



# CORPORATE GREENHOUSE GAS REPORT FOR OPTEL 2023

CORPORATE GREENHOUSE GAS ASSESSMENT OF  
SCOPE 1 & SCOPE 2 EMISSIONS FOR THE FISCAL  
YEAR 2023

Report of Methodology, Results and  
Recommendations

May 2025

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Revision number: 1.2

## REVISION HISTORY

Rev	Date	Revision summary	Approved by
1.0	2025-04-10	Official report submission.	MSR
1.1	2025-05-16	Revised to include only scopes 1 and 2.	MSR
1.2	2025-05-28	Minor rewording for clarity.	MSR

## PROJECT PARTICIPANTS

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### Project Coordinators

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*Controller*

## EXECUTIVE SUMMARY

This report outlines the corporate greenhouse gas (GHG) assessment for Optel for the fiscal year 2023, covering Scopes 1 and 2. The sum of Scope 1 and 2 emissions were found to be 433.28 tCO<sub>2</sub>e using the location-based approach, and 422.46 tCO<sub>2</sub>eq using the market-based approach. Scope 2 represents the most significant share of the impacts, contributing to 79% and 78% of the total, respectively. The most significant Scope 1 contributors were AC gas leakages at the various sites and diesel generators used at the India site. For Scope 2, the most significant contributor was the electricity consumption at the India site.

### Summary of GHG assessment (tCO<sub>2</sub>eq) by emission scope.

GHG assessment type & emission scope	Location-based method (tCO <sub>2</sub> eq)	Market-based method (tCO <sub>2</sub> eq)
Scope 1	91.26	91.26
Scope 2	342.02	331.2
<b>Total</b>	<b>433.28</b>	<b>422.46</b>

## ABBREVIATIONS

GHG	-	Greenhouse gas
CO <sub>2</sub>	-	Carbon dioxide
CH <sub>4</sub>	-	Methane
N <sub>2</sub> O		Nitrous oxide
IPCC	-	Intergovernmental Panel for Climate Change
EF	-	Emission factor
HFC	-	Hydrofluorocarbon
tCO <sub>2</sub> eq	-	ton carbon dioxide equivalent
kgCO <sub>2</sub> eq	-	kilogram carbon dioxide equivalent
AC	-	Air conditioner

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## 1. INTRODUCTION

### 1.1 Context

For 35 years, OPTEL Group has developed traceability technologies for industries including pharmaceuticals, metals and minerals, batteries, food and beverage, agrochemicals, and CPG. From raw material to consumer, our solutions ensure regulatory compliance and optimize supply chain performance. Optchain, the supply chain visibility platform, supports ESG compliance and transparent product life cycles. TrackSafe provides manufacturing solutions with serialization, aggregation, and AI vision systems, while VerifyBrand focuses on downstream traceability, government compliance, and counterfeiting prevention. Trusted globally, OPTEL tracks billions of products annually for leading brands. Founded in 1989, OPTEL is a Certified B Corporation headquartered in Canada, with facilities in Germany, Ireland, India, and Brazil [1]. This project is an internal initiative at Optel group to find out its organisational carbon footprint across all its sites in the entire globe. The main objective of this project was to quantify the organisational carbon footprint (Scope 1 and Scope 2) for the financial year 2023.

Scope 1 includes GHG emissions that are directly managed by the organization. This includes stationary combustion, mobile combustion, fugitive emissions, and emissions from chemical and physical processes. Scope 2 emissions are the indirect GHG emissions from the generation of purchased energy in the form of electricity, steam, heat, or cooling. Scope 3 emissions are the result of activities from assets not owned or controlled by the reporting organization, but that the organization indirectly affects in its value chain. Scope 3 emissions are not covered by this assessment.

This report summarises the methodology and results of the GHG inventory, as well as recommendations to help Optel identify and reduce its GHG emissions.

### 1.2 Project objectives

The objective of this study is to assess Optel's corporate GHG inventory for Scope 1 and Scope 2 according to the corporate GHG reporting standard under the GHG Protocol across all sites.

## 2. METHODOLOGY

The GHG accounting and reporting procedure is based on the ‘The Greenhouse Gas Protocol: GHG Protocol: A Corporate Accounting and Reporting Standard’ [2]. The standard was developed in a partnership between the World Resources Institute and the World Business Council for Sustainable Development.

The accounting was based on the principles of the GHG Protocol:

- **Relevance:** an appropriate inventory boundary that reflects the GHG emissions of the company and serves the decision-making needs of users;
- **Completeness:** accounting includes all emission sources within the chosen inventory boundary. Any specific exclusion is disclosed and specified;
- **Consistency:** meaningful comparison of information over time and transparently documented changes to the data;
- **Transparency:** data inventory sufficiency and clarity, where relevant issues are addressed in a coherent manner; and
- **Accuracy:** minimised uncertainty and avoided systematic over- or under-quantification of GHG emissions.

### 2.1 System Boundary

#### 2.1.1 Organisational Boundary

This assessment covers sites under Optel’s operational control. Table 1 shows the sites within Optel’s organizational boundaries that are included in the assessment.



Table 1: List of Optel sites

Continent	Site location	Site address
Asia	India	N6, Phase IV, Verna Industrial Estate, Verna, Goa 403722
Europe	Germany	Kapellenstraße 11, 85622 Feldkirchen, Germany
	Ireland	Hamilton House, Castletroy, Limerick, Ireland
North America	Canada	CEO+AR1, 2680 Bd du Parc Technologique, Québec City, Quebec G1P 4S6, Canada
South America	Brazil	R. James Clerk Maxwell, 280 - Módulo 08 - Techno Park, Campinas - SP, 13069-380, Brazil

### 2.1.2 Operational boundaries

Under the GHG Protocol, emissions are divided into direct and indirect emissions. Direct emissions are those originating from sources owned or controlled by the reporting entity. Indirect emissions are generated as a consequence of the reporting entity's activities, but occur at sources owned or controlled by another entity. The direct and indirect emissions are divided into two scopes: Scope 1 and Scope 2.

Scope 2 emissions are calculated using both a location-based and market-based method for quantifying electricity emissions. The location-based approach takes into consideration the physical locations where they operate and the related electricity grid-mix, while the market-based method accounts for the complexities and ramifications of purchasing decisions on the power mix. For some regions, if the company under study does not have special electricity purchase agreements, there is no market-based result available due to a lack of emission factors for the residual market, or due to a lack of contractual instruments for electricity purchases in that region.

## 2.2 Life Cycle Inventory

The primary data collection for this study was carried out with the assistance of Optel's internal team. The sources of emissions & its category of source and dataset used for Scope 1 & 2 emissions are shown in table 2 for each site.

Table 2 a: LCI for Scope 1 and Scope 2 emissions

Sr.No	Input or emission	Dataset name	Stream	Category	Amount	Unit	Scope
1	AC Gas leakage R410 A (Ireland)	IPCC 2021	Direct	Fugitive emissions	10.20	kg	1
2	AC Gas leakage R 32 (Ireland)	IPCC 2021	Direct	Fugitive emissions	3.3	kg	1
3	Electricity Scope 2 (Ireland)	market for electricity, medium voltage (IE)	Upstream	Purchased energy	31150	kWh	2
4	AC Gas leakage R410 A (Germany)	IPCC 2021	Direct	Fugitive emissions	10.00	kg	1
5	Propane for forklift transportation	IPCC Emission factor database	Direct	Stationary Combustion	44	kg	1
6	Electricity Scope 2	market for electricity, medium voltage (DE)	Upstream	Purchased energy	44,446	kWh	2

7	Purchased heat (Feldkirchen)	Supplier certificate (refer to Appendix A1)	Upstream	Purchased energy	180370	kWh	2
8	Purchased heat (Schwaebisch Hall)	Supplier certificate (refer to Appendix A2)	Upstream	Purchased energy	70406	kWh	2
9	AC Gas leakage R410 A (India)	IPCC 2021	Direct	Fugitive emissions	5.00	kg	1
10	Diesel used in generator (India)	IPCC Emission factor database	Direct	Stationary Combustion	7800	l	1
11	Electricity Scope 2 (India)	market for electricity, medium voltage (IN-Western grid)	Upstream	Purchased energy	244930	kWh	2
12	Electricity Scope 2 (Canada)	market for electricity, medium voltage (CA-QC)	Upstream	Purchased energy	7294.4	kWh	2
13	Petrol Car (Canada)	DEFRA MPV Petrol vehicle	Direct	Mobile Combustion	3448	km	1
14	Diesel Car (Canada)	Canadian National GHG inventory-Light Duty Diesel Vehicle-Moderate Control	Direct	Mobile Combustion	4408	km	1
15	AC Gas leakage R410 A (Brazil)	IPCC 2021	Direct	Fugitive emissions	4.00	kg	1
16	Electricity Scope 2 (Brazil)	market for electricity, medium voltage (BR-South-eastern /Mid-western grid)	Upstream	Purchased energy	84,141	kWh	2

Table 2 b: LCI for Scope 1 and Scope 2 emissions (additional for market based approach)

Sr.No	Input or emission	Dataset name	Stream	Category	Amount	Unit	Scope
1	Electricity Scope 2 (Ireland)	electricity, medium voltage, residual mix (IE)	Upstream	Purchased energy	31,150	kWh	2
2	Electricity Scope 2 (Germany)	Supplier value (refer to Appendix A3)	Upstream	Purchased energy	44,446	kWh	2

## 2.3 Scope 1 estimation

The characterization factors used for Scope 1 emission calculations are described in Table . The characterization factors are taken from the IPCC Sixth Assessment Report [3-4].

## 2.4 Scope 2 estimation

The electricity EFs were obtained from the ecoinvent electricity emission factor database v3.10.1 [5]. This was estimated using two approaches : a.) location-based approach & b.) market-based approach, as per the GHG protocol.

## 2.6 Interpretation

The interpretation phase considers all phases to properly interpret the results in an appropriate way. Limitations and uncertainties identified must be considered to avoid a misinterpretation of the results.

The scope division is based on the GHG Protocol Corporate Standard. The results are accompanied by uncertainty/limitations of the study and recommendations presented in sections 3 - 5.

## 3. RESULTS AND DISCUSSION

### 3.1.1 Overall emissions

The overall emissions were calculated using the GHG protocol and it was found that the total emissions at Optel for the financial year 2023 are **433.28 tCO<sub>2</sub>e** and **422.46 tCO<sub>2</sub>e**, using the location based method and market based method respectively. Table 3 and 4 show the contribution of Scope 1 and 2 emissions based on location based method and market based method respectively.

Table 3: Contribution analysis using the location-based method.

Location based study	Scope 1	Scope 2	Total	Units
GHG emissions	91255.18	342024.73	<b>433279.98</b>	kgCO <sub>2</sub> e
GHG emissions	91.26	342.02	<b>433.288</b>	tCO <sub>2</sub> e

Table 4: Contribution analysis using the market-based method.

Market based study	Scope 1	Scope 2	Total	Units
GHG emissions	91255.18	331242.36	<b>422497.54</b>	kgCO <sub>2</sub> e
GHG emissions	91.26	331.24	<b>422.5</b>	tCO <sub>2</sub> e

### 3.1 Scope 1 emissions

The quantities of direct GHG emissions and their respective contribution to the overall carbon footprint were estimated using the data collected from various internal teams at Optel. Table 5 compiles the Scope 1 emissions by each of the contributors in terms of kgCO<sub>2</sub>eq in the respective sites. Further a contribution analysis was carried out as shown in Figure 1. It was found that the AC gas leakage at Ireland contributed to 25.2 %, followed by the AC gas leakage at Germany contributed to 24.7 % and the diesel used in generators in India contributed to 22.8 % of overall Scope 1 emissions. The other major Scope 1 emissions were AC gas leakage in India (12.4 %) and AC gas leakage in Brazil (9.9 %).

Table 5: LCIA for Scope 1 emissions.

Sr.No	Contributor	Impact (kgCO <sub>2</sub> e)
1	AC Gas leakage R410 A (Ireland)	23006.10
2	AC Gas leakage R 32 (Ireland)	2544.30
3	AC Gas leakage R410 A (Germany)	22555.00
4	Propane for forklift transportation (Germany)	113.23
5	AC Gas leakage R410 A (India)	11277.50
6	Diesel used in generator (India)	20850.54
7	Petrol Car (Canada)	635.32
8	Diesel Car (Canada)	1251.18
9	AC Gas leakage R410 A (Brazil)	9022.00

### Scope 1 emission contributors

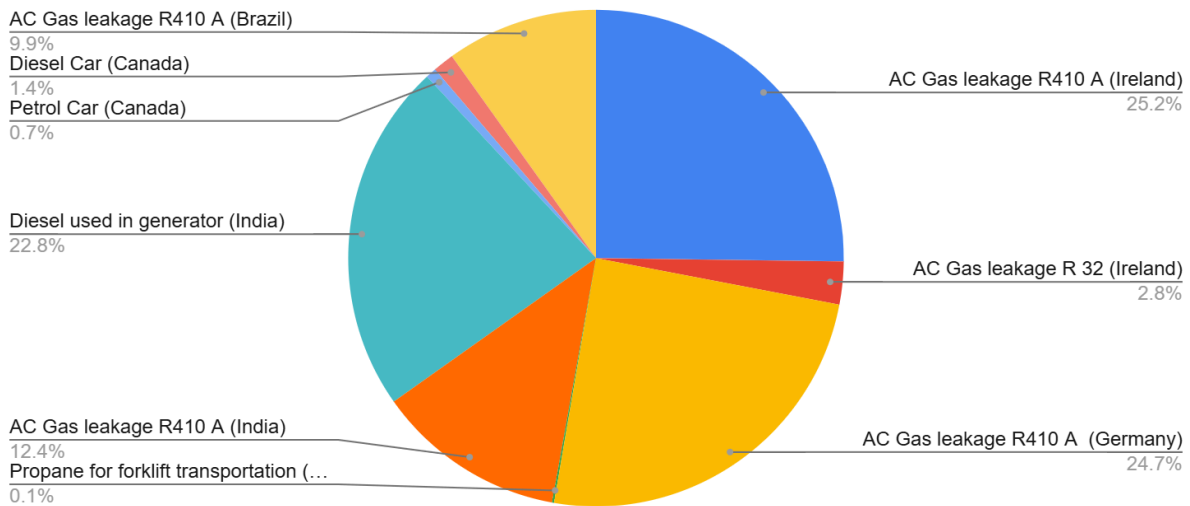


Figure 1: Scope 1 contribution analysis

### 3.3 Scope 2 emissions

The Scope 2 emissions were quantified using both location-based as well as the market-based approach. Tables 6 & 7 describe the Scope 2 contributors in terms of kgCO<sub>2</sub>e for location based study and market based study respectively. The values are the same for both approaches for all sites except the sites in Ireland (IE) and Germany (DE) as emission factors for the residual markets were available for Ireland and the German site had specific electricity emission factors available from the supplier. Further a contribution analysis was carried out as shown in Figure 2 & 3. It was found that the electricity in India contributed to 79.1% & 81.6 % using the location based and market based approaches respectively. The other major contributors using the location based approach were purchased heat (Schwaebisch Hall) (5.8 %), purchased heat (Feldkirchen)(5.1 %), electricity Scope 2-(Germany) (5 %), electricity Scope 2-(Ireland) (2.7 %) and electricity Scope 2-(Brazil) (2.3 %). The other major contributors using the market based approach were purchased heat (Schwaebisch Hall) (6 %), purchased heat (Feldkirchen) (5.2 %), electricity Scope 2-(Ireland) (4.7 %) and electricity Scope 2-(Brazil) (2.4 %). The electricity (Scope 2) in Germany contributed to 0 % using the market based approach according to the values provided by the electricity supplier that is generated using renewable energy.

Table 6: Scope 2 emissions (Location based study)

Sr. No	Contributor	Impact (kgCO <sub>2</sub> e)
1	Electricity Scope 2 (Ireland)	9099.41
2	Purchased heat (Feldkirchen)-(Germany)	17315.00
3	Purchased heat (Schwaebisch Hall)-(Germany)	19966.00
4	Electricity Scope 2-(Germany)	17258.97
5	Electricity Scope 2 (India)	270416.39
6	Electricity Scope 2 (Canada)	25.81
7	Electricity Scope 2 (Brazil)	7943.16

Table 7: Scope 2 emissions (Market based study)

Sr. No	Contributor	Impact (kgCO2e)
1	Electricity Scope 2 (Ireland)	15576.00
2	Purchased heat (Feldkirchen)-(Germany)	17315.00
3	Purchased heat (Schwaebisch Hall)-(Germany)	19966.00
4	Electricity Scope 2-(Germany)	0.00
5	Electricity Scope 2 (India)	270416.39
6	Electricity Scope 2 (Canada)	25.81
7	Electricity Scope 2 (Brazil)	7943.16

Scope 2 emission contribution (Location based)

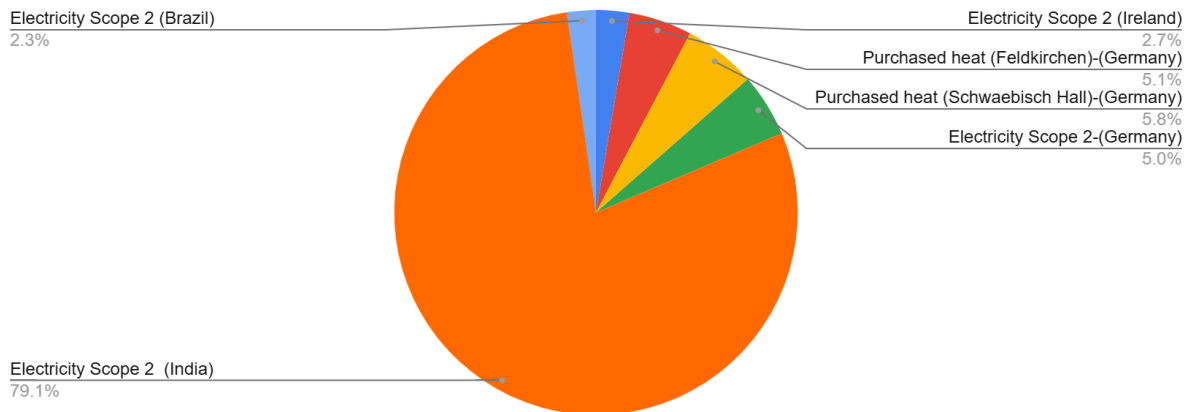


Figure 2: Scope 2 contribution analysis (Location based study)



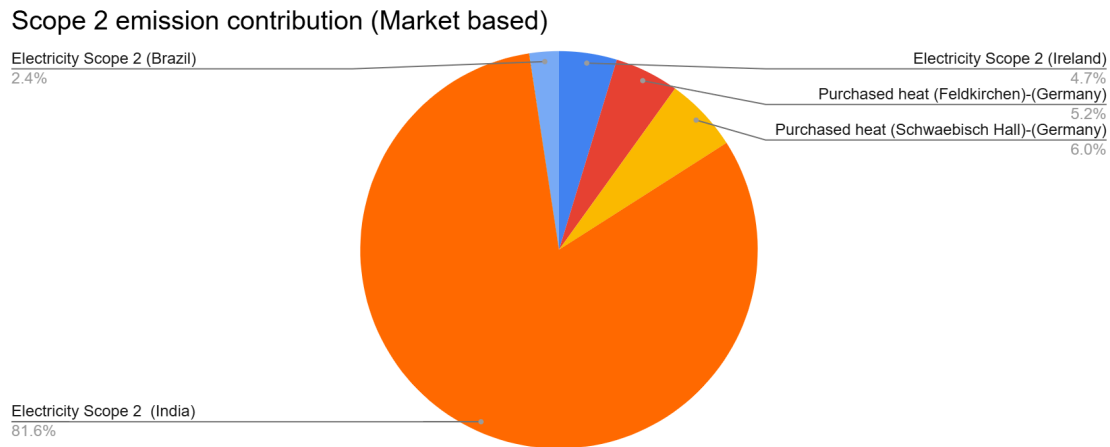


Figure 3: Scope 2 contribution analysis (Market based study)

## 4. UNCERTAINTIES AND LIMITATIONS OF THE STUDY

The electricity emission factors (both grid and residual mix) (Scope 2) are taken from ecoinvent database v3.10.1 and based on the IPCC 2021 methodology indicating high temporal representativeness. These residual mix emission factors are available only for the US and European countries to differentiate between location based study and market based study. The fuels used for stationary and mobile combustion were taken from the global IPCC emission factors that are generic in nature and the rest were from the respective national inventory reports and databases like DEFRA.

Several uncertainties are inherent in the activity data for Scope 1 and 2 emissions. For fuel usage, discrepancies may arise from estimation methods, variations in fuel quality, and measurement inaccuracies of fuel gauges or meters. Electricity bill readings may not perfectly align with the reporting period, and allocation of shared building electricity consumption can introduce errors. AC gas leakage estimates rely on assumptions, equipment age, and maintenance records; precise leakage rates are often difficult to determine, leading to potential under or overestimation.

## 5. RECOMMENDATIONS TO OPTEL SITE MANAGEMENT

- The electricity consumption can be reduced by looking for renewable energy based electricity providers, using efficient systems and by judicious consumption of energy, especially at the Indian site.
- The AC gas leakages can be reduced by using efficient AC appliances/instruments and regular maintenance, as well as switching to refrigerants with lower global warming potential.
- The diesel generator at the Indian site can be replaced with natural gas generators, renewable energy generators, battery energy storage systems etc. that have relatively less emissions.

## 6. CONCLUSIONS

A corporate GHG assessment has been carried out internally for OPTEL. The study was conducted using both physical and financial data collected from various internal team members for its all five sites. The study helped in identifying emission hotspots for the financial year 2023. Based on the identified hotspots, recommendations were provided. Appropriate strategic actions, reduced consumption and annual monitoring of emissions can help Optel reduce its overall organisational carbon footprint.

## References

- [1] URL (Optel website):  
<https://www.optelgroup.com/en/about-optel/?>
- [2] Protocol, G. G., & Greenhouse Gas Protocol Initiative. (2004). A corporate accounting and reporting standard. World Resources Institute and World Business Council for Sustainable Development.  
<https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>
- [3] URL :  
[https://www.ipcc-nggip.iges.or.jp/EFDB/find\\_ef.php](https://www.ipcc-nggip.iges.or.jp/EFDB/find_ef.php)
- [4] 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*[Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R.

- Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, In press, [doi:10.1017/9781009157896](https://doi.org/10.1017/9781009157896).
- [5] Wernet, G., Bauer, C., Steubing, B., Reinhard, J., Moreno-Ruiz, E., and Weidema, B., 2016. The ecoinvent database version 3 (part I): overview and methodology. The International Journal of Life Cycle Assessment, [online] 21(9), pp.1218-1230.
- [6] 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, <https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/inventory.html>

## Appendix A: Certificates

A1: 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, Aschheim**  
Betreiber  
**AFK Geothermie GmbH, Am Claim 2, 85609 Aschheim**

Der Gutachter bescheinigt dem Versorgungsnetz  
folgende Kennzahlen:

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

Emissionsfaktor CO <sub>2</sub> -Äquivalent:	
<b>fCO<sub>2</sub>eq. nach Anlage 9 Nr. 1c, GEG 2020</b>	<b>96 g/kWh</b>
Berechnet nach FW 309-1:2021	

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



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Mail: kontakt@bistr.de  
www.bistr.de

A2: Certificate from the purchased heat provider at the German site: Schwaebisch Hall



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:

<b>Primärenergiefaktor AGFW FW 309-1:2021</b>	<b><math>f_p = 0,00</math></b>
<b>Primärenergiefaktor nach Kappung</b> (§ 22 Absatz 3 GEG)	<b><math>f_{p,FW} = 0,24</math></b>
<b>CO<sub>2</sub>-Emissionsfaktor AGFW FW 309-1:2021</b> (Anlage 9 GEG)	<b><math>f_{CO_2eq} = 0,00 \text{ g/kWh}</math></b>

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



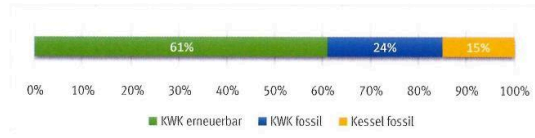

**Dipl.-Ing. Peter Vaßen VDI**  
Geschäftsführer, Umweltgutachter  
**greencert. Umweltgutachter GmbH**  
Kappishäuser Straße 72  
72581 Dettingen an der Erms



**Matthias Hildebrand**  
zugelassener Gutachter nach FW609  
Energie Baden-Württemberg AG  
Durlacher Allee 93  
76131 Karlsruhe

contd...

**Bescheinigung**  
über die energetische Bewertung nach FW 309 Teile 5 & 7



	MWh	Deckungs- anteil DA	Pflicht- anteil PA	Erfüllungs- grad EG
<b>Wärmenetzeinspeisung gesamt</b>	<b>155.852</b>			
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				
<b>Insgesamt aus erneuerbaren Energien</b>	<b>95.392</b>	<b>61%</b>		
<b>Erfüllungsgrad der Fernwärme EG<sub>FW</sub></b>				<b>252%</b>

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

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  
Energie Baden-Württemberg AG  
Durlacher Allee 93  
76131 Karlsruhe



A3: Certificate from the purchased electricity provider at the German site that generates electricity using renewable sources



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

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## ZERTIFIKAT FÜR ÖKOSTROM

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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



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](http://www.ok-power.de)

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