CORPORATE GREENHOUSE GAS REPORT FOR OPTEL GROUP 2025

SCOPE 1 & SCOPE 2 EMISSIONS

Report of Methodology and Results

June 2026

Authored by: Pedro Cybis

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OPTEL™

Traceability technologies for a better world

REVISION HISTORY

Rev	Date	Revision summary	Approved by
1.0	11-06-2026	Official report submission.	Pedro Cybis

PROJECT PARTICIPANTS

Analysis

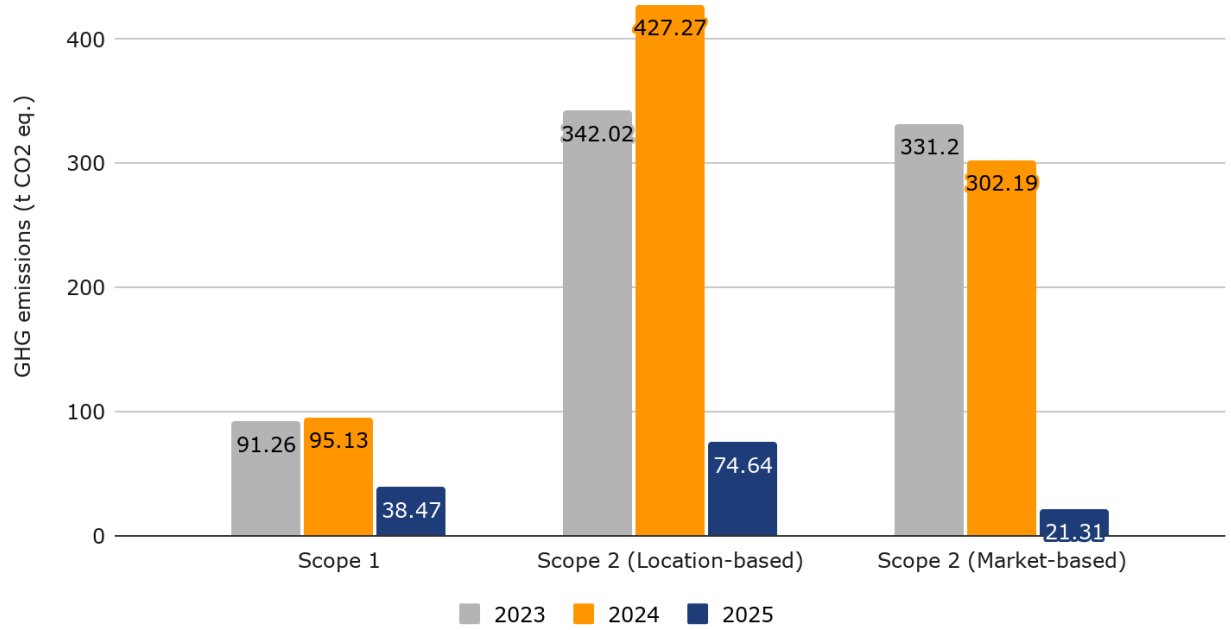
Pedro Cybis
Sustainability & LCA Specialist

EXECUTIVE SUMMARY

This report presents the 2025 greenhouse gas (GHG) inventory for OPTEL Group, detailing the climate impact of internal operations. The assessment quantifies direct Scope 1 emissions alongside Scope 2 impact from purchased electricity, evaluating the latter through both location-based regional grid averages and market-based renewable energy allocations. Both approaches show a significant decrease of GHG emissions from previous years resulting from efforts to lower energy use in Canada and India sites. Direct year-over-year comparisons should be interpreted with caution due to system boundary changes, specifically the closure of in-person facilities in Brazil and Ireland. Despite these structural changes, the data reflects genuine operational improvements and positions the organisation favorably toward its long-term climate commitments.

Summary of GHG emissions assessment by scope for 2025.

Scope	Location-based approach (t CO_2 eq.)	Market-based approach (t CO_2 eq.)
Scope 1	38.47	38.47
Scope 2	74.64	21.31
Total	**113.11**	**59.78**



Summary of Scope 1 and Scope 2 GHG emissions over time.

ABBREVIATIONS

GHG	-	Greenhouse gas
OCF	-	Organisational carbon footprint
CO_2	-	Carbon dioxide
IPCC	-	Intergovernmental Panel for Climate Change
EF	-	Emission factor
t CO_2 eq.	-	Ton carbon dioxide equivalent
kg CO_2 eq.	-	Kilogram carbon dioxide equivalent
GWP100	-	Global Warming Potential over 100 years

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1. INTRODUCTION

1.1 OPTEL Group

OPTEL Group ("OPTEL") develops traceability technologies across diverse industries including pharmaceutical, agrochemical, food and beverage and consumer packaged goods. From raw material sourcing to the end consumer, OPTEL provides end-to-end solutions that ensure performance and regulatory compliance. To achieve this, OPTEL has three distinct, but complementary, business units. Optchain provides critical supply chain visibility to support regulatory compliance, sustainability performance and transparent product life cycles. TrackSafe delivers serialization, aggregation solutions and AI-driven vision systems, while VerifyBrand focuses on downstream traceability, governmental compliance, and anti-counterfeiting measures.

Founded in 1989 in Quebec, Canada, OPTEL today has facilities in Germany and India as well as teams operating remotely in North America, Ireland and Brazil [1].

1.2 Project Objectives

This project continues the internal initiative at OPTEL to assess its organisational carbon footprint (OCF) across global operations. The objective is to update the assessment of OPTEL's greenhouse gases (GHG) direct emissions of Scope 1 and indirect emissions of Scope 2 for the financial year 2025. In alignment with previous exercises, the reporting standard *GHG Protocol* [2] is used for the OCF. This assessment represents the third consecutive year of reporting, continuing the efforts initiated in 2023 and 2024 to track major sources of GHG emissions and inform decision-making for decarbonization strategies. As with the 2024 assessment, indirect emissions of Scope 3 have been omitted from this report to focus on the direct operational impact of the company's facilities.

The goal of this report is to summarize the methodology, data collection and results, providing a clear comparison against the previous year to help OPTEL refine its sustainability action plan and reach its long-term reduction targets.

2. METHODOLOGY

OPTEL's OCF is conducted in accordance with the principles and methodology introduced in the *GHG Protocol*, which is the most widely used framework for carbon accounting. The standard accounting principles are presented on Appendix A.

According to the *GHG Protocol*, emissions are categorized into the following scopes:

- **Scope 1** are direct GHG emissions from sources owned or controlled by the company, such as stationary combustion (e.g. generators), mobile combustion, process emissions and fugitive emissions (e.g. refrigerant leaks).
- **Scope 2** are indirect GHG emissions from sources associated with the generation of purchased electricity, heat, or steam consumed by the company.
- **Scope 3** are indirect GHG emissions from other sources occurring in the company's value chain, upstream or downstream direct operations.

The data collection process and its limits are fundamental to the accuracy and usefulness of an OCF. The system boundary determines the activities which are sources of GHG emissions to be included in the inventory. The activity data collected is mostly classified as primary data as the quantities come from measures or estimations by OPTEL's internal team. When primary data is unavailable, secondary data sources from industry databases are used to fill information gaps.

2.1 System Boundary

OPTEL uses the operational control approach to define its organisational boundary. Under this approach, OPTEL accounts for all GHG emissions from operations over which the company has full authority to introduce and implement operating policies.

For the 2025 fiscal year, the organisational boundary includes the following active facilities (Appendix B presents the addresses):

- Canada (Headquarters)
- Germany
- India

An important change to note is the exclusion of sites in Limerick, Ireland and Campinas, Brazil. Both in-person offices have been closed, although the respective teams are still operating. Hence, while these regions remain active for remote-based teams, the physical facilities are no longer under OPTEL's operational control and are therefore excluded from the assessment for 2025.

2.2 GHG Emissions Sources Inventory

The GHG emissions inventory is the phase of the assessment where all relevant activity data are listed and quantified. Also presented in this section is the emission factors used to translate the activity data into CO_2 equivalent, further explained in the section 2.3 Impact Assessment.

In accordance with the *GHG Protocol*, Scope 2 emissions from purchased electricity are reported using two distinct approaches to ensure transparency regarding both local grid impacts and OPTEL's procurement choices:

- **Location-based** quantifies emissions based on the average carbon intensity of the local electricity grid where the site is located. It reflects the local energy mix available to all consumers in that region.
- **Market-based** reflects emissions from electricity that OPTEL has purposefully chosen to purchase and accounts for specific contractual instruments. If OPTEL procures 100% renewable energy for a site, the market-based emission factor for that electricity is zero, regardless of the local grid average. Appendix B presents the certificates of procurement for respective sites.

Table 1. List of sources of GHG emissions in the site in Canada.

Activity	Amount	Unit	Category	Scope	Emission Factor
Car (petrol)	112	L	Mobile Combustion	1	Canadian National GHG Inventory Report, Light-duty Gasoline Trucks (LDGT) - Tier 2 [3]
Electricity	1 075 320	kWh	Purchased Electricity	2	ecoinvent v3.11 - market for electricity, medium voltage (CA-QC), Scope 2 - Mandatory GHGs [4]

Table 2. List of sources of GHG emissions in the sites in Germany.

Activity	Amount	Unit	Category	Scope	Emission Factor
Fork lift truck (propane)	33	kg	Mobile Combustion	1	2006 IPCC - Chapters 1-2-3 [5]
Car (diesel)	1 576	L	Mobile Combustion	1	Diesel van - Class I (up to 1.305 tonnes) - Delivery vehicles (BEIS) [6]
Car (petrol)	741	L	Mobile Combustion	1	Petrol van - Class I (up to 1.305 tonnes) - Delivery vehicles (BEIS) [6]
Electricity (Feldkirchen site)	25 753	kWh	Purchased Electricity	2	ecoinvent v3.11 - market for electricity, medium voltage (DE) - Scope 2 (all GHGs) [4]
Heating (Feldkirchen site)	144 798	kWh	Purchased Heat	2	Emission intensity of district heating as reported by UBA. [7]
Electricity (Schwäbisch Hall site)	10 108	kWh	Purchased Electricity	2	ecoinvent v3.11 - market for electricity, medium voltage (DE) - Scope 2 (all GHGs) [4]
Heating (Schwäbisch Hall site)	52 483	kWh	Purchased Heat	2	Emission intensity of district heating as reported by UBA. [7]

Table 3. List of sources of GHG emissions in Germany sites that have certificates for market-based approach.

Activity	Amount	Unit	Category	Scope	Emission Factor
Electricity (Feldkirchen site)	25 753	kWh	Purchased Electricity	2	Supplier certificate (Entega Plus GmbH) - Appendix B
Heating (Feldkirchen site)	144 798	kWh	Purchased Heat	2	Supplier certificate (BISR) - Appendix B
Electricity (Schwäbisch Hall site)	10 108	kWh	Purchased Electricity	2	Supplier certificate (OK Power) - Appendix B
Heating (Schwäbisch Hall site)	52 483	kWh	Purchased Heat	2	Supplier certificate (Green cert) - Appendix B

Table 4. List of sources of GHG emissions in the site in India.

Activity	Amount	Unit	Category	Scope	Emission Factor
Generator (diesel)	1 900	L	Stationary Combustion	1	2006 IPCC - Chapters 1-2-3 [5]
Car (diesel)	819	L	Mobile Combustion	1	2006 IPCC - Chapters 1-2-3 [5]
Refrigerant R410A (2024 quantities)	11	kg	Fugitive Emissions	1	2021 IPCC [8]
Electricity	2 585	kWh	Purchased Electricity	2	ecoinvent v3.11 - market for electricity, medium voltage (IN-Western grid), Scope 2 - Mandatory GHGs [4]

2.3 Impact Assessment

The activities listed in the GHG inventory are then used for assessing the OCF. To translate this activity data into a standardized measure of environmental impact, an impact assessment method is applied. This method categorizes the various GHG emissions and their specific contribution to climate change. In this process, the emission factor acts as the impact indicator, which is applied to the activity data to quantify the final footprint results.

Impact Assessment Method

The method is the set of scientific rules and models used to calculate environmental damage. For this report, OPTEL used the Intergovernmental Panel on Climate Change (IPCC) 2021 methodology [8]. This is the most globally recognized and up to date scientific framework for climate modeling of different GHG effects on climate change.

Impact Category

An impact assessment method lists different impact categories representing specific environmental issues. In this assessment following IPCC 2021, the category selected is *Climate Change: total (excl. biogenic CO_2)* as it includes the most types of GHG emissions and their warming potential. This means the report assesses the overall warming effect of activities.

Impact Indicator

Within a given impact category, specific indicators are used to quantify environmental damage. For this assessment, the selected indicator is the *Global Warming Potential over 100 years* (GWP100), which measures the warming effect of GHG emissions over a century. Different gases have varying lifespans in the atmosphere and heat-trapping capacities, so GWP100 serves as a unifying metric. It standardizes these differences, allowing all emission factors to be consistently expressed as carbon dioxide equivalents (CO_2 eq.) per unit of activity data.

2.4 Interpretation

The interpretation phase evaluates the calculated results to identify the activities contributing the most to the organisational carbon footprint. These details are explored in the Section 3 Results and Discussion. Additionally, the interpretation requires a review of the data quality and modelisation limits, which are addressed in Section 4 Uncertainties and Limitations of the Study.

3. RESULTS AND DISCUSSION

3.1 Overall GHG Emissions

The results of OPTEL's OCF for 2025 is presented in this section. Overall, the total GHG emissions demonstrates a significant decrease from previous years. The following table presents the total GHG emissions calculated using both the location-based approach, which reflects the average emission intensity of the location's electricity grid, and the market-based approach, which accounts for OPTEL's specific choices in procuring renewable energy.

Table 5. OPTEL Group organisational carbon footprint for 2025.

Approach	Scope 1	Scope 2	Total	Units
Location-based	38.47	74.64	113.11	t CO_2 eq.
Market-based	38.47	21.31	59.78	t CO_2 eq.

The 2025 GHG emissions inventory incorporates significant structural changes to OPTEL's organisational and operational boundaries. Consequently, comparing these results directly to previous years would blur the lines between actual operational efficiency gains and footprint reductions caused by baseline adjustments.

The major drivers behind this year's emissions decrease include:

- **System boundaries change:** The shift to remote operations for sites in Ireland and Brazil removes their physical facilities from the assessment, eliminating their respective GHG emissions.
- **Exclusion of natural gas in Canada:** As natural gas is no longer billed to the Quebec facility, this specific source of emissions is excluded from the system boundary.
- **Lower energy demand in India and Canada:** A major drop in purchased electricity at the Goa facility, alongside decreased electricity consumption at the Quebec site, drove a substantial reduction in overall Scope 2 emissions.

3.2 Contribution Analysis

The contribution analysis purpose is to identify the hotspots, which are the main activity sources contributing to the organisational carbon footprint. The following figures show the total GHG emissions for Scope 1 and Scope 2 following the two different approaches.

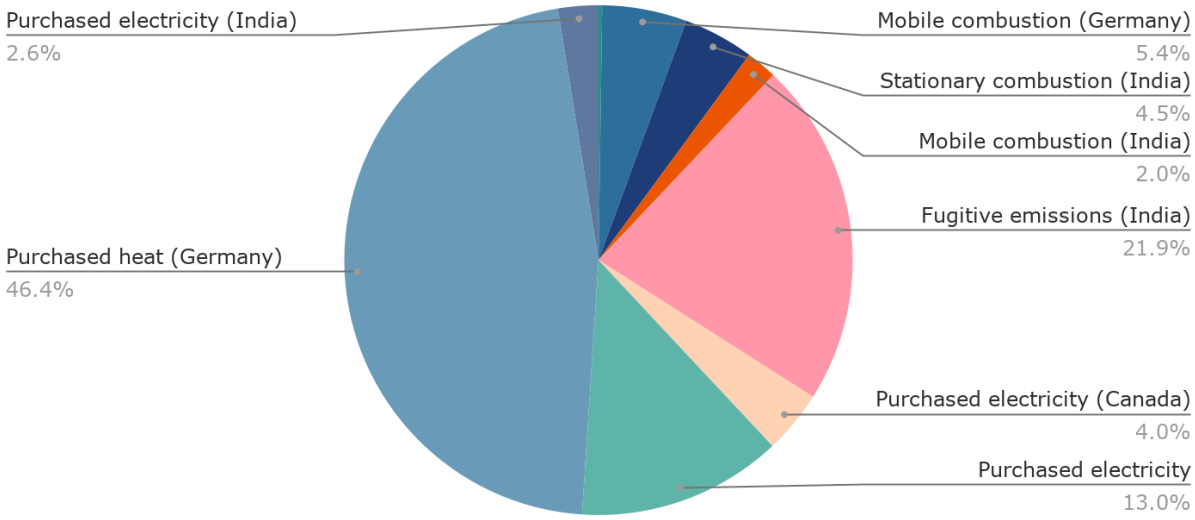


Figure 1.A. Contribution analysis of OPTEL GHG emission (location-based).

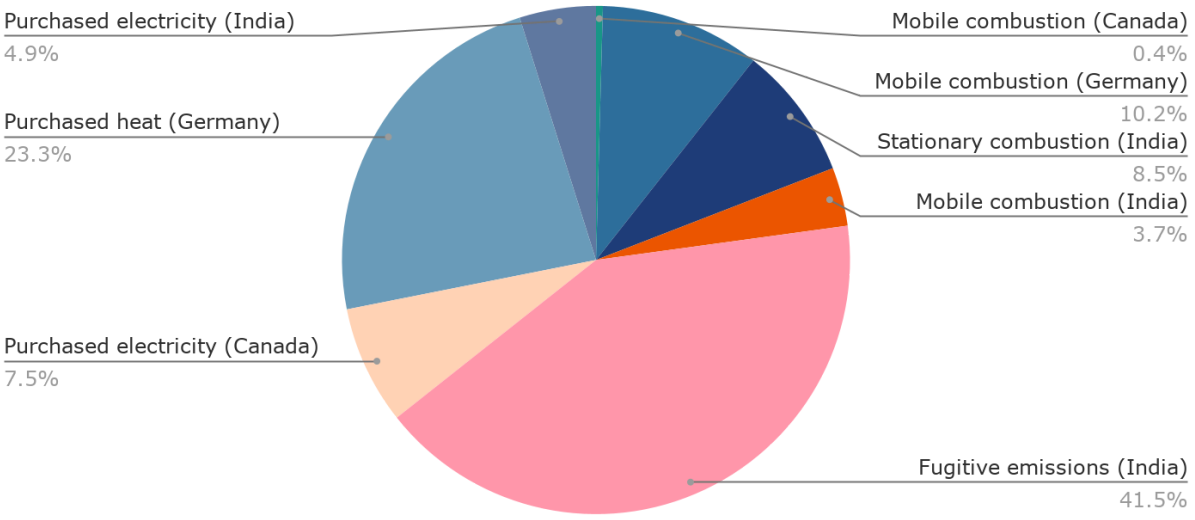


Figure 1.B. Contribution analysis of OPTEL GHG emission (market-based).

3.2.1 Scope 1 Direct GHG Emissions

Scope 1 direct emissions are from sources owned or controlled by OPTEL. With the organisational boundary adjustments excluding Ireland and Brazil sites, OPTEL's direct emissions profile has changed. The main categories of direct emissions per site are presented in the following table.

Table 6. Impact of Scope 1 direct emissions sources.

Contributor	Impact (t CO_2 eq.)	Contribution (%)
Mobile combustion (Canada)	0.26	0.67%
Mobile combustion (Germany)	6.10	15.85%
Stationary combustion (India)	5.07	13.19%
Mobile combustion (India)	2.23	5.79%
Fugitive emissions (India)	24.81	64.50%

There are two primary hotspots driving the direct emissions contributions. The most significant contributor is fugitive emissions at the India site. This high impact is driven by leaks from air conditioning systems that release refrigerant gas, which have a high global warming potential. The second largest hotspot is mobile combustion at the Germany site, which is generated by the fuel consumed by the company's vehicles with combustion engines.

3.2.2 Scope 2 Indirect GHG Emissions

Scope 2 indirect emissions from energy use include purchased electricity and purchased heat for the company's operations. The location-based approach reflects the average emissions intensity of the regional electricity grids where OPTEL's facilities are physically located. In contrast, the market-based approach takes into account the specific energy sources chosen by OPTEL, reflecting the procurement of electricity from renewable sources. Appendix B presents the certificates of procurement supporting the market-based approach. The contribution analysis reveals that purchased heat at the Germany site is the predominant emission hotspot under both methodologies.

Table 7. Impact of Scope 2 indirect emissions sources (location-based).

Contributor	Impact (t CO_2 eq)	Contribution (%)
Purchased electricity (Canada)	4.52	6.06%
Purchased electricity (Germany)	14.74	19.74%
Purchased heat (Germany)	52.48	70.30%
Purchased electricity (India)	2.91	3.89%

In the location-based assessment, Germany's purchased heat drives the majority of the impact, with the same site purchased electricity acting as the secondary contributor. The main reason explaining these hotspots is the carbon intensity of the energy grid in Germany.

Table 8. Impact of Scope 2 indirect emissions sources (market-based study).

Contributor	Impact (t CO_2 eq)	Contribution (%)
Purchased electricity (Canada)	4.51	21.15%
Purchased electricity (Germany)	0.00	0.00%
Purchased heat (Germany)	13.90	65.22%
Purchased electricity (India)	2.91	13.63%

The market-based approach significantly changes the GHG emissions breakdown. OPTEL's use of zero-emission renewable energy certificates effectively eliminates electricity-related emissions at the Germany site, leaving purchased heat as the dominant source of the market-based Scope 2, even considering the use of less carbon intensive energy sources. Meanwhile, purchased electricity in Canada and in India remain medium contributors across both reporting methods.

In summary, the dual reporting of Scope 2 approaches highlights the positive impact of OPTEL's renewable energy procurement, which successfully decreases electricity-related emissions at the Germany sites.

3.3 Progress Towards Goals and Targets

This section evaluates OPTEL's 2025 OCF against its established environmental targets, spanning near-term carbon intensity reduction targets and long term Scope 3 decarbonization ambitions. To accurately measure progress against these commitments, Scope 2 emissions are assessed using the market-based approach, which is best suited for performance tracking because it reflects OPTEL's actual energy procurement choices and captures the tangible impact of decision-making and strategic initiatives.

Goal 1: 10% Reduction in Scope 1 and Scope 2 emissions per employee by 2026

In 2025, the workforce was smaller than previous years and the total GHG emissions as well, which translates to 0.15 t CO_2 eq. per employee. This metric continues to safely surpass the original 10% reduction target. The significant decrease in the 2025 ratio is mainly driven by system boundary changes, although the lower energy use from Canada and India offices is more permanent. This goal is well underway to be achieved and consolidated by 2026.

Goal 2: Carbon neutrality for Scope 1 and Scope 2 across global operations by 2028

The total of Scope 1 and Scope 2 emissions under the market-based approach decreased from 397.32 t CO_2 eq. in 2024 to 59.78 t CO_2 eq. in 2025. This represents a critical reduction of nearly 85% and illustrates a promising trajectory toward the 2028 neutrality goal. The continued impact of purchased electricity in Germany demonstrates that procurement initiatives are highly effective. To achieve true carbon neutrality by 2028, OPTEL must actively mitigate its remaining operational hotspots before exploring high-quality carbon offsets for any residual emissions.

Scope 3 Goals

To address value chain emissions, OPTEL has previously defined two long-term environmental targets:

- Achieve a 40% reduction in indirect Scope 3 emissions from sourcing activities by 2033.
- Propose a Scope 3 carbon neutrality roadmap aligned with the Science Based Targets Initiative.

To achieve these goals, previous initial assessments identified metals and electronics as potential primary categories of purchased goods. Unfortunately, inconsistencies in data quality limited the reliability of these conclusions. Nonetheless, these identified hotspots remain conventional major contributors within the manufacturing industry. Therefore, the following subgoals are planned for 2026 to validate these initial assessments and shape actionable initiatives for the roadmap:

- Execute a focused assessment of purchased goods to establish a reliable internal data collection process and validate the contribution of categories like metals and electronics to OPTEL's OCF.
- Engage directly with key suppliers exclusively within the purchased goods category of metals to collect primary activity data and replace spend-based assumptions where possible.

Completing these subgoals will allow OPTEL to bridge the gap between initial estimates and actual procurement activity. Ultimately, this supports a roadmap and influences future reduction efforts grounded in primary data closer to operations.

4. UNCERTAINTIES AND LIMITATIONS OF THE STUDY

An OCF involves methodologies and data sources that introduce inherent uncertainties. To provide a transparent assessment of these limitations, the data quality is evaluated across two primary dimensions: the collected activity data and the selected emission factors.

This evaluation relies on three standard indicators: representativeness, completeness, and reliability. Representativeness assesses how accurately the data reflects the specific technology, temporal period, and geographical location of the actual operations. Completeness measures the extent to which all relevant emission sources and data points are captured without omission. Finally, reliability evaluates the accuracy, consistency, and credibility of the sources and measurement methods utilized. The *GHG Protocol* is used as a reference for this data quality assessment (Appendix A).

Activity Data

For primary activity data, all sites provided consumption quantities based on utility bills from the reporting year. The single exception to this complete data collection was the estimation of fugitive emissions for the facility in India. Due to the absence of available 2025 measurement records, the corresponding data from 2024 was used as a proxy estimate for refrigerant gas, which remains a recent data. Overall, the representativeness of activity data is very good, while its completeness and reliability are good.

Emission Factors

For Scope 1, the emission factors applied to stationary and mobile combustion sources were retained from the initial assessment to maintain consistency. These factors provide fair representativeness and reliability, while demonstrating very good completeness.

For Scope 2, the emission factors for the location-based approach were updated to the ecoinvent v3.11 database, which was published in 2024. Conversely, the market-based approach utilized specific energy attribute certificates. The emission factors for both the approaches demonstrate good to very good representativeness and very good completeness and reliability.

5. CONCLUSIONS

The OPTEL 2025 organisational carbon footprint assessment demonstrates measurable progress toward established environmental targets for direct operations. Total Scope 1 and Scope 2 emissions, calculated using the market-based approach, decreased to 59.78 t CO_2 eq. for 2025. While changes in system boundaries influenced this significant reduction, it is also driven by renewable energy procurement decisions, specifically in Germany sites, and reductions in energy consumption across the Canadian and Indian facilities. Furthermore, the carbon intensity per employee safely surpasses the near-term 10% reduction goal set for 2026.

The methodology and data sources used for this assessment provide a reliable baseline for tracking performance of operations controlled by the organisation, though standard limitations remain.

Moving forward, the focus for the coming years assessments will shift toward confirming Scope 3 major sources of GHG emissions and identifying actions to formalize a long-term decarbonization roadmap. Optel will continue to consolidate and monitor the performance of its Scope 1 and Scope 2 operations to ensure sustained progress towards carbon neutrality.

REFERENCES

[1] OPTEL Group. Homepage. Available online: https://www.optelgroup.com/en/about-optel/?

[2] World Resources Institute and World Business Council for Sustainable Development. (2004). The Greenhouse Gas Protocol - A Corporate Accounting and Reporting Standard. Revised Edition. Available online: https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf

[3] Canada. Environment Canada. Greenhouse Gas Division, Canada. Environment and Climate Change Canada, National inventory report : greenhouse gas sources and sinks in Canada 2022, publications.gc.ca, Available online: https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/inventory.html

[4] ecoinvent. (2024). ecoinvent Version 3.11. Swiss Centre for Life Cycle Inventories.

[5] IPCC. Emission Factor Database. Available online: https://www.ipcc-nggip.iges.or.jp/EFDB/find_ef.php

[6] Department for Business, Energy & Industrial Strategy. (2019). 2019 Government greenhouse gas conversion factors for company reporting - Methodology paper for emission factors - Final report. Available online: https://assets.publishing.service.gov.uk/media/5f1ff1ded3bf7f596c19b7bc/2019-ghg-conversion-factors-methodology-v01-02.pdf

[7] Umweltbundesamt. (2023). Emissionsbilanz erneuerbarer Energieträger. Available online: https://www.umweltbundesamt.de/system/files/medien/11850/publikationen/20231219_49_2023_cc_emissionsbilanz_erneuerbarer_energien_2022_bf.pdf

[8] IPCC. (2021). *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, In press, doi:10.1017/9781009157896.

APPENDIX A: ORGANISATIONAL CARBON ACCOUNTING

GHG Protocol Principles

The GHG accounting and reporting approach is based on the *GHG Protocol*, a standard developed through a partnership between the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).

GHG emissions accounting is guided by the following principles established by the *GHG Protocol* [2].

- **Relevance:** defining an appropriate inventory boundary that accurately reflects the organisation's GHG emissions and supports stakeholders' decision-making needs;
- **Completeness:** including all relevant emission sources within the selected inventory boundary;
- **Consistency:** ensuring meaningful comparability of information over time and transparently documenting any changes in data, methodologies, or assumptions;
- **Transparency:** providing clear, complete, and well-documented emissions data and inventory information; and
- **Accuracy:** minimizing uncertainties and avoiding systematic over- or under-estimation of GHG emissions.

Data Quality Assessment

Table A.1. Score definitions for data quality indicators.

Score	Technical representativeness	Temporal representativeness	Geographical representativeness	Completeness	Reliability
Very good	Data from processes and products under study	Less than 3 years of difference to the reference year	Data from area under study	Representative data from all sites relevant for the market considered, over an adequate period to even out normal fluctuations	Verified data based on measurements
Good	Data from processes and materials under study (i.e. identical technology) but from different enterprises	Less than 6 years of difference to the reference year	Data from area with similar production conditions	Representative data from >50% of the sites relevant for the market considered, over an adequate period to even out normal fluctuations	Verified data partly based on assumptions or non-verified data based on measurements
Fair	Data from processes and materials under study but from different technology	Less than 10 years of difference to the reference year	Data from area with slightly similar production conditions	Representative data from only some sites (<50%) relevant for the market considered or >50% of sites but from shorter periods	Non-verified data partly based on assumptions
Poor	Data on related processes or materials	Less than 15 years of difference to the reference year	Data from unknown area or area with different production conditions	Representative data from only one site relevant for the market considered or some sites but from shorter periods	Qualified estimate (e.g. by industrial expert)
Very poor	Data on unknown processes or materials	More than 15 years of difference to the reference year	Data from unknown area	Unknown	Non-qualified estimate

Reference: World Resources Institute and World Business Council for Sustainable Development. (2011). Corporate Value Chain (Scope 3) Accounting and Reporting Standard. Available online: https://ghgprotocol.org/corporate-value-chain-scope-3-standard

APPENDIX B: SITES PURCHASED ENERGY CERTIFICATES

List of OPTEL Sites

OPTEL's operations for the 2025 financial year include facilities in India, Europe and North America. The following table lists their official addresses.

Table B.1. List of OPTEL sites for 2025.

Site location	Site address
India	N6, Phase IV, Verna Industrial Estate, Verna, Goa 403722
Germany	Kapellenstraße 11, 85622 Feldkirchen, Germany
	Stauffenbergstraße 35-37, 74523 Schwäbisch Hall, Germany
Canada	2680 Boulevard du Parc Technologique, Québec City, Quebec G1P 4S6, Canada

In particular, OPTEL's sites based in Germany have certificates for purchased heat and electricity from the energy providers. These are used as primary data reference for the emission factors representing the GHG emissions for either the purchased heat or electricity. The following pages of this appendix present the respective certificates.

Germany Sites Certificates

B1: Renewable energy certificates from providers at the German site: Feldkirchen.

EnergieVision

Verein zur Förderung von Nachhaltigkeit und Markttransparenz in der Energiewirtschaft getragen von
Öko-Institut e.V.

ZERTIFIKAT FÜR ÖKOSTROM

Das Ökostrom-Produkt	ENTEGA Naturpur Strom / Ökostrom-Produktfamilie / e-ben Ökostrom / ENTEGA NaturPur-Produktfamilie / Simply Green / individuelle Kundentarife / individuelle Geschäftskunden
der	ENTEGA Plus GmbH, Frankfurter Str. 100, 64293 Darmstadt

ist mit dem Gütesiegel

OK POWER

zertifiziert

und fördert damit in besonderem Maße die Energiewende.
Das Zertifikat gilt für den Zeitraum vom **01.01.2023** bis zum **31.12.2023**
für eine Strommenge von **1.300.000.000** Kilowattstunden.

Das Ökostrom-Produkt ENTEGA Naturpur Strom / Ökostrom-Produktfamilie / e-ben Ökostrom / ENTEGA NaturPur-Produktfamilie / Simply Green / individuelle Kundentarife / individuelle Geschäftskunden erfüllt folgende Qualitätskriterien des ok-power-Siegels:

- Die Kunden des Ökostromproduktes erhalten 100 % Strom aus erneuerbaren Energien.
- Gemäß dem Kriterium der Neuanlagenförderung erfolgt die Unterstützung der Energiewende, indem der Ausbau der erneuerbaren Kraftwerke beschleunigt und mind. ein Drittel der verkauften Strommenge in neu gebauten Kraftwerken erzeugt wird
- Gemäß dem Kriterium „Initiierung und Betrieb" erfolgt die Förderung der Energiewende dadurch, dass sich der Anbieter des Ökostromproduktes zu einem ambitionierten Ausbau der erneuerbaren Energien verpflichtet hat und diesen umsetzt.
- Der Anbieter ist nicht an Atomkraft-, Braunkohle- sowie neuen Steinkohlekraftwerken beteiligt.
- Der Tarif wird zu fairen und verbraucherfreundlichen Vertragsbedingungen angeboten.

Freiburg, den 04.04.2023

Thomas Rahner
Vorstand des EnergieVision e.V.

Dominik Seebach
Vorstand des EnergieVision e.V.

www.ok-power.de

EnergieVision e.V. Zertifizierungsgeschäftsstelle • Paul-Nevermann-Platz 5 • 22765 Hamburg • Tel. +49 (0)40-39 10 69 89-50 • info@ok-power.de

EnergieVision e.V. Vereinsgeschäftsstelle und Sitz • Merzhauser Str. 173 • 79100 Freiburg • Vereinsregister-Nummer 3410, Amtsgericht Freiburg

ZERTIFIKAT*

CO2-VERMEIDUNG DURCH ÖKOSTROM

Optel Group GmbH

Kapellenstr. 11, 85622 Feldkirchen

hat sich für Ökostrom der ENTEGA Plus GmbH entschieden.

Die dem Stromverbrauch entsprechende zu erwartende Jahresmenge von voraussichtlich 51.691 kWh wird in deutschen Wasserkraftwerken erzeugt und in das Stromversorgungsnetz der allgemeinen Versorgung eingespeist.

Der TÜV Rheinland bestätigt in einem jährlichen Konformitätsnachweis des Tarifs ENTEGA NATURpur Ökostrom - Wasserkraft, dass die bezogene Energie aus den benannten regenerativen Quellen stammen und ihr Stromverbrauch im Herkunftsnachweisregister des Umweltbundesamtes dem Tarif zugeordnet wurde.

Durch den Bezug von ENTEGA Ökostrom vermeidet Optel Group GmbH jährlich die Entstehung von voraussichtlich 17 Tonnen des klimaschädlichen Gases Kohlenstoffdioxid (CO2) und leistet damit einen wertvollen Beitrag zum Klimaschutz. Die Berechnung erfolgte auf Basis der Stromkennzeichnung Stand November 2023.

Die Vertragslaufzeit für den Ökostrombezug ist vom 01.01.2025 bis 31.12.2025.

Darmstadt, der 06.12.2024

Frank Gey
Vorsitzender der Geschäftsführung
ENTEGA Plus GmbH

Antje Winter
Geschäftsführerin
ENTEGA Plus GmbH

Zertifiziert und regelmäßig überprüft durch:

TÜVRheinland ZERTIFIZIERT

EINFACH KLIMAFREUNDLICH FÜR ALLE.

entega

B2: Certificate from the purchased heat provider at the German site: Schwaebisch Hall.

greencert

Energetische Bewertung der Fernwärme
des Wärmeversorgungssystems

Netzverbund Schwäbisch Hall
74523 Schwäbisch Hall

Auftraggeber
Stadtwerke Schwäbisch Hall GmbH
An der Limpurgbrücke 1
74523 Schwäbisch Hall

Diese Bescheinigung ist nach den Vorgaben des AGFW-Arbeitsblattes FW 309 Teil 7 Stand 05/2021 erstellt. Für das Wärmeversorgungssystem - Netzverbund Schwäbisch Hall - der Stadtwerke Schwäbisch Hall GmbH können folgende Kennzahlen bescheinigt werden:

Primärenergiefaktor AGFW FW 309-1:2021	**$f_p = 0{,}00$**
Primärenergiefaktor nach Kappung (§ 22 Absatz 3 GEG)	**$f_{p,rw} = 0{,}24$**
CO_2-Emissionsfaktor AGFW FW 309-1:2021 (Anlage 9 GEG)	**$f_{CO2eq} = 0{,}00$ g/kWh**

Die Berechnung erfolgte auf Basis von Planungsdaten. Diese Bescheinigung ist gültig bis zum 5. August 2028, sofern keine Änderung der Anlagenkonfiguration oder des Energieträgermixes erfolgt, welche den Primärenergie- beziehungsweise Emissionsfaktor wesentlich erhöht oder verringert.

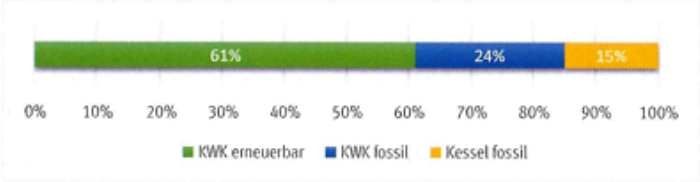
Dettingen an der Erms, den 5. August 2021

Dipl.-Ing. Peter Vaßen VDI
Geschäftsführer, Umweltgutachter
greencert. Umweltgutachter GmbH
Kappishäuser Straße 72

Matthias Hildebrand
zugelassener Gutachter nach FW609
Energie Baden-Württemberg AG
Durlacher Allee 93

Bescheinigung

über die energetische Bewertung nach FW 309 Teile 5 & 7



	MWh	Deckungs-anteil *DA*	Pflicht-anteil *PA*	Erfüllungs-grad *EG*
Wärmenetzeinspeisung gesamt	**155.852**			
aus Kraft-Wärme-Kopplung:	132.422	85%		
hiervon aus fossilen Brennstoffen				
hiervon aus Erdgas	37.030	24%	50%	48%
hiervon aus Kohle			50%	
hiervon aus Heizöl			50%	
hiervon aus fester/flüssiger Biomasse			50%	
hiervon aus Biogas/Biomethan	95.392	61%	30%	204%
aus sonstigen Wärmeerzeugern:				
aus Biomassekesseln			50%	
Abwärme			50%	
Solarstrahlung			15%	
Tiefengeothermie			50%	
aus Erdgaskesseln	23.430	15%		
aus Heizölkesseln				
insgesamt aus erneuerbaren Energien	95.392	**61%**		
Erfüllungsgrad der Fernwärme EG_{FW}				**252%**

Name des Wärmenetzbetreibers	Stadtwerke Schwäbisch Hall GmbH
Name des Wärmenetzes	Schwäbisch Hall
Verantwortlicher Betriebsleiter	Steffen Hofmann
E-Mail	steffen.hofmann@stadtwerke-hall.de
Zeitraum der Datenbasis	Planungsdaten
Diese Bescheinigung ist gültig bis	5. August 2028

Schwäbisch Hall, 10.08.2021
Ort, Datum

Stadtwerke Schwäbisch Hall GmbH
An der Limpurgbrücke 1
74523 Schwäbisch Hall

Unterschrift des Wärmenetzbetreibers

Die Berechnung der Zusammensetzung der Wärme wurde von der ***greencert.*** *Umweltgutachter GmbH durchgeführt.*

Dettingen an der Erms, den 5. August 2021
Ort, Datum

Dipl.Ing. Peter Vaßen VDI
Geschäftsführer, Umweltgutachter

Berechnung bestätigt durch:

Matthias Hildebrand
zugelassener Gutachter nach FW609

B3: Certificate from the purchased heat provider at the German site: Feldkirchen.

BESCHEINIGUNG

über die energetische Bewertung nach
FW 309 Teile 1 und 7

Wärme-Versorgungssystem
Fernwärme AFK Geothermie, Ascheim
Betreiber
AFK Geothermie GmbH, Am Claim 2, 85609 Aschheim

Der Gutachter bescheinigt dem Versorgungsnetz
folgende Kennzahlen:

Primärenergiefaktor:

fP nach § 22 Absatz 2, GEG 2020 Berechnet nach FW 309-1:2021	**0,43**
fP nach § 22 Absatz 3, GEG 2020 nach Kappung und EE-Bonus	**0,43** (nach GEG zu verwenden)

Emissionsfaktor CO_2-Äquivalent:

fCO_2eq. nach Anlage 9 Nr. 1c, GEG 2020 Berechnet nach FW 309-1:2021	**96 g/kWh**

Datenbasis: Istdaten 01.10.2017-30.09.2020

Diese Bescheinigung ist gültig bis zum 13.08.2031

Ausgestellt am 13.08.2021 von

AGFW-Gutachter Nr. FW609-179
Dipl.-Kfm. (Univ)
Dipl.-Ing. (FH)
Michael Schwarz

BISR
Beratende Ingenieure
Michael Schwarz &
Martin Reuter GbR