

## **INDEPENDENT VERIFICATION OPINION OF GREENHOUSE GAS EMISSIONS DATA**

Avieco Ltd (part of Accenture) have prepared this verification opinion for Croda International PLC (hereby Croda), through which it is confirmed that Croda's reported scope 1, 2 and 3 greenhouse gas (GHG) emissions for reporting year 2022, and all rebaselined data back to 2018, have received **reasonable verification** in accordance with the requirements of the ISO 14064 – part 3: 2019 standard.

Reasonable verification is distinguished from limited verification as it provides a high degree of confidence that the information disclosed is accurate and complete compared to the limited level. This is because the verification procedures for reasonable verification employ a lower risk threshold and a higher level of data testing and review compared to limited verification, to reduce the risk of material misstatements to an acceptably low level.

The verification covers Croda's stated historic rebaselined emissions and intensity metric reported for one reporting year – the 12 months starting 1<sup>st</sup> January 2022 and ending 31<sup>st</sup> December 2022 (FY22), as shall appear in Croda's Annual Report and Accounts and wider environmental reporting. In addition, the verification also covers the year-on-year performance change compared to reporting periods 2021, 2020, 2019 and 2018 (baseline year).

Of note during the 2022 period – scope 1, 2, and 3 values for years 2018, 2019, 2020, and 2021 have been rebaselined to account for the divestment of the PTIC part of the business.

### **RESPONSIBILITIES OF CRODA AND AVIECO**

Croda was responsible for the preparation of the GHG emission statements and the internal management controls governing the data collection, collation and GHG calculations performed.

Avieco was responsible for carrying out a verification assessment in accordance with the ISO 14064-3: 2019 'Greenhouse gases – Part 3: Specification with guidance for the verification and validation of greenhouse gas statements' and providing an independently expressed opinion to a **reasonable level** on the reported GHG emissions totals for each of the data sources included in the scope of this verification.

### **VERIFICATION SCOPE AND SUBJECT MATTER**

The boundary of the verification process included all sites across the globe over which Croda International Plc have operational control.

#### **GHG sources included in the reasonable verification process:**

- **Scope 1:** Natural gas; landfill gas; biogas; light fuel oil; heavy fuel oil; gasoline; diesel; propane/LPG; energy from waste oil; biodiesel, VOCs
- **Scope 2:** Electricity; steam; renewables; district heating
- **Scope 3:** Purchased goods and services, capital goods, fuel and energy-related activities, upstream transportation and distribution, waste, business travel, employee commuting and homeworking
- **Outside of scopes:** Biogenic portion of vehicles fuels; biofuels
- **Types of GHGs** included, as applicable: CO<sub>2</sub>e, CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFCs, PFCs and SF<sub>6</sub>

Croda's GHG statements verified by Avieco cover 100% of emissions by scope (in tCO<sub>2</sub>e) as follows:

Year	Scope 1	Scope 2 (location-based)	Scope 2 (market-based)	Scope 3	Outside of scopes
2018	104,088	59,050	46,882	870,009**	17,915
2019	94,491	57,535	38,391	788,439	11,603
2020	102,750	64,416	27,138	775,568	17,228
2021	112,903	61,984	20,996*	895,375**	11,112
2022	110,487	57,294	10,606*	920,578**	17,463

\*The 2021 and 2022 GHG emissions statements for market-based scope 2 in the table above are reporting out of market RECs for Singapore, which have been accepted as best available practice for the market at present given the prohibitive availability and pricing of RECs in that location.

\*\*The 2018, 2021 and 2022 GHG emissions statements for scope 3 in the table above have been calculated on a more granular methodology than 2019 and 2020. Interim years 2019 and 2020 remain in the prior approach per the 2020 verification statement and the methodology remains valid and aligned to international reporting standards.

Year	2018	2019	2020	2021	2022
tCO <sub>2</sub> e/ £m value add***	306	275	263	192	134

\*\*\*Intensity on the basis of scope 1 + scope 2 market based per £m value add. The 2018-2021 emissions values include the PTIC portfolio values, whereas the 2022 emissions intensity excludes the PTIC divestment.

## TEMPORARY BIOGENIC CARBON SEQUESTRATION

Avieco has also verified the temporary biogenic carbon sequestration associated with one specific<sup>1</sup> bio-based raw material Croda purchased in year ending 31<sup>st</sup> December 2022, as 41,197tCO<sub>2</sub>e. However, we note this figure does not take into account the associated downstream emissions and therefore does not include any end-of-life emissions associated with its use.

## REPORTING METHODOLOGIES AND VERIFICATION CRITERIA

Croda's GHG inventory has been completed in accordance with the World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol, Corporate Accounting and Reporting Standard (Revised Edition), The GHG Protocol Corporate Value Chain Scope 3 standard, The GHG Protocol Scope 2 Guidance for market-based reporting, and with Defra's Environmental reporting guidelines: Including Streamlined Energy and Carbon Reporting requirements. The verification criteria assessed the adherence of Croda's GHG statements and procedures to the best practice reporting principles of relevance, completeness, consistency, transparency and accuracy.

<sup>1</sup> The specific raw material the biological sequestration is related to is commercially sensitive, so to avoid back calculation of the results the name has been redacted. Croda is prepared to discuss further details related to this raw material on specific request from stakeholders.

Avieco conducted the reasonable verification engagement in two separate phases: in November/December 2022 through an initial phase of engagement with material and non-material sites to carry out verification of Q1 – Q3 data, and throughout January/February 2023 to conduct verification of the final Q4 site data, new environmental reporting software system, emission calculations and scope 3 inventory calculations. A separate workstream was also conducted to review the rebaseline of all years' data across 2018-2021. Avieco used the appropriate verification planning, validation, GHG assessment and evaluation steps in accordance with the requirements of ISO 14064:3 2019, and in adherence to the standard's principles of independence, ethical conduct, fair presentation and due professional care.

## **OBJECTIVES**

The objectives of the verification engagement were to ensure Croda's GHG statements are materially correct to an acceptable materiality threshold of 2% at the GHG source level and organizational level (appropriate for reasonable level of verification); and to ensure the GHG inventory provides the relevant material information required by stakeholders for the purpose of decision making.

## **AVIECO'S VERIFICATION PROCESS**

Our verification conclusions are based on the following activities:

- Agreement on the levels of verification, objectives, criteria, organisational scope and materiality thresholds.
- Review of the processes and procedures for establishing the organisational and operational boundary, ensuring relevance in emissions reporting across scope 1, 2 and 3 emissions sources.
- Development of the verification project plan and data sampling plan (based on risk and materiality appropriate for reasonable verification in relation to GHG emissions)
- To reflect the reasonable level of verification, Avieco's sample included >80% of Croda's total scope 1, 2 and 3 emissions.
- Assessment of the GHG data system and controls through interviews and one site visit.
- Assessment of the data collection process from raw data comparison with primary evidence, through to data entry into the new environmental software system. This step included assessment of estimations and extrapolation systems in place and their underlying assumptions.
- Review of online data collection systems, third party dashboarding systems and third-party supply chain impact tools
- Review of the appropriateness and application of the methodologies and calculations used for conversion of activity data to CO<sub>2</sub>e emissions.
- Review of the change in scope 1, 2 and 3 emissions and intensity metrics between all reporting years and the 2018 baseline.
- Evaluation of the internal quality assurance procedures and results.
- Our evidence gathering procedures included but were not limited to:
  - In depth online interviews with representatives of 6 sites to confirm completeness of GHG inventory, changes to previous years, operational behaviour and standard procedures for data collection and reporting to Group ESG,
  - In depth interview and site visit was carried out at 1 other manufacturing site, with further physical inspection conducted at Leek,
  - Desktop study of data of 11 further manufacturing and non-manufacturing sites and central data,
  - Desktop study of site level and centralised data for scope 3 reporting to confirm accuracy of source data and applied calculations.

## **VERIFICATION OPINION**

Based on the verification procedures for **reasonable verification**, Avieco declares that Croda's 2022 scope 1, 2 and 3 emissions, rebaselined 2018-2021 data, intensity metrics and year-on-year performance changes to 2018 baseline are:

- Prepared in accordance with Croda 's relevant internal GHG emissions reporting methodologies, which adhere to the internationally recognized WRI/WBCSD Greenhouse Gas (GHG) Protocol Corporate Accounting and Reporting Standard (revised version) (scope

- 1, 2 and 3) and to Defra's "Environmental reporting guidelines: Including Streamlined Energy and Carbon Reporting requirements".
- Materially correct and a fair representation of their GHG emissions within the established scope of reporting.
  - Prepared in adherence to the best practice reporting principles of relevance, completeness, consistency, transparency and accuracy.
  - Worthy of the award of reasonable verification.

## **AVIECO'S INDEPENDENCE AND TEAM COMPETENCIES**

We can confirm our independence, ethics and competence as follows:

- We are independently appointed by Croda and no member of the verification team has a business reason for bias with regard to the reasonable verification engagement.
- We have complied with the ethical requirements relevant for the performance of the ISO14064:3 engagement in respect of professional experience in environmental reporting and assurance. We have acted with the integrity, objectivity, professional competence, due care and confidentiality to be expected of a professional services provider and the rigor of our work is sufficient to the level required by the ISO 14064:3 standard.
- Our team have extensive experience in GHG reporting to WRI/WBCSD GHG Corporate Accounting and Reporting Standard (revised) standard, wider WRI GHG Protocol Scope 2 and 3 standards and ISO 14064 – part 3: 2019.

Avieco applies quality control and management approaches equivalent to ISO 9001 International Standard and as encompassed in our legacy quality and ethics policies. Our commitment to ethical conduct is appropriate for that required for environmental and sustainability professionals in respect of conducting the verification engagement.

## **RECOMMENDATIONS FOR IMPROVEMENT**

In future Croda should:

1. Ensure all sites upload actual figures once received alongside accompanying raw data evidence onto the environmental reporting system through the course of the year. This will create a centralised evidence record for values in the system and any estimation approaches, ensuring ongoing rigor in internal quarterly reporting and the end of year verification and external reporting exercise.
2. Where newly identified / deployed sources of emissions have been identified at sites during the last phase of the 2022 verification engagement; conduct a gap analysis of such sources, collect qualifying data and calculate emissions during the course of 2023. Assess the need for restatement in 2023 if any sources are found to breach materiality threshold.
3. Ensure primary data collection channels are in place for the recently divested PTIC business, which is now in the Croda scope 3 emissions calculations.

Avieco declares that Croda International Plc have received reasonable verification for reporting years ending 31st December 2019/ 2020/ 2021/ 2022; and limited verification for reporting year 2018 for the following:

- Scope 1, 2 and 3, plus outside of scopes GHG emissions and intensity metric (Scope 1+ 2 tCO<sub>2</sub>e/£m value add)
- Scope 1, 2 and 3 year-on-year performance change relative to baseline
- Temporary biogenic carbon sequestration from raw material (2022 purchase)



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