GHG INVENTORY REPORT 2025

TOPSIL GLOBAL WAFERS A/S

INVENTORY PERIOD
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CHAPTER 1 INTRODUCTION

This Greenhouse Gas (GHG) Report provides an overview of Topsil Global Wafers' direct (Scope 1) and indirect (Scope 2) emissions, along with a limited assessment of selected Scope 3 categories for the reporting year 1 January to 31 December 2025. The inventory has been prepared in alignment with the methodologies set out in the GHG Protocol and ISO 14064-1:2018 (Edition 2, confirmed in 2025). Any departures from these standards are explicitly stated in the relevant sections of the report.

Topsil is committed to transparent and credible climate reporting. The compilation of this GHG inventory follows the principles of transparency, accuracy, consistency, comparability, and completeness, and reflects the company's continued adherence to international frameworks and sustainability commitments. Data collection, calculations, and reporting are carried out using a structured, data-driven approach to ensure high-quality and robust disclosure of CO_2 emissions.

The report presents Topsil's approach to climate action, including the company's emissions-reduction initiatives, strategic priorities, and progress towards its climate objectives. The underlying data is supported by established governance processes and internal controls designed to ensure reliability and traceability. The inventory is independently reviewed by a third-party assurance provider, with the assurance statement delivered separately.

1.1 Description of the reporting organisation

Topsil is a Danish subsidiary of GlobalWafers Co., Ltd., Taiwan, one of the world's leading semiconductor wafer manufacturers. Topsil remains a global leader in Float Zone (FZ) technology and is, in fact, the only company in the world that continues to manufacture FZ wafers at industrial scale. This makes Topsil both Denmark's largest semiconductor company and a unique global player within an extremely specialised segment of the semiconductor industry.

The company's core activity is the production of ultrapure Float Zone silicon in the form of ingots used in advanced, energy-efficient electrical components. These components are applied across multiple sectors including infrastructure, energy systems, production machinery, wind turbines, electric and hybrid vehicles, and high-speed rail – primarily serving the highest-voltage applications in the global power and electronics market.

Topsil's supply chain spans a global network of suppliers. Raw materials are primarily sourced from the EU and the US, while consumables are procured locally whenever feasible. Due to high demand for FZ ingots and short expected lead times, both upstream and downstream logistics continue to rely on air freight. While FZ ingots support the global transition toward cleaner electricity, Topsil acknowledges that its own operations have an environmental footprint. The company therefore maintains a strong focus on managing, monitoring, and improving its environmental performance. This commitment is supported by a formal environmental management system certified to the internationally recognized ISO 14001 standard.

As part of the GlobalWafers Group, Topsil contributes to the consolidated greenhouse-gas inventory and aligns with the Group's overarching sustainability strategy and policies. These include clear

commitments to energy efficiency, renewable-energy adoption, carbon-reduction initiatives, circular-economy principles, responsible supply-chain management and regulatory compliance. GlobalWafers is committed to the Science Based Targets initiative (SBTi) and has pledged to achieve net-zero emissions by 2040, supported by its membership in RE100, which obligates all sites to transition to 100% renewable electricity. Topsil directly contributes to these group-wide commitments.

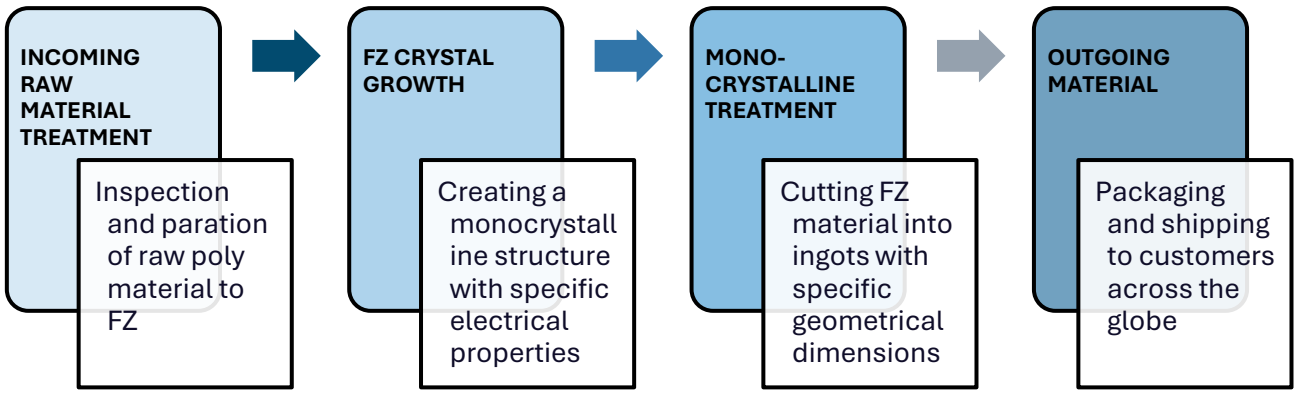
1.2 Production Process and Energy Use

Topsil's production is centered around the Float Zone (FZ) process, which, while based on a relatively simple sequence of steps, requires highly specialized technical expertise and strictly controlled cleanroom conditions. Incoming raw materials are inspected, prepared and cleaned before entering the FZ production area to meet stringent purity and contamination requirements.

The FZ process itself is the core and most energy-intensive stage of Topsil's operations. During this step, monocrystalline silicon is formed using dedicated FZ pullers that apply precise thermal and electrical conditions to achieve the required electrical properties. Approximately 50% of the company's total energy use originates from this single process step.

Following crystal growth, the FZ material is cut into ingots with defined geometrical properties and undergoes grinding and measurement before being packed and shipped to customers.

The simplified process flow is shown below and reflects the production stages most relevant for GHG and energy reporting:



1.3 GHG Management Policy and Reduction Strategy

Topsil's greenhouse gas (GHG) management is grounded in a structured and systematic approach aligned with ISO 14064-1 principles. As part of the GlobalWafers Group, Topsil's climate efforts are guided by the Group's overarching sustainability strategy, which emphasises responsible growth, transparent governance and long-term decarbonisation across all sites. GlobalWafers has committed to the Science Based Targets initiative (SBTi) and has set a clear ambition to reach net-zero emissions by 2040, supported by its membership in RE100, which requires the transition to 100% renewable

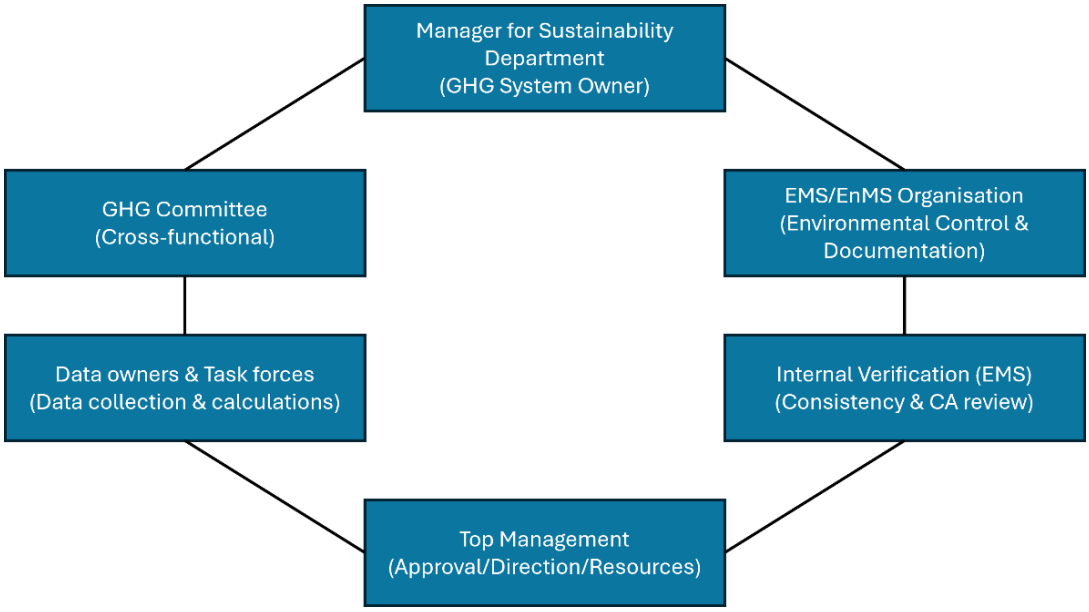
electricity across all global operations. These strategic commitments provide the framework for Topsil's local environmental and climate initiatives.

At site level, Topsil integrates environmental, energy and safety considerations through certified management systems (EMS/EnMS), ensuring that climate-related decisions follow established procedures, risk assessments and continuous-improvement cycles. Sustainability is embedded into daily operations, and GHG management forms a central part of Topsil's wider corporate responsibility.

Topsil's reduction strategy reflects both the Group's long-term vision and the specific operational context of the site. The company prioritises actions with the highest measurable impact, including electrification, renewable-energy integration, process optimisation and improved waste-handling practices. This is supported by systematic mapping of significant emission sources, evaluation of technical mitigation options, and increasingly robust supplier- and product-level data.

By strengthening methodological consistency and enhancing data transparency, Topsil ensures that its climate work remains evidence-based, audit-ready and aligned with ISO 14064-1 requirements as well as GlobalWafers' strategic direction. These efforts position Topsil to deliver meaningful reductions across Scope 1, Scope 2 and Scope 3, while contributing to the Group's overall sustainability ambitions

GHG Management Committee and its responsibilities



In 2025, Topsil strengthened the integration between the Environmental/Energy Management System (EMS/EnMS) and the GHG Management Committee to ensure a unified governance model for climate and environmental performance. As part of this effort, several core processes were restarted, reviewed and rewritten to improve clarity, consistency and documentation quality. Roles and responsibilities for key processes were reassigned or reaffirmed, and process owners were clearly identified to ensure accountability across the organisation.

The Manager of the Sustainability Department leads the Committee and is accountable for the end-to-end GHG inventory process, including planning, data governance and the prioritisation of reduction initiatives. The GHG Management Committee remains cross-functional with representatives from Sustainability, QA, Finance, Procurement and HR. The GHG Committee coordinates data collection, method updates and internal timelines, while the EMS/EnMS organisation applies established environmental procedures, controls and documentation standards to the GHG workstream.

Prior to final approval, EMS members conduct the internal verification of the inventory to ensure completeness, consistency and methodological compliance. Top management ensures alignment by setting direction, providing resources and reviewing performance (management review). In line with ISO 14064-1, Topsil defines clear roles and responsibilities for the GHG inventory. The standard does not require a specific "Management Representative" title, so responsibilities are embedded in the Sustainability function and the EMS/EnMS governance structure.

1.4 Inventory Period

The GHG inventory period covered in this report is from 1 January to 31 December 2025. The report works in a yearly cycle and follows the calendar year.

1.5 Purpose, Intended Use and Intended Users

Topsil reports GHG emissions in compliance with the Greenhouse Gas Inventory and Registration Guidelines of ISO 14064-1:2018, reaffirming our commitment to effective greenhouse gas management.

The primary intended users of the GHG inventory are the Global Wafers Group and other key stakeholders, including customers, employees, and partners. The supply chain is also considered an intended user, as Topsil aims to utilize the GHG inventory to identify and promote improvement opportunities among suppliers and to strengthen climate-related collaboration across the value chain.

The report is made available to all relevant stakeholders. It is first distributed internally and may subsequently be shared externally—either in full or in part—depending on communication needs and future stakeholder engagement requirements.

1.6 Operating Procedures and Record Keeping

Topsil maintains a documented procedure for GHG management to ensure a structured, consistent, and transparent approach to compiling the greenhouse gas inventory. The procedure defines responsibilities, scope, review mechanisms, data selection, data handling, and risk assessment, supporting the effective application of the Plan-Do-Check-Act (P-D-C-A) cycle. This framework is essential for ensuring the accuracy and reliability of the reported GHG data.

Because Topsil is certified as ISO 14001 and ISO 50001, many processes related to data selection, data handling, and performance monitoring are integrated into the organisation's Environmental and Energy Management Systems.

GHG inventory-related records—including purchase documents, invoices, meter readings, and other relevant data—are maintained as documented information in accordance with Topsil's internal procedures for document control and retention. All GHG records are stored systematically to support verification, audits, and long-term performance tracking. The minimum retention period is 10 years, unless customer or regulatory requirements specify a longer duration.

Previous GHG inventory reports are available on Topsil's website at www.topsil.com, ensuring transparency and enabling stakeholders to review emission trends and methodological developments across reporting years.

CHAPTER 2 ORGANISATIONAL BOUNDARIES

Topsil's GHG inventory continues to apply the operational-control boundary, meaning that all activities, processes and emission sources under Topsil's operational authority at the Frederikssund site are included in the organisational boundary.
Under this approach, Topsil accounts for all GHG-relevant sources and sinks over which the company has full operational authority. No GHG sinks or reservoirs have been identified within the site.

A significant change occurred at the beginning of 2025: the onsite solar park, constructed in 2024, was fully commissioned and began operating in January 2025. From this reporting year onward, a portion of the facility's electricity demand is supplied directly by this renewable installation.

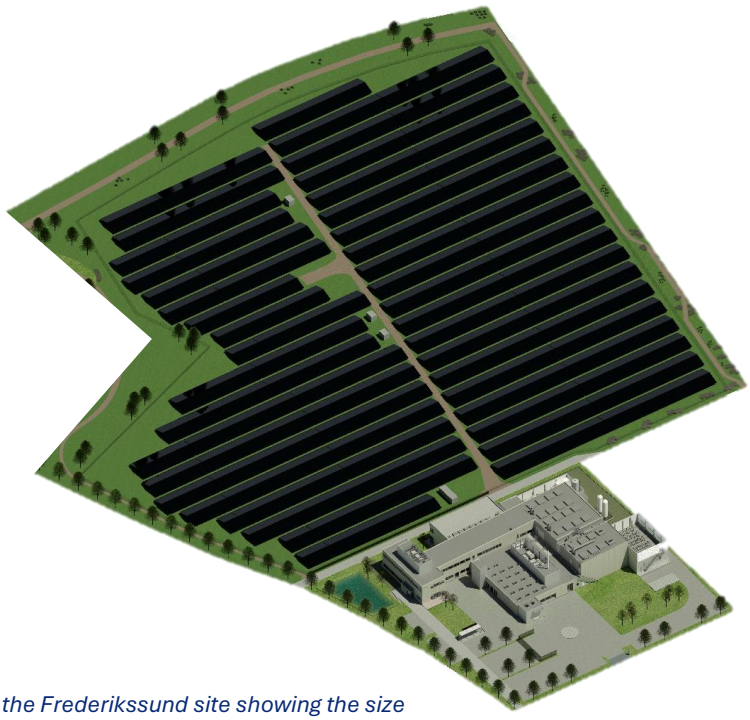


Figure 1. Illustration of the Frederikssund site showing the size of the onsite solar park commissioned in 2025.

Although Topsil continued to purchase electricity from the grid – particularly during night-time hours when production runs and the solar park do not generate power – the total annual output from the installation exceeded the company's total electricity consumption in 2025. This means that Topsil was a net producer of renewable electricity on an annual basis, even though grid-supplied power remained necessary during certain periods, primarily evenings and nights.

Because the solar park began generating electricity in 2025, its impact is fully included in this year's GHG inventory. This includes reductions in market-based Scope 2 emissions to the extent that onsite generation displaces grid consumption. (See section 4.4.4.2) In contrast, any CO_2e-related financial expenditures from the construction phase were accounted for in 2024, as they fell within the investment year and therefore does not influence the 2025 operational emissions.

CHAPTER 3 REPORTING BOUNDARIES

The GHG inventory covers the following emission sources within Topsil's reporting boundary:

- Direct GHG emissions (CO_2, CH_4, N_2O) from mobile combustion sources, corresponding to Category 1 and Scope 1 under the GHG Protocol.
- Indirect GHG emissions from purchased energy, representing Category 2 and Scope 2.
- Indirect value chain emissions (Scope 3) aligned with ISO 14064-1:2018 and the GHG Protocol, specifically Categories 3–6. Scope 3 emissions are assessed using a limited cradle-to-gate approach, which includes transportation to other GlobalWafers sites.

This reporting approach reflects Topsil's recognition of its responsibility within the supply chain, while acknowledging that many raw material suppliers have limited insight into downstream stages. Based on the organisation's current data availability and influence, it is not feasible to map or validate all Scope 3 categories comprehensively.

Figure 2. Illustration of Global Wafers sites across the world

3.1 Significance of Emissions

To determine which emission sources are included in the GHG inventory, a significance assessment has been performed. The purpose is to ensure that all relevant aspects of Topsil's GHG impacts are appropriately represented. All emissions are expressed as CO_2e in the final inventory (see Chapter 4).

Key outcomes of the significance screening:

- CO_2 is the only emission identified as significant.
- CH_4 and N_2O emissions were evaluated for transportation activities and assessed as insignificant, based on base-year results.
- A 5% significance threshold is applied throughout the assessment.

The significance evaluation follows a process-based approach, considering the following factors:

- Regulatory or sector-specific requirements
- Availability and quality of activity data
- Availability and quality of emission factors
- Capability to monitor and reduce emissions within the organisational boundary
- Employee involvement
- Risk assessments based on Topsil's operational knowledge
- Supplier engagement and development
- Scope 3 limitations associated with the cradle-to-gate boundary

Based on these criteria, Topsil determines which indirect emission sources are material and should be included in this year's GHG inventory. The detailed results of the significance assessment are presented in Chapter 4.

3.1.1 Category 1: Direct GHG Emissions

Direct GHG emissions arise from sources owned or controlled by Topsil, including fuels used for transportation. Topsil continues to operate only a small number of company vehicles, and all other on-site energy needs are supplied exclusively by electricity.

Emissions from the biogenic fraction of B7 diesel are not included in CO_2 calculations, in line with EU standards that classify biogenic CO_2 as carbon-neutral. (ICCT - comprehensive carbon accounting for identification of sustainable biomass feedstocks) However, CH_4 and N_2O emissions resulting from combustion are fully included in the GHG inventory, consistent with ISO 14064-1:2018 and the GHG Protocol.

3.1.2 Category 2: Indirect GHG-emissions from imported energy

Topsil's production continues to rely exclusively on electricity, which in 2025 was supplied partly from the Danish power grid and partly from the company's onsite solar park, deployed at the beginning of the year. During hours of low onsite generation, electricity was imported from the grid. The Danish government annually provides the official emission factors for the national grid, covering CO_2, CH_4 and N_2O.

All Guarantees of Origin (GoOs) generated from Topsil's renewable electricity production were cancelled in Topsil's name for the reporting year. The volume of cancelled GoOs exceeds Topsil's total electricity consumption, and the company therefore applies a market-based emission factor of 0 g CO_2e/kWh, in accordance with the GHG Protocol Scope 2 Guidance.

For the location-based Scope 2 calculation, Topsil reports emissions using the national residual mix and the national average grid emission factor (as published by the competent national authority for the reporting year). This factor reflects the average carbon intensity of the electricity grid after accounting for traded and cancelled certificates, and provides a consistent baseline for comparison with previous years and other companies operating in Denmark

3.1.3 Category 3: Indirect GHG emissions from transportation

Four subcategories have been identified as sources of indirect transportation-related emissions to ensure correct differentiation of transport activities:

1. Downstream transportation
2. Business travel
3. Upstream transportation
4. Employee commuting

As in previous reports, all mapped transportation emissions are based on data provided by transport suppliers and are therefore reported in CO_2e only, even though fuel combustion generates CO_2, CH_4 and N_2O. Supplier data does not allow for separation of individual gases, and the aggregated CO_2e value is used consistently. Data quality depends on the accuracy and completeness of information delivered by transport partners, and Topsil applies the values as received.

3.1.3.1 Category 3: Upstream Transportation

Topsil currently has one upstream transport supplier, who carries out short-distance domestic transport of raw materials between Topsil's warehouse facility and the production site. As this transport takes place before the materials enter the production process, it is classified in accordance with the GHG Protocol as Scope 3, Category 4: Upstream transportation and distribution.

The data received from this sole upstream supplier are included in the 2025 inventory. However, because the information is limited and not sufficiently detailed or auditable, it does not allow for a complete and robust quantitative calculation of all upstream transportation emissions beyond this supplier. For this reason, only the emissions supported by the available supplier data are included, while any additional upstream transportation activities remain unquantified.

Until more comprehensive and verifiable activity data can be obtained, upstream transportation beyond the identified supplier will continue to be assessed qualitatively, based on Topsil's operational knowledge of transport routes, volumes, and frequency.

Topsil's assessment that upstream emissions are lower than downstream emissions are further reinforced by the fact that upstream transport consists solely of short-distance domestic road transport, while downstream logistics rely heavily on international air freight. Even with full data coverage, upstream emissions are therefore expected to remain significantly lower.

3.1.3.2 Category 3: Downstream transportation

Topsil ships several tonnes of products each month to customers and other GlobalWafers sites. Multiple transportation suppliers are used throughout the year, with the majority of shipments delivered via air freight. For the 2025 inventory period, three transportation suppliers have been identified.

These two suppliers manage international downstream freight movements, transporting Topsil's finished products across global routes. These activities fall under Scope 3, Category 9: Downstream transportation and distribution.
(The third transport-supplier is classified as upstream, as described in Section 3.1.3.1.)

Topsil relies on GHG emissions reports provided directly by its transportation suppliers. As in the previous inventory period, suppliers have improved their data quality and methodological accuracy. They now report emissions across all relevant greenhouse gases, expressed as CO_2-equivalents (CO_2e), rather than providing CO_2-only values.

Downstream transportation emissions are calculated using both Well-to-Wheel (WtW) and Tank-to-Wheel (TtW) methodologies, with Topsil prioritising WtW reporting to ensure a more comprehensive assessment of total GHG emissions across the entire transport value chain.
All downstream transport suppliers utilise EcoTransIT World for emissions calculations, including emission factors and methodological assumptions. EcoTransIT World is based on an energy-based, bottom-up methodology developed by independent research institutes (ifeu, INFRAS, Fraunhofer IML). It calculates emissions using actual energy consumption, fuel type, vehicle characteristics, routing and load factors, and is fully compliant with ISO 14083, EN 16258 and the GLEC Framework. [ecotransit.org]

3.1.3.3 Category 3: Employee Commuting

Employee commuting data is based on an internal survey designed to represent the full organisation. The survey covers different commuting modes, including both combustion-engine vehicles (CO_2, N_2O, CH_4) and electric vehicles (CO_2), in accordance with the GHG Protocol's reporting requirements.

In 2025, the survey approach was simplified to improve clarity and user-friendliness, and the questionnaire was made accessible to all Topsil employees. This includes production staff, who we were not successful in engaging in the previous year. The survey was also distributed earlier in the reporting cycle to support a higher participation rate. Participation remained voluntary.

3.1.3.4 Category 3: Business travel

The organisation undertakes a limited number of business trips each year, primarily for supplier and customer visits. In line with GlobalWafers' corporate travel policy, business travel continues to be minimized wherever possible and is largely restricted to short, local trips, with no overseas travel permitted.

Emissions are reported as CO_2e using the UK Government GHG Conversion Factors 2025, produced by DESNZ/DEFRA. These factors incorporate both direct emissions from fuel combustion and indirect (Well-to-Tank) emissions, consistent with the methodology outlined in the official 2025 methodology paper. For air travel, the supplier's reporting includes DEFRA's distance-based aviation model, which applies emissions factors per passenger-kilometer differentiated by flight type and class, and integrates radiative forcing (RFI) to account for non-CO_2 climate impacts associated with high-altitude aviation. Because aircraft GHG accounting is methodologically complex and relies on standardized

assumptions for fuel burn, load factors, and lifecycle emissions, the organization uses supplier-generated calculations rather than performing its own estimates

3.1.4 Category 4: Indirect GHG-emissions from products used by an organisation

The identification of indirect GHG emissions associated with purchased products has focused on those sources—typically suppliers—expected to contribute most significantly to Topsil's upstream footprint. The GHG Management Committee has conducted a materiality assessment to determine which products and suppliers should be included. The assessment considered the following parameters:

1) Nature of the product or service delivered
2) Quality and transparency of the supplier's emissions data
3) Strategic importance to Topsil's operations
4) Other relevant factors, such as supplier maturity and stability

Based on this assessment, the GHG Management Committee has identified several relevant sources capable of providing data on supplied products and services. To ensure accurate differentiation between types of indirect emissions, two subcategories have been defined.

3.1.4.1 Indirect GHG-emissions from goods purchased by an organisation.

Indirect GHG-emissions from goods purchased by an organisation.

a) Emissions from purchased goods: Indirect emissions arising from the extraction, processing, manufacturing and transportation of raw materials and finished products supplied to the organisation
    - Raw material supplier 1
    - Raw material supplier 2
    - Gas supplier 1
    - Packaging material supplier 1
    - Plastic material supplier 1
    - Office materials supplier 1
    - Production material supplier 1
    - Food and beverage supplier 1
    - IT Supplier 1

3.1.4.2 Indirect GHG-emissions from services used by an organization.

a) Emissions from services:
    - Cleanroom service provider
    - Waste handler 1
    - Waste hander 2
    - Waste hander 3

The analysis looks at all suppliers in scope 3 that is identifiable in the different subcategories (purchased goods and services, fuel and energy related activities, waste generated during operations etc.).

3.1.4.3 Detailed exploration of Category 4 emission sources

3.1.4.3.1 Emissions from purchased goods - Raw supplier 1 and 2

Two raw material suppliers are included in the inventory period. Both “Raw Supplier 1” and “Raw Supplier 2” have been part of the GHG inventory for the past three reporting years (2022, 2023, and 2024), jointly accounting for approximately 90% of total emissions associated with raw material procurement.

The primary driver of these emissions is a specific, energy-intensive production step with an energy demand comparable to the FZ process. The energy source for this stage varies by supplier and may include electricity, coal, diesel, or gasoline, depending on local geological conditions and political infrastructure.

“Raw Supplier 1” has ceased production. However, Topsil still holds inventory of this supplier’s material, and the remaining stock was used in 2025. Because emissions are calculated based on material consumption rather than purchasing, the supplier remains a relevant emission source. To maintain methodological consistency across inventory years, the final reported volumes—used in the previous two reporting periods—are therefore applied again in this year’s emissions assessment.

“Raw Supplier 2” applies the TfS PFC Guideline methodology and ISO 14067:2018 when determining GHG emissions from raw material production. In addition, Raw Supplier 2 can provide Life Cycle Assessment (LCA) reports for the specific raw material types supplied to Topsil, offering increased transparency and higher data quality through standardized, product-specific footprint documentation.

3.1.4.3.2 Emissions from purchased goods - Gas supplier 1

Topsil uses a range of high-purity process gases, several of which are associated with elevated greenhouse gas footprints due to their chemical characteristics and production requirements. These gases continue to represent a material share of Topsil’s upstream emissions, and “Gas Supplier 1” remains the primary source of these inputs.

For this reporting year, the emissions associated with the purchased gases are based on supplier-provided CO_2e data. The supplier determines product footprints using the European Industrial Gases Association (EIGA) methodology, which incorporates the energy demand and process steps involved in gas extraction, separation, and purification. These stages are inherently energy-intensive, which contributes significantly to the overall GHG profile of the supplied gases.

3.1.4.3.3 Emissions from purchased goods - Packaging material supplier 1

Packaging materials such as cardboard, plastic films, tins, pallets and other single-use items are necessary to protect products during transport, and several studies indicate that such materials can contribute meaningfully to a company’s upstream emissions. For this reason, Topsil has again included packaging-related emissions in the 2025 inventory.

As in previous years, the supplier provides CO_2e per item together with annual purchase volumes, but does not disclose the underlying methodology, data sources or emission factors used to generate

these values. Without insight into how the figures are calculated—from raw material extraction to finished packaging—Topsil is unable to reconstruct or independently verify the calculation process.

Accordingly, emissions from this supplier are reported as provided, with the methodological limitation clearly noted in the inventory to ensure transparency and alignment with ISO 14064-1 requirements on data quality and disclosure.

3.1.4.3.4 Emissions from purchased goods - Plastic material supplier 1

Plastic materials are used in a critical sub-process to protect sensitive production components from contamination, making these materials an integral part of Topsil's operational footprint. The supplier delivers oil-based plastics and represent a relevant source of indirect GHG emissions within Category 4. Including this supplier ensures that the climate impact of material choices is reflected in the inventory and supports future evaluation of alternative, lower-impact materials or suppliers.

3.1.4.3.5 Emissions from purchased goods - Office material supplier - limited assessment

Office materials remain a relevant source of indirect emissions, as they represent recurring operational purchases across the organisation. In 2025, the office material supplier provided CO_2e data for a significantly larger share of items than in previous years, supported by a mix of recognised databases, supplier-specific information and best-available estimates. This marks a clear improvement in methodological transparency and data maturity.

However, the assessment continues to be limited**,** as product-specific emission factors are still not available for all purchased items, and several data sources rely on approximate or category-level estimates. The supplier is actively working to expand upstream LCA coverage, but large and high-impact product types remain without fully validated CO_2e factors.

Despite these constraints, including office-related emissions in the 2025 inventory provides a more accurate representation of Topsil's indirect impact and supports ongoing supplier engagement aimed at improving data quality in future reporting years.

3.1.4.3.6 Production material supplier 1

Materials and equipment purchased for production represent an important indirect emission source, as they reflect both the carbon intensity of the supplier's own operations and the embedded emissions in the goods we procure. Including the production material supplier 1's emissions in our GHG inventory provides a more accurate picture of our value-chain impact and clarifies how our purchasing activities contribute proportionally to the supplier's scope 1 and 2 emissions. These data support better decision-making when assessing supplier performance and enable future benchmarking against alternative suppliers, should procurement patterns or market options change.

3.1.4.3.7 Emissions from purchased goods - Food and beverage supplier 1 – limited assessment

Food consumption represents a material emissions source, as dietary choices influence the climate impact of daily operations. Including canteen meals in the emissions inventory provides insight into both the footprint associated with our food supplier and the organisation's eating patterns — such as the distribution between meals with meat, vegetarian options, and vegan dishes.

Emission estimates are based on established Danish food-data sources, including nutrient and weight data from DTU Fødevareinstituttet, product-level emission factors from Den Store Klimadatabase, and supplementary food composition information from frida.fooddata.dk. These datasets allow Topsil to link meal composition with representative life-cycle emission values.

By combining consumption data with meal-level emission factors, the assessment supports more informed decisions regarding supplier performance, menu planning, and the potential climate benefits of adjusting meal offerings in the future.

3.1.4.3.8 Emissions from purchased goods - IT supplier 1

In 2025, Topsil included laptops and monitors from one of four IT suppliers in the inventory. This supplier represents approximately 20% of Topsil's total IT procurement volume, meaning that only a limited share of the overall IT footprint could be quantified based on supplier-specific data.
The remaining three suppliers declined to provide GHG data, explaining that reporting requirements have become more complex and that planned data-provision efforts have been scaled back following the EU omnibus adjustments. As a result, fewer internal resources are currently prioritised for generating product-level carbon data.

The reporting supplier provides item-level CO_2e values for both embedded (manufacturing) and use-phase emissions. These values are calculated using the Rejoose methodology, which is independently validated by PNZ Advisory, as documented in the Rejoose Data Validation Statement 2025. The validation confirms alignment with ISO 14064-3:2019, ISO 14067, and the GHG Protocol Product Standard, and ensures traceability to product and invoice level.

3.1.4.3.9 Emissions from services - Cleanroom service provider

Topsil's operations depend on controlled cleanroom environments, which require specialized external service providers to ensure compliance with stringent cleanliness and process requirements. The activities performed as part of this service can contribute meaningfully to the company's overall environmental impact, particularly through the use of chemicals, water, and energy.

Until more detailed data becomes available, the cleanroom service provider is treated as a significant emission source. Emissions associated with this service have been estimated using emission factors provided by Energinet and ADEME.

3.1.4.3.10 Emissions from services - Waste handler 1, 2 and 3

Waste management is an important parameter in assessing the environmental impact of production activities, as all sites generate waste streams that require proper handling, treatment, and documentation. Accounting for emissions from waste treatment is therefore necessary to ensure compliance with regulatory requirements and to maintain alignment with standards such as ISO 14001 and ISO 14064.

During 2025, Topsil transitioned from "waste handler 2" to a new provider, "waste handler 3". As a consequence, three different waste handlers are represented in the reporting for this year. The

transition was made because waste handler 3 operates on a significantly larger scale and offers improved recycling and recovery options for Topsil's waste fractions. Additionally, waste handler 3 is able to provide more complete and higher-quality emissions data, thereby enhancing the robustness and reliability of the emissions inventory.

"Waste Handler 1" has supplied CO_2e data for waste acid and states the calculation method used, including which external consultants support the modelling. However, the provider is currently unable to trace and demonstrate the end-to-end data flow (from raw operational inputs to final CO_2e outputs) at customer level. As a result, Topsil cannot verify how data are processed from A to B for our specific fractions, and reported figures should be interpreted as part of a pooled calculation rather than a fully customer-segregated result. Data provided by "waste handler 2" is still incomplete and not yet satisfactory for reliable emissions accounting. Several waste fractions are currently not included in the calculation tool *Klimakompasset*, which significantly limits the precision and usefulness of their reporting. This lack of data quality is one of the key reasons why Topsil no longer uses "waste handler 2" and has shifted to a provider capable of delivering a more comprehensive and transparent dataset.

"Waste handler 3" delivers annual, fraction-level CO_2e data with details on quantities, treatment routes (recycling, recovery, energy recovery, disposal) and the associated transport. Emissions are reported per fraction and in total, with avoided-emissions credits where recovered materials replace virgin inputs. Data are supplied in a machine-readable format and supported by weighbridge documentation, improving traceability and overall inventory robustness compared with previous deliveries. Remaining limitations mainly concern minor fractions that still rely on secondary factors and market-based assumptions behind avoided-emissions calculations.

The supplier's methodology is based on life-cycle assessment (LCA) principles and aligns with ISO 14040/14044. Emissions are calculated using reported fuel, heat and electricity consumption from the supplier's operations, combined with process-specific emission factors for different treatment technologies, transport stages, and material characteristics. Transport emissions are included based on actual route distances and vehicle types, while material-specific factors are sourced from recognised external databases such as EcoInvent. For avoided-emissions calculations, the supplier applies comparative modelling between primary (virgin) material production and secondary (recycled) raw materials, ensuring that credits reflect the differential climate impact of producing new materials versus substituting them with recovered feedstocks. Data collection relies on weighbridge measurements for incoming and outgoing volumes, supplemented by facility-level process information and annual operational reporting.

Incorporating emissions from waste management also highlights the broader environmental value of recycling and recovery. These treatment routes generate "avoided emissions" by replacing virgin materials, reducing energy demand, and diverting waste from high-emission processes such as incineration or disposal. As a result, effective sorting, higher recovery rates and collaboration with waste handlers contribute not only to compliance, but also to Topsil's overall reduction efforts across the value chain.

3.1.5 Category 5: Indirect GHG-emissions associated with the use of products from the organisation

Category 5 covers downstream emissions related to the processing, use, and end-of-life treatment of products sold by the organisation. Topsil supplies raw materials that are further processed into wafers by other GlobalWafers sites and by external customers. These downstream entities account for such emissions within their own GHG inventories.

In 2024, no reliable or standardised downstream data were available to quantify Category 5 emissions, and this remained unchanged in 2025. Despite growing interest in value-chain transparency across the semiconductor industry, the exchange of consistent and verifiable product-use data is still not mature enough to support a robust calculation. Several GlobalWafers sites are progressing toward full GHG inventories, but detailed, comparable data on the processing and use of Topsil's products have not yet been made available.

As data availability develops in future years, Topsil will reassess the potential for integrating Category 5 downstream emissions into the inventory. Topsil does not operate franchises or hold investments relevant to this category; these subcategories therefore remain out of scope.

3.1.6 Category 6: Indirect GHG-emissions from other sources

Category 6 covers additional indirect emissions not captured within the established upstream and downstream scope 3 categories. In 2024, Topsil was unable to identify any relevant activities that would fall under this category, and this assessment remains unchanged for 2025. No new operations, contractual arrangements, or value-chain activities have emerged during the reporting year that would meet the criteria for inclusion.

The category will continue to be monitored annually to ensure that any future developments—such as new service models, emerging supplier practices, or changes in operational structure—can be incorporated if they become material to the organisation's indirect emissions profile.

CHAPTER 4 QUANTIFIED GHG INVENTORY OF EMISSIONS

4.1 Review and adjusting of base year

Base year (unchanged): 2021.
Topsil retain 2021 as the base year. This is the organization's first complete GHG inventory prepared under the operational-control approach and established in accordance with ISO 14064-1 requirements for selecting and documenting a base-period inventory. The 2021 base year covered Scope 1 and Scope 2, and from 2022 onward selected Scope 3 categories were added.

Prior recalculation (2023)
In 2023, the 2021 Scope 2 figure was recalculated to correct the purchased-electricity emission factor and to include CH_4 and N_2O in line with IPCC AR6 GWP100 values. The factor was updated from 135 g CO_2/kWh to 206 g CO_2/kWh as published by Energinet, reflecting certificate-trading effects and the corrected national electricity mix. A later Energinet update adjusted the factor to 207 g CO_2/kWh. As this marginal change did not exceed ±5 % of the published inventory, no further recalculation was required.

Major change in 2025 (own-generation solar PV)
From 1 January 2025, Topsil began covering its site electricity demand with on-site solar PV generation and exported more electricity than it consumed during the year. This represents a major structural change in energy supply with a significant impact on Scope 2 emissions.
Under ISO 14064-1, organizations must review and recalculate their base-year inventory when:
Structural changes occur (e.g., acquisitions, divestments, major shifts in energy supply), calculation methodologies change, or emission factors change in ways that materially affect comparability over time.

ISO 14064-1 also requires that base-year recalculations be performed only when necessary to maintain consistency and comparability of emissions performance over time.

Reason for maintaining 2021 as the base year
Although the transition to on-site renewable electricity in 2025 constitutes a major change, ISO 14064-1 does not require that the base year itself be replaced—only that base-year emissions be recalculated if the change causes a material impact on trend comparability.
For Topsil, the 2025 structural change affects future-year Scope 2 emissions, but it does not alter organizational boundaries, historical activity levels, or the fundamental representativeness of 2021 as the baseline year.

Therefore:

- 2021 remains the organization's legitimate and ISO-compliant base year.
- A recalculation of the base-year Scope 2 value would only be required if the solar-PV change altered historical electricity consumption or emission factors retrospectively—which it does not.

- Maintaining 2021 as the base year supports continuity, comparability, and transparent performance tracking against the original baseline.

4.1.1 Recalculation policy and triggers (aligned with ISO 14064-1 and ISO/TS 14064-4)

To ensure consistency and comparability over time, we operate a documented base-year review and recalculation procedure. In line with ISO 14064-1 clause 6.4.2 (review of base-year GHG inventory) and the application guidance in ISO/TS 14064-4:2025, the organization applies a fixed materiality threshold of ±5%.

In this policy, "major" is therefore defined as any change—individually or cumulatively—that alters the base-year total by more than ±5%.
Such changes will trigger a recalculation of the base year.

1. Major changes that directly impact Scope 2 (≥ ±5%)
Structural or methodological changes that affect Scope 2—such as retrospective corrections to electricity data, emission factor updates, or contractual changes affecting market-based accounting—will trigger recalculation only when the impact exceeds ±5% of the base-year total.

Forward-looking structural changes (e.g., the commissioning of our own solar-PV plant in 2025) do not trigger recalculation, because they do not alter historical activity data, organizational boundaries, or the representativeness of the 2021 base year. They affect only future-year emissions and therefore fall outside ISO 14064-1's recalculation requirements.

Changes with < ±5% impact are documented but do not trigger recalculation.

2. Better quantification of Scope 3
When improved data quality, boundary refinement, or category expansion leads to a substantial cumulative impact on base-year emissions, we recalibrate the base year to keep time-series comparisons representative.

3. Major supply-chain changes significantly impacting Scope 3 (≥ ±5%)
Changes in suppliers, upstream energy mixes, transport modes, or logistics structures will trigger recalculation only if the combined effect exceeds the ±5% materiality threshold.
Supply-chain shifts below the ±5% threshold are monitored and documented but do not require recalculation.

4. Material calculation errors or emission-factor updates (≥ ±5%)
If errors or corrected methodologies alter the base-year result by more than ±5%, a recalculation is required. Minor updates—such as small annual adjustments to electricity emission factors—remain documented but do not meet the recalculation threshold.

4.2 Scope 2 Reporting and Methodological Clarifications

4.2.1 Dual Scope 2 Reporting: Second Year of Location-Based and Market-Based Methods

Dual Scope 2 reporting—disclosing both location-based and market-based emissions—was introduced in Topsil's previous reporting year. This year marks the second year of reporting under both methods. While ISO 14064-1 requires transparent disclosure of methods, factors and assumptions, the dual-method approach is applied because it is a formal requirement of GlobalWafers Group (GWC). This year marks the second year of reporting under both methods, ensuring continuity, comparability, and alignment with GlobalWafers Group policy and SBTi expectations.

4.2.2 Selection and management of emission factors

In 2025, emission factors are selected using the same structured approach as in previous years. National, site specific factors—particularly government published electricity conversion factors—are applied where available. When national data is missing, regional or global factors are used to ensure completeness.

For general parameters such as combustion emissions, material factors and GWP values, internationally recognised sources (e.g., IPCC AR6 and regional databases) are applied to maintain consistency and comparability across reporting years.

4.2.3 Location-Based Method

The location-based method calculates emissions using the average emission intensity of the national electricity grid, independent of any renewable energy procurement instruments such as RECs or direct green power contracts.

4.2.4 Market-Based Method

The market-based method reflects the specific electricity purchased or contracted, including RECs, direct green power agreements, and the residual mix. This method captures the effect of Topsil's renewable energy investments and supports RE100 and net-zero goals.

Reporting both methods provides a detailed and transparent representation of Topsil's energy-related emissions and highlights the impact of renewable electricity sourcing.

The base year settings (year 2025) calculated using location-based energy emission factors:

CATEGORIES	LOCATION-BASED	MARKED-BASED
Scope 1, Direct GHG emissions	1,6 tons CO_2e	-
Scope 2, Indirect GHG emissions from imported energy	3,32 tons CO_2e	0 tons CO_2e

4.3 Types of Greenhouse Gases

In accordance with the greenhouse gas classifications defined under ISO 14064-1, the Kyoto Protocol, and relevant international GHG reporting frameworks, Topsil's greenhouse gas inventory includes the following gases:

Carbon dioxide (CO_2)
Methane (CH_4)
Nitrous oxide (N_2O)
Hydrofluorocarbons (HFCs)
Perfluorocarbons (PFCs)
Sulphur hexafluoride (SF_6)
Nitrogen trifluoride (NF_3)

Not all organizational emission sources generate all greenhouse gas types. Therefore, Topsil quantifies and reports only the gases that are measurable, relevant, and applicable to the company's operations. Emissions are included based on the availability of reliable activity data and established calculation methodologies.

4.4 Greenhouse Gas Emissions Calculations

4.4.1 Emission Source Identification

The emission source items identified within the boundary are listed in the table below:

CATEGORY	SUBCATEGORY	IDENTIFIER	EMISSION FACTOR		SOURCE
1. Direct emissions	Mobile	Company owned vehicles	*		https://theicct.org/sites/default/files/publications/Global-LCA-passenger-cars-jul2021_0.pdf European Environmental Agency, 2023*
2. Indirect emission from imported energy	Electricity	EMS-data collection	**Location-based energy emissions factor**	**Market-based energy emissions factor**	https://ens.dk/analyser-og-statistik/noegletal-om-energiforbrug-og-forsyning
			0,06912 kgCO2e/kWh	Total consumption covered by certificate	https://energinet.dk/eldeklaration/ https://ens.dk/analyser-og-statistik/noegletal-om-energiforbrug-og-forsyning
3. Indirect emission from transportation	Downstream	Transport supplier 1	Air Freight: 718,98 CO2e/(g/t-km Road Freight: 100,13 CO2e/(g/t-km Sea Freight: 4,18 CO2e/(g/t-km		Dataset from the supplier included tCO_2e emissions and other relevant data, enabling Topsil to calculate emission factors. Supplier data is ISO14083 and GLEC-compliant

			Transport supplier 2	–		Report from supplier, based on EN 16258 And Product Lifecycle Accounting and Reporting Standard, ISO14083 and GLEC-compliant
	Upstream supplier		Transport supplier 3	-		Uniteam uses the SEAROUTES v2.0 shipment API which is accredited by Smart Freight Centre to provide calculations of greenhouse gas emissions for freight and logistics operations that are in methodological conformance with the Global Logistics Emissions Council Framework for Logistics Emissions Methodologies (GLEC Framework
	Commuting by employees		Vehicles, employee owned	107 gCO2e/kWh	439 gCO2e/kWh	European Environmental Agency, 2023*
				0,3 g CH_4/kWh	0,3 g CH_4/ kWh	
				0,004g N_2O/ kWh	0,004g N_2O/ kWh	
				Diesel: 3,17 CO_2 kg/kg 0 CH_4 kg/km 0,000015 N_2O kg/km		
				Gasoline: 3,16 CO_2 kg/kg 0,000057 CH_4 kg/km 0,000006 N_2O kg/km:		
	Business trips		Business trip supplier 1	–		Report from supplier, based on BEIS/DEFRA
4. Indirect emission from products used by the organisation	Indirect GHG-emissions from goods purchased by an organization.	a) Purchased goods	Raw supplier 1	127 kgCO_2e/kg		Inventory report year 2022, method unknown
			Raw supplier 2	91,7 kgCO2e/kg / 87,5kgCO2e/kg - dependent on specific product		ISO14067:2018 Together for sustainability (TfS) PFC Guideline
			Gas supplier 1	–		https://www.eiga.eu/uploads/documents/DOC167.pdf
			Packaging material supplier 1	–		Report from supplier, dependent on item ID, method unknown
			Plastic material supplier 1	–		Raw data from supplier - calculations by Topsil
			Office material supplier 1	–		Data from supplier - calculations by Topsil
			Production material supplier 1	–		Raw data from supplier - calculations by Topsil
			Food and beverage supplier 1	–		Data from supplier and calculations based on "Den Store Klimadatabase"
			IT Supplier 1	The supplier provides CO_2e per item based on a validated LCA		Data from supplier based on ICT LCA White paper in accordance

				methodology (ISO 14064-3, ISO 14067, GHG Protocol Product Standard).	with GHG Protocol Product Standard
			Cleanroom service provider	-	Report from supplier - emission factors from ADEME and Energinet
		a) Waste generated in operations	Waste handler 1	-	Report from supplier, factor and method unknown
	Indirect GHG-emissions from services used by an organization	a) Waste generated in operations	Waste handler 2	Emission factors related to waste categories	https://assets.eu.ctfassets.net/vhb8aakerf77/2X8iCzgLyORBZLnNbGTAoS/a85812a0d4d1ad0d91df7be11ae47118/MASTER_Udvidet_Vejledning_Klimakompasset_2023_FINAL.pdf
			Waste handler 3	Emission factors related to waste categories	The value is calculated in accordance with the minimum boundary plus transport, in line with the Greenhouse Gas Protocol (Scope 3 Calculation Guidance, Category 5)."
5. Indirect emission associated with usage of product	Processing of sold product		Silicon wafers	N.A	Covered by other Global Wafer sites GHG reports. See Global Wafers webpage

*Some of the subcategories require several emissions factors to properly calculate them. A summary of them can be found below:

- **Petrol density**: 0,75 [kg/l] source is: 1.A.3.b.i-iv Road Transportation 2023 (updated 2025) p. 56, table 3-28 (EMEP/EEA air pollutant emission inventory guidebook 2023, updated 2025, published by European Environment Agency)

- **Diesel density:** 0,84 [kg/l] source: is 1.A.3.b.i-iv Road Transportation 2023 (updated 2025p. 56, table 3-28 (EMEP/EEA air pollutant emission inventory guidebook 2023, updated 2025, published by European Environment Agency)

- **Petrol** (bulk emission factor for Passenger Cars)**:** 3,17 [kg CO_2/kg fuel] source: is 1.A.3.b.i Road Transportation 2023 (updated 2025) p. 135, table A1 0-7 (EMEP/EEA air pollutant emission inventory guidebook 2023, updated 2025, published by European Environment Agency)

- **Diesel** (bulk emission factor for Passenger Cars)**:** 3,18 [kg CO_2/kg fuel] source: is 1.A.3.b.i Road Transportation 2023 (updated 2025) p. 135, table A1 0-7 (EMEP/EEA air pollutant emission inventory guidebook 2023, updated 2025, published by European Environment Agency)

- **Motorcycle** (bulk emission factor for Passenger Cars)**:** 3,16 [kg/kg] source: is 1.A.3.b.i-iv Road Transportation 2023 (updated 2025) p. 135, table A1 0-7 (EMEP/EEA air pollutant emission inventory guidebook 2023, updated 2025, published by European Environment Agency)

- **Buses**: N/A [kg/kg] source is: 1.A.3.b.iii Road Transportation 2023 (updated 2025) p. 135, Table A1 0-7 (EMEP/EEA air pollutant emission inventory guidebook 2023, updated 2025, published by European Environment Agency)

- **Diesel B7 ICTT WTW:** 0.98 (WTT) [kg CO_{2e}/kg] + 2.44 (TTW) [kg CO_{2e}] = 3.42 [kg CO_{2e}/kg] source is: ICTT White Paper, p. 71, Table A.9.

- **CH_4 emissions factor for gasoline:** 0,000057 [kg/km] source is:
  IPCC chapter 3, Mobile combustion, p. 3.24, table 3.2.5 Gasoline, Euro 4, Urban, Cold

- **CH_4 emissions factor for diesel:** 0 [kg/km] source is:
  2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 3, Mobile combustion, p. 3.24, table 3.2.5 Gasoline, Euro 4, Urban, Cold

- **N_2O emissions factor for diesel**: 0,000015 [kg/km] source is:
  2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 3, Mobile combustion, p. 3.24, table 3.2.5 Gasoline, Euro 4, Urban, Cold

- **N_2O IPCC Gasoline:** 0,000006 [kg/km] source is:
  2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 3, Mobile combustion, p. 3.24, table 3.2.5 Gasoline, Euro 4, Urban, Cold

- **CH_4 – GWP100**: 27,9 source is:
  7SM, p.16, table 7.SM.7 The Earth's Energy Budget, Climate Feedbacks and Climate Sensitivity Supplementary Material

- **N_2O – GWP100:** 273 source is:
  7SM, p.16, table 7.SM.7 The Earth's Energy Budget, Climate Feedbacks and Climate Sensitivity Supplementary Material

* 0,069 kWh/km (for each passenger) =14,149km/kWh

4.4.2 Calculation instructions

All greenhouse gas calculations are performed using SI units, with results converted into tCO_2e or $kgCO_2e$ to ensure consistency across the reporting framework. Unit conversions are applied systematically to maintain accuracy and comparability across all emission categories.

Topsil quantifies greenhouse gas emissions using the carbon emission coefficient method, expressed as:

$$E = A \times EF \times GWP$$

where:

- E = total emissions (tCO_2e or $kgCO_2e$)
- A = activity data or consumption rate
- EF = emission factor
- GWP = global warming potential (CO_2-equivalency factor)

To ensure methodological consistency across reporting years,Topsil applies the IPCC AR6 GWP100 values, which represent the latest internationally recognised scientific benchmarks for climate impact assessment. These values originate from the 2021 IPCC Sixth Assessment Report (AR6) and are derived from the radiative-efficiency-based GWP calculations documented in the Chapter 7 Supplementary Material (Table 7.SM.6). Using IPCC AR6 ensures comparability with global GHG reporting standards, including the Greenhouse Gas Protocol, which also references IPCC-approved GWP metrics

The applied AR6 GWP100 values are:

- CO_2: 1
- CH_4: 27.9

- N_2O: 273

When available, Topsil prioritizes supplier-reported emissions, particularly within:

- Scope 3, Category 3: Fuel- and energy-related transport, and
- Scope 3, Category 4: Purchased goods and services

Using supplier-provided data enhances accuracy and increases the representativeness of emissions associated with upstream activities and transportation impacts.

4.4.3 Methodology for calculation of emissions from categories 1-4

4.4.3.1 Category 1: Direct emission by company owned vehicles

The organisation operates a limited number of company-owned vehicles, primarily used by executive management. While a semi-automated calculation method is applied for all vehicles used for business purposes—whether owned by the organisation or by employees—data relevant to direct emissions from company-owned vehicles are excluded from the general emission-calculation formula and are instead reported separately. This ensures accurate representation of Scope 1 emissions and maintains clear methodological separation from indirect and employee-owned vehicle calculations.

4.4.3.2 Category 2: Imported energy electricity, methodology for calculation of emissions

In 2025, Topsil's electricity supply structure changed fundamentally due to the commissioning of the company's on-site solar park, which has been delivering renewable electricity to the grid since 1 January 2025. Electricity consumed on-site is therefore supplied through a combination of (1) imported grid electricity during periods without sufficient on-site generation, and (2) renewable electricity matched by Guarantees of Origin (GoOs) cancelled in Topsil's name.

4.4.3.3 Category 3: Employee Commuting, methodology for calculation of emission

In 2025, the organisation introduced a more standardised and user-friendly data-collection process, where employees submit vehicle-related activity data through a structured form. Submitted information is automatically compiled into a central spreadsheet, where a calculation sheet applies the relevant emission factors.

To ensure accurate Scope 1 reporting, data related to direct emissions from company-owned vehicles are extracted from the general workflow and reported separately. The consolidated results are then scaled to represent the full organisation using the average number of employees for 2025.

4.4.3.4 Category 3: Downstream transportation, methodology for calculation of emission

Topsil collaborates with three transport suppliers, each using different transport modes and emissions-reporting methodologies. All data are integrated into Topsil's inventory using a harmonised approach and aligned with ISO 14083 and the GLEC Framework.

Supplier 1 – Multimodal Transport with Enhanced ISO 14083-Aligned Reporting

Supplier 1 provides air, road and sea transport and calculates emissions using EcoTransIT World aligned with the GLEC Framework. Emissions are calculated using both Well-to-Wheel (WtW) and Tank-to-Wheel (TtW) factors, covering fuel combustion, upstream fuel production and logistics routing.

In 2025, Supplier 1 introduced an updated CO_2 Performance Report designed to meet ISO 14083 requirements and strengthen decarbonisation insights. Key improvements include:

- inclusion of hub emissions,
- hotspot identification for each transport mode,
- estimated emission-reduction potential through optimisation and modal shifts.

This provides Topsil with more granular and future-oriented emission insights across all modes managed by Supplier 1.

Supplier 2 – Road Transport Using ISO 14083, GHG Protocol and GLEC-Aligned WtW Calculations
Supplier 2 operates exclusively road transport and reports emissions according to the GHG Protocol, ISO 14083 and the GLEC Framework. Their method includes:

- Scope 1 vehicle emissions,
- Scope 2 electricity used in operations,
- Scope 3 upstream fuel production (WTT).

Supplier 2 applies both WTT (Well-to-Tank) and TTW (Tank-to-Wheel) principles, ensuring full coverage. Emissions are based on fuel type, energy consumption, vehicle category and distance travelled, consistent with EcoTransIT and GLEC methodology.

Supplier 3 – Road-Only Transport Using Searoutes WtW Methodology
Supplier 3 provides national road transport and calculates emissions using the Searoutes v2.0 API, accredited by the Smart Freight Centre. The model is aligned with the GLEC Framework and applies full Well-to-Wheel (WtW) factors, including upstream fuel production and direct combustion emissions (TTW).

Emissions are calculated per shipment based on:

- vehicle and fuel type,
- transport distance,
- transported cargo weight.

Searoutes integrates certified WtW emission factors, ensuring consistency with ISO 14083 and enabling comparable intensity values across suppliers.

4.4.3.5 Category 4: Indirect emission from purchased products used by the organisation, methodology for calculation of emissions

In 2025, the same calculation framework as previous years is applied; however, the data landscape has evolved. Many suppliers are increasingly able to describe the methodologies they use, yet most suppliers still cannot provide product-specific emission factors, as they supply a wide range of different materials and components. As a result, supplier data are often not directly attributable to the specific products purchased by Topsil.

Where suppliers are unable to provide product-level CO_2e data, no further calculations are performed. However, when suppliers provide sufficiently detailed information — such as methodological descriptions, material consumption data or partial emission factors — Topsil may perform its own calculations. This occurs when:

- supplier information does not fully align with Topsil's activity data
- data are provided in unit-based formats that require conversion
- product-specific factors are unavailable and estimation is necessary

In these cases, Topsil applies established emission-factor databases and the same methodological approach used in previous reporting years to ensure consistency. The following sections outline the methods applied when Topsil conducts its own calculations based on incomplete or partially available supplier data.

4.4.3.5.1 Raw material suppliers 1 and 2

Raw material suppliers are assessed using Topsil's own activity data. Because Topsil purchases a broader volume of raw materials than it consumes within a single reporting year, emission calculations must be adjusted to accurately represent the 2025 inventory period. Each supplier's contribution is therefore calculated proportionally, based on the share of materials consumed during the reporting year rather than total materials purchased.
Further details on activity data and allocation principles are provided in section 4.4.1.

4.4.3.5.2 Gas supplier 1

The supplied gases continue to have a Global Warming Potential (GWP) of 0, as they belong to the category of noble gases. For 2025, the supplier's emission factor calculations are still based on IPCC AR5 GWP values rather than the updated AR6 values. Their methodological approach follows EIGA's *Methodology to Establish a Product Carbon Footprint (Doc 167/20)*.

For electricity-related emissions associated with gas production, the supplier relies on IEA data, which covers CO_2 emissions but does not include other greenhouse gases. As a result, electricity emissions are presented as CO_2-only values, consistent with the supplier's current data model.

4.4.3.5.3 Packaging material supplier 1

For some suppliers, including the one providing item-specific CO_2e values in this category, emissions are reported per finished item rather than as a uniform emission factor per kilogram or per material

type. This approach reflects that suppliers calculate emissions based on their own processes, materials, energy sources and internal LCA models, which vary significantly across products.

Because of this, Topsil cannot apply or describe one single emission factor for the supplier. Instead, emissions are quantified using the values provided per item, combined with the annual purchase volume, according to the following simplified formula:

$E = D \times PA \times GWP$
Where:

E = total emissions (kg CO_2e)
D = supplier-provided $CO_2(e)$ per item
PA = purchase amount for that item in the reporting year
GWP = global warming potential values (IPCC AR6, 100-year)

This method remains valid in 2025 and is necessary because the supplier uses multiple underlying emission factors depending on product composition, processing steps and energy sources. These factors are embedded in the supplier's internal calculation system and are not available as a single consolidated emission factor that Topsil can report or reproduce independently.

Therefore, Topsil reports the results exactly as provided, ensuring that supplier-specific footprints are preserved and that the inventory reflects the most accurate product-level data available.

4.4.3.5.4 Plastic material supplier 1

For 2025, data on material consumption and electricity use remain available for all product types, enabling Topsil to calculate emissions using the same methodological approach as in previous reporting years. Annual consumption data form the basis for the calculation, supplemented by a 10% buffer to account for operational variability.

As product-specific CO_2e data from the supplier are still unavailable, emissions associated with plastic materials are estimated using external emission-factor databases. Electricity-related emissions linked to the production of these materials are calculated using the 2025 country-specific governmental conversion factors. This approach maintains consistency and comparability with prior years while acknowledging that the assessment will improve once more detailed, supplier-level CO_2e data become available.

4.4.3.5.5 Office material supplier 1

In 2025, the assessment of purchased goods and services remains constrained by limited availability of product-specific CO_2e factors, although transparency and data maturity have improved compared with the previous reporting year. The office material supplier now provides CO_2e data for 561 purchased items, based on nine different methodological sources, but only a portion of the purchased product range is supported by fully verifiable emission factors.

Unlike the 2024-report, the data gaps no longer stem from suppliers withholding information, but from the fact that many suppliers cannot yet provide item-level emission factors due to broad product portfolios and immature LCA practices in their upstream supply chains. As a result, the dataset consists of a mix of supplier LCAs, recognised databases, category-level estimates and "best current estimates," with varying levels of precision.

While the supplier is increasingly able to explain the underlying methodologies—including the use of databases such as Ecoinvent, Den Store Klimadatabase, OpenCO2Net and Klimakompasset—uncertainty remains for product categories where only approximate or AI-assisted values are available. Product-level CO_2e data for the most material items are still under development.

Overall, the 2025 dataset represents a step forward compared with 2024, but methodological maturity and completeness vary significantly across product groups. As suppliers continue to develop more robust LCA data, Topsil expects data quality in this category to improve in future reporting years.

4.4.3.5.6 Production material supplier 1

For the current reporting period, emissions related to this supplier have been estimated using a high-level, spend-based allocation approach based solely on available financial data. The calculation distributes the supplier's reported total scope 1 and scope 2 emissions from the most recent reporting year proportionally according to the share of the supplier's total annual revenue represented by the company's purchases. As such, the estimate reflects an economic allocation only, without incorporating any physical data, material flows, or activity-based information.

The values used in this calculation have not been verified by the supplier, as they are derived exclusively from publicly available information and not from supplier-specific disclosures. This introduces an additional layer of uncertainty, as the underlying emissions data have not been confirmed or validated directly by the supplier.

This approach entails a high degree of uncertainty. The estimation does not account for differences in product types, material composition, production volumes, energy intensity, or underlying manufacturing processes, nor does it reflect potential variation in carbon intensity across individual goods supplied. Consequently, the calculated value should be understood strictly as an indicative approximation of the company's potential share of supplier emissions rather than a representation of actual emissions embedded in the purchased materials.

Given these limitations and the exclusive reliance on financial proxy data, the resulting figure is reported under limited assurance in accordance with ISO 14064. Despite its low level of granularity and accuracy, the inclusion of this estimate is considered relevant at this stage to ensure that emissions associated with externally sourced production materials are not omitted from the inventory. The figure primarily serves as a placeholder and baseline. As more supplier-specific, activity-based, or product-level emissions data become available, the methodology can be refined and progressively transitioned to a more robust and comparable basis across suppliers.

4.4.3.5.7 Food and beverage supplier 1

The food and beverage supplier has calculated CO_2 impacts for our canteen meals using their internal model. The model combines two methodological sources:

- "Closest-match" emission factors from Den Store Klimadatabase 1.2
- Supplier-specific testing of 38 representative dishes to estimate average ingredient quantities per meal

This mixed-method approach results in standardised emission values of 2.52 kg CO_2e for meat-based meals and 0.80 kg CO_2e for vegetarian meals. The calculations cover embedded emissions from food ingredients only; transport, preparation and cooking emissions are not included.

Although the supplier's model has been externally reviewed against the principles of ISO 14040/44, the methods are not fully verified, and methodological differences remain between the two data sources. These include:

- Variations in how ingredient quantities are estimated (database averages vs. supplier testing)
- Differences in system boundaries between the Klimadatabase and the supplier's internal model
- Lack of verification of the combined method as a unified LCA approach

Given the relatively small contribution of canteen meals to our total footprint, we assess the data as sufficiently robust for inclusion in this year's reporting. However, methodological inconsistencies mean that the results should be interpreted with caution. We will continue to track improvements in the supplier's model and reassess data quality as refinements are implemented. Orders placed outside the system remain a known data gap.

4.4.3.5.8 IT supplier 1

The reporting IT supplier uses an activity-based methodology to calculate CO_2e for IT hardware. The method combines three data types:

- Manufacturer-specific data,
- Configuration-category averages, and
- Category averages, which are applied dynamically depending on what information is available for each product. This approach improves data quality, consistency and comparability across IT equipment types.

The methodology is based on Environmental Product Declarations (EPDs) and public data sources, and includes emissions from manufacturing, transport, use-phase and end-of-life. All data is processed through harmonised validation and normalisation routines to ensure traceability and robust output. According to the supplier documentation, the method is independently validated by PNZ Advisory and confirmed to align with ISO 14064-3:2019, ISO 14067 and the GHG Protocol Product Standard.
This ensures a credible and standard-aligned emissions profile for the included IT devices, although Topsil only received usable data from one out of four IT suppliers in 2025.

Topsil does not calculate product emissions for IT equipment but uses the supplier-reported CO_2e per item, already calculated according to the supplier's validated LCA methodology (aligned with ISO 14064-3, ISO 14067 and the GHG Protocol Product Standard).

Total CO_2e (kg) = Supplier-reported CO_2e per item (kg) × Number of items purchased

For 2025, usable data was received from one out of four IT suppliers; coverage therefore includes laptops and monitors only. Where the supplier's figure includes embedded, use-phase and/or transport/em end-of-life, this is reported as provided; Topsil does not add components that are not included in the item value.

4.4.3.5.9 Cleanroom service provider

Topsil engages external cleanroom service providers to uphold the required contamination-controlled conditions. These services represent a notable source of indirect emissions, driven by the energy use, water consumption and chemical processes associated with laundering and reprocessing of cleanroom garments.

Several providers have initiated environmental performance improvements, including lower-temperature washing programs, heat-recovery systems, water-recirculation technologies, optimized chemical dosing, and increased use of low-impact detergents. Logistics efficiency has also improved through consolidated deliveries and deployment of low-emission or electric vehicles. In addition, some providers have expanded garment circularity initiatives and enhanced data transparency by delivering customer-specific CO_2 calculations, including Scope 3.

Cleanroom service emissions are assessed using emission factors from Energinet and ADEME, supplemented by supplier-reported data where available. These services remain classified as a relevant Scope 3 category until further analysis allows for more granular supplier-specific quantification.

4.4.3.5.10 Waste handler 1 and 2

Waste Handler 1 provides Topsil with an annual CO_2e calculation for all waste handled. The 2025 data shows that almost all emissions (97%) stem from high-temperature energy recovery, which is required for hazardous waste streams such as inorganic residues, solvents, contaminated liquids and laboratory waste. Out of 97.92 tonnes of waste processed, this results in 27 t CO_2e gross emissions and 3 t CO_2e credits, giving 24 t CO_2e net for the year.

Waste Handler 1's calculation method is based on recognised life-cycle principles and uses operational data from their own systems, together with standard emission factors for treatment processes, transport and avoided emissions from material recovery.

However, it is important to note a key data limitation:
Although Waste Handler 1 continuously updates its calculation tool through external consultants, the system cannot currently differentiate emissions per individual customer. Waste from multiple companies is mixed intentionally to achieve the correct composition for safe and efficient combustion

under controlled high-temperature conditions. As a result, Topsil receives CO_2e figures that represent our share of a combined waste stream, not emissions calculated strictly from Topsil-specific waste fractions alone.

This means that, while the data is methodologically robust and aligned with industry practice, the emission values represent a proportional share of a pooled waste treatment process. Topsil will continue to monitor methodological improvements and engage with Waste Handler 1 as soon as customer-level differentiation becomes technically feasible.

"Waste handler 2" continued to base its CO_2e calculations on *Klimakompasset*, which includes a mix of positive and negative emission factors depending on waste treatment method (burden or avoided emissions). However, the dataset remained incomplete: only a portion of total waste fractions could be calculated, several categories were missing emission factors entirely, and certain fractions could not yet be processed due to methodological limitations. These gaps limit both precision and comparability across waste streams and represent a key reason for the transition away from this supplier.

From mid-2025, "waste handler 3" took over. This provider operates on a larger scale and offers broader recycling and recovery options, alongside a more transparent and robust data model. Their ability to supply more consistent and comprehensive CO_2e data is expected to improve the quality of Topsil's scope 3 waste reporting over time. While methodological refinement is still ongoing, the shift marks a substantial step toward higher data reliability and stronger alignment with GHG Protocol reporting practices.

The calculation of emissions by the waste service provider follows the principles of the Greenhouse Gas Protocol, specifically the *Scope 3 Calculation Guidance, Category 5: Waste Generated in Operations*. Emission estimates are determined based on the minimum boundary defined by the GHG Protocol, supplemented by transport-related emissions associated with the handling of each waste fraction.

For each reported waste stream, the provider applies emission factors linked to the specific treatment method (e.g., recycling, incineration with energy recovery, landfill). These factors are used to calculate the direct GHG-reporting footprint. Transport emissions are added separately using distance- and mode-specific CO_2e factors to ensure that logistics are included within the mandated boundary.

In addition to the emission results, the provider also calculates avoided emissions, reflecting the environmental benefits of material recovery and recycling. These avoided emissions are derived from displacement factors representing the reduced need for virgin raw materials when recycled materials re-enter production cycles. While avoided emissions provide useful insight into environmental benefits, they fall outside the required reporting boundary for scope 3 and are therefore presented separately from Topsil's inventory.

Overall, waste handler 3 employs a structured, GHG-Protocol-aligned model with clearly defined system boundaries, treatment-specific factors, and transparent distinction between reported (burden) emissions and avoided emissions. This approach provides improved data consistency and

methodological robustness compared with previous suppliers and forms a stronger basis for ongoing waste-related scope 3 reporting.

4.5 Greenhouse Gas Emissions for the reporting period 2025

The total GHG emissions for 2025 amount to 35237,2 tons of CO_2e, using location-based energy emissions factor and with 35233,8 using the market-based energy emissions factor.
The emissions for each category detailed in the table below. All values are presented to one decimal place.

Category	Subcategory		Identifier	Emission (tCO2e)		Percentage (%) (Location-based energy emissions factor	Percentage (%) Market-based energy emissions factor
1. Direct emissions	Mobile		Company owned vehicles	1,6		0,005	0,005
2. Indirect emission from imported energy	Electricity		EMS data collection	Location-based energy emissions factor	Market-based energy emissions factor		
				3,32	0	0,01	0,01
3. Indirect emission from transportation	Downstream		Downstream - Transport supplier 1	2.609,8		7,49	7,50
			Downstream - Transport supplier 2	4,7		0,01	0,01
			Upstream - Transport supplier 3	3,1		0,01	0,01
	Commuting by employees		Vehicles, employee owned	178,64 (svarprocent: 40,67%)		0,51	0,51
	Business trips		Business trip supplier 1	38,3		0,11	0,11
4. Indirect emission from products used by the organisation	Indirect GHG-emissions from goods purchased by an organization.	a) Purchased goods	Raw supplier 1	12268,2		35,23	35,23
			Raw supplier 2	19128,6		54,93	54,94
			Gas supplier 1	332		0,95	0,95
			Packaging material supplier 1	38,8		0,11	0,11
			Plastic material supplier 1	6,5		0,02	0,02
			Office material supplier 1	7,5		0,02	0,02
			Production material supplier 1	3,87		0,01	0,01
			Food and beverage supplier 1	82,2		0,24	0,24
			IT Supplier 1	23,88		0,07	0,07
			Cleanroom service provider	0,2		0,001	0,001

	Indirect GHG-emissions from services used by an organizatio n	a) Waste generat ed in operati ons	Waste handler 1	27,0		0,08	0,08
			Waste handler 2	62,8		0,18	0,18
			Waste handler 3	18,8		0,054	0,054
5. Total				Location-based	Market-based	Location-based	Market-based
				34840,1	34836,8	100.0	100,0

4.5.1 Direct GHG emissions (Category 1)

Direct emissions from company-owned vehicles remain very limited in 2025. Topsil's vehicle fleet is now almost entirely electric, which means that Scope 1 emissions from fuel combustion (CO_2, CH_4 and N_2O) occur only in rare cases where a non-electric vehicle is used. For the electric fleet, emissions are instead accounted for under Scope 2, using the applicable electricity emission factors.

Although Scope 1 emissions continue to fall well below the 5% significance threshold, they are still included to maintain completeness and consistency in line with ISO 14064-1:2018, which requires all three scopes to be represented. Including Category 1 also supports transparency regarding the transition from combustion engines to a low-emission, electricity-based fleet.

4.5.2 Indirect GHG emissions from imported energy (Category 2)

Category 2 emissions arise from the electricity Topsil imports from the public grid during periods where on-site solar generation is insufficient. Although Topsil's solar park produced more electricity than the annual site consumption in 2025, imported grid electricity was still required during low-generation hours and therefore constitutes the basis for Scope 2 reporting.

In line with ISO 14064-1 and the GHG Protocol Scope 2 Guidance, Topsil reports both location-based and market-based emissions:

- Location-based: Calculated using the official Danish grid emission factor, representing the average carbon intensity of electricity physically supplied through the grid.
- Market-based: Reflects the contractual attributes of Topsil's electricity purchases. In 2025, Topsil cancelled Guarantees of Origin (GoOs) covering more electricity than consumed annually, meaning all electricity used onsite is matched with certified renewable energy. As a result, the market-based emission factor is 0 g CO_2e/kWh, and Topsil reports zero market-based emissions for the reporting year.

Exported renewable electricity is not included in Topsil's own Scope 2 calculations, as environmental attributes follow the associated certificates and benefit the receiving party. Only GoOs cancelled on Topsil's behalf can be applied to Topsil's Scope 2 inventory.
Monthly consumption data recorded in Topsil's Environmental Management System forms the basis for all Scope 2 calculations and follows the methodology described in Section 4.4.3.

While achieving zero market-based emissions marks a clear improvement in Topsil's operational footprint, Scope 2 has historically accounted for less than 5% of total emissions. This reinforces that Topsil's most material climate impacts—and the greatest reduction potential—lie within Scope 3, particularly upstream and downstream value-chain emissions. Internal initiatives remain important, but meaningful reductions depend primarily on continued supplier engagement, higher-quality primary data, and targeted decarbonization efforts across the value chain.

4.5.3 Indirect GHG emissions from category 3 - 6

In 2025, the data again shows that Scope 3 emissions vary significantly across suppliers and categories, with the largest contributions stemming from raw-material production and transportation. The two largest raw-material suppliers ("raw supplier 1 and 2") together account for more than 90% of total emissions, which is consistent with the highly energy-intensive nature of wafer-grade material manufacturing. Their emission levels are strongly influenced by regional energy mixes, geopolitical conditions and the maturity of their internal climate strategies.

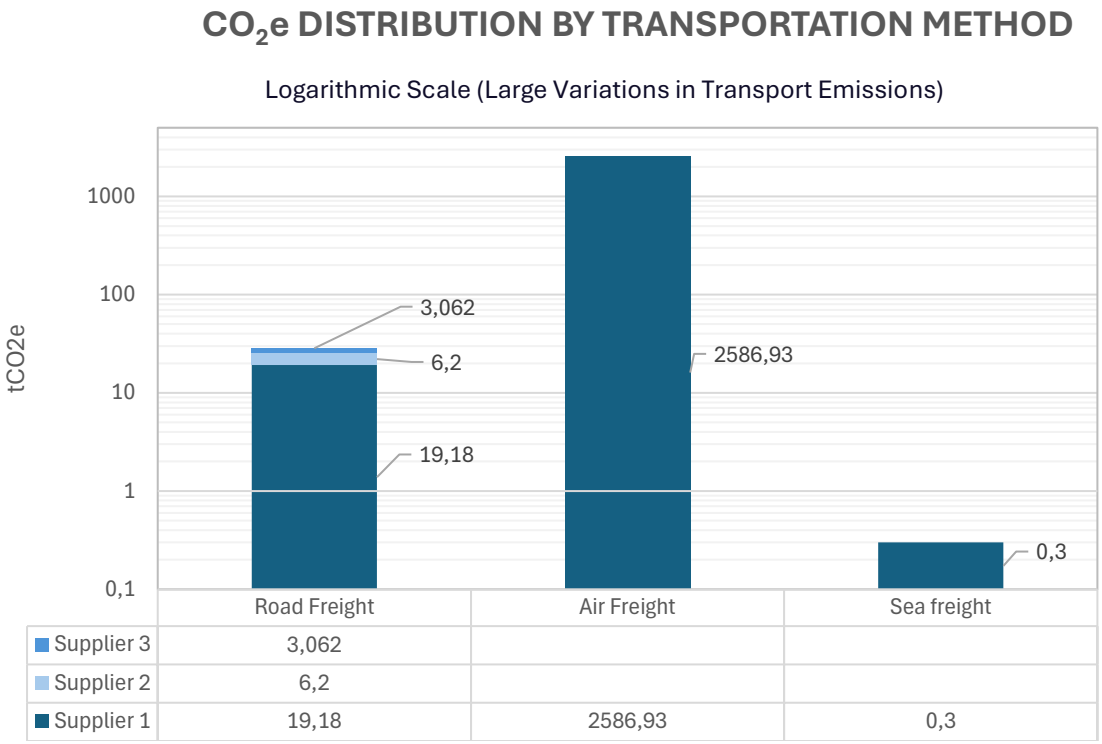
A key development this year is the growing need for product-level emissions reporting, driven by customer expectations and wider industry trends. This shift places higher demands on Topsil's suppliers, particularly in Category 3 (fuel- and energy-related activities) and Category 4 (purchased goods and services), where access to primary, supplier-specific data becomes increasingly important. Several suppliers have begun improving their climate disclosures, but data quality and methodological transparency still vary considerably.

Transportation (Category 6: downstream transportation) remains another critical area. With Topsil shipping products globally, emissions differ widely depending on whether air, road or sea transport is used. Supplier calculations reflect mode-specific methodologies that cannot be represented by a single emission factor. As more customers request product-level footprints, the need for joint forecasting, better planning and shared logistics optimisation becomes increasingly important in order to replace high-emission air freight with lower-emission alternatives where feasible.

Overall, Categories 3–6 represent both the largest emissions drivers and the greatest reduction potential within Topsil's value chain. Improving data quality, expanding primary supplier data, and strengthening collaboration with key partners will be essential for supporting more accurate product-level GHG reporting and long-term decarbonisation efforts.

4.5.3.1 Emissions from Transport Suppliers and the Impact of Transport Mode

For transport suppliers, the mode of transport—air, road, or sea—is the primary driver of emissions. These modes differ by several orders of magnitude in carbon intensity, which is why the results are shown on a logarithmic scale. A logarithmic presentation makes it possible to visualise both very small and very large values within the same figure.



All transport emissions are reported exclusively in tCO_2e, as it has not been possible to extract other GHG emissions from the provided report.

Regarding other categories, none can be classified as significant, as the majority contribute less than 5% to the overall GHG inventory.

4.5.3.2 Subcategory: Commuting by employees

Topsil conducted the annual commuting survey to collect data on transport modes and commuting distances. The response rate increased markedly in 2025, reaching 40.67%, which provides a more reliable and representative basis than in the previous year.

The distribution of exhaust-gas emissions is shown below:

	tCO_2	**tCH_4**	**tN_2O**	**Total tCO_2e**
Equivalent Emissions	175,2	1,2	2,2	178,6
Percentage (%)	99%	<1%	<1%	100%

The data confirm that commuting-related emissions remain a minor component of Topsil's overall footprint. CO_2 accounts for virtually the entire climate impact, while CH_4 and N_2O occur only in trace amounts with no meaningful influence on the total result. The category stays well below the 5%

significance threshold, largely because many employees live locally and travel short daily distances—consistent with local mobility benchmarks (Movia Trafik).

Looking forward, commuting patterns are expected to evolve. As ownership of electric and low-emission vehicles continues to increase—driven by national incentives, market trends, and customer expectations for product-level GHG transparency—the relative contribution of commuting to the total footprint may change. Improved data quality and a potentially more electrified employee vehicle fleet will strengthen Topsil's ability to assess and manage this category in future inventories.

Topsil applies CH_4 and N_2O emission factors from the IPCC 2006 Guidelines (Mobile Combustion, Table 3.2.5), using the default values for 'Gasoline, EURO 4, Urban, Cold'. This standard is recommended when detailed vehicle-specific emissions data are not available, which is the case for employee commuting. EURO 4 factors therefore provide a consistent, recognised and conservative basis for estimating CH_4 and N_2O emissions across a diverse fleet of employee vehicles.

4.5.4 Emissions from biomass combustion

In accordance with ISO 14064-1:2018 (section 9.3.1), organisations must account for emissions from biomass combustion where such activities fall within the organisational boundary. Topsil does not operate any biomass-fired equipment, and no biomass combustion activities occurred in 2023, 2024 or 2025.

Type of GHG emission	**tons/year**
CO_2 Emissions from Biomass Combustion	0
CH_4 Emissions from Biomass Combustion	0
N_2O Emissions from Biomass Combustion	0
Total Emissions	0

Consequently, Scope 1 continues to consist solely of direct emissions from Topsil's limited number of company-owned vehicles.

4.6 Uncertainty assessment

Uncertainty is an inherent part of all GHG inventories, and in 2025 Topsil continues to evaluate these uncertainties using the same methodological approach as previous reports. Two recognised methods exist for uncertainty assessment. A statistical approach can only be used when all input data and their associated uncertainties are fully known, allowing a quantified confidence interval—typically at 95%—to be calculated. This requirement is not met with several of Topsil's emission sources, particularly where supplier data or upstream scope 3 estimates are involved.

For this reason, Topsil applies an expert-based uncertainty assessment, consistent with IPCC (2006) guidance. This method allows uncertainties to be identified and evaluated qualitatively even when they cannot be expressed numerically. The assessment considers data transparency, measurement

precision, the reliability of emission factors and calculation methods, and the overall credibility of supplier information.

By using expert judgement, the GHG Management Committee can assess uncertainty systematically across all subcategories and ensure that data limitations are clearly understood and transparently documented within the 2025 inventory.

4.7 Data quality assessment

To ensure a consistent and transparent evaluation of data quality across the GHG inventory, Topsil applies a structured expert-judgement approach. This is necessary due to the heterogeneous nature of the current dataset, including differing methodological practices among suppliers, variations in measurement precision, and instances of incomplete underlying documentation. Under these conditions, expert assessment remains the most robust and appropriate method for determining the reliability of each data source and the implications for uncertainty.

Due to the nature of the current dataset — including varying methodologies across suppliers and incomplete insight into the underlying drivers of uncertainty — expert judgement remains the most suitable method.

The assessment is overseen by the GHG Management Committee, which evaluates data quality across the following criteria:

1. Measurability and precision of collected data
   – including calibration and reliability of measurement tools
2. Internal direct measurements
   – data controlled and recorded by Topsil
3. Supplier-provided data
   – including both direct measurements and indirect estimates
4. Emission factors applied
   – national factors (preferred), IPCC AR6 factors, or alternative factors requiring validation
5. Calculation methodologies
   – including review of supplier calculation approaches and internal estimation methods
6. Supplier data reliability
   – considering plausibility of data provided and contextual factors such as operational maturity or external influences

Each subcategory is assigned a data quality classification score based on the Committee's expert evaluation. This approach ensures continuity with previous years while acknowledging that uncertainty quantification will improve as supplier methods mature and more detailed data become available.

CLASSIFICATION	DESCRIPTION

4 (A - Highest data quality)	Data is direct, reliable, well-documented and based on measurable, verifiable information
3 (B - Acceptable data quality)	Data is indirectly collected or partially estimated, but still sufficiently robust for use in the inventory.
2 (C - Limited data quality)	Key information is missing or incomplete, preventing a confident assessment of overall data reliability.
1 (D - Low data quality)	The method of data generation is unclear or undocumented, making the data unsuitable for use in the subcategory.

Using this classification system, the GHG Management Committee reviews all underlying data, evaluates its reliability and associated risks, and assigns a final data quality score to each subcategory. The classification ensures consistent evaluation across the inventory and provides a transparent basis for understanding data strengths and limitations in the 2025 assessment.

4.7.1 Weighted data quality assessment based on supplier contributions

In 2025, Topsil continues to apply the weighted data-quality assessment introduced in the previous reporting year. By converting qualitative data-quality classifications (A–D) into numerical values (4–1), Topsil can quantify the relative reliability of data across suppliers and emission sources. This enables a more accurate representation of where uncertainty is concentrated within the inventory.

Because suppliers contribute unevenly to total emissions, their data quality is weighted according to their share of overall CO_2e. A supplier responsible for a large proportion of emissions but with a lower data-quality score has a significantly greater influence on the overall reliability of the inventory than one with a minimal contribution. A simple average would therefore misrepresent the true data-quality distribution.

The weighted score is calculated as:

$$\text{Weighted Score} = \Sigma\,(\text{Supplier Emissions} \times \text{Data Quality Score}) \,/\, \Sigma\,(\text{Total Emissions})$$

This approach ensures that the overall data-quality rating reflects both the magnitude of emissions and the robustness of underlying data. It also highlights areas where methodological improvements or deeper supplier engagement would have the greatest impact on reducing uncertainty in future reporting years.

Category	**Subcategory**	**Identifier**	**Data quality score - categorial value**	**Data quality score - numeric value**

1. Direct emissions	Mobile		Company owned vehicles	B	3
2. Indirect emission from imported energy	Electricity		EMS-data collection	A	4
3. Indirect emission from transportation	Downstream		Transport supplier 1	B	3
			Transport supplier 2	B	3
			Transport supplier 3	B	3
	Commuting by employees		Vehicles, employee owned	D	1
	Business trips		Business trip supplier 1	C	2
4. Indirect emission from products used by the organisation	Indirect GHG-emissions from goods purchased by an organization.	a) Purchased goods	Raw supplier 1	C	2
			Raw supplier 2	A	4
			Gas supplier 1	C	2
			Packaging material supplier 1	D	1
			Plastic material supplier 1	C	2
			Office material supplier 1	D	1
			Production material supplier 1	D	1
			Food and beverage supplier 1	D	1
			IT Supplier 1	C	2
	Indirect GHG-emissions from services used by an organization	a) Waste generated in operations	Cleanroom service provider	C	2
			Waste handler 1	C	2
			Waste handler 2	C	2
			Waste handler 3	A	4
5. Total				B-C	2,24

4.7.2 Key weighted suppliers and data quality impact

The largest contributors to total emissions and data reliability are:

- Raw Supplier 2 (54,29%) – Largest emissions source, and high data quality (4) setting a strong reporting standard.
- Raw Supplier 1 (34,82%) – Second-largest source, with acceptable data quality (3).
- Transport supplier 1 (7,41 – Acceptable data quality (3)
- Gas supplier 1 (2,27%) – Limited data quality (2).

4.8 Data quality and transparency in the supply chain

Several data categories remain fully under Topsil's operational control, which ensures strong traceability and reliability. These categories are described in the sections below.

Most collected data falls into quality categories B and C, resulting in a weighted data quality score of 2.18 on a 1–4 scale. This indicates moderate overall reliability, while also highlighting areas where data completeness and transparency need improvement.

In 2026, efforts will focus on strengthening data transparency with key raw-material suppliers, encouraging broader alignment of reporting practices, and maintaining the high data quality already achieved for Scope 2 emissions. Targeting high-emission sources with lower data quality will further improve the robustness of future inventories.
Greater supply-chain transparency remains essential to meet ISO 14064-1:2018 requirements for relevance, completeness, consistency, accuracy, and transparency. Until this level of visibility is achieved, some uncertainty cannot be reliably quantified through statistical methods.

The expected improvements in data availability under the Corporate Sustainability Reporting Directive (CSRD) have been slower to materialize. Due to the EU's omnibus adjustments, several of Topsil's partners and suppliers have re-prioritized resources and are now working far less proactively with CSRD implementation, as the requirements no longer apply to them in the short term. This has temporarily reduced the anticipated momentum toward higher transparency and more consistent data delivery.

Despite this slowdown, Topsil continues to strengthen internal data practices. Several data categories remain fully under Topsil's direct operational control, ensuring a higher level of traceability and reliability. These categories are described in the following sections.

Fortunately, even smaller suppliers who are not yet affected by CSRD requirements are beginning to recognise the need to provide data, set concrete targets, and work systematically towards them. As a result, we are gradually gaining access to more and better data across our supply chain, despite the slowdown caused by the omnibus adjustments.

4.8.1 Uncertainties in Employee Transportation Data

Employee commuting data is collected through an internal questionnaire. In 2025, the response rate improved considerably—from 22% last year to 40.67%—resulting in a more representative dataset. Despite this progress, several sources of uncertainty remain.

The dataset is based on self-reported values, including commuting distance, fuel consumption (L/100 km), and vehicle characteristics. Many employees are unsure of their vehicle's exact specifications—such as real fuel use, hybrid electric driving share, or official consumption ratings—which leads to rough estimates and increases variability in the data. In particular, plug-in hybrid owners frequently lack insight into how often they drive on electricity versus fuel, which makes this drivetrain category especially uncertain.

Even with the higher participation rate, the reliance on memory and subjective estimates introduces recall bias and inconsistent reporting practices. Furthermore, participation varies across employee groups. Office staff tend to respond more accurately and more often, while production staff participate less, which can skew the commuting profile towards certain work patterns or vehicle types.
To improve data accuracy in future inventories, Topsil is evaluating options to pre-program more answer categories in the survey. Allowing employees to select their vehicle brand and model would enable the use of predefined technical values (e.g., typical fuel consumption, drivetrain, battery range). This would create a more standardised and controlled dataset and reduce dependence on personal estimations.

For 2025, the survey instead included additional questions not directly required for GHG reporting—such as the employee's work area on site and whether they work day shifts, night, or weekend shifts. While not necessary for emission calculations, this information will support more targeted internal communication efforts, awareness campaigns, and initiatives aimed at increasing participation and potentially improving the quality of future CO_2e data.

Despite the remaining uncertainties, the improved response rate marks a positive development, and further refinements to both survey design and data handling are expected to enhance reliability in upcoming reporting cycles.

4.8.2 Data quality for imported energy emissions (Scope 2) is very high.

In 2025, Topsil received complete Scope 2 electricity data directly from the electricity supplier. The supplier applies recognised GHG Protocol methods using both the location-based and market-based approaches:

Location-based

- Uses the average Danish grid emission factor from Electricity Maps (volume-weighted national carbon intensity).
- Calculated as: Consumption (kWh) × Grid emission factor (kg CO_2e/kWh).

Market-based

- Based on electricity declarations and Guarantees of Origin (GOs).
- Residual emissions are calculated using the AIB (which only include CO2) residual emission factor.
- Calculated as: Residual consumption (kWh) × Residual emission factor (kg CO_2e/kWh).

All supplier-provided values have been cross-checked against Topsil's electricity invoices to secure consistency and accuracy. Because the methodology is transparent, externally governed, and supported by audit-ready documentation, Scope 2 data quality is assessed as very high.
In contrast, employee commuting data carries higher uncertainty due to self-reported inputs and limited technical knowledge among respondents

4.9 Comparison with selected base year

In accordance with ISO 14064-1:2018, organisations must select a base year that reflects normal operating conditions and allows consistent tracking of greenhouse gas performance over time. Topsil has retained 2021 as the base year, as it represents a stable reference point for historical comparison and provides continuity in long-term emissions reporting.

The commissioning of Topsil's solar park in January 2025 significantly changed the company's Scope 2 profile by replacing grid-based electricity with on-site renewable generation. While this marks an important structural improvement in Topsil's energy supply, it does not alter the role of 2021 as the established baseline for evaluating year-to-year developments. Maintaining 2021 as the base year ensures methodological consistency and supports comparability across the full reporting period, in line with ISO 14064-1 principles on transparency, completeness and accuracy.

Topsil continues to present a complete time series from 2021 onwards, enabling stakeholders to understand both the long-term trajectory of Scope 1 and Scope 2 emissions and the impact of major operational changes such as the transition to renewable electricity in 2025. This approach ensures that historical trends remain visible while still acknowledging significant improvements in the company's energy and emissions profile

Emission category	Reporting period 2021 (Former base Year) tCO_2e	Reporting Period 2022 tCO_2e	Reporting period 2023 tCO_2e	Reporting period 2024 tCO_2e – location-based energy emissions factor	**Reporting period 2025 tCO_2e – location-based energy emissions factor- (base year)**	**Reporting period 2025 tCO_2e – market-based energy emissions factor- (base year)**
Scope 1, Category 1, Company Cars	19,8	13	3	2	**1,6**	**1,6**
Scope 2, Category 2, Electricity	1095	1303	1105	1049	**3,32**	**0**
Total CO2e	1115	1316	1108	1050	**4,92**	**1,6**

4.9.1 Scope 1: Development in company car emissions

Company-car emissions decreased from 2.0 tCO_2e in 2024 to 1.6 tCO_2e in 2025. The year-on-year reduction is mainly attributable to a smaller company-car fleet. During the last quarter of 2025, Topsil operated with four company cars instead of five, which naturally lowered the total kilometres driven. Driving behaviour and route patterns changed only marginally, so a modest reduction in emissions was anticipated.

Although the total activity level remained relatively stable, the reduction reflects the structural impact of operating fewer vehicles rather than significant changes in driving efficiency or energy mix. The emission intensity per kilometre remained largely unchanged, indicating that the underlying carbon performance of the fleet is consistent with previous years.

In addition, the gradual shift toward a more electrified and energy-efficient fleet continues to stabilise Topsil's Scope 1 emissions. Even small operational adjustments—such as optimising car usage, consolidating trips or reducing the number of active vehicles—have a measurable effect when the overall emission baseline is already low.

Overall, Topsil's Scope 1 emissions from company cars remain at a low and stable level. The development in 2025 reflects both the effect of having a slightly smaller fleet and the continued long-term benefits of transitioning away from higher-emission vehicle types. This supports the company's overall decarbonisation trajectory and aligns with ongoing efforts to minimise operational emissions where possible.

4.9.2 Scope 2 Electricity emissions – location vs. market-based methods

Scope 2 results for 2025 show a marked difference between the location-based and market-based methods, as required by the GHG Protocol:

Location-based

- 2025 emissions: 331 tCO_2e
- Based on Danish grid-average carbon intensity.
- Represents the emissions Topsil would have if no renewable energy certificates were purchased.

Market-based

- 2025 emissions: 0 tCO_2e
- Topsil's entire annual electricity consumption is matched with cancelled Guarantees of Origin, verified by the supplier.
- Residual consumption is 0 kWh, resulting in no market-based emissions.

The location-based result reflects the physical emissions of electricity delivered via the national grid, whereas the market-based result reflects Topsil's procurement decisions and the contractual attributes of the electricity purchased.

Reporting both values provides full transparency, ensures compliance with ISO 14064-1 and the GHG Protocol, and demonstrates that while Topsil has effectively eliminated market-based Scope 2 emissions through renewable procurement, Scope 2 remains a small part of the company's total footprint. The most material climate impacts—and reduction opportunities—continue to lie in Scope 3 value-chain emissions.

4.9.3 Total CO_2e Trends and Considerations

Topsil's total Scope 2 emissions (location-based and market-based) have changed significantly over the three-year period:

Location-based emissions
2023: ca. 1,114 tCO_2e
2024: 1,050 tCO_2e → reduction of 64.8 tCO_2e driven by efficiency gains and grid decarbonisation

2025: 331 tCO_2e → major reduction due to continued grid improvements and full utilisation of on-site solar capacity

Market-based emissions
2023: ca. 3,480 tCO_2e (high due to full exposure to the fossil-heavy residual mix)
2024: 3,481 tCO_2e (largely unchanged; no renewable certificates retained)
2025: 0 tCO_2e, due to cancellation of Guarantees of Origin (GOs) covering 100% of annual consumption

Interpretation of the trend
The location-based trend demonstrates a consistent downward trajectory, reflecting both operational improvements and the decarbonisation of the Danish power system. The market-based trend, in contrast, shows that Topsil's emissions remained high until 2025, when the company's procurement strategy shifted toward fully certified renewable electricity. Achieving 0 tCO_2e market-based emissions in 2025 marks a significant milestone, aligning Topsil with GHG Protocol best practice and positioning the company more competitively in customer dialogues—especially as more clients require product-level CO_2e documentation.

However, the results also highlight that Scope 2 contributes only a small fraction of Topsil's total GHG footprint. The largest emissions—and the most meaningful reduction potential—remain in Scope 3, particularly raw-material production and global transport activities.

CHAPTER 5 GHG REDUCTION TARGETS AND MITIGATION ACTIONS

Topsil continuously works to identify and implement measures that can reduce or eliminate greenhouse-gas emissions across the organisation. Our mitigation efforts are structured around three interconnected areas:

Internal mitigation activities within Topsil's own operations,
Engagement with suppliers to drive Scope 3 reductions, and
Collaboration with customers to lower emissions linked to products and downstream logistics.

In 2025, Topsil advanced to a more mature phase of climate work, supported by a strengthened Environmental Management System (EMS) and Energy Management System (EnMS) following organisational restructuring. These systems now provide clearer process ownership, improved documentation flows and stronger tools for performance tracking. This allows Topsil to evaluate mitigation opportunities more systematically and anchor GHG-reduction actions in daily operations. The following subsections outline the key internal initiatives undertaken in 2025.

5.1 Internal mitigation activities - achieving RE100 and generating surplus renewable energy

In 2025, Topsil achieved its RE100 target ahead of schedule, as the newly commissioned solar park generated more renewable electricity than the site consumed during the year. This milestone eliminates market-based Scope 2 emissions and represents a decisive step toward long-term renewable energy self-sufficiency.

To maximise on-site utilisation of the solar park, Topsil enables employees to charge electric and plug-in hybrid vehicles at a favourable rate using company-owned charging stations. Whenever possible, these chargers draw directly on electricity from the solar installation, supporting low-emission commuting and further increasing the share of renewable energy used within our operational boundary.

While these internal mitigation activities significantly reduce Topsil's direct (Scope 1) and indirect energy-related (Scope 2) emissions, they must be viewed in the broader context of the company's total carbon footprint. Like most manufacturing companies with energy-intensive and material-dependent processes, Topsil's Scope 3 emissions constitute the vast majority of total emissions, far exceeding the combined impact of Scope 1 and Scope 2. This is primarily driven by the extraction, processing and transport of raw materials — areas where Topsil has limited direct control and is therefore "bound" by the carbon intensity of upstream suppliers and global commodity markets.

Despite this constraint, Topsil continues to work actively with suppliers to improve transparency, encourage low-carbon material options and support long-term decarbonisation efforts in the value chain. However, meaningful reductions in Scope 3 emissions require structural changes in raw-material production, availability of low-carbon alternatives and broader market transformation — developments that extend beyond Topsil's operational boundary.

Looking ahead, Topsil is preparing for increased energy demand. Future options include expanding the solar installation, integrating wind energy or combining multiple renewable sources to ensure sufficient coverage during seasonal or weather-related variability. These initiatives strengthen Topsil's position on Scope 1 and Scope 2, while long-term progress on Scope 3 will depend on continued supplier engagement, technological innovation and the decarbonisation of global material supply chains.

5.1.1 Local energy collaboration and storage initiatives

To enhance energy resilience and maximise the value of surplus renewable electricity, Topsil has initiated discussions with other companies in the local area regarding shared battery-storage solutions, potential energy-sharing models and solar–wind balancing. Such collaborations may help stabilise local energy supply, reduce grid dependency during low-generation periods, and create mutual benefits across the local energy ecosystem. Optimization of production process – energy efficiency in fz process.

5.1.2 Strengthening EMS and EnMS after organisational restructuring

The organisational changes implemented in 2025 resulted in a full review and refinement of the EMS and EnMS. Enhancements include:

- clearer allocation of process responsibilities,
- updated procedures and documentation flows,
- stronger monitoring of environmental and energy indicators, and
- improved integration of energy performance into operational decision-making.

These updates ensure compliance with ISO 14001 and ISO 50001, and they give Topsil a stronger foundation for tracking progress, identifying new opportunities and supporting long-term decarbonisation.

5.1.3 Energy efficiency and optimisation of the FZ process

The FZ process remains Topsil's most energy-intensive production activity. Targeted optimisation projects—including improved monitoring, process adjustments and equipment upgrades—aim to reduce electricity consumption per kilogram produced.

Topsil operates with an internal KPI requiring at least 2% annual improvement in energy intensity. Since 2021, these efforts have contributed to an approximate 38% reduction in location-based CO_2e per kg product, demonstrating the long-term effectiveness of process optimisation and renewable energy integration.

5.1.4 Waste minimisation and reduction of high-impact fractions

Beyond energy-related initiatives, Topsil has intensified its work on minimising residual waste and reducing GHG-intensive waste fractions. Key efforts in 2025 include:

- improving waste sorting to increase reuse and recycling,
- reducing fractions requiring high-temperature treatment,
- strengthening data quality through the new waste-handling provider,
- prioritising circular practices and resource efficiency in production.

These measures help reduce treatment-related emissions while also decreasing reliance on virgin materials upstream.

5.1.5 Overall impact and next steps

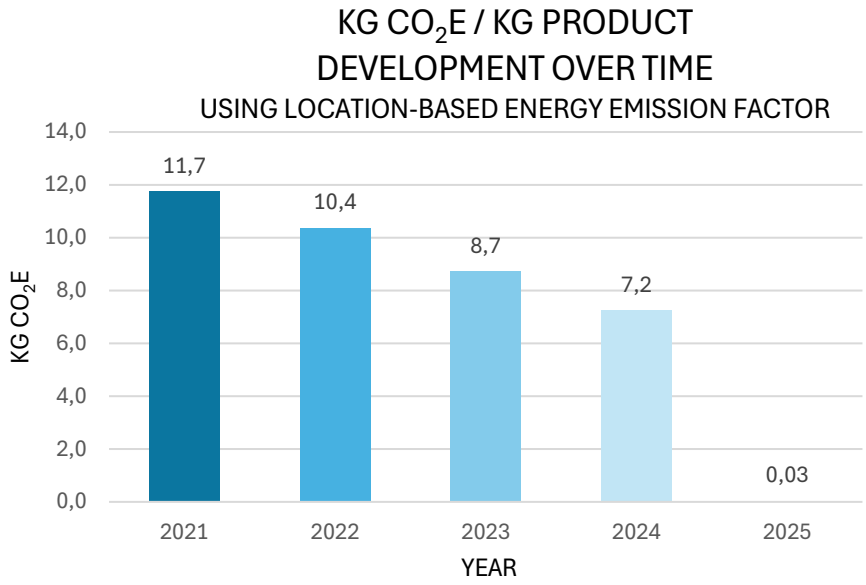
The internal mitigation activities carried out in 2025 mark a transition from isolated initiatives to a fully integrated, data-driven mitigation strategy. Renewable energy generation, energy efficiency, local partnerships, waste minimisation and improved management systems now reinforce each other and form a strong foundation for future climate action.

Together with supplier engagement and customer collaboration, these efforts position Topsil to meet increasing expectations for product-level emissions transparency and contribute meaningfully to long-term decarbonisation across the value chain.

5.1.6 Explanation of Trends in Scope 1 and Scope 2 Emissions (2021–2025)

The development in Topsil's Scope 1 and Scope 2 emissions over the period 2021–2025 shows a distinct structural shift in 2025, driven by the commissioning of the company's solar park and the transition to fully renewable electricity. The graphs below illustrate how Topsil's carbon intensity (kg CO_2e per kg product) has decreased steadily since 2021, culminating in a near-zero result in 2025.

This trend is confirmed by the underlying inventory data:



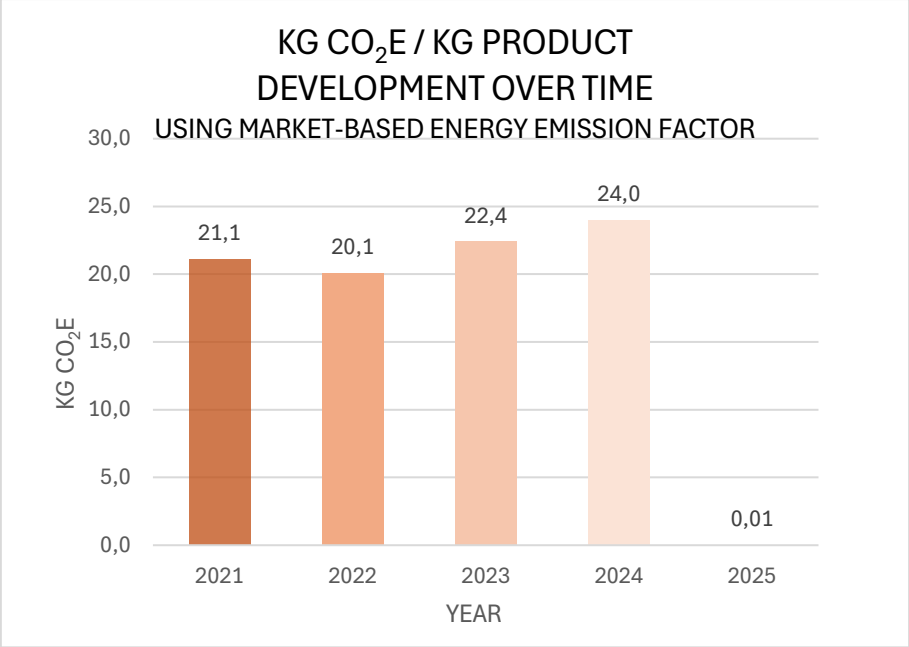
Location-based explanation
Under the location-based method, emissions reflect the carbon intensity of the Danish grid. Because Topsil still imports a limited amount of electricity during low-generation hours, Scope 2 is not completely eliminated, but reduced to 3.32 tCO_2e. When normalised per kg of final product, this results in an emissions intensity that approaches zero, consistent with the downward trend shown in the graph.

Market-based explanation
Under the market-based method, the effect is even stronger. Topsil cancelled Guarantees of Origin covering more than the total annual electricity consumption, meaning 0 tCO_2e is allocated for Scope 2 in 2025. This explains the sudden and complete drop in the market-based graph from ~24 kg CO_2e/kg in 2024 to 0 kg CO_2e/kg in 2025.

- 2021–2024: Scope 2 dominates the footprint (particularly market-based), resulting in higher kg CO_2e/kg values.
- 2025: Renewable electricity supply and solar-park overproduction eliminate market-based emissions and nearly eliminate location-based emissions.
- Scope 1 emissions (company vehicles) remain very small and have minimal influence on the total kg CO_2e/kg indicator.

Thus, the 2025 results represent a fundamental shift in Topsil's energy profile:
Scope 2 is no longer a material contributor to Topsil's carbon footprint.

This also means that future reductions will depend far more on process efficiency, waste streams and Scope 3-related emissions, rather than electricity procurement.



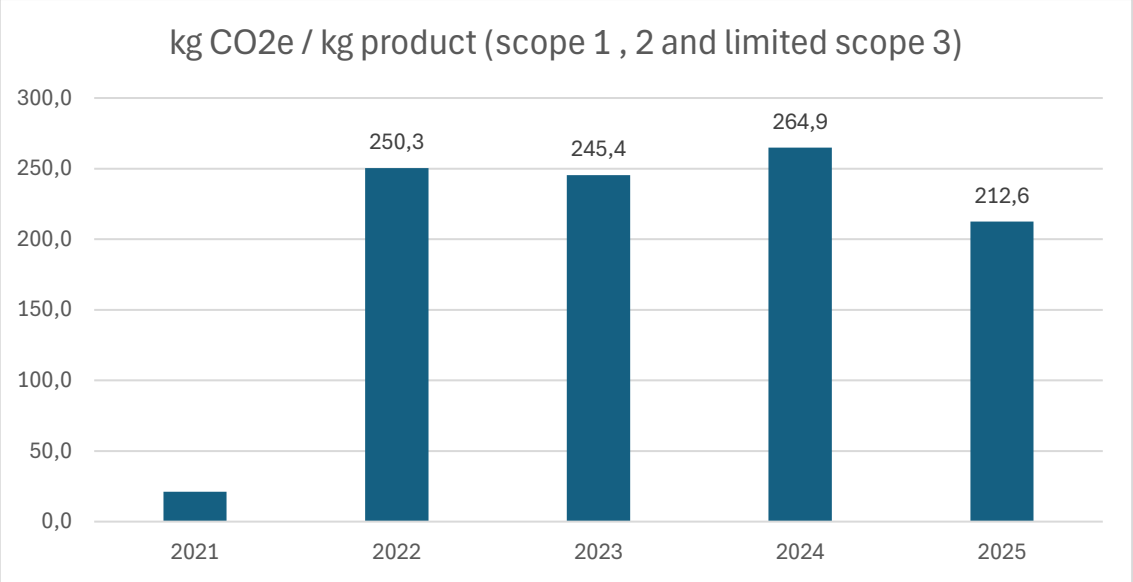
5.1.7 Influence of Increased Production on Total Emissions (2021–2025)

Topsil's 2025 results must also be interpreted in light of a significant increase in production output. The volume of finished product rose from 145.0 tons in 2024 to 163.9 tons in 2025, continuing the growth from previous years (127.0 tons in 2022–2023 and 95.0 tons in 2021).

Under normal circumstances, higher production would be expected to increase absolute emissions, as a larger output typically results in higher electricity consumption, more process operations and additional waste generation. Despite this, Topsil's total emissions — particularly for Scope 2 — declined sharply in 2025.

This demonstrates that the structural shift to renewable electricity now outweighs the emissions typically associated with increased production volumes. Because the solar park generated more electricity than the factory consumed, and because all electricity used on-site was matched with cancelled Guarantees of Origin, Topsil's Scope 2 emissions fell to almost zero under both the location-based and market-based methods.

In other words, Topsil was able to scale production while reducing absolute emissions, meaning that carbon performance improvements are now driven primarily by renewable-energy supply, process efficiency and internal optimisation rather than changes in production volume. The kg CO_2e per kg product indicator therefore becomes an even more meaningful representation of Topsil's true climate performance.



The graph presents Topsil's total greenhouse gas emissions per kilogram of product, covering Scope 1, Scope 2 and our limited Scope 3 inventory. Including Scope 3 provides a more complete picture of our carbon footprint, but it also introduces complexity: the total Scope 3 emissions vary from year to year depending on how many suppliers are included in the inventory and the level of data available from each of them. As our supplier coverage expands, the reported emissions may increase or decrease independently of operational changes, reflecting improvements in data completeness rather than shifts in actual performance.

Scope 3 data were not collected in 2021 which explains the significantly smaller bar for that year compared to subsequent years. From 2022 onwards, limited Scope 3 categories have been incorporated, enabling a more representative—though still evolving—view of Topsil's upstream emissions intensity.

5.2 Working with suppliers on Scope 3 reductions — introduction

As shown in Section 4.5, the majority of Topsil's GHG inventory arises in Scope 3. Continued engagement with suppliers is therefore essential to deliver material emissions reductions across the value chain. In practical terms, this means moving from ad-hoc requests to a structured, data-driven supplier program that combines clear expectations, comparable metrics, and targeted support.

5.2.1 Green procurement as the starting point

Environmental considerations are now becoming a more consistent part of Topsil's purchasing decisions. This includes reviewing how suppliers produce their goods, the type of energy they use, how materials are transported, and how waste and packaging are handled. Contracts and purchasing documents are gradually being updated so that environmental expectations are clearer, and suppliers know which improvements will be required over time.

5.2.2 Developing suppliers where it matters most

Not all suppliers have the same impact on Topsil's emissions. Some—especially raw-material suppliers and logistics partners—are responsible for a very large share of the footprint. Together with the environmental group in GlobalWafers, Topsil is beginning to assess these suppliers more systematically. This includes identifying gaps, setting concrete expectations for improvement, and following up on progress.

The goal is to help key suppliers strengthen their energy use, renewable-energy share, waste handling and general environmental performance, as well as improve the quality of the data they provide.
Key tools and standards for supplier development may include:

5.2.3 Building a stronger Supply Chain Management system

To support this work, Topsil is preparing to introduce a new supply-chain management system. The intention is to create a more complete and structured overview of supplier performance—not only on environmental aspects, but also on broader sustainability topics such as working conditions, safety, transparency, governance and ethical conduct.

The system will make it possible to evaluate suppliers across a wider range of parameters and compare them on a fair and consistent basis. Over time, this supplier scorecard will help Topsil prioritise collaboration, identify which suppliers are ready to work on joint improvements, and ensure that procurement decisions support both climate goals and long-term supply-chain resilience.

By combining greener procurement practices, targeted supplier development and a stronger supply-chain management system, Topsil positions itself to:

- reduce Scope 3 emissions where reductions are most meaningful,
- strengthen the quality and transparency of supplier data,
- and build long-term relationships with partners who support the shift toward a more sustainable value chain.

This integrated approach reflects the growing importance of supply-chain collaboration for meeting customer expectations, regulatory developments and Topsil's own climate ambitions.

5.2.4 New waste handler

In the summer of 2025, Topsil transitioned to a new waste handler to strengthen the environmental performance of its waste management system. The change was motivated by the need for higher data quality, improved transparency, and better alignment with Topsil's long-term climate objectives. The new provider offers more detailed and structured information on waste fractions, treatment routes, and associated CO_2 emissions, enabling a more accurate and reliable representation of waste-related Scope 3 impacts.

A portion of the waste stream continues to be managed by the previous supplier, as the specific characteristics of that fraction require specialized handling and treatment that cannot yet be transferred. Nevertheless, the improved data access from the new handler allows Topsil to monitor

waste composition and downstream processes with greater precision, supporting the company's goal of gradually reducing residual waste.

Topsil is actively pursuing opportunities to increase the circularity of its waste fractions. Several waste types are currently undergoing technical assessment to determine whether they can be repurposed or integrated into external production systems, rather than being treated as end-of-life waste. This work requires coordination across technical, operational and environmental disciplines, but it represents a key priority within Topsil's broader sustainability strategy.

5.2.5 Enhanced data collection from suppliers

Efforts to improve emissions transparency across purchased goods and services are ongoing, with several key suppliers working on CO_2 data collection systems that align with recognized methodologies.

Coffee Supplier

Although coffee represents only a negligible share of Topsil's total emissions, it remains a product with a disproportionately high environmental impact. Beyond CO_2 emissions associated with processing and transportation, coffee production is often linked to biodiversity loss, pesticide use, poor labor conditions, and deforestation. These broader sustainability concerns underline the relevance of monitoring this category, even if its quantitative climate impact is limited.

One of Topsil's coffee suppliers has committed to the Science Based Targets initiative (SBTi) and has developed a formal action plan outlining how the company will reduce its CO_2 emissions in line with recognised climate-science pathways. This commitment strengthens the supplier's credibility and supports more transparent emissions reductions throughout the value chain. As Topsil increasingly focuses on Scope 3 improvements, collaborating with suppliers who actively work to lower their own climate footprint becomes particularly important.

Given this development, gaining improved insight into supplier-specific CO_2 data—including farming practices, sourcing models, and logistics—will be relevant for future assessments and for ensuring that even small emission sources are aligned with Topsil's broader sustainability objectives.

Suppliers of Corporate Gifts, Merchandise, and Workwear

Similarly, Topsils gifts, merchandise, and workwear suppliers are actively engaged in the complex process of collecting CO_2 data for their products. This requires them to gather emissions data from their own suppliers, making it a lengthy but essential effort to improve supply chain transparency.

As data systems mature, they will provide a more detailed and accurate picture of Scope 3 emissions from purchased goods and services, strengthening supplier collaboration as a key strategy for achieving comprehensive and lasting GHG reductions across the value chain.

5.3 Expectations and collaborations with customers

Customers increasingly request simple, reliable and product-specific climate data, because they need to understand exactly how our products influence their own environmental footprint. Even suppliers and customers who are not yet required to report under CSRD are beginning to ask for clearer documentation, data they can reuse directly, and practical support in meeting their own sustainability goals.

To meet these expectations, Topsil is not only improving transparency but also shifting towards product-level data, where emissions are linked to individual wafer types, production steps or energy use. This is becoming a natural part of commercial discussions, tender processes and long-term customer relationships.

Customers are asking for:

- Clear and traceable data tied directly to the products they purchase
- Full visibility of how our processes and energy use affect their supply chain
- Constructive collaboration on how to reduce emissions together over time

Topsil already works within recognised management systems (ISO 14001, ISO 50001, ISO 45001 and ISO 14064-1), which strengthens data reliability. But as customer expectations grow, we must strengthen our ability to deliver more granular, product-specific climate data and communicate it in a way that supports purchasing decisions, compliance and joint improvement initiatives.

Looking forward, we expect customers to look beyond carbon alone and include broader ESG themes. This means that data quality, transparency and practical collaboration will become even more important in how we support customers and compete in the market.

5.4 Customer driven emissions – the role of transportation

Transportation remains one of Topsil's largest customer-driven emission sources, as our products are shipped globally and often under tight delivery requirements. Air freight continues to dominate due to short lead times, frequent late order changes and urgent customer requests, all of which make slower transport modes difficult to apply. This significantly increases logistics-related GHG emissions.

Topsil is, however, increasingly working to transition suitable shipments to sea freight, which has a far lower climate impact per tonne-kilometre. This shift is only possible through closer collaboration with customers, including clearer delivery windows, earlier purchase-order confirmations, and more reliable long-term demand forecasts. Better forecasting enables earlier production planning and consolidated shipments, both of which are essential to expanding the use of low-emission transport modes.

In 2025, a growing share of customers began requesting product-level emissions data, which makes the climate impact of transportation far more visible in their own value-chain reporting (Scope 3). As this becomes standard practice across the industry, the incentive to jointly reduce transport emissions

increases. Customers now have a direct interest in lowering air-freight dependency because it reduces the embedded emissions of the products they purchase.
Transitioning from air to sea freight is still challenged by:

high demand for FZ material and limited global production capacity,
customer expectations for immediate or rapid delivery, and
rapidly changing order patterns that restrict the ability to plan shipments efficiently.

Nevertheless, engaging customers in mutual expectation-setting and shared logistics planning will be a critical lever going forward. By aligning on longer delivery horizons, stabilising order behaviour and improving forecast accuracy, Topsil and its customers can jointly reduce emissions, costs and supply-chain volatility.

As transportation forms part of customers' own Scope 3 emissions, the need for transparency, collaboration and advanced planning will only grow. Strengthening these partnerships is essential for developing logistics solutions that are both operationally viable and aligned with the sector's climate ambitions.

5.5 Integration with financial and sustainability reporting

Topsil is still not formally in scope for the EU's Corporate Sustainability Reporting Directive (CSRD), including after the Omnibus adjustments. Nevertheless, the company continues to strengthen its GHG inventory and broaden the level of detail in its reporting. As outlined throughout this report, Topsil now works more systematically to identify reduction opportunities, evaluate cost–benefit impacts, and track performance improvements over time.

Although CSRD does not apply, the underlying frameworks — including the ESRS standards, the EU Taxonomy and double materiality principles — remain valuable tools for structuring ESG work. Using these frameworks voluntarily supports better decision-making, improves risk awareness, and ensures that Topsil's sustainability reporting remains aligned with emerging customer expectations and international best practice.

By further integrating GHG data into financial and operational planning, Topsil is strengthening accountability and preparing for a future where product-level emissions, data transparency and supply-chain documentation will become essential, regardless of formal regulatory scope.

CHAPTER 6 DATA QUALITY MANAGEMENT AND VERIFICATION

6.1 Internal quality assurance and quality control

An internal first-party verification of data, methods and calculations was carried out on 13 March 2025 by Topsil's Quality Department. Findings were incorporated before finalising the GHG inventory. The internal QA/QC process included basic checks of data completeness, consistency, and traceability across Scopes 1–3.

6.2 External Verification and statement

This greenhouse gas report underwent independent third-party verification by Bureau Veritas on 14 March 2025. The verification was performed in accordance with ISO 14064-1:2018 and ISO 14064-3:2018, including a review of data sources, calculation methods, boundaries, and internal controls. A formal verification statement will be issued upon completion in line with the agreed assurance scope and procedures.

6.3 Final statements

- This report has been prepared in accordance with the requirements of ISO 14064-1:2018 and reflects Topsil's established GHG inventory methodology.

- The internal approval and quality-assurance processes applied prior to publication follow Topsil's GHG inventory procedures, including documentation, verification readiness, and record-keeping.
- The report serves as an official internal document for GHG management, third-party verification, external reporting, and long-term archiving, as defined in our organisational procedures.
- The report becomes effective upon publication and remains valid until it is revised or withdrawn in accordance with Topsil's document-control processes.
- The report has been prepared by Kristine Bergstein, Sustainability Manager and member of the GHG Management Committee.
- The report has been reviewed and commented on by Nadia Arp, member of the GHG Management Committee.

CHAPTER 7 REFERENCES

Standards & Frameworks

• ISO 14064-1:2018 — Greenhouse gases: Specification with guidance at the organization level for quantification and reporting of GHG emissions and removals.
• ISO 14064-3:2018 — Greenhouse gases: Specification and verification for GHG assertions.
• ISO 14001:2015 — Environmental Management Systems (referenced in integration section).
• GHG Protocol Corporate Standard (WRI/WBCSD).
• GHG Protocol Scope 2 Guidance — Location-based and Market-based methodology.

IPCC & scientific sources

• 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
• 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
• IPCC Sixth Assessment Report (AR6), 2021.
• AR6 WG1 Chapter 7 – The Earth's Energy Budget, Climate Feedbacks and Climate Sensitivity (incl. Table 7.SM.7 for GWPs).

Electricity & energy data sources

• Electricity Maps — National grid-average carbon intensity for Denmark (used for Scope 2 LB).
• AIB (Association of Issuing Bodies) — Residual Mix & Residual Emission Factors (used for Scope 2 MB).

Transport & vehicle emission methodologies

• ICCT Global Vehicle LCA – White Paper (2021).

• GLEC Framework (Global Logistics Emissions Council) — Standardised freight CO_2 methodology
• EN16258 — Methodology for calculating and declaring energy consumption & GHG emissions of transport services
• 1.A.3.b.i-iv Road Transportation 2023 (updated 2025) p. 56, table 3-28
(EMEP/EEA air pollutant emission inventory guidebook 2023, updated 2025, published by European Environment Agency

CHAPTER 8 ABBREVIATIONS

AIB – Association of Issuing Bodies (EU body issuing Residual Mix and Residual Emission Factors)
CH_4 – Methane
N_2O – Nitrous Oxide
CO_2e – Carbon dioxide equivalent
CIP – Carriage and Insurance Paid To (Incoterm; seller covers transport and insurance costs to agreed destination)
CSRD – Corporate Sustainability Reporting Directive
DAP – Delivered At Place (Incoterm; seller covers cost and risk until the goods reach buyer's location)
EMS – Environmental Management System
EnMS – Energy Management System (ISO 50001)
ESRS – European Sustainability Reporting Standards (CSRD reporting rules)
EURO 4 – EU vehicle emissions standard for pollutant limits (cars registered after 1/1/2006)
FZ – Float Zone (crystal-growth process for high-purity silicon)
GHG – Greenhouse gas
GHG Protocol – Greenhouse Gas Protocol Corporate Standard
GoO – Guarantee of Origin (renewable electricity certificate)
GWP – Global Warming Potential (IPCC metric converting CH_4/N_2O to CO_2e)
GW – GlobalWafers
IPCC – Intergovernmental Panel on Climate Change
KPI – Key Performance Indicator
LCA – Life Cycle Assessment
LB – Location-Based (Scope 2 method using grid-average emission factor)
LTA – Long-Term Agreement

MB – Market-Based (Scope 2 method reflecting contractual energy attributes)
PCF – Product Carbon Footprint (cradle-to-gate emissions per product)
PPA – Power Purchase Agreement (contract to buy renewable electricity directly from a generator)
REC – Renewable Energy Certificate
RE100 – Global corporate initiative committing to 100% renewable electricity
SBTi – Science Based Targets initiative
SEU – Significant Energy Use (ISO 50001 term)
SI-unit – International System of Units
tCO_2e – Tons of CO_2-equivalent emissions
WtW – Well-to-Wheels (full fuel cycle emissions)