SCC Ref: EIA Case 025-010

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17 March 2025

Dear Mr Law,

Independent review of Greenhouse Gas Emissions Assessment submitted with an EIA Screening Opinion request in respect of further development at the Wressle Wellsite, Lodge Farm, Clapp Gate, Appleby, North Lincolnshire DN15 0DB

1. Further to your request of 26 February 2025 this letter sets out a review of the greenhouse gas (GHG) emissions assessment submitted by Egdon Resources UK Limited in support of an EIA screening opinion request relating to proposed further development at the Wressle wellsite near Appleby in North Lincolnshire. It is our understanding you require an independent review of the submitted GHG emissions assessment to assist with the preparation of North Lincolnshire Council's EIA screening opinion.

2. The submitted GHG emissions assessment comprises two reports, dated 27 February 2025 and prepared by ESG Able Ltd trading as sustain:able. The first report covers the Scope 1, 2 and 3 (excluding the use of sold products) emissions for the proposed development. The second report covers the scope 3 emissions associated with the use of products manufactured from the extracted oil and gas.

A. The Development

3. The Wressle wellsite is an existing facility occupying 1.85 hectares located north-west of Appleby in North Lincolnshire. Planning permission (ref.PA/2024/275) was granted by North Lincolnshire Council on 13 September 2024 for the extension of the wellsite, involving the drilling of two additional wells, upgrading of production facilities, installation of a 600 metre gas pipeline connection to the national gas grid, and the long term production of oil and gas. That permission was subsequently quashed by order of the High Court on 8 November 2024.

4. The submitted EIA Screening Opinion request (dated 24 February 2025) reports the Wressle-1 well would cease production in 2034 under the extant planning permission (ref. APP/Y2003/W/19/3221694). The proposed Wressle-2 and Wressle-3 wells would cease production in 2039, should permission be granted in 2025.

5. The EIA Screening Opinion request (dated 24 February 2025) and accompanying GHG emissions assessment provided to Surrey County Council (SCC) on 4 March 2025 reports the following production forecasts for the permitted and proposed Wressle wells.

   - Wressle-1 – forecast production of 313,146 barrels or 41,440 tonnes of oil to end of 2034. The conversion factor used is 1 barrel of oil equates to 0.1323357 tonnes.

   - Wressle-2 and Wressle-3 – forecast production of 1,044,957 barrels or 138,285 tonnes of oil and 5.264 billion cubic feet (BCF) or 122,221 tonnes of gas by end of 2039. The oil conversion factor used is the same as that for Wressle-1. The gas conversion factor used is based on 1 million standard cubic feet (MMscf) equates to 23.22025 tonnes.

6. The first GHG emissions assessment report (Scope 1, 2 and 3) advises (section 3 'Introduction', final paragraph, p.5) the assessments are made on the basis of the 3P (Proven + Probable + Possible Reserves) production forecast for the Wressle wellsite. The 3P forecast represents the likely maximum amount of oil and gas that could be extracted at the wellsite. The report explains (pp.5-6) the different categories of production forecasts as follows:

   - 1P (Proven reserves) have a high probability (≥90%) of recovery under current conditions.

   - 2P (Proven + Probable reserves) include 1P (≥90%) reserves and other less certain reserves (≥50% probability of recovery).

   - 3P (Proven + Probable + Possible Reserves) includes 1P (≥90%) and 2P (≥50%) reserves and further less certain reserves (≥10% probability of recovery).

B. Review of the predicted Scope 1, 2 and 3 (excluding the use of sold products) GHG emissions

7. The first GHG emissions assessment report covers the scope 1, 2 and 3 emissions associated with the development of the Wressle-2 and Wressle-3 wells and the proposed national gas grid connecting pipeline, their operation in combination with the established Wressle-1 well, and the eventual decommissioning and restoration of the wellsite. Emissions

arising from the use of fuels manufactured from the extracted oil and gas are reported separately (see section C of this letter).

8. The methodology used is based on the Greenhouse Gas Protocol (World Resources Institute (WRI) and World Business Council for Sustainable Development, 2004) and 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 Organisation for Standardisation). Emissions associated with the construction, operation, decommissioning and restoration of the wellsite were assessed on the basis of being solely attributable to the wellsite. The key activities covered by the assessment, the assumptions made, the emissions factors used, and the matters excluded, are set out in section 4.3 (pp.10-14) of the report.

9. Section 4.3.3 (pp.13-14) explains the Global Warming Potential (GWP) factors applied to the greenhouse gases covered by the assessment (carbon dioxide, methane and nitrous oxide). Those GWP factors were taken from the Inter-governmental Panel on Climate Change (IPCC) fifth assessment report (AR5). The GWP factors used cover only the direct effects of greenhouse gases, for reasons of consistency with the conversion factors for company reporting published by the UK Government. The GWP factors allow presentation of the assessment's findings as tonnes of carbon dioxide equivalent (tCO_2e). The emissions factors used for specific fuels are set out in Table 5 (p.14) with sources accredited in the footnotes.

10. The assessment findings are given in section 5 (pp.15-21) of the report. The project's lifetime emissions are reported as 89,732 tCO_2e (Table 6, p.15). Those emissions contributions to North Lincolnshire's carbon budgets are given in Table 8 (p.20).

    - Fourth carbon budget (2023-2027) period – the project would account for 0.25% (0.035 $MtCO_2e$) of the North Lincolnshire budget (14.3 $MtCO_2e$).
    - Fifth carbon budget (2028-2032) period – the project would account for 0.44% (0.031 $MtCO_2e$) of the North Lincolnshire budget (6.9 $MtCO_2e$).
    - Sixth carbon budget (2033-2037) period – the project would account for 0.55% (0.019 $MtCO_2e$) of the North Lincolnshire budget (3.4 $MtCO_2e$).
    - Seventh carbon budget (2038-2042) period – the project would account for 0.33% (0.005 $MtCO_2e$) of the North Lincolnshire budget (1.6 $MtCO_2e$).

11. Emissions associated with the construction, operation and decommissioning / restoration of the wellsite would be greatest during 2033-2037 (Sixth carbon budget). The wellsite's emissions would account for 0.55% of the North Lincolnshire area's carbon budget for that period.

C. Review of the predicted Scope 3, category 11 (use of sold product) GHG emissions

12. The second GHG emissions assessment report focuses on the Scope 3, category 11 emissions, which would arise from the use of fuels derived from the oil and gas extracted at Wressle. As for the first GHG emissions assessment report, the 3P (Proven + Probable + Possible Reserves) production scenario is used, giving the likely maximum amount of oil and gas that could be extracted at the wellsite. The report states (p.9) that production from the wellsite is expected to cease completely by the end of June 2039.

13. Table 2 (p.11) summarises projected oil and gas production and sales from the existing Wressle-1 well (2025-2034) and the proposed Wressle-2 and Wressle-3 wells (2025-2039). Production and sales values differ due to a 0.5% correction applied at the refinery gate to take account of entrained water content in the produced oil. For produced gas, the difference in the production and sales figures reflects the use of a proportion of the gas for on-site power generation from 2026.

    - Wressle-1: 41,400 tonnes of oil produced with 41,233 tonnes of oil sold.
    - Wressle-2 and Wressle-3: 138,285 tonnes of oil produced, and 137,594 tonnes of oil sold; and 134,561 tonnes of gas produced and 122,221 tonnes of gas sold.

14. The methodology used is based on the Greenhouse Gas Protocol (2013a) 'Corporate Value Chain (Scope 3) Accounting and Reporting Standard (WRI) and the Carbon Disclosure Project (CDP) 'Scope 3 Category 11 Guidance for Oil and Gas' (2021). Emissions are presented as tCO_2e. The scenarios covered by the assessment, the assumptions made, the emissions factors used, and the matters excluded, are set out in section 4 (pp.7-12) of the report.

15. The assessment considers two emissions scenarios (A and B), full details of which are set out in section 5 (pp.12-14) of the report.

    - Scenario A – Emissions from oil are calculated on the basis of the likely range of products manufactured from the oil at the receiving refinery (Phillips 66 at Immingham). It is assumed that all exported gas is combusted.

- Scenario B – assumes all produced oil and gas sold from the wellsite is combusted.

16. The assessment findings are given in section 6 (pp.14-16) and section 8 (pp.19-20) of the report. Emissions from the use of oil extracted from Wressle-1 are reported as being in the range 121,216 tCO_2e (A) to 129,885 tCO_2e (B) (Table 5, p.15). For Wressle-2 and Wressle-3 emissions from the use of oil would be in the range 404,492 tCO_2e (A) to 433,420 tCO_2e (B) (Table 6, p.15). For natural gas, emissions from use of the gas produced from all three wells would be 354,695 $tCO_{2e}e$ under both scenarios (Table 6, p.15).

17. Oil and gas are traded on an international market, and it is therefore uncertain where products derived from oil and gas extracted at Wressle would be used. For the purposes of the GHG emissions assessment the report assumes all products would be used within the UK. The impact of those emissions is therefore considered against the pertinent UK carbon budgets in Table 10 (p.20).

- Fourth carbon budget (2023-2027) period – the project would account for between 0.0169% (0.33 $MtCO_2e$) (A) and 0.0178% (0.347 $MtCO_2e$) (B) of the UK budget (1,950 $MtCO_2e$).

- Fifth carbon budget (2028-2032) period – the project would account for between 0.0216% (0.372 $MtCO_2e$) (A) and 0.0224% (0.386 $MtCO_2e$) (B) of the UK budget (1,725 $MtCO_2e$).

- Sixth carbon budget (2033-2037) period – the project would account for between 0.0153% (0.148 $MtCO_2e$) (A) and 0.0159% (0.153 $MtCO_2e$) (B) of the UK budget (965 $MtCO_2e$).

- Seventh carbon budget (2038-2042) period – the project would account for between 0.0057% (0.031 $MtCO_2e$) (A) and 0.0060% (0.032 $MtCO_2e$) (B) of the UK budget (535 $MtCO_2e$).

18. Emissions associated with the combustion of produced oil and gas would be greatest during 2028-2032 (Fifth carbon budget). Those emissions would account for up to 0.0224% of the UK's carbon budget for that period.

D. Combined emissions – wellsite construction, operation, decommissioning and restoration and use of produced oil and gas

19. The first GHG emissions report considers the likely contribution of total emissions from the project – covering wellsite development, operation and decommissioning and the use of produced oil and gas – to the relevant UK carbon budgets. Table 7 (p.19) of the first GHG emissions report indicates the greatest combined impact of the development on the

UK carbon budget would occur during 2028-2032 (Fifth carbon budget), with emissions of 0.416 $MtCO_2e$ or 0.0241% of the UK carbon budget (1,725 $MtCO_2e$).

- Fourth carbon budget (2023-2027) period – the project would account for up to 0.0196% (0.382 $MtCO_2e$) of the UK budget (1,950 $MtCO_2e$).
- Fifth carbon budget (2028-2032) period – the project would account for up to 0.0241% (0.416 $MtCO_2e$) of the UK budget (1,725 $MtCO_2e$).
- Sixth carbon budget (2033-2037) period – the project would account for up to 0.0178% (0.172 $MtCO_2e$) of the UK budget (965 $MtCO_2e$).
- Seventh carbon budget (2038-2042) period – the project would account for up to 0.0069% (0.037 $MtCO_2e$) of the UK budget (535 $MtCO_2e$).

E. Significance of the projected GHG emissions

20. The worst case scenario modelled for the wellsite predicts total attributable GHG emissions, including downstream emissions from the combustion of fossil fuels, accounting for less than 0.1% of any UK Carbon Budget up to 2039.

21. On a precautionary basis I have evaluated the projected total GHG emissions for the wellsite against the carbon budgets of the Yorkshire and the Humber and the East Midlands regions. The regional carbon budgets were compiled using data from the Tyndall Centre's local carbon budgets.

Carbon Budget periods	Yorkshire and the Humber $MtCO_2e$	East Midlands $MtCO_2e$	Combined Regions $MtCO_2e$	Wressle Wellsite – Total Emissions $MtCO_2e$	Wressle Emissions as % regional Carbon Budgets		
					YH	EM	CR
Fourth 2023-2027	76.5	57.6	134.1	0.382	0.5	0.7	0.3
Fifth 2028-2032	37.4	27.6	65.0	0.416	1.1	1.5	0.64
Sixth 2033-2037	18.5	13.5	32.0	0.172	0.9	1.3	0.54
Seventh 2038-2042	9.3	6.1	15.4	0.037	0.4	0.6	0.24

22. As was the case at the UK level, the greatest impact from the extended wellsite occurs during the Fifth carbon budget period, accounting for 0.64% of the combined regional carbon budget.

23. The Wressle-1 well benefits from an existing planning permission and is producing oil. Between 2025 and 2034 Wressle-1 is predicted to produce 41,233 tonnes of oil. Emissions from use of that oil will arise irrespective of any decision made in relation to the proposed additional wells.

24. The Institute of Environmental Management and Assessment (IEMA) guidance on consideration of GHG emissions in Environmental Impact Assessment (EIA) (2nd edition, 2022) suggests an indicative threshold of 5% of the relevant carbon budget be used to determine significance for those schemes with the potential to materially affect carbon budget compliance. For oil and gas development it is inarguable that extraction of hydrocarbons will result in the release of GHGs, likely as a result of combustion which could materially impact on carbon budget compliance. For the purposes of EIA screening of oil and gas development, where a judgement needs to be made about the likely significance of a development's impacts, the indicative threshold recommended in the IEMA guidance may be applied.

25. For the Wressle wellsite, the projected future emissions attributable to the facility, including downstream emissions from use of oil and gas, do not account for more than 5% of any pertinent UK, combined regional, or regional carbon budget at any time during the project's operational lifespan. On that basis it may be concluded that EIA is not required in this case on climate change grounds.

F Closing comments

26. In conclusion, I recommend the GHG emissions associated with the extended Wressle wellsite, including downstream emissions, would not significantly impact attainment of any relevant UK, combined regional or regional carbon budget. In this case EIA would not be required on climate change grounds.

27. I hope you find the review set out in this letter helpful. If you have any queries or require further assistance, please do not hesitate to contact me.

Yours sincerely

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Surrey County Council