

Verification Statement

AB Volvo's 2019 GHG emissions inventory and energy consumption data

Issued to: AB Volvo, 405 08 Göteborg, Sweden

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Date: 3 March 2020

Navigant, a Guidehouse company has independently verified, with a limited level of assurance the 2019

1. Scope 1 (direct) and Scope 2 (indirect) greenhouse gas (GHG) emissions inventory of AB Volvo, according to ISO 14064-3¹, meeting the requirements provided in the GHG Protocol Corporate Standard², the ISO 14064-1³ standard and the GHG Protocol Scope 2 Guidance⁴.
2. Energy consumption of AB Volvo, performed following the general principles of completeness, transparency, consistency, and accuracy.

The 2019 AB Volvo Scope 1 and 2 GHG emissions inventory represents a total amount of:

Scope 1 CO ₂ emissions:	211	kton CO ₂ eq.
Scope 2 CO ₂ emissions:		
- Market based:	113	kton CO ₂ eq.
- Location based:	191	kton CO ₂ eq.

The 2019 AB Volvo energy consumption is as follows:

Energy consumption:	2,118	GWh
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Verification Objectives

- To assess completeness of the GHG emissions inventory and energy consumption data reports;
- To determine the extent of conformity of AB Volvo's GHG calculation methodology and emissions report with the GHG Protocol Corporate Standard, the GHG Protocol Scope 2 Guidance and ISO 14064-1;
- To evaluate the GHG emissions and energy consumption data information system and its controls/management;
- To assess whether the GHG emissions inventory and energy consumption data assertion is without material discrepancy;

Period covered

1 January 2019 – 31 December 2019

Verification standard

ISO 14064-3 (for GHG emissions)

¹ International standard ISO 14064-3, Greenhouse gases — Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions". International Organization for Standardization (ISO). March 2006, Geneva, Switzerland. The standard is available at www.iso.org.

² The GHG Protocol, A Corporate Accounting and Reporting Standard, revised Edition. World Business Counsel for Sustainable Development (WBCSD) and World Resource Institute (WRI), March 2004, Geneva, Switzerland. The protocol is available at www.ghgprotocol.org.

³ International standard ISO 14064-1, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals". International Organization for Standardization (ISO). March 2006, Geneva, Switzerland. The standard is available at www.iso.org.

⁴ GHG Protocol Scope 2 Guidance, An amendment to the GHG Protocol Corporate Standard, World Resource Institute, 2015. ISBN: 978-1-56973-850-4. The protocol is available at www.ghgprotocol.org

Level of assurance

The level of assurance agreed is limited.

Scope Verification

The verification covered the energy consumption and direct (Scope 1) and indirect (Scope 2) GHG emissions generated from AB Volvo's Group's global operations, in the year 2019. For GHGs all relevant GHG emissions as specified within the applicable standards of the GHG Protocol and ISO (CO₂, N₂O, CH₄, SF₆, PFC, HFC and NF₃) are included in the inventory and verification.

In line with previous years AB Volvo has consistently and correctly applied the "operational control" consolidation approach to determine the organisational boundaries. Within the organisational boundaries all production locations including its logistics sites (warehouses and distribution hubs) that are owned or operated by AB Volvo are covered. Excluded are buildings hosting support activities (like offices and IT) and company owned dealers. The impact of this exclusion is estimated to be relatively small (<5%).

For energy consumption and GHG emissions production locations with a total energy consumption of less than 2,000 MWh are excluded from the inventory. The effect of this is relatively small and is calculated at around 3.0% of the total scope 1 and 2 footprint.

Description Verification Process

The verification of AB Volvo's Scope 1 and 2 GHG emissions inventory and energy consumption data was performed in the period between November 2019 and February 2020. As a first step several online meetings were organised in which the scope of the verification, the GHG calculation methodology, and the data collection process were discussed and subsequently reviewed by Navigant. In these meetings, Volvo introduced Navigant to its newly introduced energy and emission IT monitoring system (called UL Pure) and also provided direct access to this system via an own online account.

As part of a first pre-check in December and early January, a first data set with energy and emission data for the Volvo sites consuming more than 2,000 MWh was exported from UL Pure and reviewed by Navigant. Big changes compared to last year as well as missing data points were already flagged and (where possible) subsequently checked and confirmed or altered by Volvo. Mid-January, Navigant exported the energy and emission data for each Volvo site for the entire year 2019. Navigant analysed and checked the data for plausibility and completeness and made Volvo check or alter data if applicable. As a follow up, a sample⁵ of sites was selected for a more detailed on-site review. On 3 and 4 February 2020, a site visit was organised during which a verification of the IT data collection and calculation system UL PURE, the selected underlying data sources, and the final calculation results was performed. During the verification, the roles and responsibilities between the verifier and the responsible party (AB Volvo) as described in ISO 14064-3 were taken into account.

Limitations of Assurance Statement

Our responsibility is to carry out a limited assurance engagement on the proposed calculation methodology, dataset used and final calculation result, in order to provide conclusions on the conformity of the annual emission data with the principles and requirements of the WBCSD/WRI GHG Protocol and ISO. We do not accept or assume any responsibility for any other purpose or to any other person or organisation. Any reliance such third party may place on the information request is entirely at its own risk.

⁵ These sites were selected based on the following criteria: sites with significant total energy consumption, sites from different geographies, sites with data points that stood out in the comparison with last year, sites that have not been audited in earlier years, and sites with reporting issues in the audit of the 2018 results.

Conclusions

Navigant has independently verified, with a limited level of assurance the 2019:

1. Scope 1 (direct) and Scope 2 (indirect) greenhouse gas (GHG) emissions inventory of AB Volvo, according to ISO 14064-3⁶, meeting the requirements provided in the GHG Protocol Corporate Standard⁷, the GHG Protocol Scope 2 Guidance⁸ and the ISO 14064-1⁹ standard.
2. Energy consumption of AB Volvo, performed following the general principles of completeness, transparency, consistency, and accuracy.

Based on the process and procedures conducted we conclude that:

- There is no evidence that the reported 2019 Scope 1 and 2 GHG emissions inventory and energy consumption data of AB Volvo is not materially complete, transparent, consistent, accurate and reported in line with the requirements of the GHG Protocol, the ISO 14064-1 standard, or the general principles of completeness, transparency, consistency, and accuracy.
- No evidence was found that misstatements and/or data gaps have material effects on the level of reported GHG emissions and energy consumption.

Verified by:

Lead Assessor:



Caspar Noach

Associate Director

Utrecht, 3 March 2020

Technical reviewer:



Thomas Hähl

Senior Consultant

Cologne, 3 March 2020

About Navigant, a Guidehouse company

Guidehouse is a leading global provider of consulting services to the public and commercial markets with broad capabilities in management, technology, and risk consulting. We help clients address their toughest challenges with a focus on markets and clients facing transformational changes, technology-driven innovation and significant regulatory pressure. Headquartered in Washington DC, the company has more than 7,000 professionals in more than 50 locations.

With over 700 consultants, our global Energy, Sustainability, and Infrastructure segment is the largest in the industry. We collaborate with and serve as trusted advisors to utilities and energy companies, large corporations, investors, NGOs, and the public sector to help them thrive in the rapidly changing energy, resources, and infrastructure environment. Our highly skilled professionals form exceptional teams to help our clients transform their businesses, manage complexity and change, accelerate operational performance, manage critical programs, manage risk, meet compliance requirements, and improve operations and systems to address today's most complex issues. We lead through our insights and excel at strategy, transformation, and implementation, creating more sustainable and resilient countries, governments, companies, cities, and infrastructure.

No member of the Navigant project team has a business relationship with AB Volvo, other than the work regarding the GHG accounting and reporting of AB Volvo. We have conducted this assurance independently and there has been no conflict of interest.

⁶ International standard ISO 14064-3, Greenhouse gases — Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions". International Organization for Standardization (ISO). March 2006, Geneva, Switzerland. The standard is available at www.iso.org.

⁷ The GHG Protocol, A Corporate Accounting and Reporting Standard, revised Edition. World Business Counsel for Sustainable Development (WBCSD) and World Resource Institute (WRI), March 2004, Geneva, Switzerland. The protocol is available at www.ghgprotocol.org.

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