

Independent Assurance Statement to Merck and Co., Inc.

ERM Certification and Verification Services Inc. ('ERM CVS') was engaged by Merck and Co., Inc. ('Merck') to provide assurance in relation to the specified 2021 environmental performance data presented in Merck's Environmental, Social, & Governance (ESG) Progress Report 2021/2022 ('the Report') and the 2022 CDP Climate Change & Water Questionnaires ('the CDP Questionnaires') as set out below.

Engagement summary	
Scope of our assurance engagement	<p>Whether the 2021 selected GHG emissions and water data are fairly presented, in all material respects, with the reporting criteria.</p> <p><u>GHG Emissions</u></p> <ul style="list-style-type: none"> • Total Scope 1 GHG emissions [metric tonnes CO₂e] • Total Scope 2 (location-based) GHG emissions [metric tonnes CO₂e] • Total Scope 2 (market-based) GHG emissions [metric tonnes CO₂e] • Total Scope 3 GHG emissions [metric tonnes CO₂e] comprised of the following categories: <ul style="list-style-type: none"> - Category 3: Fuel and energy-related activities not included in Scope 1 or Scope 2 - Category 6: Business travel (primary travel vendor and reimbursable mileage only) - Category 11: Use of sold products <p><u>Water</u></p> <ul style="list-style-type: none"> • Total water withdrawal (ESG Report); Total withdrawals (CDP) [million cubic meters (ESG Report); megaliters (CDP)] • Total Purchased water withdrawal (ESG Report); Third party sources (CDP) [million cubic meters (ESG Report); megaliters (CDP)] • Total Pumped water withdrawal (Groundwater and Surface water (ESG Report); Fresh surface water, including rainwater, water from wetlands, rivers, and lakes and Groundwater – renewable (CDP)) [million cubic meters (ESG Report); megaliters (CDP)] • Total water discharge (ESG Report); Total discharges (CDP) [million cubic meters (ESG Report); megaliters (CDP)]
Reporting period	The data covered by the assurance relates to the calendar year ending 31 December 2021.
Reporting criteria	<ul style="list-style-type: none"> • WBCSD/WRI GHG Protocol (including the Corporate Accounting and Reporting Standard, and the Corporate Value Chain (Scope 3) Accounting and Reporting Standard) for the Scope 1, 2 and 3 greenhouse gas (GHG) emissions; • Merck's internal reporting criteria and definitions.
Assurance standard	ERM CVS' assurance methodology which is aligned with the International Standard for Assurance Engagements ISAE 3000 (Revised) and ISO 14064:3 for the verification of GHG emissions.
Assurance level	Limited assurance.
Respective responsibilities	<p>Merck is responsible for preparing the Report and CDP Questionnaires for the collection and presentation of the information within it.</p> <p>ERM CVS' responsibility is to provide a conclusion on the agreed scope based on the assurance activities performed and exercising our professional judgement.</p>

Our conclusion

Based on our activities, as described below, nothing has come to our attention to indicate that the 2021 data and information for the disclosures listed under 'Scope' above are not fairly presented in the Report and CDP Questionnaires, in all material respects, with the reporting criteria.

Scope 1 GHG emissions:	695,700 metric tons CO ₂ e
Scope 2 GHG emissions (location based method):	374,200 metric tons CO ₂ e
Scope 2 GHG emissions (market based method):	230,000 metric tons CO ₂ e
Total Scope 3 GHG emissions comprised of the following categories:	239,852 metric tons CO ₂ e
– Category 3: Fuel and energy-related activities not included in Scope 1 or Scope 2	
– Category 6: Business Travel (primary travel vendor and reimbursable mileage only)	
– Category 11: Use of sold products	
Total water withdrawal (ESG Report); Total withdrawals (CDP):	19.4 million cubic meters (ESG Report); 19,371 megaliters (CDP)
Total Purchased water withdrawal (ESG Report); Third party sources (CDP):	7.1 million cubic meters (ESG Report); 7,144 megaliters (CDP)
Total Pumped water withdrawal (Groundwater and Surface water (ESG Report); Fresh surface water, including rainwater, water from wetlands, rivers, and lakes and Groundwater – renewable (CDP)):	12.3 million cubic meters (ESG Report); 12,227 megaliters (CDP)
Total water discharge (ESG Report): Total discharges (CDP)	17.11 million cubic meters (ESG Report); 17,105 megaliters (CDP)

Our assurance activities

A multi-disciplinary team of sustainability and assurance specialists performed a range of assurance procedures which varied across the disclosures covered by our assurance engagement, as follows:

- Interviews with management representatives responsible for data reporting;
- Interviews with relevant staff to understand and evaluate the management systems and processes (including internal review processes) used for collecting and reporting the selected disclosures;
- A review at corporate level of water and GHG emissions calculation outputs;
- A review of systems and processes for reporting and consolidating Scope 3 GHG emissions including activity data underlying the calculations and emission factors applied;
- A review at corporate level of a sample of qualitative and quantitative evidence supporting the reported information;
- An analytical review and substantive testing (on a sample basis) of the key performance indicators included in the Assurance Scope submitted by all sites, and follow up and close out of our queries;
- Confirming appropriateness and accuracy of emission and conversion factors and assumptions used;
- Web-based visits to Merck operations in the Netherlands, Singapore, and the United States to verify the source data underlying the key performance indicators included in the Assurance Scope and to review local environmental management approaches;
- A review of the presentation of information relevant to the scope of our work in the Report and CDP Questionnaires to ensure consistency with our findings.

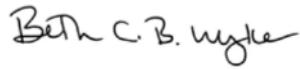
The limitations of our engagement

The reliability of the assured information is subject to inherent uncertainties, given the available methods for determining, calculating or estimating the underlying information. It is important to understand our assurance conclusions in this context.

Due to COVID-19 travel restrictions, we planned our assurance engagement to include virtual site visits. While we believe this approach does not affect our limited assurance conclusion above, we draw attention to the possibility that if we had undertaken in person visits we may have identified errors and omissions in the assured information that we did not discover through the alternative assurance program.

Our independence

ERM CVS is a member of the ERM Group. The work that ERM CVS conducts for clients is solely related to independent assurance activities and auditor training. Our processes are designed and implemented to ensure that the work we undertake with clients is free from bias and conflict of interest. ERM CVS and the staff that have undertaken work on this assurance exercise provide no consultancy related services to Merck in any respect.



Beth Wyke
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