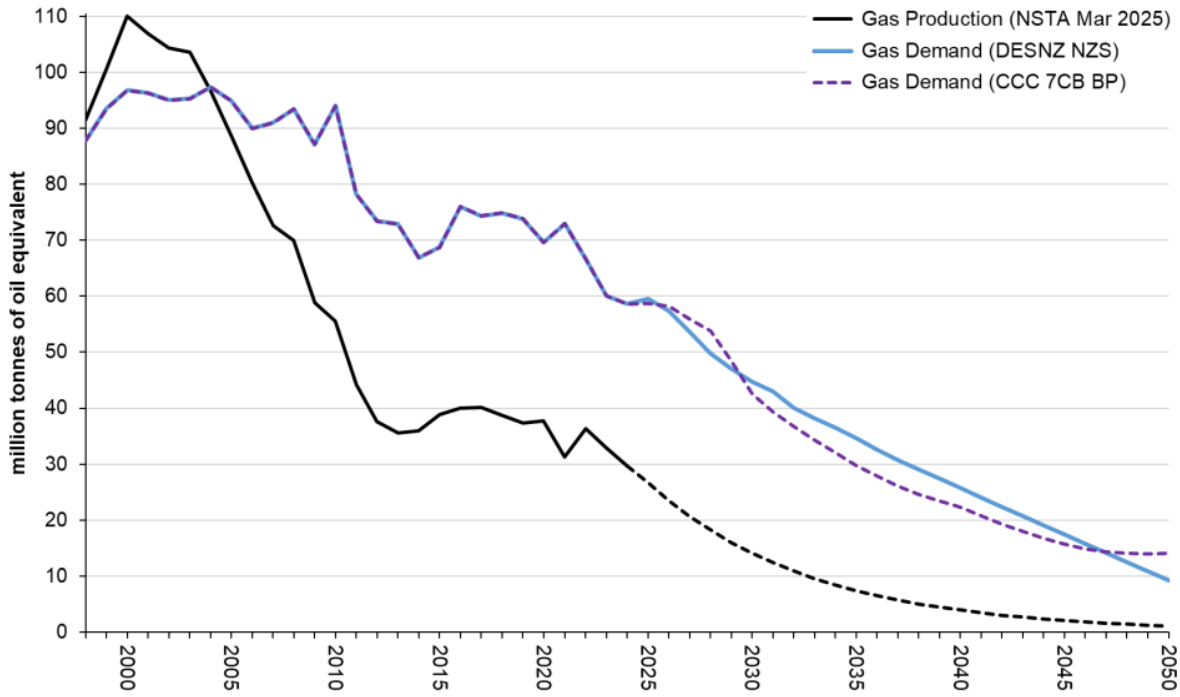


Figure 4-1: UK Gross Gas: DESNZ Net Zero Strategy and CCC 7th Carbon Budget & Demand and NSTA Production Predictions[25].

Given the above projections, it is reasonable to assume that, even in the absence of the Jackdaw project, UK demand for gas will still need to be fulfilled. Table 4-1 demonstrates that for Jackdaw's likely period of production (2026 – 2034):

- Projected UK gas production follows a declining trend, consistent with historical patterns and field maturity in the UKCS
- In contrast, projected UK demand for gas (on a net-zero compliant pathway) persistently and materially exceeds projected UK gas production
- The UK will therefore continue to need to import gas in order to meet demand, at an annual average of around 31 mtoe per annum
- Per the 2022 Jackdaw Environmental Statement[26]at its peak, Jackdaw is expected to deliver 6.5% of UKCS gas production."

[26] Jackdaw Environmental Statement

Table 4-1: Projected UK Gas Demand, Domestic Production and Net Imports, 2026-2034[27]

Year	UK Gas Demand (mtoe)		UK Gas Production	UK Gas Imports (mtoe)	
	CCC 7th Carbon Budget	DESNZ Net Zero delivery pathway	NSTA (August 2025 Projections)	Net Imports Gas (CCC)	Net Imports Gas (DESNZ)
2026	59.1	57.4	23.5	35.6	33.9
2027	56.9	53.6	20.7	36.2	32.9
2028	54.8	49.8	18.3	36.5	31.5
2029	49.6	47	16	33.6	31
2030	43.7	44.7	14.1	29.6	30.6
2031	40.5	43	12.4	28.1	30.6
2032	37.8	40	10.9	26.9	29.1
2033	35.3	38.2	9.6	25.7	28.6
2034	33.1	36.6	8.5	24.6	28.1

It is therefore reasonable to assume that, in the absence of the Jackdaw project, UK demand would need to be met by an alternative source of gas, and that the alternative source of gas will be imported, given the shortfall in domestic production highlighted by the NSTA (August 2025 projection).

LOWER EMISSIONS FROM DOMESTIC GAS

Shell believes that gas has a key role to play in the global energy transition, described in detail in the Shell Energy Transition Strategy 2024[28]. Globally, gas replacing coal in power generation is one of the biggest short-term levers for reducing global emissions. Gas-fired power generation is flexible and therefore well suited to partner with renewables generation which can be intermittent. The Global Stocktake Agreement[29] following COP28 recognises that "*transitional fuels can play a role in facilitating the energy transition while ensuring energy security*."

In the UK, gas demand is projected to significantly outweigh UK gas production, meaning that the UK is constantly importing gas to fulfil the domestic gas demand. shows that UK gas demand is projected to not only outweigh UK production, but also UK production in combination with the UK's single-biggest source of imports, which is pipeline gas from Norway,

[27] NSTA August 2025 production projections plus ccc and desnz demand projections
[28] Shell Energy Transition Strategy 2024.
[29] Global Stocktake | UNFCCC

Other sources of gas import (i.e. LNG and non-Norwegian interconnectors) are therefore required to fulfil UK's gas demand as shown in Figure 4-2.

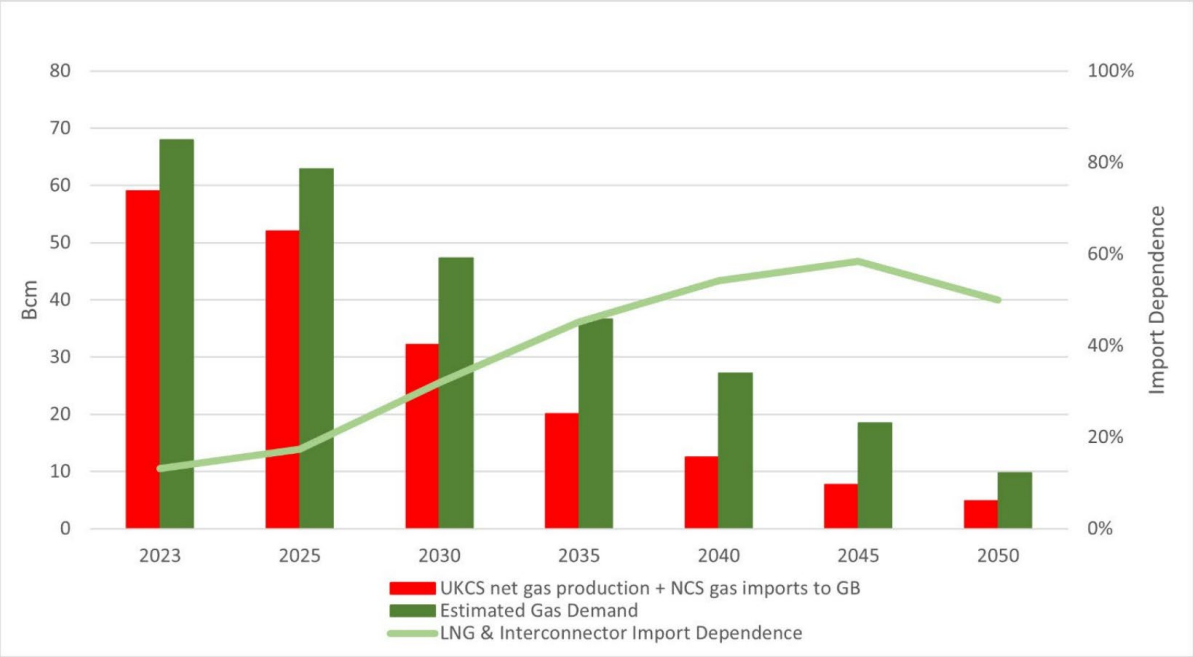


Figure 4-2: Projected UK gas supply and Norwegian gas imports, compared to UK Gas Demand[30].

LNG is projected to become increasingly important to UK security of gas supply over the period of likely expected Jackdaw production. As the UK Energy Research Centre have recognised in a recent report, falling UK gas production is mirrored by falling gas production across the UK's continental neighbours, which "*means that it is LNG that will fill this gap*"[31]. National Gas in its most recent Gas Ten Year Statement states that it expects "*a continuation of increased LNG supplies to offset reduced imports from, and increased exports to, Europe*."[32]

Figure 4-3 presents the increasing importance of LNG in UK's future gas supply. While currently Norwegian pipeline gas is the UK's largest import source, an increasingly large proportion of gas demand is served by LNG, particularly from the US. LNG has typically been the last source brought online to meet demand, and it is typically sold at a higher price than pipeline gas. Increasing LNG imports are projected to be required as shown in , even when the total UK gas demand is reducing.

[30] The role of gas storage and other forms of flexibility in security of supply.
[31] UK Gas Security: Managing Energy Security Challenges and Transition Risks.
[32] National Grid Transmission Ten Year Statement 2024.

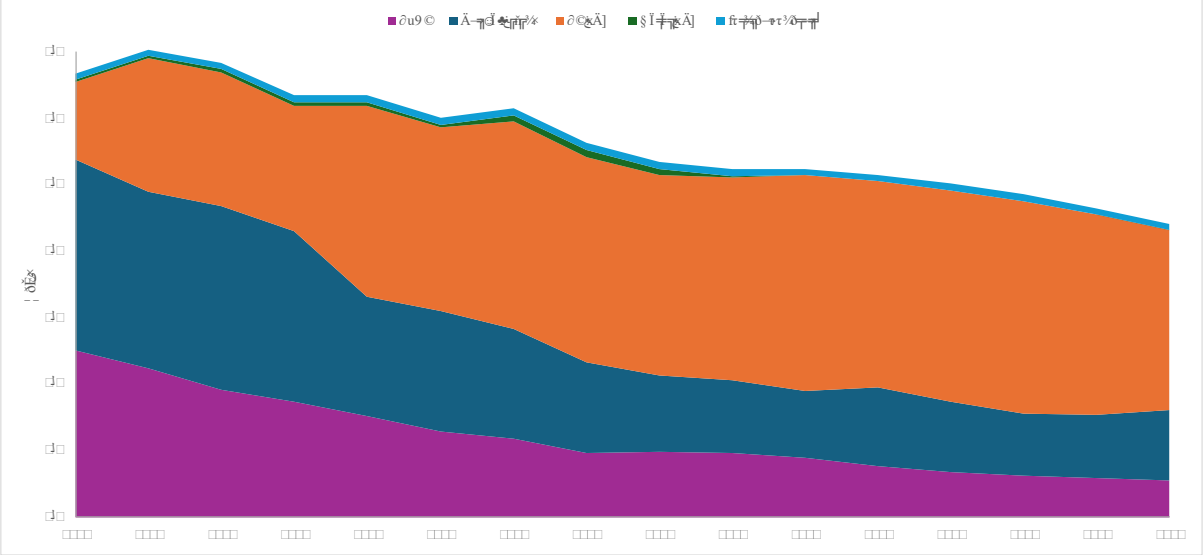


Figure 4-3 – Future UK Gas Supply by Source[33]

While imported LNG can be expected to have equivalent Scope 3 emissions as natural gas, the emissions intensity of producing gas domestically (28 $kgCO_2e$/boe) is on average approximately three times lower compared with importing gas in LNG form (85 $kgCO_2e$/boe), according to NSTA analysis[1].· This is because the production of LNG, alongside traditional upstream production, requires liquefaction, shipping and regassification, all of which produce additional emissions. Therefore, the net effect on emissions from replacing Jackdaw gas with an alternative imported source of gas is that overall emissions would be likely to increase.

The context for Jackdaw's likely period of production (2026-2034) is therefore:

- UK gas production declining at a faster rate than UK gas demand
- With Norwegian import volumes expected to decline (Figure 4-3) there will be increasing reliance on sources of non-Norwegian imports, the majority of which are expected to be LNG.

In summary, this section highlights that:

- In the absence of the Jackdaw project, UK demand for gas will still need to be fulfilled
- The alternative source of gas, in the absence of Jackdaw, will be an imported source of gas, and
- With declining domestic and Norwegian supplies, it is reasonable to expect that Jackdaw gas would be replaced by LNG imports, likely resulting in higher emissions overall.

Shell believes that, while demand for gas remains, the UK should strive to produce domestic gas as much as possible. Jackdaw production would fulfil part of the highly predictable future demand for gas in the UK at lower emissions intensity than imported LNG, which is expected to be the replacement alternative. Jackdaw would also support national energy security and economic resilience.

[33] Wood Mackenzie independent verification.

5. SHELL'S ROLE IN THE ENERGY TRANSITION

Shell supports the more ambitious goal of the Paris Agreement[34], which is to limit the rise in global average temperature this century to 1.5 degrees Celsius above pre-industrial levels. Together with effective government policies, Shell believes that consumer demand can be shifted to low-carbon products, through developing the infrastructure and technology needed for the energy transition, while maintaining a secure and affordable supply of energy.[35] Public policy, developments in technology and infrastructure, and a functioning carbon market are essential to create the demand signals for the private sector to invest at scale. This will require collaboration between policymakers, customers and private organisations like Shell that have the financial strength, experience and capabilities to help build the new energy system.[35]

Shell's target is to become a net-zero emissions energy business by 2050.[35] In the short- and medium- term, we have set targets for emissions that we are able to control (namely our Scope 1 and 2 emissions, methane emissions and flaring), as well as targets and an ambition for emissions that are outside our control. This includes our ambition to reduce customer emissions from the use of our oil products by 15-20% by 2030, Scope 3 Category 11 (2021 reference year),[36] and our target to reduce the net carbon intensity of all the energy products we sell[35][37]. The vast majority of the Scope 3 emissions reported by a company like Shell are those associated with the consumption of the energy products that it sells.

To support consumers' decisions and choices, Shell offers a range of low-carbon alternatives. In the UK, Shell has long supported ambitious climate policy, including emissions trading, legislating for net zero, and sectoral initiatives, including the North Sea Transition Deal[38]. Shell's initiatives to contribute to the energy transition include, for example:

- Through Shell Energy[39], enabling renewable deployment by entering into offtake agreements with renewable energy producers, pursuant to which we supply thousands of UK businesses with clean power providing them with long-term price stability.
- Investing in electric mobility infrastructure to support the UK's switch to electric vehicles.[40] We provide access to one of the UK's largest electric-charging networks with access to over 35,000 public charge points, ensuring we offer a strong, reliable and highly-utilised network. For example, Ubitricity[41], a Shell subsidiary, has installed 10,000 public EV charge points in the UK.
- Partnering with others in the carbon capture and storage (CCS) Acorn Project[42], which aims to provide the transport and storage infrastructure that will help Scottish industry decarbonise, aiming to store up to 10 million tonnes of CO_2 every year.

In the future, some mitigation measures may be possible for some projects, for example if there is a functioning market (including at consumer level) for CCS and sufficient demand for hydrogen. However, measures such as these to effectively tackle emissions require progressive

[34] The Paris Agreement
[35] shell-energy-transition-strategy-2024.pdf
[36] Customer emissions from the use of our oil products (Scope 3, Category 11) were 517 million tonnes carbon dioxide equivalent (CO2e) in 2023 and 569 million tonnes CO2e in 2021.
[37] Shell's "net carbon intensity" includes Shell's carbon emissions from the production of our energy products, our suppliers' carbon emissions in supplying energy for that production and our customers' carbon emissions associated with their use of the energy products we sell. Shell only controls its own emissions. The use of the term Shell's "net carbon intensity" or NCI is for convenience only and not intended to suggest these emissions are those of Shell plc or its subsidiaries.
[38] North Sea Transition Deal
[39] shellenergy.com
[40] Electric vehicle charging | About Shell UK
[41] ubitricity | turning lampposts into EV charge points
[42] Acorn | Growing Our Decarbonised Future - The Acorn Project

government policy, supported by effective collaboration between policymakers, customers and private organisations.

SHELL'S WIDER SOCIAL IMPACT IN THE UK

Shell in the UK is committed to delivering positive impact in the communities where we operate beyond the energy products and services we provide. This includes working closely with local stakeholders to assess and manage our social and environmental footprint. In addition to powering homes, transport and industry, we create jobs, support local businesses through procurement, and invest in training and employment initiatives.

We support the future energy workforce through our UK SkillsTransition programme[43], aiming to help 15,000 people into jobs with a focus on the energy transition by 2035.

Specific skills development and innovation initiatives across the UK that Shell supports are:

1. Energy Transition Skills Hubs[44]

Shell is supporting the development of Energy Transition Skills Hubs across the UK to help build a highly skilled and more diverse workforce for the future energy system.

Fife College (Fife, Scotland):

Opened in 2024, the Energy Transition Hub at Fife College offers students hands-on training in renewable energy technologies. The facility includes a nano grid learning environment with small-scale solar panels and wind turbines, supported by sensors and software. Students gain practical experience in SmartGrids, wind and solar PV systems learning how to design, manage, install, and maintain energy infrastructure in real-world scenarios.

North East Scotland College (Aberdeen, Scotland):

The Energy Transition Skills Hub in Aberdeen opened in August 2025 and was founded by ETZ Ltd, Shell UK, and North East Scotland College with support from the UK Government and the Scottish Government's Just Transition Fund. It aims to help 1,000 people[45] into energy transition jobs within its first five years.

Pembrokeshire College:

The hub at Pembrokeshire College in Haverfordwest, offers a new virtual control room centre on the existing campus. This innovative specialist centre provides immersive, hands-on training in control systems crucial for offshore floating wind, hydrogen production, solar photovoltaics and other emerging energy technologies.

With these hubs, Shell aims to support 5,000 learners across the UK. The hubs have successfully attracted additional investment from private, philanthropic and public sector partners, amplifying their impact and reach.

2. Girls in Energy[46]

Delivered in partnership with North East Scotland College and Fife College, Girls in Energy is a year-long engineering programme designed to inspire young women to pursue Science Technology Engineering and Maths (STEM) subjects and careers in the global energy sector. Combining classroom learning, industry visits, and hands-on workshops, students earn a National 5 "Skills for Work – Energy" qualification. Since its launch in 2010, over 1,800 young

[43] Shell UK – Supporting UK Jobs and Skills.
[44] Energy transition jobs and skills | About Shell UK
[45] First Minister performs official opening of new Energy Transition Skills Hub - North East Scotland College
[46] Girls in Energy | About Shell UK

women have completed the programme, with more than 200 participants annually. Girls in Energy recently celebrated its 15th anniversary. The Girls in Energy programme has been recognised with a cross-party motion in the Scottish Parliament[47] for its impact.

3. Shell Engineering Scheme[48]

Launched in 2002 to support the Goldeneye Project at St Fergus, this bespoke programme has helped over 250 young people gain in-demand engineering skills. With an annual intake of 12 students, the two-year programme includes a PEO (Performing Engineering Operations), NC (National Certificate), two Higher National qualifications, and an SVQ (Scottish Vocational Qualification), along with industry-specific modules aligned to current sector needs.

4. Shell LiveWire[49] (delivered by Elevator)

In 2024, this programme supported 29 Scottish firms contributing to the energy transition, providing strategic guidance, connections, and growth tools. Participating businesses have reported tangible outcomes, including the creation of over 50 new jobs.

5. APTUS Scheme[50]

Shell UK continues to be the largest industry sponsor of APTUS, the UK oil and gas industry's apprenticeship programme. In 2025, Shell is sponsoring four new apprentices, bringing its total to 46 apprentices currently in training under the OEUK Charter agreement.

[47] S6M-15721 | Scottish Parliament Website
[48] Shell Engineering Scheme - North East Scotland College
[49] Shell LiveWire Scotland | About Shell UK
[50] Technical Apprenticeships in the Energy Sector - Aptus

6. CONCLUSION

The development of Jackdaw aligns with the UK Government's strategic objectives for the future of the North Sea by supporting secure, domestic gas production, sustaining critical infrastructure such as the Shearwater gas hub and SEGAL system, and contributing to the UK's energy resilience, good jobs and tax revenue during the transition to net zero.

With over £1 billion invested to date, Jackdaw has supported more than 1,000 UK-based jobs and generated an estimated £2.1 billion in economic value. The project is being developed in accordance with the OGA Strategy and the North Sea Transition Deal, contributing to decarbonisation goals while maintaining reliable supply. At peak, Jackdaw will deliver around 6.5% of UKCS gas production – enough to heat over 1.4 million homes.

By retaining offshore capability and enabling continued investment, Jackdaw supports the UK's energy security, economic growth, and industrial continuity, while helping ensure the workforce and infrastructure needed for future clean energy expansion remain in place.

According to the CCC's 7th carbon budget, UK gas demand during Jackdaw's expected production period will exceed domestic supply. Without Jackdaw, any additional shortfall will be met by imports, primarily LNG. While imported LNG can be expected to have equivalent Scope 3 emissions as natural gas, the emissions intensity of producing gas domestically (28 $kgCO_2e$/boe) is on average approximately three times lower compared with importing gas in LNG form (85 $kgCO_2e$/boe), according to NSTA analysis[1]. Therefore, the net effect on emissions from replacing Jackdaw gas with an alternative imported source of gas is that overall emissions would be likely to increase.

Shell believes that, while gas demand remains, the UK should strive to produce domestic gas as much as possible, with projects like Jackdaw, given the tangible benefits to the country. Jackdaw helps meet UK gas demand with lower emissions intensity than imported LNG, while also supporting national energy security and economic resilience.

APPENDIX 1 - DIRECT EMPLOYMENT FROM THE JACKDAW PROJECT

Project Scope	Types of job	Jobs created	
		2023 -Present	Present – First Gas (mid 2026)
Wells	Offshore Rig Mechanic; Drilling Engineer; Roustabouts; Logistics Coordinator; Coiled Tubing Technician	267	267
Subsea	DSV Captain; ROV Engineer; Welder; Vessel Crew; Subsea Engineer; Offshore Diver; Offshore Doctor and Diving Medical Crew	310	310
Well head platform	Mechanical Technician; Instrument Technician; Scaffolder; Work Package Engineer; Commissioning Lead; Offshore Cook; Cost Engineer; Buyer; Planner; Project Engineer; Completions Engineer	420	130
Brownfield Modifications	Mechanical Technician; Instrument Technician; Scaffolder; Work Package Engineer; Commissioning Lead; Offshore Cook; Cost Engineer; Buyer; Planner; Project Engineer; Completions Engineer	120	95
TOTAL		**1117**	**822**

APPENDIX 2 – DIRECT SHEARWATER JOBS SAFEGUARDED BY JACKDAW

Onshore/Offshore	Types of Jobs	Jobs
Offshore	Offshore installation manager, Installation Engineer, Operations Supervisor, Operations Technician, Maintenance Supervisor, Maintenance Technician, Electrical technician, Mechanical Technician, Instrument technician	63
Onshore	Operations, Engineering, HSSE, Finance, Commercial, Development, Supply Chain	55
Offshore	Mechanical Technician, Instrument technician, Electrical technician, Deck crew, rigger, pipefitter	49
Onshore	Work Preparator (Mechanical, Instrument & electrical) Scheduler, Structural Engineer	6
Offshore	Scaffolders, Fabric Maintenance Supervisors, Painter, Insulators	48
Onshore	Work Preparator, Planner	2
Offshore	Camp Boss, Stewards, Chef, Helicopter Admin staff	24
Offshore	Non-Destructive Testing, Fabric Maintenance	15
Onshore	Inspection Engineers, Inspection Planner	8
Offshore	Crane Driver	3
TOTAL		**273**