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Vector CO_2-balance sheet 2024

Vector Informatik GmbH

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V7.0 from 29 September 2026

Reporting period: 01 Jan 2024 - 31 Dec 2024

Accounting boundary: Cradle-to-gate within Vector-defined system boundaries

Geographical scope: German branches, owned buildings with operational influence by Vector

Unit of analysis: kg CO_2e

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1. Executive Summary

The 2024 greenhouse gas inventory covers Vector's German branches (chapter 2.1) and reports total market-based emissions of 4.938,4 t CO_2e and 1.455,9 kg CO_2e per employee.

For transparency, total emissions were also calculated using the location-based approach, resulting in 10.028,9 t CO_2e. Emissions calculated using the market-based approach were approximately 51% lower, primarily due to Vector's procurement of 100% renewable electricity backed by Guarantees of Origin (GoOs) from German wind power and the low emission factor applied to district heating. This difference illustrates the effect of renewable energy sourcing on the company's reported carbon footprint.

In line with the GHG Protocol, location-based results are disclosed for transparency and completeness. However, the market-based approach is used as the primary reporting basis throughout this report and forms the basis for all subsequent analyses and comparisons.

Compared with the reported 2023 footprint, total emissions increased by +38.7%, while emissions per employee increased by +26.0%. However, this development should not be interpreted as a purely operational trend. The 2024 inventory reflects an expanded reporting scope, including additional emission sources, improved data quality, retrospective corrections to the 2023 baseline, and the integration of the Karlsruhe site into the reporting boundary.

To improve transparency and year-on-year comparability, three analytical views are presented throughout this report:

> **Reported:** officially reported greenhouse gas inventory for the respective year.
> **Restated:** corrected 2023 baseline reflecting retrospective data and methodology adjustments.
> **Like-for-Like (LfL):** comparable emissions excluding newly included categories and correction effects.

See Chapter 3 for the detailed reconciliation. The Like-for-Like view (LfL) indicates that comparable emissions increased by +25.5%, although the increase is considerably lower than the reported growth because additional emission sources and correction entries have been excluded. It excludes new 2024 categories and correction entries attributable to the 2023 baseline.

2. Scope, boundaries and methodology

2.1 Master data

Parameter	2024 value / description
Number of employees	3.392 (31 Dec 2024)
Operating area	112.042 m²
Annual turnover	EUR 863.531.837,36
NACE code	62.01 - Programming activities: development and provision of software and hardware products for automotive and related industries
Balance sheet type	Company inventory; no change in overall method compared with version 6.0
Included locations	Stuttgart, Karlsruhe, Regensburg (main locations)
Excluded locations	Small branches inside Germany and branches outside Germany
Accounting boundary	Cradle-to-gate within Vector-defined system boundaries

TABLE 1: Master Data and Reporting Boundaries

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2.2 Reported View

KPI	2023 reported	2024 reported	Change
Number of employees	3.081	3.392	+10,1%
Annual turnover	EUR 990.758.154	EUR 863.531.837	-12,8%
Total emissions	3.560,7 t CO_2e	4.938,4 t CO_2e	+38,7%
CO_2e per employee	1.155,7 kg	1.455,9 kg	+26,0%
Revenue-related emissions	0,003594 kg CO_2e/EUR	0,005719 kg CO_2e/EUR	+59,1%

TABLE 2: Reported KPI Comparison 2023–2024

2.3 System boundaries

Compared with the 2023 inventory, the reporting boundary was expanded to include the Karlsruhe site, including building operations, district heating consumption and canteen-related activities.

The inventory covers emissions directly associated with the development and provision of Vector software and hardware products within the defined organizational and operational boundaries. Main processes include sales, customer training, support, customer project management, product management, development, consulting, purchasing, production and logistics.

Management and support processes such as leadership, legal, information security, process management, controlling, facilities, IT infrastructure and finance are included where relevant activity data are available.

Vector does not operate production-intensive processes with multiple outputs. Therefore, no allocation was necessary. Land use changes are not relevant in the defined boundaries because Vector does not use agricultural or forestry land.

2.4 Accounting methodology and data quality

The inventory was prepared using the IHK Baden-Württemberg “Ecocockpit”. The tool supports greenhouse gas accounting aligned with the GHG Protocol Corporate Standard and provides emission factors for a broad range of predefined emission sources. Where required, these factors were supplemented by documented estimates.

Compared with the previous reporting cycle, the 2024 reporting year includes additional data sources to further enhance the completeness and accuracy of the emissions inventory. The underlying accounting methodology remains unchanged. Selected 2023 figures were retrospectively corrected based on improved source data and are transparently identified in the detailed emission source table.

The 2024 inventory also expands the coverage of digital infrastructure and end-user devices. For the first time, emissions related to client devices, server infrastructure, smart devices and associated home-office energy consumption were included. The underlying data were derived from internal asset management and sustainability datasets and represent a significant improvement in the completeness of Scope 3 reporting.

To ensure transparency in year-on-year comparisons, these newly included categories are separately identified and excluded from the like-for-like analysis presented in Chapter 3.3.

All assumptions, calculation methods and source references are documented separately and can be provided upon request.

2.5 GHG Protocol categories and materiality

Vector reports Scope 1 and Scope 2 emissions in accordance with the GHG Protocol Corporate Standard. Scope 3 reporting covers the material categories Purchased goods and services (Cat. 1), Capital goods (Cat. 2), Upstream transportation and distribution (Cat. 4), Waste generated in operations (Cat. 5), Business travel (Cat. 6) and Employee commuting (Cat. 7). The 2024 inventory expands Categories 1 and 2 through additional food, paper and digital infrastructure data, while home-office energy consumption is reported under Category 7.

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These additions improve inventory completeness and are excluded from the Like-for-Like comparison. Category 3 and Categories 8–15 are currently considered not material or cannot yet be quantified with sufficient data quality.

3. Scope Comparison: Market Based vs. Location Based

The reported greenhouse gas emissions for 2023 and 2024 are shown below, but as described in chapter 1 the results are not fully comparable due to additional emission sources included in 2024, improved data quality, and retrospective corrections to previously reported data.

Scope	2023 t CO_2e	2024 t CO_2e	Change	Comment
Scope 1	283,9	1.224,8	+331,4%	The significant increase is primarily attributable to the reclassification of natural gas from Scope 2 to Scope 1, higher natural gas consumption and a higher emission factor. EV charging electricity was reclassified from Scope 1 to Scope 2.
Scope 2	Market-based: 593,7	Market-based: 118,3 Location-based: 5208,8	-80,1%	District heating was recorded in 2024. EV charging electricity was reclassified from Scope 1 to Scope 2. Market-based emissions remain low due to renewable electricity and the favorable district-heating emission factor; the location-based view applies grid-based factors.
Scope 3	2.683,2	3.595,3	+34,0%	Increase includes higher activity and newly added categories; detailed drivers are shown in the Like-for-Like and quantity comparison sections.
Total	3.560,7	Market-based: 4.938,4 Location-based: 10.028,9	+38,7%	The 2024 total is shown under both approaches. The market-based value equals the official reported total; the location-based value replaces market-based Scope 2 with location-based Scope 2.

TABLE 3: Scope Comparison – Market-Based vs. Location-Based

As stated in chapter 1, a direct comparison between the 2023 and 2024 reported values is informative but not sufficient on their own. The 2024 inventory contains additional categories and improved data sources, while selected 2023 values were corrected retrospectively. The following three-view approach separates these effects.

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3.1 2023 Restated View

Step	Delta CO_2e (t)	Cumulative CO_2e (t)	Comment
2023 reported		3.560,7	Reported total 2023; officially published CO_2 inventory 2023
Municipal waste correction 2023, amount	+61,0	3.621,7	MVA municipal waste correction amount entry
Municipal waste correction 2023, CO_2 factor	-847,1	2.774,5	MVA municipal waste correction CO_2 factor
Commuting correction 2023	+54,9	2.829,4	Correction from 2023 - employee commuting
Fleet correction 2023	+105,3	2.934,7	Leasing vehicles and charging electricity added
Food correction 2023	+141,0	3.075,7	Lamb and veal reassessed
Food correction 2023	+11,2	3.086,9	Correction: wild meat
Sea freight correction 2023	-157,3	2.929,6	Removed, as no sea freight was applicable in 2023
2023 restated		2.929,6	Restated basis of comparison, rounded for presentation

TABLE 4: Reconciliation of 2023 Reported and Restated Emissions

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3.2 2024 New Categories

To provide a Like-for-Like comparison between 2023 and 2024, the additional emission categories included in 2024 are listed below.

New category	Deduction for LfL view (t CO_2e)	Comment
Client devices	392,4	
Client device energy use in home office	73,4	
Smart devices	38,7	
Smart device energy use in home office	2,0	
Server infrastructure	67,3	
Paper and cardboard	7,0	
Food	269,1	The increase is primarily driven by improved coverage of food-related emission sources, newly included food categories and revised emission factors. Changes in food demand associated with the integration of the Karlsruhe site may have contributed to the increase as well.
District heating	39,9	Used exclusively at the Karlsruhe site.
Total	889,6	

TABLE 5: New 2024 Emission Categories Excluded from the Like-for-Like View

3.3 Like-for-Like (LfL) View

The Like-for-Like view (LfL) excludes emission categories that were newly introduced in 2024 and were therefore not part of the 2023 baseline. It also excludes correction entries of 373,3 t CO_2e from 2023 that were included in the 2024 result.

The Like-for-Like view (LfL) compares the 2024 like-for-like result with the restated 2023 result, providing a consistent basis for year-on-year analysis. This approach enables changes in operational emissions to be assessed independently of scope expansions, improved data quality and methodological enhancements.

KPI	2023 restated	2024 result	Deduction New categories and correction	2024 LfL	Change	Comment
Total emissions	2.929,6 t	4.938,4 t	1.262,9	3.675,5 t	+25,5%	excludes 2024 categories not included in 2023
CO_2e per employee	950,9 kg	1.455,9 kg	372,3 kg	1.083,6 kg	+14,0%	same deduction logic
Revenue-related emissions	0,002957 kg CO_2e/EUR	0,005719 kg CO_2e/EUR	0,001463 kg CO_2e/EUR	0,004256 kg CO_2e/EUR	+43,9%	same deduction logic

TABLE 6: Like-for-Like KPI Comparison 2023–2024

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4. Key developments

4.1 Positive developments

- **Improved data quality and traceability:** Data quality, scope coverage and traceability improved through additional primary activity data, expanded source coverage and a more transparent correction and reconciliation process.
- **Reduction in gasoline-related emissions:** On a like-for-like basis, gasoline consumption and the associated emissions decreased by approximately 6% in 2024. This comparison assigns the correction entry recorded in the 2024 inventory, but attributable to the 2023 reporting period, to the 2023 baseline.

4.2 Challenges

- **Limited relevance of revenue-related emissions:** Revenue-related emissions increased significantly in 2024. However, this development was driven not only by higher emissions but also by a -12.8% decrease in revenue. Revenue-related emissions should be interpreted with caution. For software companies, many relevant emission sources are primarily linked to workforce size, infrastructure and business activities rather than directly to revenue. As a result, changes in revenue can significantly influence this KPI without reflecting actual environmental performance.
- **Additional emissions from the Karlsruhe site:** The new company-owned building in Karlsruhe, including its canteen, increased absolute emissions despite its DGNB Platinum certification and comparatively low building-related emissions.
- **Rise in Scope 1 emissions:** Natural gas-related emissions increased by +29,3%, driven by a +9,6% increase in consumption and an additional effect from the higher CO_2 emission factor.
- **Worsening mobility and logistics footprint:** Increased air travel and air freight contributed to higher transport-related emissions.
- **Relevant share of canteen-related emissions:** Food consumption and waste contribute noticeably to canteen-related emissions and should remain focus areas for further improvement.
- **High need for data corrections and restatements:** Extensive adjustments highlight the importance of improving data quality and consistency.

4.3 Measures and outlook

Vector continues to reduce its greenhouse gas emissions using renewable electricity, on-site photovoltaic generation and geothermal energy for cooling and heating where applicable. In addition, the company compensated emissions from business air travel in 2024 through “atmosfair” certificates, while rail travel with Deutsche Bahn is based on electricity from renewable sources.

Vector remains committed to achieving carbon neutrality in Scope 1 and Scope 2 by 2035. Future reduction efforts will focus on improving building energy efficiency, reducing natural gas consumption, transitioning the vehicle fleet, supporting lower-emission employee commuting, addressing food-related emissions and further improving the traceability of waste data.

The continued transition of the vehicle fleet in 2025 and 2026 is expected to support progress toward these objectives. Future inventories will monitor the resulting emissions development and provide a basis for assessing the effectiveness of implemented measures.

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5. Detailed emission source table

Scope		GHG category	Emission source	Unit	Qty 2023	Qty 2024	kg CO_2e 2023	kg CO_2e 2024
1		Mobile combustion	Gasoline*	L	71.870	121.788	206.929	350.655
		Mobile combustion	Diesel*	L	23.768	34.387	73.738	106.683
		Stationary combustion	Natural gas**	kWh	2.953.494	3.236.239	593.652	767.481**
Scope 1 total							**874.319**	**1.224.819**
2		Purchased energy	Renewable electricity	kWh	8.954.501	11.465.147	0	0
		Purchased energy	District heating	kWh	0	510.980	0	39.856
		Mobile combustion	EV charging electricity***	kWh	8.817	178.543	3.227	78.418
Scope 2 total (market-based)							**3.227**	**118.274**
3	Cat. 1	Purchased goods and services	Food consumption total*	kg	139.210	245.325	673.807	1.483.912
			IaaS server	Units	0	19.260	0	19.260
			Paper and cardboard	kg	0	6.438	0	6.963
			Drinking water	m^3	28.794	34.530	6.580	7.890
			Wastewater	kg	28.794	34.530	8	9
	Cat. 2	Capital goods	Client devices VI (Dell, Lenovo)		Not reported	392.380	Not reported	392.380
			Own server infrastructure		Not reported	48.000	Not reported	48.000
			Smart devices (Apple, Google)		Not reported	38.700	Not reported	38.700
	Cat. 3	Not material						
	Cat. 4	Upstream transportation and distribution****	Road freight	tkm	41.220	37.000	8.244	7.400
			Air freight	tkm	114.500	206.000	57.250	103.000
	Cat. 5	Waste generated in operations	Municipal waste*	kg	373.840	1.047.916	137.072	384.229
	Cat. 6	Business travel	Air travel	km	2.758.858	3.412.947	326.942	404.359
	Cat. 7	Employee commuting	Employee commuting*	Working days	220	440	468.791	623.869
			Client device energy use, home office	MWh	0	200	0	73.350
			Smart device energy use, home office	MWh	0	5	0	1.984
	Cat. 8-15	Not material						
Scope 3 total							**2.683.153**	**3.595.306**
Scope 1-3 total							**3.560.699**	**4.938.399**

TABLE 7: Detailed Emission Sources by Scope and Reporting Year

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MORE INFORMATION

* 2024 inventory values include correction entries attributable to the 2023 reporting period. These entries are reassigned to the 2023 baseline for the like-for-like comparison.

** Natural gas was reported in Scope 2 (purchased energy) in the 2023 inventory and reclassified to Scope 1 in the 2024 inventory.

*** Reclassification of EV charging electricity from Scope 1 to Scope 2.

**** Sea freight values were retrospectively corrected for 2023, as the category was not applicable.

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