



LRQA Independent Assurance Statement

Relating to Ricardo plc GHG Emissions Data Verification for the Financial year
July 1, 2021-June 30, 2022

This Assurance Statement has been prepared for Ricardo plc in accordance with our contract.

Terms of Engagement

LRQA was commissioned by Ricardo plc to provide independent assurance of its greenhouse gas (GHG) emissions inventory (hereafter referred to as “the Inventory”) for the for the financial year 2021/2022. The Inventory relates to direct GHG emissions and energy indirect GHG emissions and other indirect GHG emissions.

Scopes 1, 2 and the following categories in Scope 3 were verified to a reasonable level of assurance and a materiality of 5%: Category 5-Waste generated by operations, Category 6- Business Travel and Category 13-Downstream leased assets. The following categories in Scope 3 were verified to limited assurance and materiality of the professional judgement of the verifier: Category 1- Purchase of goods and services; Category 2- Capital goods; Category 4- Upstream transport and distribution; Category 7 – Employee commuting; Category 8 – Upstream leased assets Category 9-Downstream T&D; Category 11-Use of sold products; Category 12-End of life treatment of sold products. The inventory has been verified using ISO 14064 - Part 3 for greenhouse gas emissions as taking into account the requirements of The Greenhouse Protocol – A Corporate Accounting and Reporting Standard (revised edition, Jan 2015).

Our assurance engagement covered Ricardo plc’s Operational control boundaries as follows:

- Verifying conformance with:
 - Ricardo plc’s reporting methodologies such as Environmental and non-financial reporting, GHG scope 3 data and calculations and Ricardo Group methodology statement.
 - World Resources Institute / World Business Council for Sustainable Development Greenhouse Gas Protocol: A corporate accounting and reporting standard, revised edition (otherwise referred to as the WRI/WBCSD GHG Protocol) for the GHG data¹.
- Evaluating the accuracy and reliability of data and information for only the selected indicators listed below:
 - Direct (Scope 1), Energy Indirect (Scope 2) and Other Indirect (Scope 3) GHG emissions.
 - Scope 3 GHG emissions verified by LRQA only include Category 1, 2,4,5,6,7,8,9,11,12 and 13.

Our assurance engagement excluded the data and information of Ricardo plc

- small offices that are services (from organisation such as Regus, data capture not carried out– population of less than 5
- Emissions from homebased working and commuting are excluded from our measurement boundary
- Emissions from Transmission and Distribution losses

¹ <http://www.ghgprotocol.org/>



LRQA’s responsibility is only to Ricardo plc. LRQA disclaims any liability or responsibility to others as explained in the end footnote. Ricardo plc’s responsibility is for collecting, aggregating, analysing and presenting all the data and information within the Report and for maintaining effective internal controls over the systems from which the Report is derived. Ultimately, the Report has been approved by, and remains the responsibility of Ricardo plc

LRQA’s Opinion

Based on LRQA’s approach, we believe that Ricardo plc’s Scope 1, Scope 2 and Scope 3-Categories 5, 6 and 13 have in all material respects

- Met the requirements of criteria listed above; and
- Disclosed accurate and reliable performance data and information as summarized in Table 1 below.

The opinion expressed is formed on the basis of a reasonable level of assurance and at the materiality of 5%

Based on LRQA’s approach nothing has come to our attention that would cause us to believe that Ricardo plc’s Scope 3- Categories 1, 2, 4,7, 8,9,11 and 12 have not, in all material respects:

- Met the requirements of the criteria listed above; and
- Disclosed accurate and reliable performance data and information as summarized in below and break down of scopes presented in table 1.

The opinion expressed is formed on the basis of a limited level of assurance² and at the materiality of the professional judgement of the verifier.

Scope of GHG emissions	Tonnes CO ₂ e
Scope 1 GHG emissions	2,702
Scope 2 GHG emissions (Location-based)	3,423
Scope 2 GHG emissions (Market-based)	753
Scope 3 GHG emissions [GHG Protocol Basis]	93,975
Scope 3 GHG emissions [SBTi Basis]	145,044
Note 1: Scope 2, Location-based and Scope 2, Market-based are defined in the WRI/WBCSD GHG Protocol Scope 2 Guidance, 2015	

LRQA’s Approach

LRQA’s assurance engagements are carried out in accordance with our verification procedure. The following tasks were undertaken as part of the evidence gathering process for this assurance engagement:

- conducting site tours to the Corporate office of Ricardo plc at the following locations, and reviewed processes related to the control of GHG emissions data and records:
 - Shoreham Technical Centre, UK
 - Midlands Technical Centre, UK
- conducting remote site visit to the following location

² The extent of evidence-gathering for a limited assurance engagement is less than for a reasonable assurance engagement. Limited assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a limited assurance engagement is lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.



○ Ricardo Prague, CZ

- interviewing relevant staff of the organization responsible for managing GHG emissions data and records; and
- verifying, on a sampling basis, the historical GHG emissions data at a primary data level for the financial year 2021/22
- verifying the emission factors applied for market-based Scope 2 emissions
- verifying the spend data for Scope 3- Category 1,2,4,7,8,9,11 and 12
- verifying consumption data for Scope 3- Category 5, 6 and 13.

Observations

Further observations and findings, made during the assurance engagement, are:

- Improve the transparency of data collection at a site/source level, as data tends to be aggregated prior to entry into the reporting system, better documentation of sources and methodologies is recommended.
- A system of controls should be adopted by the organisation in order to minimise the risk of misstatements within the inventory prior to external audit.
- Obtain evidence of conformance to Scope 2 quality criteria for all sites.

LRQA's Standards, Competence and Independence

LRQA implements and maintains a comprehensive management system that meets accreditation requirements for ISO 14065 *Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition* and ISO/IEC 17021 *Conformity assessment – Requirements for bodies providing audit and certification of management systems* that are at least as demanding as the requirements of the International Standard on Quality Control 1 and comply with the *Code of Ethics for Professional Accountants* issued by the International Ethics Standards Board for Accountants.

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

LRQA is Ricardo plc's certification body for ISO 9001, ISO 14001 and ISO 45001. The verification and certification assessments are the only work undertaken by LRQA for Ricardo plc and as such does not compromise our independence or impartiality.

Dated: 06 September 2022

Sujatha Ramasamy
LRQA Lead Verifier
On behalf of LRQA 1 Trinity Park, Bickenhill Lane, Birmingham, UK.
LRQA reference: LRQ00003441



Table 1: Greenhouse gas emissions
Base year FY2019/20 and FY2020/21 verified by LR
Category 8 is part of category 1 and 2

	FY 2021/22	FY 2020/21	FY 2019/20 baseline
Emissions - tCO₂e			
Scope 1 – Gas (methane based) usage	697	777	
Scope 1 - Diesel usage	674	555	
Scope 1 – Gasoline usage	367	381	
Scope 1 – Other emissions	964	703	
Scope 1 - Total	2,702	2,416	4,343
Scope 2 – Location-based	3,423	3,791	4,981
Scope 2 – Market-based	753	774	2,016
Total – Location-based (Scopes 1 and 2)	6,125	6,208	9,324
Total – Market-based (Scopes 1 and 2)	3,455	3,191	6,359
Scope 3 - Category 1 (including Category 8) – Purchased goods and services	76,062	No data	No data
Scope 3 - Category 2 – Capital goods	4,405	No data	No data
Scope 3 – Category 4 – Upstream transportation and distribution	206	No data	No data
Scope 3 – Category 5 - Waste	142	No data	No data
Scope 3 – Category 6 – Business travel (all modes)	2,396	No data	No data
Scope 3 - Category 7 – Employee commuting	1,917	No data	No data
Scope 3 - Category 9 – Downstream transportation and distribution	88	No data	No data
Scope 3 - Category 11 – Use of sold product (weight apportioned basis – GHG protocol)	8,431	No data	No data
Scope 3 – Category 11 - Use of sold product – (whole vehicle method – SBTi)	59,500	No data	No data
Scope 3 – Category 12 - End of life of sold products	282	No data	No data
Scope 3 – Category 13 – Downstream leased assets, location based	46	No data	No data
Scope 3 total – GHG basis	93,975	No data	No data
Scope 3 total – SBTi basis	145,044	No data	No data
Total – Location-based (Scopes 1,2,3) GHG Protocol basis	100,100	6,688	13,291

	FY 2021/22	FY 2020/21	FY 2019/20 baseline
Total - Market-based (Scopes 1,2,3) GHG Protocol basis	97,430	3,671	10,326
Note - Scope 3 - Air travel	1,560	N/A	6,015
Intensity Measures – GHG basis (tCO ₂ e per employee)			
Total – Location-based (Scopes 1 and 2)	2.22	2.14	3.05
Total – Market-based (Scopes 1 and 2)	1.25	1.10	2.08
Scope 3 GHG Protocol basis	34.01		
Total – Location-based (Scopes 1,2,3)	36.23	No data	No data
Total - Market-based (Scopes 1,2,3)	35.26	No data	No data
Electricity consumed (all sources)	15,369	15,742	17,455
Renewable energy consumed	13,601	14,296	12,973
Percentage of renewable electricity used	89%	91%	74%
SECR (UK Streamlined Energy and Carbon Reporting)			
UK Scope 1 tCO ₂ e	2,526	2,175	2,496
UK Scope 2 - Location-based tCO ₂ e	2,606	2,971	3,065
UK Scope 2 - Market-based tCO ₂ e	26	47	166
UK Scope 1 + Scope 2 tCO ₂ e Location-based	5,132	5,146	5,562
UK Scope 1 + Scope 2 tCO ₂ e Market-based	2,552	2,223	2,662
Energy consumption (million kWh)	21	21	17
Intensity measures (tCO ₂ e per UK employee)			
Scope 1	1.52	1.35	1.50
Scope 2 Location based	1.57	1.84	1.84
Scope 2 Market based	0.02	0.03	0.10
Scope 1 + scope 2 Location based	3.09	3.19	3.34
Scope 1 + scope 2 Market-based	1.54	1.38	1.60



- The operational control test is applied to determine if an emission is within Scope 1 or scope 2.
- The inventory has been compiled according to the GHG Protocol and internal procedures with the exception that individual gases are not reported. Our GHG emissions for FY 2021/22 have been verified by LRQA in accordance with ISO 14064-3:2018 'Specification with guidance for validation and verification of greenhouse-gas assertions'.
- The base year is FY 2019/20, as this as the first year where Scope 1 and Scope 2 data was verified. The scope 3 base year is FY21/22. Some data includes estimates, which may be updated at a later time when more accurate data are available.
- Emission factors used for fuels and UK location-based electricity are based on UK BEIS/DEFRA conversion factors for 2022. Electricity emissions factors used for location-based calculations are the most recent confirmed IEA factors for the country. Electricity emissions factors used for market-based calculations where renewable electricity is supplied are 0 kgCO₂e/kWh. Location-based factors are applied elsewhere.
- For Scope 3 emissions factors for categories: 1,2, 4, 5, 8, and 9 are based upon cost using Defra for UK and EU based entities and Quantis for other entities. Scope 3 category 7 is based on an annual employee survey commuting survey which had an average return rate of 68% for site-based employees and DEFRA factors, Categories 11 and 12 are estimated based on volumes sold in Performance Products and ABS kits in Ricardo Defense, end of life is estimated on material type and weight using DEFRA for PP and Quantis for Ricardo Defense. Category 12 is based on published WLTP emissions for each engine variant and estimated vehicle use over 10 years
- Air and rail travel emissions are calculated by Susterra using bespoke factors that take account of route, class of travel, airline and aircraft type. The remaining elements of category 6 are calculated based on cost using the Defra and Quantis factors as above
- Other Scope 1 emissions include refrigerants used to top up cooling and air conditioning plants, fire extinguishants such as FM200 and sulphur hexafluoride (SF₆) associated with switchgear.
- SECR: Our UK operations are our biggest consumer of electricity, which is our only UK Scope 2 emission source, where we directly procure electricity from renewable sources for our largest sites.
- We have no Scope 3 emissions in Categories 3, 14 or 15. Category 8 emissions are included within our Scope 1 reporting.
- Our triggers for base year recalculation would be an acquisition or disposal which changed head count by +/- 20% - this did not occur in the current or previous year. The sale of Ricardo Software was below the threshold

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