

# Verification Statement

## AB Volvo's 2020 GHG emissions inventory and energy consumption data

**Issued to:** AB Volvo, 405 08 Göteborg, Sweden

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**Date:** 17 February 2021

Guidehouse has independently verified, with a limited level of assurance the 2020

1. Scope 1 (direct) and Scope 2 (indirect) greenhouse gas (GHG) emissions inventory of AB Volvo, according to ISO 14064-3<sup>1</sup>, meeting the requirements provided in the GHG Protocol Corporate Standard<sup>2</sup>, the ISO 14064-1<sup>3</sup> standard and the GHG Protocol Scope 2 Guidance<sup>4</sup>.
2. Energy consumption of AB Volvo, performed following the general principles of completeness, transparency, consistency, and accuracy.

The 2020 AB Volvo Scope 1 and 2 GHG emissions inventory represents a total amount of:

Scope 1 CO <sub>2</sub> emissions:	173	kton CO <sub>2</sub> eq.
Scope 2 CO <sub>2</sub> emissions:		
- Market based:	97	kton CO <sub>2</sub> eq.
- Location based:	173	kton CO <sub>2</sub> eq.

The 2020 AB Volvo energy consumption is as follows:

Energy consumption:	1,816	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 2020 – 31 December 2020

### Verification standard

ISO 14064-3 (for GHG emissions)

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<sup>1</sup> 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](http://www.iso.org).

<sup>2</sup> 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](http://www.ghgprotocol.org).

<sup>3</sup> 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](http://www.iso.org).

<sup>4</sup> 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](http://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 2020. For GHGs all relevant GHG emissions as specified within the applicable standards of the GHG Protocol and ISO (CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, SF<sub>6</sub>, PFC, HFC and NF<sub>3</sub>) 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. In addition, for energy consumption and GHG emissions production locations with a total energy consumption of less than 2,000 MWh are excluded from the inventory.

During 2020 Volvo has made an extensive effort to collect 2019 data for the (smaller) sites that have so far been excluded from the footprint. Volvo is planning to include most of these in the annual reporting starting next year as part of the new baseline for Volvo's 2030 target. This exercise has indicated that the currently excluded sites add up to an estimated impact of up to 18% of the total footprint reported in the year 2019. Of these sites' Volvo intends to include the majority in their updated footprint starting next year to ensure that the final updated scope of Volvo's climate reporting will cover >95% of all Scope 1 and 2 emissions. For this year's results these sites are however still excluded.

### 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 2020 and February 2021. 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 Guidehouse. Early December 2020, Guidehouse also did a pre-audit (referred to as "mid-year audit") to prepare sites as well as all business units involved for the final audit beginning of February 2021. In these meetings, Volvo introduced Guidehouse to the status quo of e.g. energy consumption values, energy savings measures implemented etc. and Guidehouse reviewed and validated these.

Following the mid-year audit, in 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 Guidehouse. 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. Towards the end of January, Guidehouse exported the energy and emission data for each Volvo site for the entire year 2021. Guidehouse analysed and checked the data for plausibility and completeness and made Volvo again check or alter data if applicable. As a follow up, a sample<sup>5</sup> of sites was selected for a more detailed review. Normally, the audit is done on-site at Volvo in Gothenburg but due to COVID the entire audit was performed virtually early February. On 1 and 2 February 2020, a verification of the IT data collection and calculation system UL PURE was performed including a review of selected underlying data sources and final calculation results.

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<sup>5</sup> 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 2018/2019 results.

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.

### Conclusions

Guidehouse has independently verified, with a limited level of assurance the 2020:

1. Scope 1 (direct) and Scope 2 (indirect) greenhouse gas (GHG) emissions inventory of AB Volvo, according to ISO 14064-3<sup>6</sup>, meeting the requirements provided in the GHG Protocol Corporate Standard<sup>7</sup>, the GHG Protocol Scope 2 Guidance<sup>8</sup> and the ISO 14064-1<sup>9</sup> 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 2020 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, 17 February 2021

Technical reviewer:



Thomas Hähl

Senior Consultant

Cologne, 17 February 2021

<sup>6</sup> 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](http://www.iso.org).

<sup>7</sup> 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](http://www.ghgprotocol.org).

<sup>8</sup> 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](http://www.ghgprotocol.org)

<sup>9</sup> 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](http://www.iso.org).

### **About Guidehouse**

*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 Guidehouse 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.*