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Deadline D3: 10th March 2026
SUMMARY of Part A
Comments on submissions received at Deadline D1

Climate Change

EN0100166 Connah's Quay Low Carbon Power

1 Three quantitative parameters determine the lifecycle greenhouse-gas outcome presented in the Environmental Statement for the CQLCP project: the upstream natural-gas well-to-tank emission factor, the climate metric used to represent methane, and the assumed CO_2 capture rate. The first of these parameters, upstream emissions, forms the dominant component in the ES — 63.4% of the lifecycle total — once capture is applied. CESL's D3 (Part A) submission demonstrates, on a detailed evidential record, that the ES does not demonstrate robustness to reasonably foreseeable variability in those determinative parameters.

D3 / Part A / Section A Purpose of this summary

2 This document provides a concise overview of the CESL D3 (Part A) submission. It is intended to assist the Examining Authority by identifying the principal issues raised and the evidential basis for those issues.

3 This summary should be read alongside the full D3 (Part A) submission, which contains the detailed analysis, evidential references and indicative calculations on which the conclusions summarised here are based. The summary does not reproduce that material and should not be treated as a substitute for the underlying submission.

D3 / Part A / Section B Issue for the Examination

4 The issue raised by CESL concerns the adequacy of the Environmental Statement (ES) greenhouse-gas assessment under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

5 Schedule 4 of the Regulations requires the Environmental Statement to describe the likely significant effects of the development on climate, including greenhouse-gas emissions and their short-, medium- and long-term characteristics.

6 The submission identifies three quantitative parameters that materially determine the lifecycle emissions outcome presented in the ES:

(a) the upstream natural-gas well-to-tank (WTT) emission factor;

(b) the climate metric used to represent methane effects;

(c) the assumed operational CO_2 capture rate.

7 Each parameter directly influences the magnitude and/or temporal character of the climate effects assessed. The upstream emission factor is particularly material because upstream emissions constitute the dominant component of lifecycle emissions once capture is applied.

8 CESL's submission does not challenge the legitimacy of government datasets or recognised methodologies. The issue raised is narrower: whether the Environmental Statement demonstrates that the emissions outcome presented to the decision-maker is robust to reasonably foreseeable variability in these determinative parameters for the purposes of assessing likely significant climate effects.

9 Where an environmental assessment depends materially on parameters that may vary in practice, the Environmental Statement must demonstrate either that the parameter bounds reasonably foreseeable variation in effects or that the assessment outcome and significance conclusion are robust across that variation.

D3 / Part A / Section C Evidential basis of the CESL submission

10 CESL's D3 (Part A) submission is grounded in a detailed evidential record drawn from multiple independent sources, including these summarised below.

11 These evidence streams are used to test the assumptions embedded in the ES, and the applicant's D2 submission "Applicant's Response to Deadline 1 Submissions" [REP2-019], and to examine whether the assessment demonstrates robustness to reasonably foreseeable variability in the parameters identified.

Issue examined	Primary evidence sources	Purpose in CESL analysis	Usage in D3 PART A
UK gas supply composition	UK government gas-supply datasets: DESNZ[1] / DUKES[2] statistics	Establish empirical supply mix and LNG share	Section B.1
Future gas supply modelling	National Energy System Operator modelling: NESO Future Energy Scenarios (FES 2025)	Examine future annual gas supply projections (including Norwegian pipeline and LNG shares)	Section B.1
UK Gas system operation under stress	NESO Gas Supply Security Assessment (GSSA), National Gas Securing Britain's Energy policy paper	Examine marginal supply sources during peak demand conditions	Section B.1
UK and international gas-market dynamics	Oxford Institute for Energy Studies (OIES)	Assess LNG as marginal global supply source	Section B.1
Methane leakage evidence	Recent peer-reviewed methane measurement-based studies	Evaluate uncertainty in upstream methane intensity	Sections B.2, B.3
Climate forcing of methane and near time climate impacts	Peer-reviewed climate science and IPCC Sixth Assessment Report	Examine temporal characteristics of methane warming	Section C
CCS operational performance	Environmental permitting decisions: Net Zero Teesside and more recent CCS environmental permits	Regulation and assessment bounding of assumed capture rate	Section D

Table 1: Overview of evidence sources in CESL D3 Part A

[1] Department for Energy Security and Net Zero

[2] Digest of United Kingdom Energy Statistics

D3 / Part A / Section D Parameter 1 – Upstream natural-gas emissions (WTT factor)

D.1 Applicant position

12 The Environmental Statement represents upstream supply-chain emissions using the UK Government natural-gas well-to-tank emission factor. In [REP2-019] the Applicant argues that this approach is appropriate because:

(a) future UK gas supply will predominantly originate from Norwegian pipelines;

(b) international initiatives will reduce methane leakage in supply chains;

(c) government conversion factors are recognised by professional guidance;

(d) the DESNZ factor responds to changes in LNG supply share;

(e) previous DCO decisions have relied upon the same factor.

D.2 CESL evidential analysis

13 Once carbon capture is applied, upstream emissions become the dominant component of the development's lifecycle emissions (Table 20-8 [APP-058]). The upstream well-to-tank emission factor therefore materially determines the lifecycle emissions outcome presented to the decision-maker.

14 CESL examines the role of upstream emissions within the lifecycle modelling structure used in the ES, and analyses upstream supply dynamics, drawing on multiple independent evidence sources.

D.2 (A) UK supply data, gas system and gas-security modelling

15 Official UK gas-supply statistics show that while Norway is the largest pipeline supplier, residual imports beyond Norway are overwhelmingly LNG rather than continental pipeline gas, reflecting the structural decline of non-Norwegian pipeline imports into the UK.

16 CESL examines the Future Energy Scenarios modelling referenced in the ES. The analysis demonstrates that future LNG volumes shown in the FES charts represent minimum LNG supply levels rather than the total LNG potentially entering the system. Additional imports required to balance supply and demand are in a residual "generic imports" category that predominantly includes LNG. By 2040, FES 2025 shows generic imports exceeding Norwegian pipeline supply across all scenarios — directly contradicting the Applicant's submission.

17 The NESO Gas Supply Security Assessment, which models system operation during supply-stress conditions, indicates that flexible imports, increasingly LNG, play an important role in maintaining system security during high-demand periods. This is confirmed by recent research from the Oxford Institute for Energy Studies, demonstrating the increasing role of LNG as the marginal source of supply in global gas markets. The recent National Gas Securing Britain's Energy policy paper analysis indicates that future security-of-supply policy may involve materially expanded LNG import capability relative to current utilisation levels. Dispatchable gas-fired power stations, such as CQLCP, operate primarily during such conditions. The relevant EIA question is therefore not annual average supply composition, but the upstream intensity of gas supplied when the development operates. <u>In those circumstances, lifecycle emissions for the development may be materially influenced by the upstream intensity of marginal LNG supply.</u>

18 Taken together, these sources indicate that UK gas supply is likely to remain exposed to LNG-linked supply dynamics over the lifetime of the development, reinforcing the relevance of upstream methane intensity to the lifecycle emissions outcome presented in the ES.

D.2 (B) Implications for the WTT factor, evidence from methane measurement studies

19 The DESNZ WTT factor is derived from upstream emission intensities originating from the Exergia (2015) EU modelling study, used as the source basis since 2017. Although the factor incorporates annual changes in supply composition using DUKES data, there is limited, or no, evidence that the underlying emission intensities have been recalibrated using more recent methane measurement datasets.

20 A specific and unresolved anomaly reinforces this concern: the published WTT factor remained static at 9.30 kgCO_2e/GJ across publication years 2023–2025, while the LNG share of UK gas supply varied between 18.8% and 35.5% over the corresponding DUKES data years. The Applicant characterises the factor as "LNG-responsive"; the published record does not support that characterisation.

21 CESL has made three separate attempts to obtain the methodology and working files from DESNZ (January 2024, February 2026, and a formal EIR request before this Deadline). No substantive response has been received. The working calculations underlying the factor — which determines 63.4% of the lifecycle emissions total — cannot be independently verified by any party to this examination.

22 There is a growing body of measurement-based research examining methane emissions from natural-gas supply chains. Aircraft, satellite and ground-based measurement campaigns have demonstrated that methane leakage from oil and gas systems can be significantly higher than inventory-based estimates, with MethaneSAT (2026) finding global oil and gas emissions consistently exceed reported inventories by significant margins.

23 These studies confirm that upstream methane intensity spans a wide distribution. A single central WTT factor without sensitivity analysis treats that intensity as known with certainty — a position the scientific literature does not support.

24 CESL therefore submits that reliance on a single central WTT factor does not demonstrate that the lifecycle emissions assessment is robust to reasonably foreseeable variability in upstream methane intensity. The assessment of significance logically follows the identification and quantification of the reasonable worst-case effect. Where that effect has not been tested — and the dominant parameter (63.4%) cannot be independently verified — the significance conclusion rests on an unverifiable central assumption.

D.2 (C) **NZT precedent**

25 The Applicant relies on the Net Zero Teesside DCO decision as authority for the DESNZ factor. CESL submits this provides no determinative support: (a) ExA reports create no legal precedent; (b) the NZT ExA addressed a different question and had materially different evidence before it; (c) the NZT ExA's acceptance of the factor was expressly temporally qualified as "the best data and understanding available at the current time"; and (d) the optimistic premise on which the NZT ExA balanced acknowledged uncertainty — international initiatives reducing methane — has been directly contradicted by subsequent evidence (such as MethaneSAT).

D3 / Part A / Section E Parameter 2 – Methane climate metrics

E.1 Applicant position

26 The Environmental Statement expresses methane emissions using Global Warming Potential over a 100-year time horizon (GWP100), consistent with greenhouse-gas reporting practice.

E.2 CESL evidential analysis

27 The physical science basis (Working Group I, IPCC Sixth Assessment Report) demonstrates that methane is responsible for a substantial proportion of present-day warming: AR6 Figure SPM.2 attributes approximately 0.5°C of observed anthropogenic warming to methane — around one third of total anthropogenic warming. AR6 Figure 6.16 further demonstrates that a one-year pulse of current methane emissions produces a greater 10-year temperature response than an equivalent pulse of CO_2.

28 An illustrative sensitivity analysis comparing GWP100 with GWP20[3] illustrates that near-term climate effects during the operational lifetime are not captured by GWP100 alone. Schedule 4, paragraph 5 of the EIA Regulations expressly requires description of short-, medium- and long-term effects: a GWP20 sensitivity case is sought to discharge that obligation, as an addition to GWP100 reporting, not a replacement for it.

D3 / Part A / Section F Parameter 3 – CO_2 capture rate

F.1 Applicant position

29 The Environmental Statement models the development assuming a CO_2 capture rate of 95% and states that environmental permitting and best-available-technique standards will ensure appropriate operational performance.

F.2 CESL evidential analysis

30 The regulatory evidence from the environmental permit issued for the Net Zero Teesside project demonstrates that capture efficiency is monitored and averaged during operation. NZT Improvement Condition IC10 expressly allows operators to justify that 95% is not reasonably achievable, confirming that 95% functions as a monitored design target, not a continuously enforceable minimum.

[3] a 20-year time horizon

31 The Applicant asserts that the Environmental Permit regime will in future secure 95% capture. CESL submits the position advanced by the Applicant depends on a structure of mutually reinforcing regulatory assumptions between the planning assessment and the future permitting regime. The ES assumes 95% because the design targets it; the design targets it because the guidance describes it as BAT; the EP will require it, but not enforce it, because the design describes it. The CQLCP draft DCO contains no DCO-level minimum capture rate specification, unlike H2 Teesside whose DCO Schedule 1 specified a minimum 95% design capture rate.

32 Critically, in March 2024 — a year before the ES was published — the Environment Agency reclassified post-combustion CCS from ‘best available techniques’ to ‘emerging technique’. Under the regulatory framework, an emerging technique is one not yet fully commercially developed to the level of established BAT. This means no settled sectoral BAT reference document exists for post-combustion CCS and the regulator’s BAT determination is made case-by-case on provisional evidence. The ES does not engage with this reclassification.

33 The evidence review underlying the March 2024 reclassification is not publicly accessible (a circular link exists between the GOV.UK page and the UKCCSRC website). CESL has submitted an EIR request to the EA before this Deadline. The Applicant cannot demonstrate that 95% represents a settled, empirically validated operational floor.

34 CESL therefore submits that the ES should demonstrate either a specific enforceable mechanism securing 95% as a lower-bound operational parameter, or provide sensitivity testing reflecting reasonably foreseeable capture performance below that level.

D3 / Part A / Section G   Implications for Environmental Statement adequacy

35 Drawing on the evidential sources outlined above, CESL submits that the Environmental Statement does not demonstrate that the lifecycle emissions assessment is robust to reasonably foreseeable variability in three determinative parameters:

(a) the upstream natural-gas well-to-tank (WTT) emission factor;

(b) the climate metric used to represent methane effects;

(c) the assumed operational CO_2 capture rate.

36 CESL further submits that all three parameters share the same directional bias: each, if it departs from the actual operational outcome, will do so in the direction of understating assessed greenhouse-gas effects. The Applicant's claim in ES paragraph 20.6.69 that the Reference Case represents "the worst-case scenario for GHG emissions" is therefore unsustainable: it is a maximum volume scenario at minimum assumed intensity, not a genuine worst case. The true worst case, properly constructed, is higher than the Reference Case on all three intensity dimensions simultaneously.

37 The detailed analysis is set out in D3 (Part A). This summary identifies the principal issues and their evidential basis.

38 Accordingly, the matters identified above are properly understood as questions of ES sufficiency for the purposes of the Examination, to be considered by reference to the full evidential analysis set out in D3 (Part A).

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