Wressle Field Onshore UK

Lodge Farm, Clapp Gate, Appleby, North Lincolnshire, DN15 0DB

Scope 1, 2 and 3 Emissions Forecast for Wressle Field Development

esg risk emissions engagement

Published By
sustain:able

27th February 2025

For Egdon Resources U.K. Limited

About sustain:able

sustain:able are a UK-based consultancy focussed on providing relevant, honest advice regarding ESG and emissions to companies in the oil & gas, mining and wider energy sectors across the globe. Our people come from geoscience, engineering, commercial, facilities, environmental and project management roles who have worked directly in either oil & gas, mining, or renewable energy, in locations all over the world. We use our industry knowledge and experience to support our clients in addressing the ever-changing ESG and emissions requirements, whilst always being mindful of their core business.

Our expert emissions team hold ISO 14064 and 14067 certifications in Greenhouse Gas Emissions Accounting and Carbon Footprint Analysis, providing emissions forecasts for future projects, accounting of annual emissions, and evaluation of Scope 3 emissions. We also support ESG risk assessment and reporting for companies across the globe, providing both the strategic planning, data and framework reporting activities relevant to their situation, and the narrative and proposed graphics for the publication of ESG information on company websites, in annual reports, sustainability reports, or through investor content.

More information is available on our website (www.esgable.com).

Contents

List of Tables

List of Figures

1 Glossary of Terms & Conversions

Abbreviation/Term	Definition
3P forecast production	Proven + Probable + Possible production forecast volumes representing the high case estimate of oil and gas reserves
bbl (plural bbls)	Barrel(s) of oil, equivalent to 159 litres
BCF	Billion cubic feet of gas
Category 11 emissions	Scope 3 Category 11 (use of sold product) emissions
CH_4	Methane
CO_2	Carbon dioxide
EF	Emissions factor
GHG	Greenhouse gas
GWP	Global warming potential
m^3	Cubic metres
MD	Measured depth along the borehole measured from ground level
MMbbls*	Million barrels of oil
MMscf *	Million standard cubic feet of gas
$MtCO_2e$	Million tonnes of carbon dioxide equivalent
N_2O	Nitrous oxide
tCO_2e	Tonnes of carbon dioxide equivalent
TVDSS	True vertical depth of the borehole below a sub-sea datum
WTT	Wheel-to-tank upstream emissions factor for fuels

* It is common in the oil and gas industry to represent millions by the notation 'MM' (e.g. MMbbls to signify millions of barrels of oil). This may be different to other industries where millions may be represented by one 'M' only (e.g. $MtCO_2e$).

Unit	Conversion
1 bbl	159 litres
1 bbl of oil*	0.1323357 tonnes
1 scf	0.028317381 m^3
1 m^3 of gas*	0.00082 tonnes
1 scf of gas*	2.32203×10^{-5} tonnes
1 MMscf of gas*	23.22025 tonnes
Wressle 1 crude oil density	0.8323 kg/litre
Wressle 1 flare gas density	0.82 kg/m^3

* Quoted conversions use densities provided in this table supplied by Egdon and are assumed to be at ambient conditions.

2 Executive Summary

This report, prepared by sustain:*able* for Egdon Resources U.K. Limited ('Egdon'), assesses future greenhouse gas (GHG) emissions from the existing Wressle 1 well and the proposed site development that will enable the drilling and production of hydrocarbons from two new wells, Wressle 2 & 3, and the construction and commissioning of a new gas export pipeline.

A 'reasonable worst-case' emissions estimate has been prepared for the proposed Wressle development that includes Scope 1, 2 and 3 emissions that are relevant to the proposed activities. Scope 3 Category 11 (use of sold product) emissions have been assessed separately and compared to the Scope 1, 2 and 3 emissions assessed during this study, however a detailed discussion of Category 11 emissions is excluded and the reader is referred instead to the sustain:able report dated 14th February 2025 (Wressle Field Onshore UK, Scope 3, Category 11 Emissions Assessment).

Activities and emissions sources related to the proposed development of the Wressle Field are based on the 3P production forecast, which represents the high case estimate of oil and gas reserves. Details of the activities and sources associated with the proposed development were provided by Egdon, in conjunction with proxies and industry averages where necessary. The emissions arising from Scope 1, 2 and 3 activities were then calculated to produce an overall absolute emissions estimate for the project throughout the expected 15-year field life.

The total 'reasonable worst-case' project emissions are estimated to be **89,732 tCO_2e**. This has been split into Scope 1 (**74,031 tCO_2e**), Scope 2 (**10,408 tCO_2e**) and Scope 3, excluding Category 11 (**5,293 tCO_2e**), with Scope 1 emissions accounting for 83% of the total emissions.

The most significant sources of emissions are related to power generation, where the forecast use of diesel and gas engines on site, and electricity purchased from the national grid accounts for 45% of emissions. Venting (30%), and flaring (19%) account for the majority of remaining emissions.

Scope 3 Category 11 (use of sold product) emissions (assessed in a separate study) are reported to be between 880,402 tCO_2e (Scenario A) and 917,999 tCO_2e (Scenario B). When combined with the other estimated Scope 1, 2 and 3 project emissions, Category 11 emissions represent over 90% of the total project emissions.

The period of highest expected production and sales of oil and gas from the Wressle Field, and hence the period of highest total forecast emissions, falls within the 5th Carbon Budget period between 2028-2032. During this time, the total project emissions (including Category 11 emissions) will amount to approximately 0.0241% of the UK Carbon Budget.

3 Introduction

The Wressle Field is located to the east of Scunthorpe in North Lincolnshire on licence PEDL180 and PEDL182 where Egdon Resources U.K. Limited ('Egdon') operates with a 30% equity interest (JV partners Europa Oil & Gas Ltd have 30% equity, and Union Jack Oil plc have 40% equity). Production of oil and gas commenced from the Wressle 1 well in January 2021. The proposed development at the Wressle Field is to include additional oil and gas production from two new wells (Wressle 2 & 3) and a new gas export pipeline.

Planning permission was granted by North Lincolnshire Council ('NLC') for the Wressle Field development on 13th September 2024. However, the permission was quashed on 8th November 2024 by the High Court following the '*Finch*' decision in the Supreme Court in June 2024 (Finch v Surrey County Council, 2024) and the application (PA/SCR/2024/275) is with NLC for redetermination.

The '*Finch*' decision was wholly related to consideration of emissions from eventual combustion of the extracted oil, known as Scope 3 Category 11 (use of sold product) emissions. An assessment of these 'Category 11' emissions has been undertaken and presented in a separate report and is therefore not addressed in detail in this study (sustain:able, 2025). However, a comparison of the Scope 1, 2 and 3 emissions assessed during this study has been made against the Scope 3 Category 11 emissions in the results section to provide context for the total project emissions.

Oil produced from the Wressle 1 well is transported by road tanker to the Phillips 66 Humber refinery on Humberside where it is sold. Currently, there is no export route for gas, therefore gas produced from the field is largely flared (in compliance with all required permits) with a small amount available for on-site power generation.

The next stage of the Wressle Field development will include the drilling of two new wells (Wressle 2 and 3) and the construction of a 600m underground gas pipeline. For the purpose of this assessment the new facilities are assumed to be commissioned in 2026 allowing first oil from the new wells and gas export. Once the new facilities are commissioned, oil produced from Wressle 1, 2 and 3 wells will continue to be transported to the same refinery and sold. A small volume of produced gas will be used for power generation and the remaining gas will be sold and exported via the new pipeline. This study considers all future development activities and production from the field from 1st January 2025 to 2039, a 15-year production life (with cessation of production assumed at 1st July 2039 followed by decommissioning activities until end 2039).

Activities and emissions sources related to the proposed development of the Wressle Field are based on the 3P production forecast. In oil and gas production forecasting, 1P, 2P, and 3P reserves represent different levels of certainty in estimated recoverable volumes. 1P (Proven Reserves) are

the most certain, with a high probability (≥90%) of being commercially recoverable under existing conditions. 2P (Proven + Probable Reserves) include 1P plus additional reserves with a lower certainty (≥50%) of being economically viable. 3P (Proven + Probable + Possible Reserves) further extend the estimate to include less certain volumes with a ≥10% probability of recovery (SPE, 2018). These classifications help operators and investors assess risk and potential production profiles over a field's lifespan. Therefore, aligning activity and emissions calculation to the 3P forecast provides a 'reasonable worst-case' estimate.

This report summarises the calculation of the potential Scope 1, Scope 2 and Scope 3 emissions that could result from the Wressle Field development. Scope 1, 2, and 3 categorise GHG emissions based on the degree of control a company has over the emissions sources. Scope 1 emissions are direct emissions from owned or controlled sources, such as fuel combustion in on-site power and production facilities, and gas flaring and venting. Scope 2 emissions are indirect emissions from purchased electricity, steam, or heat used in operations, such as power utilised from the national grid. Scope 3 emissions encompass indirect emissions from the value chain, including emissions from suppliers, transportation of crude oil, and, most significantly, the combustion of sold oil and gas products by end users. The GHG Protocol identifies 15 Scope 3 categories, with the combustion of sold oil and gas products by end users known as Category 11. Other Scope 3 categories have not been defined in this study because this often relies on alignment to accounting procedures and contract types, which has not yet been defined for this project. A detailed breakdown of emissions sources and their assigned scope is provided in Section 4.3 and Appendix 1. This was undertaken using activity data provided by Egdon and their suppliers, as well as proxies and industry averages where necessary. The methodology, scope, assumptions and results are discussed below.

The UK is the first country to set legally binding carbon budgets. A carbon budget places a restriction on the total amount of greenhouse gases the UK can emit over a 5-year period. This report summarises the Wressle Field Development's contribution to these budgets in Section 5.3.

4 Methodology, Scope and Assumptions

4.1 Methodology

The GHG Protocol (Greenhouse Gas Protocol, 2004) and ISO 14064-1 (ISO, 2018) standards provide an internationally recognised methodology for emissions accounting of both company emissions and project emissions, with the primary objective of ensuring consistency and transparency in reporting. The general approach is shown in Figure 1 and described in more detail below.

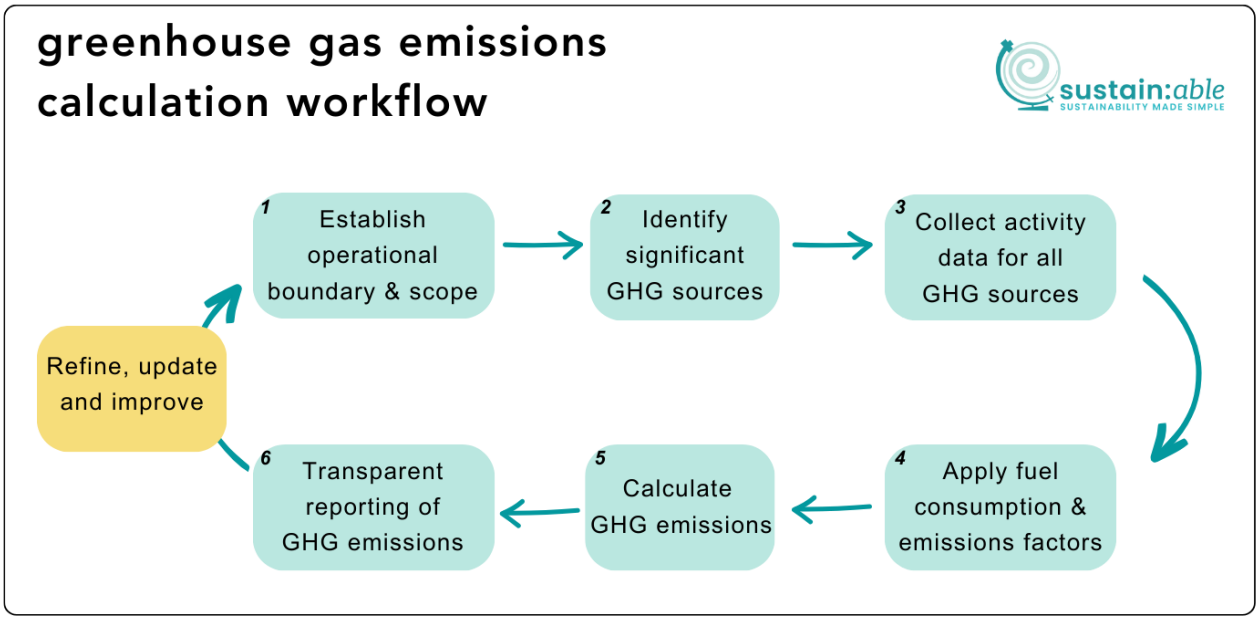

Figure 1. General workflow for calculation of greenhouse gas emissions.

1. **Establish the operational boundaries and scope of the project** – in this study emissions are classified based on operational control and presented on a 100% basis. The project emissions are calculated for the Wressle Field development to present a 'reasonable worst-case' scenario that includes activities relating to future production from the existing Wressle 1 well and planned Wressle 2 & 3 wells and gas export pipeline.
2. **Identifying emissions sources and categorising by scope**:
    - The emissions sources identified for each phase of the planned Wressle Field development are listed in Table 2. These have been classified as Scope 1, 2 or 3 depending on degree of control and ownership as per GHG Protocol methodology.
3. **Collection of activity data** – Egdon have provided a forecast of activity data for this study which includes:
    - Power requirements for the site and production facilities.
    - Forecasts of planned flaring and venting volumes.

- Rationale for exclusion of fugitive emissions as non-material to the project (refer to Section 4.3.4).
- Activities relating to drilling, proppant squeeze and decommissioning operations using a drilling rig and other specialist equipment.
- Civil works activities including site construction and restoration and pipeline construction.
- A detailed breakdown of HGV (heavy goods vehicles) and LGV (light goods vehicles) movements over the life of the project, including types of vehicles and distances travelled.
- Contractor and employee commuting activities.

4. **Emissions calculations** – conducted in two steps:
   a) Determining the fuel type and total fuel consumption for each activity identified by Egdon, utilising publicly available databases and equipment/vehicle specifications, including UK Government and industry databases.
   b) Applying relevant emission factors based on the relevant fuel type using publicly available data from UK Government and industry databases.
5. **Applying Global Warming Potential (GWP) Factors** – in this study the IPCC's 5th assessment (AR5) has been applied, enabling relevant GHGs to be presented as carbon dioxide equivalent (CO_2e) values. It should be noted that the UK Government emissions factors (DESNZ and DEFRA, 2024) already include GWPs from the IPCC AR5, therefore these GWPs have been used throughout this study to ensure consistency.
6. **Ensuring transparency through documentation** – assumptions of all activity data, and GWP and emissions factors used in this study are summarised below in Tables 1-4 with more detailed activity data included in Appendix 1.

The GHG Protocol and ISO 14064 standards also recommend adopting an approach to emissions calculation and forecasting that promotes improvements to accuracy over time as the project is better defined and data quality increases.

4.2 Scope

This assessment includes Scope 1, 2 and relevant Scope 3 emissions relating to the existing development (comprising the Wressle 1 well) and the next phase of the field development (comprising Wressle 2 & 3 and commissioning of a gas export pipeline). The development is split into five phases, each with an approximate timescale over which the activities will occur, with some activities assumed to be running concurrently (Table 1).

The full consideration of emissions is included (i.e. 100% basis) - equity share of these emissions has not been presented.

This assessment is considered to represent a reasonable worst-case scenario based on the following key points:

- Use of 3P production forecast, which has a low probability of being exceeded (≤10%). Higher production requires higher activity levels and energy use for a longer period. The 3P forecast includes worst-case gas production from the Wressle-1 well, which continues to be flared until the installation of the gas engine to utilise gas to generate electricity. Any residual gas not used within the gas engine is flared until the new wells are drilled and the gas pipeline is installed and commissioned. The emissions calculations account for this and for testing of the Wressle 2 and 3 wells via flare in early 2026.
- An assumption that onsite power generation via gas engine continues up to cessation of production in mid-2039. This results in higher emissions than a scenario where 100% of power is provided by the electricity grid (which is still an option under consideration).
- Continued venting of gas from the oil storage facilities as a same percentage of gas production as seen historically in 2024.

Table 1. Summary of the five phases comprising Egdon's Wressle project

Project Phase	Description	Approximate Timing [1]	Approximate Duration [1]
Phase 1	Site construction civil works	Jul-Aug 2025	8 weeks
Phase 2	Drilling & completion of operations on W2 & W3	Sep 2025-Jan 2026	21 weeks
Phase 3	Proppant squeeze & well testing	Feb-May 2026	17 weeks
Phase 4	Production facility enhancement, and gas pipeline construction & installation	Sep 2025-March 2026	29 weeks
	Production Operations	Jan 2025-Jun 2039	14.5 years
Phase 5	Decommissioning and site restoration	Jul-Dec 2039	12 weeks

[1] Timing and durations of each project phase and associated activities are approximate based on current planning and they will continue to be refined going forward and are therefore subject to updates in future planning stages. It should be noted that Phases 1-4 will run concurrently with ongoing production resulting in total duration of activities of 15 years.

4.3 Assumptions

4.3.1 Emission Sources

The following emissions sources, presented in Table 2, were identified for the Wressle development across the 5 phases of the project. Activity data was either provided by Egdon, taken from an industry standard, government database, or from a representative vehicle/source specification (detailed in Table 3). Detailed assumptions are documented in Appendix 1.

Table 2. Summary of activities and emissions sources across each phase of the Wressle project

Phase		Weeks	Emissions Sources
1	Site Construction	8	• HGV material and equipment deliveries to site • Contractor and employee commuting by LGV and car • Civil/excavation equipment mobilisation, operation and demobilisation
2	Drilling and Completion	21	• HGV material and equipment deliveries to site • Contractor and employee commuting by LGV and car • Drilling rig mobilisation, operation and demobilisation • Drilling mud degassing
3	Testing	17	• HGV material and equipment deliveries to site • Contractor and employee commuting by LGV and car • HGV oil export, waste and fuel services • Proppant squeeze rig mobilisation, operation and demobilisation • Test flaring of Wressle 2 & 3 wells
4	Pre-production	29	• HGV material and equipment deliveries to site • Contractor and employee commuting by LGV and car • HGV waste and fuel services • Civil/excavation equipment mobilisation, operation and demobilisation for production facilities civil works and gas pipeline installation • Gas pipeline equipment and material delivery incl. pipeline
	Production	14.5 years	• Contractor and employee commuting by LGV and car • Production facilities power provided by diesel generator, gas engine onsite and grid electricity supply • Crane mobilisation, operation and demobilisation (1 lift per month) • Water, fuel, waste services, production services and supply deliveries • Flaring, and vent emissions from storage tanks • Workover rig mobilisation, operation and demobilisation • Slickline rig mobilisation, operation and demobilisation
5	Decommissioning and Site Restoration	12	• Contractor and employee commuting by LGV and car • Materials delivery • Site restoration equipment and material removal • Waste removal • Workover rig mobilisation, operation and demobilisation for well P&A • Slickline rig mobilisation, operation and demobilisation • Site restoration construction vehicle operation

Table 3. Summary of the sources of activity data and assumptions for calculation of emissions for the Wressle Field development.

Activity/Data Type	Activity Data	Fuel Consumption	Emissions Factors (EFs)	References
	Unit volumes of fuels (e.g. MMscf/day), mileage, &/or duration of activity	*Fuel consumption rates for calculation of total fuel consumed over life of project*	*EFs used specific to fuel type*	*Sources of fuel consumption rates and EFs*
On-site power requirements - diesel/gas engines	Egdon	Egdon	sustain:able	[1]
Power requirements from national grid	Egdon	Egdon	sustain:able	[2]
Flaring, venting & fugitive emissions	Egdon	Egdon	Egdon	[3]
Drilling rig activities (drilling, proppant squeeze, workover, decommissioning)	Egdon	Egdon	sustain:able	[2]
Drilling mud degassing	Egdon	sustain:able	sustain:able	[4]
HGVs & LGVs associated with movements of equipment and materials to/from site	Egdon	sustain:able	sustain:able	[5]
Cars associated with contractor and employee movements	Egdon	sustain:able	sustain:able	[5]
Civil works equipment – site preparation and restoration	Egdon	Egdon	sustain:able	[2]
Other vehicles (e.g. cranes, waste removal)	Egdon	Egdon	sustain:able	[2]

[1] EEMS Atmospheric Emissions Calculations (EEMS, 2008), [2] Conversion factors 2024, full set, UK Government (DESNZ and DEFRA, 2024), [3] Gas values specific to Wressle Field provided by Egdon. [4] Onshore well mud degassing 2021 API Compendium (American Petroleum Institute, 2021). [5] Table 4-12, Equations 4-18/4-19 2021 API Compendium (American Petroleum Institute, 2021).

4.3.2 Key Activity Assumptions

Assumptions relating to key activities for the Wressle Field development are included below, with a complete list of assumptions documented in Appendix 1:

- Onsite electricity generation is assumed to be provided by diesel engine until mid-2025 (fuel consumption 400 litres/day), then by gas engine from May 2025 with 2 months cross-over with the diesel generator. Rates of gas to power as per 3P production forecast is 0.083 MMscf/d initially, reducing to 0.053 MMscf/d towards the end of field life;

- Remaining power requirements not supplied by the gas engine are assumed to be supplied by the grid at 478 kWh during period 2026-2032, 366 kWh during period 2033-2036, and 310 kWh during 2037-2039.
- Onsite vent volumes and composition are based on Wressle 2024 data. Vented volumes averaged 3.08% of total gas produced in 2024, with gas flows measured through a flow meter. Vented gas composition from the storage tanks is determined by way of analysis by a third-party laboratory; this gas has a much lower CH_4 content (at 26% CH_4) than the average gas to flare/fuel (at 67% CH_4) which is separated out earlier in the process;
- In the worst-case scenario assumptions, Wressle 1 gas to flare is forecasted at 0.457 MMscf/d average in 2025 (0.5 MMscf/d initially, slightly less once gas engine running from May 2025), going to zero in 2026 when the gas pipeline is in place for export of gas to the UK grid;
- 1 MMscf/d of gas from Wressle 2 and 3 is flared during well testing expected to occur in the first half of 2026. From July 2026, forecasted gas volumes are assumed to be directed into the export gas pipeline;
- A combustion efficiency of 99.9% is assumed for the flare with emission factors based on Wressle-specific composition (67% CH_4 for gas stream) provided by Egdon. The gas composition is determined by a third-party laboratory, in line with analysis frequencies set out within the site Environmental Permit. Gas engine emission factors are based on the UK government EEMS Atmospheric Emissions Calculations (EEMS, 2008);
- Rig activity is dependent on the type of operation (total duration dependent on activity – see Appendix 1 for detail):
    - Drilling and completions operations are assumed to run 24 hours a day, 7 days a week;
    - Proppant squeeze, workover and well decommissioning operations are assumed to run 12 hours a day.
- Cessation of production (COP) is assumed to occur at the end of June 2039 with no additional onsite power generation required for subsequent decommissioning activities.
- Construction vehicles completing civil works are assumed to run 12 hours a day, 6 days a week;
- Fuel consumption for HGVs assumes that all vehicles are on average 50% laden;
- HGV fuel use was pro-rated based on estimated maximum weight of vehicle going from 3 axle to 6 axle.

4.3.3 Emissions Factors and Global Warming Potentials

Table 4 and Table 5 below show the Global Warming Potential (GWP) factors and the emissions factors used to estimate future emissions for the Wressle Field.

GWP factors measure the relative heat-trapping ability of GHGs over a specific time horizon, usually 20 years or 100 years, compared to carbon dioxide (CO_2), which has a GWP of 1. According to the IPCC's Fifth Assessment Report (AR5), methane (CH_4) has a GWP of 28 when considering only direct effects and 34 when including climate-carbon feedbacks due to its stronger short-term warming effect, though it breaks down faster in the atmosphere. Nitrous oxide (N_2O) has a GWP of 265 without feedbacks and 298 with feedbacks, due to its long atmospheric lifespan and strong radiative forcing. This means that methane has a warming impact 28 times larger than carbon dioxide, and nitrous oxide has 265 times the warming impact of CO_2. Use of these GWP factors allow all GHGs to be presented as a carbon dioxide equivalent (CO_2e) value. An emissions factor is a coefficient that quantifies the amount of GHG emissions produced per unit of activity, such as fuel combustion or industrial processes, and is used to estimate emissions based on operational data.

In this study, the 100-year global warming potentials were taken from the IPCC AR5 report excluding carbon feedbacks to ensure alignment and consistency with the 2024 UK Government GHG Conversion Factors for Company Reporting (DESNZ and DEFRA, 2024). Emissions factors for all relevant fuels expected to be utilised during the Wressle Field development have been taken from UK Government GHG Conversion Factors (DESNZ and DEFRA, 2024) and industry sources (EEMS, 2008, American Petroleum Institute, 2021).

Table 4. List of Global Warming Potential (GWP) factors used

Global Warming Potential Factors - CO_2 Equivalent (AR5 [1])				
CO_2	**CH_4**	**N_2O**	**Notes**	**Reference**
1	28	265	100-year factors, excluding carbon feedbacks	2024 UK Govt emissions database references IPCC AR5 GWPs.

[1] IPCC 5th Assessment Report (IPCC, 2014).

Table 5. Emissions factors for fuel combustion used for emissions calculations

Activity	Fuel Type	Unit	tCO_2e of CO_2 per unit	tCO_2e of CH_4 per unit	tCO_2e of N_2O per unit	Density (kg/m^3)
Drilling Rig (onshore)	Diesel (100% mineral) [1]	Tonnes	3.1643	0.00035	0.0392	833.68
Vehicles - Trucks	Diesel (Average biofuel blend) [1]	Tonnes	2.9749	0.00035	0.0389	830.72
Vehicles – Passenger (medium car)	Petrol (Average biofuel blend) [2]	Tonnes	2.7598	0.01084	0.0079	750.18
Gas Engine (gas)	Engine Wressle gas [2,4]	Tonnes	2.8629	0.55440	0.0583	0.82
Well Testing (gas)	Wressle specific 99.9% efficiency [4]	Tonnes	2.8629	0.01876	0.0215	0.82
Flaring (gas)	Wressle specific 99.9% efficiency [4]	Tonnes	2.8629	0.01876	0.0215	0.82
Venting (gas)	Wressle specific [4]	Tonnes	0.00	3.27190	0.00	1.61
Mud degassing	Default gas assumed [3]	Per drilling day	0.00	1.28240	0.00	0.82
Electricity power to site	Default UK Grid Mix [1]	kWh	$2.05E^{-04}$	$9.00E^{-07}$	$1.22E^{-06}$	-

[1] Conversion factors 2024, full set, UK Government (DESNZ and DEFRA, 2024), [2] EEMS Atmospheric Emissions Calculations (EEMS, 2008), [3] Onshore well mud degassing 2021 API Compendium (American Petroleum Institute, 2021). [4] Egdon provided gas values specific to Wressle Field. Note: GWP factors have already been applied so all factors are represented in tCO2e. Note that values are rounded from many decimal places, therefore totals may not sum exactly.

4.3.4 Exclusions

The following activities were excluded from the Scope 1, 2 and 3 emissions estimates for Wressle Field in this study:

- Scope 3 Category 11 emissions have been assessed and reported separately and therefore a detailed discussion is not included in this study.
- Embedded emissions from materials used throughout the project are not included.
- Idling of delivery vehicles on-site while loading/unloading has not been included – Egdon confirmed drivers will be required to switch off their engines while on site as part of the Traffic Management Plan.
- Egdon confirmed that scheduled fugitive emission monitoring is undertaken via a third-party. To date, no fugitive emissions have been detected so it has been assumed that this potential source is not material for this project and therefore has not been included in the current study.

5 Results

5.1 Scope 1, 2 and 3 Emissions

Estimated reasonable worst-case emissions for the Wressle Field, including future activities from the existing and proposed development, and the gas pipeline installation, are summarised by project phase in Table 6.

Table 6. Emissions for the Wressle Field Development by stage and greenhouse gas.

Phase		CO_2 (tCO_2e)	CH_4 (tCO_2e)[1]	N_2O (tCO_2e)[1]	Total (tCO_2e)	% of Total
1	Site construction	69.5	0.03	0.84	**70.4**	**0.1%**
2	Drilling and completions	1,772	162	21.3	**1,956**	**2.2%**
3	Testing	5,745	36.9	43.7	**5,826**	**6.5%**
4	Production upgrades	105	0.03	1.27	**107**	**0.1%**
	Production	49,147	31,843	669	**81,659**	**91.0%**
5	Decommissioning and Site Restoration	113	0.05	1.32	**114**	**0.1%**
Total [2]		**56,953**	**32,042**	**738**	**89,732**	**100%**

[1] GWP factors have already been applied so all factors are represented in tCO2e. [2] Totals are rounded from many decimal places, therefore may not sum exactly.

More than 90% of forecast emissions occur during the Production phase, predominantly associated with power generation over the 15-year production period. The Testing phase contributes 6% as a result of test flaring of the Wressle 2 and 3 wells. The contribution to emissions from all other activities during the project is estimated to be approximately 3% (Figure 2).

When analysed by emissions source, the largest contribution (45%) is forecast to be from power generation, which includes diesel engine (generator), gas engine (generator) and grid electricity power sources. Venting and flaring is forecast to contribute 30% and 19%, respectively, of the total emissions across the project in this reasonable worst-case scenario. Other sources of mobile and on-site emissions (e.g. HGV deliveries of materials, contractor and staff commuting, crane use, drilling rig) are forecast to account for 6% of total emissions (Figure 3).

Analysis of emissions by scope, estimates that Scope 1 emissions account for 83% of the total forecast project emissions. Scope 2 resulting from purchase of grid electricity is estimated to account for 12% of total emissions, and Scope 3 emissions, comprising on-site and mobile combustion emissions is estimated to contribute 6% to total forecast emissions (Figure 4).

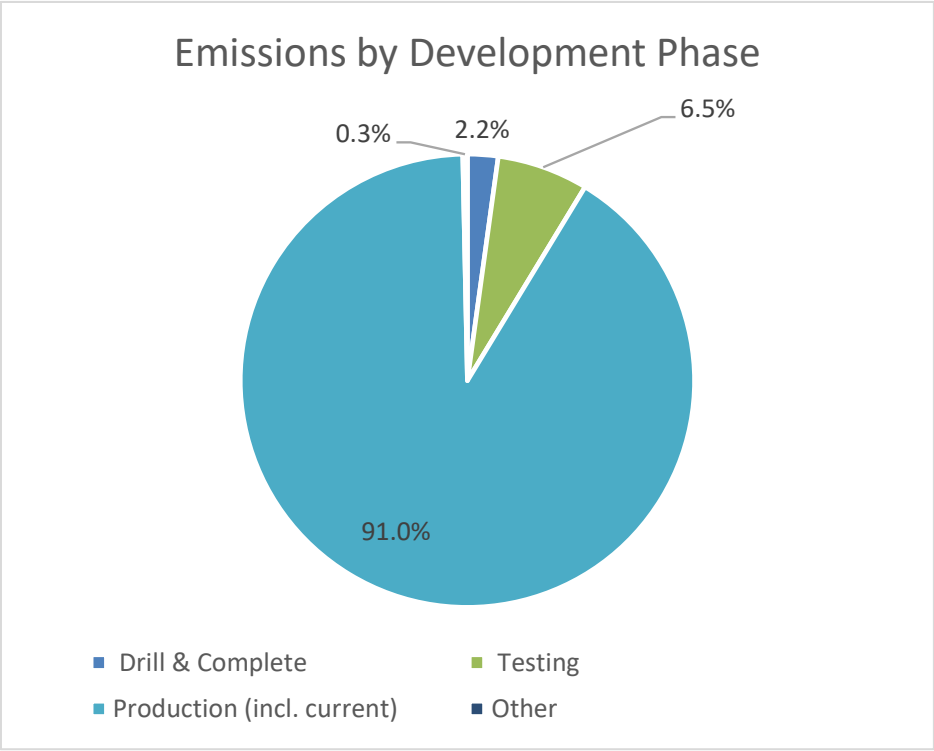

Figure 2. Breakdown of emissions by phase for a 'reasonable worst-case' scenario. Note that "other" includes site construction, production upgrade and decommissioning activities.

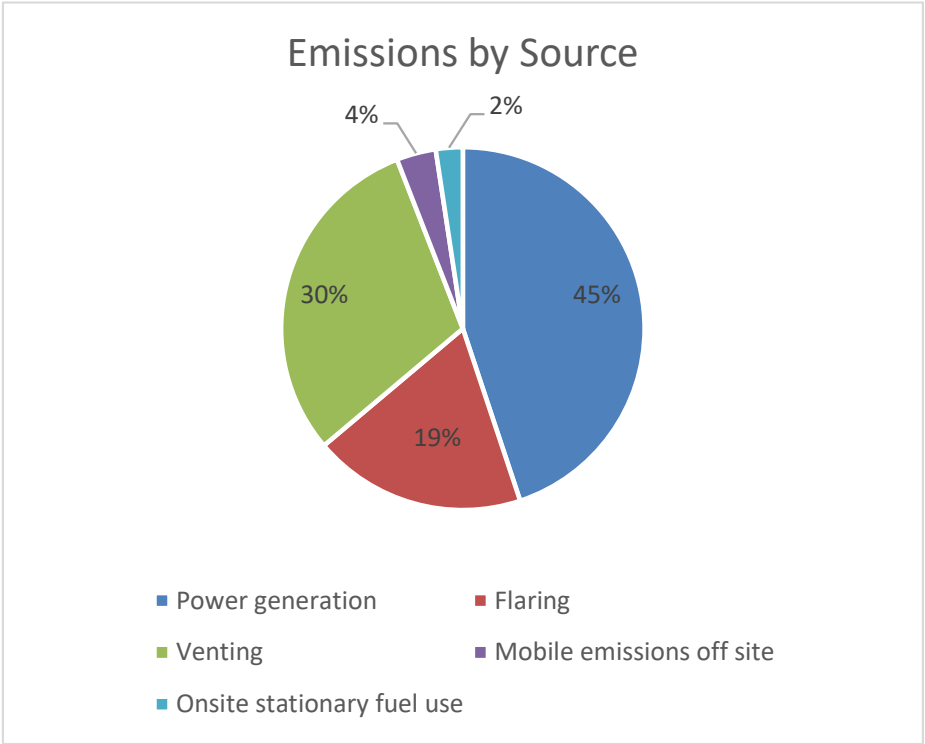

Figure 3. Breakdown of emissions by source across all phases of the development.

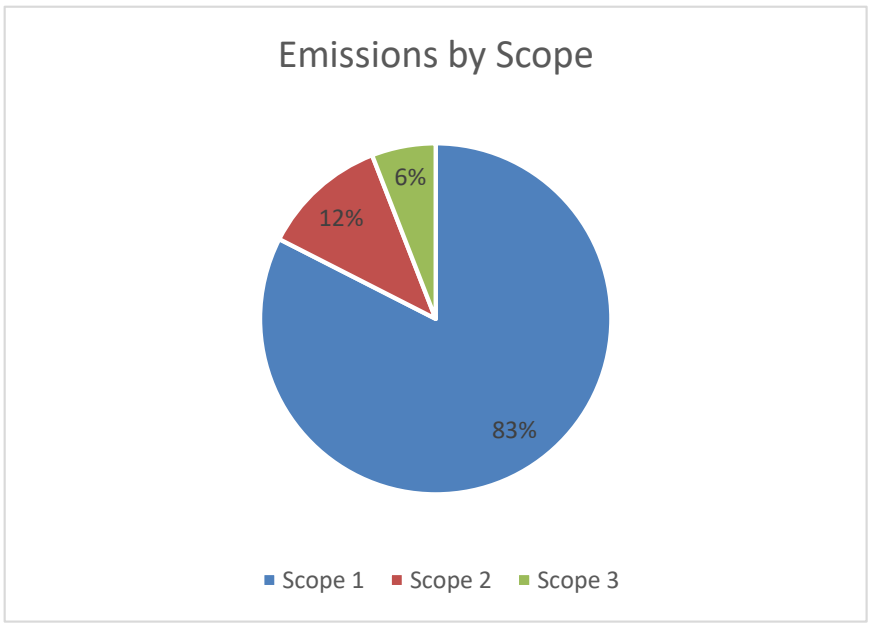

Figure 4. Breakdown of Scope 1, 2 and 3 emissions (excluding Category 11 use of sold product).

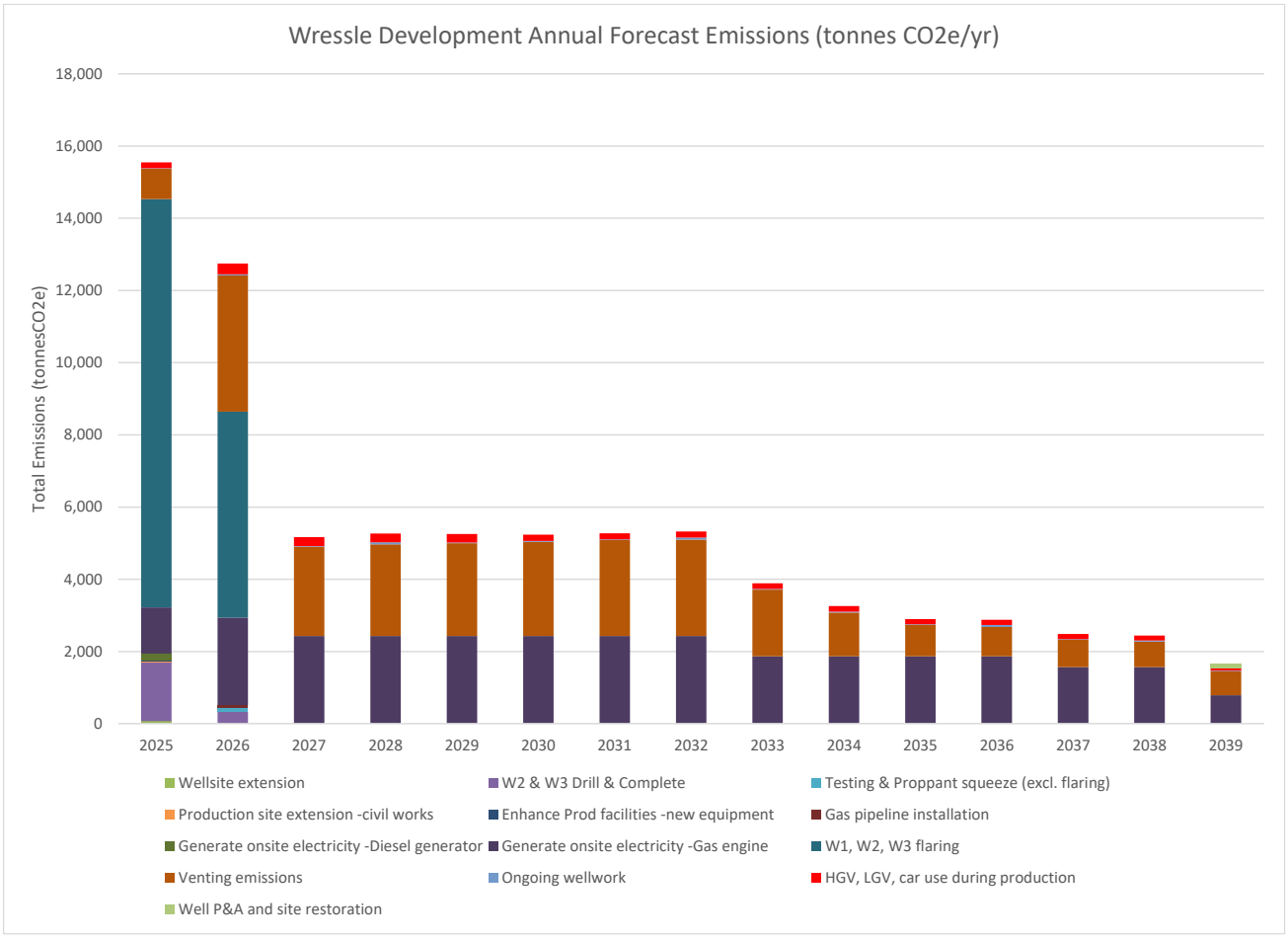

Figure 5. Annual emissions by source across the full life of the Wressle Field for a 'reasonable worst-case' scenario.

5.2 Scope 3 Category 11 (use of sold product)

Scope 3 Category 11 (use of sold product) emissions have been assessed separately (sustain:able, 2025). Total future Category 11 emissions for the remaining field life are estimated to be between 880,402 tCO_2e (Scenario A) and 917,999 tCO_2e (Scenario B) based on the 3P production forecast which represents a reasonable worst-case for end-use emissions.

When combined with the other project emissions assessed in this current study, Category 11 emissions represent over 90% of the total project emissions (Figure 6).

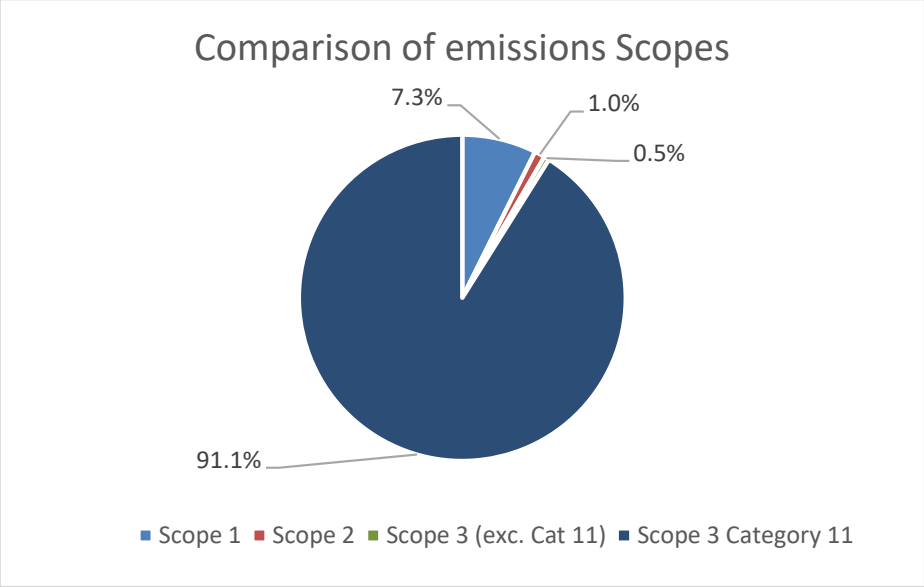

Figure 6. Breakdown of Scope 1, 2 and 3 emissions (excluding Category 11 use of sold product) and Scope 3 Category 11.

5.3 Comparison to the UK Carbon Budget

GHG emissions impact the atmosphere globally regardless of where they occur, and their mitigation remains a critical challenge. In the UK, the legal framework for addressing emissions is underpinned by the Climate Change Act 2008, which sets binding targets for territorial emissions and supports broader decarbonisation efforts.

Table 7 below compares the Scope 1, 2 and 3 emissions for the Wressle Field development to the 5-year periods for the 3rd to 7th UK Carbon Budgets.

The Scope 3 Category 11 emissions from Scenario B, which provides the upper estimate of 'use of sold product' emissions, are included in the total project emissions in order to show the reasonable worst-case for comparison to the UK Carbon Budget.

The period of highest expected production and sales of oil and gas from the Wressle Field falls within the 5th Carbon Budget period between 2028-2032. During this time, the total project emissions will amount to approximately 0.0241% of the UK Carbon Budget (Table 7).

A comparison of Scope 1,2 3 emissions (excluding Category 11) has also been made to the North Lincolnshire allocated carbon budgets (Table 8) to understand local impact of operational emissions. Local authority carbon budgets have been allocated using a "grandfathering" approach, based on recent estimated emissions (Kuriakose, 2025). This indicates the Wressle development will amount to less than 0.6% of the North Lincolnshire Carbon Budget (in 2033-2037).

As shown in Section 5.2, 91% of the total project emissions are attributed to Scope 3 Category 11 (use of sold product). Oil and gas from fields such as Wressle is produced for the purpose of generating energy, or as feedstock for a range of refined products from fuels to plastics to battery feedstock materials. Upstream operators such as Egdon and its JV partners do not retain ownership of the oil and gas after export and therefore have little influence on its ultimate use after sale and, hence, the Category 11 emissions resulting from such use. Egdon has advised sustain:able that it will continue to work to reduce those Scope 1, 2 and 3 operational emissions that are directly related to the development of the Wressle Field and within its control or influence.

Table 7. Comparison of Wressle Field development to the UK Carbon Budget.

UK Carbon Budget	Period	UK Carbon Budget	Scope 1-2-3 Emissions [1]	Category 11 Emissions - Scenario B [2]	Total Wressle Proposed Development Emissions	Wressle Emissions as % of UK Carbon Budget
	Years	($MtCO_2e$)	($MtCO_2e$) [3]	($MtCO_2e$) [3]	($MtCO_2e$) [3]	%
Third	2018 - 2022	2544	0.000	0.000	0.000	0.0000%
Fourth	2023 - 2027	1950	0.035	0.347	0.382	0.0196%
Fifth	2028 - 2032	1725	0.031	0.386	0.416	0.0241%
Sixth	2033 - 2037	965	0.019	0.153	0.172	0.0178%
Seventh [4]	2038 - 2042	535	0.005	0.032	0.037	0.0069%

[1] Scope 1, 2 and 3 emissions (excluding Category 11) from this study (refer to Section 5.1 for details). [2] Scope 3 Category 11 emissions, Scenario B is included here in order to present the uppermost estimate for these emissions in the 'reasonable worst-case' scenario (sustain:able, 2025). [3] Emissions for Wressle are presented in million tonnes of CO_2 equivalent ($MtCO_2e$) to enable direct comparison in the same units to the UK Carbon Budget. [4] The 7th UK Carbon Budget was published on 26th February 2025 (Climate Change Committee, 2025). Note: values are rounded from many decimal places, therefore totals may not sum exactly.

Table 8. Comparison of Wressle Field development to the North Lincolnshire energy CO_2 only Carbon Budget.

North Lincolnshire Carbon Budget	Period	North Lincolnshire Carbon Budget[3]	Scope 1-2-3 Emissions [1]	Wressle Operational Scope 1-2-3 Emissions as % of North Lincolnshire Carbon Budget
	Years	($MtCO_2$)	($MtCO_2e$) [2]	%
Third	2018 - 2022	28.6	0.000	0.00%
Fourth	2023 - 2027	14.3	0.035	0.25%
Fifth	2028 - 2032	6.9	0.031	0.44%
Sixth	2033 - 2037	3.4	0.019	0.55%
Seventh [3]	2038 - 2042	1.6	0.005	0.33%

[1] Scope 1, 2 and 3 emissions (excluding Category 11) from this study (refer to Section 5.1 for details). [2] Emissions for Wressle are presented in million tonnes of CO_2 equivalent ($MtCO_2e$) to enable direct comparison in the same units to the North Lincolnshire Carbon Budget. [3] North Lincolnshire's share of the UK Carbon Budgets based on grandfathering allocation regime for sub-dividing the UK sub-national energy only carbon budget accounting for CO_2 only for North Lincolnshire (Kuriakose, 2025). Note: values are rounded from many decimal places, therefore totals may not sum exactly.

5.4 Uncertainties

Contracts with, and appointment of, specialist contractors and suppliers for the proposed development of the Wressle Field that will include drilling and production from two new wells (Wressle 2 & 3) and a new gas pipeline are at a relatively early stage. Consequently, suppliers and schedules are not yet finalised. Therefore, a degree of uncertainty in the level of many activities and resulting emissions remains. To ensure a reasonable worst-case is presented at this early stage of planning, conservative estimates have been made based on activities to support the 3P production forecast, which represents the high case for production. This ensures that conservative estimates for the most significant emissions sources (i.e. power, venting and flaring volumes) have been utilised for this assessment.

Uncertainties in suppliers and schedules will also impact the number of HGV loads, the type of trucks used, their fuel consumption and their distance travelled. Future reductions in transport-related emissions through changes in fuel type or technologies (e.g. battery or fuel cell) are also not factored in. However, this is expected to have a much smaller impact on the overall emissions as noted in Section 5.1 above.

6 Conclusions

Activities and emissions sources from future production from the existing Wressle 1 well, and the proposed development, including drilling and production of the Wressle 2 & 3 wells and a new gas export pipeline, have been assessed to develop a ‘reasonable worst-case’ emissions estimate.

Activities and emissions sources evaluated are based on the 3P forecast production, which represents a high estimate of forecast production. Details of the activities and sources associated with the future development and production from the field were provided by Egdon, in conjunction with proxies and industry averages where necessary, and relevant emissions factors to produce an overall absolute emissions estimate for the project throughout the expected 15-year field life.

The total reasonable worst-case project emissions are estimated to be **89,732 tCO_2e**. This has been split into Scope 1 (**74,031 tCO_2e**), Scope 2 (**10,408 tCO_2e**) and Scope 3 (**5,293 tCO_2e**), with Scope 1 emissions accounting for 83% of the total emissions (Table 9).

The most significant sources of emissions are related to power generation, where the forecast use of diesel and gas engines and electricity purchased from the grid accounts for 45% of emissions. Venting (30%), and flaring (19%) emissions account for the majority of remaining emissions sources.

Scope 3 Category 11 (use of sold product) emissions have been assessed in a separate study with total future Category 11 emissions estimated to be between 880,402 tCO_2e (Scenario A) and 917,999 tCO_2e (Scenario B) (Table 9). When combined with the other estimated Scope 1, 2 and 3 project emissions, Category 11 emissions represent over 90% of the total project emissions.

Table 9. Summary of emissions for the planned Wressle Field development.

Emissions Category	Total Emissions (tCO_2e)
Scope 1	74,031
Scope 2	10,408
Scope 3 (excluding Category 11)	5,293
Scope 3 Category 11 (use of sold product) - Scenario B [1]	917,999
Total Project Emissions	**1,007,731**

[1] Scenario B for the Scope 3 Category 11 emissions has been used here to present the upper estimate for total project emissions. Note that values are rounded from many decimal places and therefore totals may not sum exactly.

The period of highest expected production, and hence total emissions, from the Wressle Field falls within the 5th Carbon Budget period between 2028-2032 when the total project emissions (including Category 11 emissions) is estimated to amount to approximately 0.0241% of the UK Carbon Budget.

A comparison of Scope 1,2 3 emissions (excluding Category 11) has also been made to the North Lincolnshire allocated carbon budgets to understand local impact of operational emissions. This indicates the Wressle development will amount to less than 0.6% of the North Lincolnshire Carbon Budget (in 2033-2037).

7 References

American Petroleum Institute. (2021). *Compendium of Greenhouse Gas Methodologies for the Natural Gas and Oil Industry.* Washington DC: American Petroleum Institute. Retrieved from https://www.api.org/-/media/files/policy/esg/ghg/2021-api-ghg-compendium-110921.pdf

Climate Change Committee. (2025). *The Seventh Carbon Budget - Advice for the UK Government.* 26th February 2025: Climate Change Committee.

DESNZ and DEFRA. (2024, October 30). *UK Government GHG Conversion Factors for Company Reporting, version 1.0.* Retrieved from Gov.UK: https://assets.publishing.service.gov.uk/media/6722567487df31a87d8c497e/ghg-conversion-factors-2024-full_set__for_advanced_users__v1_1.xlsx

EEMS. (2008). *Atmospheric Emissions Calculations.* Online: EEMS. Retrieved from https://assets.publishing.service.gov.uk/media/5a75bdb1ed915d6faf2b5551/atmos-calcs.pdf

Finch v Surrey County Council. (2024, judegement given on 20th June 2024). *R (on the application of Finch on behalf of the Weald Action Group) (Appellant) v Surrey County Council and others (Respondents), before Lord Kitchin, Lord Sales, Lord Leggatt, Lady Rose, Lord Richards.*

Greenhouse Gas Protocol. (2004). *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard.* World Resources Institute and World Business Council for Sustainable Development.

IPCC. (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.* Geneva, Swizerland: R.K. Pachauri and L.A. Meyer (eds).

ISO. (2018). *ISO 14064-1:2018 Greenhouse gases, Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.* International Standards Organisation.

Kuriakose, J. J. (2025). *Setting Climate Committments for North Lincolnshire.* February 2025: Tyndall Centre.

SPE. (2018). *Petroleum Resources Management System.* Society of Petroleum Engineers.

sustain:able. (2025). *Wressle Field Onshore UK - Scope 3, Category 11 Emissions Assessment.* Issued 27th February 2025.

Appendix 1 – Detailed Assumptions Table

Phase		GHG Source	Sub category	Scope	Activity data assumptions	Fuel Type	Total Mileage (miles)	Total Fuel (litres)
Phase 1								
1	Site Construction	Mobile combustion	Wellsite extension - Construction vehicles	3	Extension area & new well cellars, construction vehicles running 12hrs/day, 6 days a week using 22.41 litres/hr diesel fuel	Mineral Diesel	-	12,908
1	Site Construction	Mobile combustion	Wellsite extension - Material deliveries, 4 axle articulated HGVs	3	0.33 litres/km diesel use	Bio Blend Diesel	2,087.5	1,109
1	Site Construction	Mobile combustion	Wellsite extension - Material deliveries, 4 axle rigid HGVs	3	0.35 litres/km diesel use	Bio Blend Diesel	19,600	11,040
1	Site Construction	Mobile combustion	Wellsite extension - Contractor commute, LGVs	3	0.15 litres/km diesel use	Bio Blend Diesel	1,206	291
1	Site Construction	Mobile combustion	Wellsite extension - Contractor commute, Cars	3	0.08 litres/km petrol use.	Petrol	17,824	2,295
Phase 2								
2	Drilling & Completion	Stationary combustion	W2 & W3 - Drilling rig	3	Drilling rig for drilling and completing W2 and W3 running 24hrs a day, 7 days a week at 4000 litres/day diesel fuel	Mineral Diesel	-	588,000
2	Drilling & Completion	Stationary combustion	W2 & W3 - Mud degassing	3	0.0458 tonnes CH_4/drilling day, assume drilling time is 18 weeks (126 days)	Mud Gas	-	-

Phase		GHG Source	Sub category	Scope	Activity data assumptions	Fuel Type	Total Mileage (miles)	Total Fuel (litres)
2	Drilling & Completion	Mobile combustion	Drill & Complete -Material deliveries, 4 axle articulated HGVs	3	0.33 litres/km diesel use	Bio Blend Diesel	5,745	3,051
2	Drilling & Completion	Mobile combustion	Drill & Complete -Material deliveries, 6 axle articulated HGVs	3	0.38 litres/km diesel use	Bio Blend Diesel	79,836	48,824
2	Drilling & Completion	Mobile combustion	Drill & Complete -Material deliveries, 3 axle rigid HGVs	3	0.29 litres/km diesel use	Bio Blend Diesel	8,180	3,818
2	Drilling & Completion	Mobile combustion	Drill & Complete - Contractor commute, LGVs	3	0.15 litres/km diesel use	Bio Blend Diesel	400	97
2	Drilling & Completion	Mobile combustion	Drill & Complete - Contractor commute, Cars	3	0.08 litres/km car use.	Petrol	312,380	40,218
Phase 3								
3	Testing	Mobile combustion	Pre-squeeze test -Oil export, waste/fuel services, 4 axle articulated HGVs	3	0.33 litres/km diesel use	Bio Blend Diesel	3,565	1,893
3	Testing	Mobile combustion	Pre-squeeze test -Egdon staff/Contractor commute, Cars	3	0.08 litres/km petrol use.	Petrol	15,352	1,977
3	Testing	Stationary combustion	W2 & W3 wells -Proppant squeeze rig	3	Proppant squeeze rig running 12 hr day, 6 days a week at 41.67 litres/hr	Mineral Diesel	-	9,001
3	Testing	Mobile combustion	Proppant squeeze - material delivery & fuel/waste services, 4 axle articulated HGVs	3	0.33 litres/km diesel use	Bio Blend Diesel	12,135	6,445
3	Testing	Mobile combustion	Proppant squeeze -Waste removal, 6 axle articulated HGVs	3	0.38 litres/km diesel use	Bio Blend Diesel	800	489

Phase		GHG Source	Sub category	Scope	Activity data assumptions	Fuel Type	Total Mileage (miles)	Total Fuel (litres)
3	Testing	Mobile combustion	Proppant squeeze -Coil tubing and N2 mobilisation, 3 axle rigid HGVs	3	0.29 litres/km diesel use	Bio Blend Diesel	4,690	2,189
3	Testing	Mobile combustion	Proppant squeeze - mobilise rig from Romania, 4 axle rigid HGVs	3	0.35 litres/km diesel use	Bio Blend Diesel	42,000	23,657
3	Testing	Mobile combustion	Proppant squeeze - Contractor commute, LGVs	3	0.15 litres/km diesel use	Bio Blend Diesel	10,040	2,424
3	Testing	Mobile combustion	Proppant squeeze - Contractor commute, Cars	3	0.08 litres/km petrol use.	Petrol	2,048	264
3	Testing	Stationary combustion	W2 & W3 wells -test flaring	1	1 MMscf/d for 12 weeks (during 14 weeks of flow test (9 pre-stim, 4 after) only actually flow for 12 weeks)	Flare Gas	-	-
3	Testing	Mobile combustion	Post-squeeze test -Oil export, waste/fuel services, 4 axle articulated HGVs	3	0.33 litres/km diesel use	Bio Blend Diesel	3,520	1,869
3	Testing	Mobile combustion	Post-squeeze test -Egdon staff/Contractor commute, Cars	3	0.08 litres/km petrol use.	Petrol	9,752	1,256
Phase 4								
4	Pre-production	Mobile combustion	Production site extension -Construction vehicles	3	Install additional bund areas and plinths, extend the road. Construction vehicles running 12hrs/day, 6 days a week using 22.41 litres/hr diesel fuel	Mineral Diesel	-	11,295
4	Pre-production	Mobile combustion	Production site extension -civil equipment mobilisation & fuel/waste services, 4 axle articulated HGVs	3	0.33 litres/km diesel use	Bio Blend Diesel	815	433

Phase		GHG Source	Sub category	Scope	Activity data assumptions	Fuel Type	Total Mileage (miles)	Total Fuel (litres)
4	Pre-production	Mobile combustion	Production site extension -Material delivery, 4 axle rigid HGVs	3	0.35 litres/km diesel use	Bio Blend Diesel	5,340	3,008
4	Pre-production	Mobile combustion	Production site extension -Contractor commute, Cars	3	0.08 litres/km petrol use.	Petrol	16,396	2,111
4	Pre-production	Mobile combustion	Enhance prod facilities - fuel/waste services, 4 axle articulated HGVs	3	0.33 litres/km diesel use	Bio Blend Diesel	360	191
4	Pre-production	Mobile combustion	Enhance prod facilities - equipment mobilisation, 6 axle articulated HGVs	3	0.38 litres/km diesel use	Bio Blend Diesel	842	515
4	Pre-production	Mobile combustion	Enhance prod facilities - Equipment mobilisation, 4 axle rigid HGVs	3	0.35 litres/km diesel use	Bio Blend Diesel	50	28
4	Pre-production	Mobile combustion	Enhance prod facilities - Contractor commute, LGVs	3	0.15 litres/km diesel use	Bio Blend Diesel	14,920	3,602
4	Pre-production	Mobile combustion	Enhance production facilities -Contractor commute, Cars	3	0.08 litres/km petrol use.	Petrol	1,350	174
4	Pre-production	Mobile combustion	Gas pipeline -Excavation vehicles	3	Excavator/dozer/dumper/roller running 12hrs/day, 6 days a week using 16.08 litres/hr diesel fuel on average. This assumes vehicles are being operated one at a time, not simultaneously	Mineral Diesel	-	8,104
4	Pre-production	Mobile combustion	Gas pipeline installation- Equipment mobilisation, material delivery & waste/fuel services, 4 axle articulated HGVs	3	0.33 litres/km diesel use	Mineral Diesel	1,215	645
4	Pre-production	Mobile combustion	Gas pipeline installation - pipeline delivery, 6 axle articulated HGVs	3	0.38 litres/km diesel use	Mineral Diesel	11,800	7,216

Phase		GHG Source	Sub category	Scope	Activity data assumptions	Fuel Type	Total Mileage (miles)	Total Fuel (litres)
4	Pre-production	Mobile combustion	Gas pipeline installation - Material delivery, 4 axle rigid HGVs	3	0.35 litres/km diesel use	Mineral Diesel	1,320	744
4	Pre-production	Mobile combustion	Gas pipeline installation - Contractor commute, LGVs	3	0.15 litres/km diesel use	Mineral Diesel	11,206	2,705
4	Pre-production	Mobile combustion	Gas pipeline installation - Contractor commute, Cars	3	0.08 litres/km petrol use.	Petrol	1,560	201
4	Production	Stationary combustion	Production Well workovers -workover rig	3	3 Workover campaigns of 2 weeks, in 2028, 2032, 2036. Workover rig running 12hrs a day, 7 days a week at 41.67 litres/hr	Mineral Diesel	-	21,002
4	Production	Mobile combustion	Production -WO operation support, 3 axle rigid HGV	3	3 workover campaign 2028, 2032, 2036, 900 miles each campaign at 0.29 litres/km	Bio Blend Diesel	2,700	1,260
4	Production	Mobile combustion	Production -waste/fuel services, 4 axle articulated HGV	3	3 workover campaign 2028, 2032, 2036, 225 miles each campaign at 0.33 litres/km	Bio Blend Diesel	675	358
4	Production	Mobile combustion	Production -crane mob/demob, 6 axle articulated HGV	3	3 workover campaign 2028, 2032, 2036, 2040 miles each campaign at 0.38 litres/km	Bio Blend Diesel	6,120	3,743
4	Production	Mobile combustion	Production -WO personnel mob/demob, Cars	3	3 workover campaign 2028, 2032, 2036, 18720 miles each campaign at 0.08 litres/km	Petrol	56,160	7,230
4	Production	Stationary combustion	Production Well slickline work -slickline unit	3	A slickline campaign of 1 week, every 2 yrs (7 campaigns in total). Slickline unit running 12hrs a day, 7 days a week at 41.67 litres/hr	Mineral Diesel	-	171,514
4	Production	Mobile combustion	Production -slickline rig mob/demob, 3 axle rigid HGVs	3	A slickline campaign of 1 week/each, every 2 yrs (7 campaigns in total). Each campaign 300 miles at 0.29 litres/km	Bio Blend Diesel	2,100	980
4	Production	Mobile combustion	Production -slickline personnel mob/demob, LGV	3	A slickline campaign of 1 week/each, every 2 yrs (7 campaigns in total).	Bio Blend Diesel	2,940	710

Phase		GHG Source	Sub category	Scope	Activity data assumptions	Fuel Type	Total Mileage (miles)	Total Fuel (litres)
					Each campaign 420 miles at 0.15 litres/km			
4	Production	Stationary combustion	Routine crane operations	3	1 operation per month, 8 hrs in duration at 69.72 litres/hr (84 kg/hr)	Mineral Diesel	-	100,397
Continued & future production								
0	Continued Production	Stationary combustion	Generate site electricity - Diesel generator	1	Diesel generator running 24hrs a day, 7 days a week using 400 litres/day diesel fuel. Assumes 2 month overlap with gas engine onsite	Mineral Diesel	-	73,000
0	Continued Production	Stationary combustion	W1 flaring	1	0.457 MMscf/d average for 2025 (0.5MMscf/d gas prod minus 0.043MMscf/d to gas engine)	Flare Gas	-	-
0,4	Continued & future production	Stationary combustion	Generate site electricity - Gas engine	1	Gas engine running 24hrs a day, 7 days a week at 0.043 MMscf/d in 2025, 0.082 MMscf/d 2026-2032, 0.063 MMscf/d 2033-2036, 0.053 MMscf/d 2037-mid-2039 fuel gas. Available from end April 2025, average 2025 rate is 0.043 MMscf/d	Engine Gas		
0,4	Continued & future production	Indirect stationary combustion	Buy remainder of electricity requirements from grid	2	Remaining power requirement not supplied by the gas engine, 478 kWh 2026-2032, 366 kWh 2033-2036, 310 kWh 2037-2039	Electricity	-	-
0,4	Continued & future production	Venting emissions	Venting emissions	1	3.08% of total gas production based on average during 2024. Composition v. different to fuel gas as coming off oil tanks (only 26% CH_4).	Vented Gas	-	-
0,4	Continued & future production	Mobile combustion	Production - oil/water export, equipment & material delivery, fuel/waste services - 4 axle articulated HGVs	3	Varies per year from 91,544 - 8,783 miles at end field life (profile provided by Egdon), at 0.33 litres/km diesel use	Bio Blend Diesel	523,266	277,898

Phase		GHG Source	Sub category	Scope	Activity data assumptions	Fuel Type	Total Mileage (miles)	Total Fuel (litres)
0,4	Continued & future production	Mobile combustion	Production - equipment supplies - 2 axle rigid HGVs	3	0.19 litres/km diesel use, 4,800 miles/yr to mid 2039	Bio Blend Diesel	69,600	22,016
0,4	Continued & future production	Mobile combustion	Production - crane mobilisation - 6 axle rigid HGVs	3	1,440 miles/yr for one crane mob/demob per month at 0.49 litres/km diesel use to mid 2039	Bio Blend Diesel	20,880	17,033
0,4	Continued & future production	Mobile combustion	Production - services & commuting - LGVs	3	Varies per year from 24,490 - 7,785 miles at end field life (profile provided by Egdon), at 0.15 litres/km diesel use	Bio Blend Diesel	259,958	62,754
0,4	Continued & future production	Mobile combustion	Production - services & commuting - Cars	3	Varies per year from 127,304 - 40,960 miles at end field life (profile provided by Egdon), at 0.08 litres/km petrol use	Petrol	1,370,120	176,400
0,4	Continued & future production	Indirect stationary combustion	Electricity purchased	2	Grid requirements initially 477.89 kWh for first 7 years, then reducing down to 309.89 kWh by 2039	kWh	-	-
Phase 5								
5	Decommissioning	Mobile combustion	Decommissioning -Site restoration equipment & material removal, fuel/waste services, 4 axle articulated HGVs	3	0.33 litres/km diesel use	Bio Blend Diesel	1,690	898
5	Decommissioning	Mobile combustion	Decommissioning -Site restoration equipment & material removal, well P&A waste removal, WO rig mob/demob, 6 axle articulated HGVs	3	0.38 litres/km diesel use	Bio Blend Diesel	11,680	7,143
5	Decommissioning	Mobile combustion	Decommissioning -Well P&A material delivery, slickline mob & demob, 3 axle rigid HGVs	3	0.29 litres/km diesel use	Bio Blend Diesel	1,920	896

Phase		GHG Source	Sub category	Scope	Activity data assumptions	Fuel Type	Total Mileage (miles)	Total Fuel (litres)
5	Decommissioning	Mobile combustion	Decommissioning -Site restoration equipment removal, 4 axle rigid HGVs	3	0.35 litres/km diesel use	Bio Blend Diesel	744	419
5	Decommissioning	Mobile combustion	Decommissioning - Contractor commute & equipment removal, LGVs	3	4,146 total mileage at 0.15 litres/km diesel use	Bio Blend Diesel	4,146	1,001
5	Decommissioning	Mobile combustion	Decommissioning - Contractor commute, Cars	3	40,400 total mileage at 0.08 litres/km petrol use.	Petrol	40,400	5,201
5	Decommissioning	Stationary combustion	Well P&A -workover rig	3	Workover rig running 12hrs a day, 6 days a week at 41.67 litres/hr	Mineral Diesel	-	21,002
5	Decommissioning	Stationary combustion	Site restoration - construction vehicles	3	Construction vehicles running 12hrs a day, 6 days a week at 22.41 litres/hr	Mineral Diesel	-	8,068