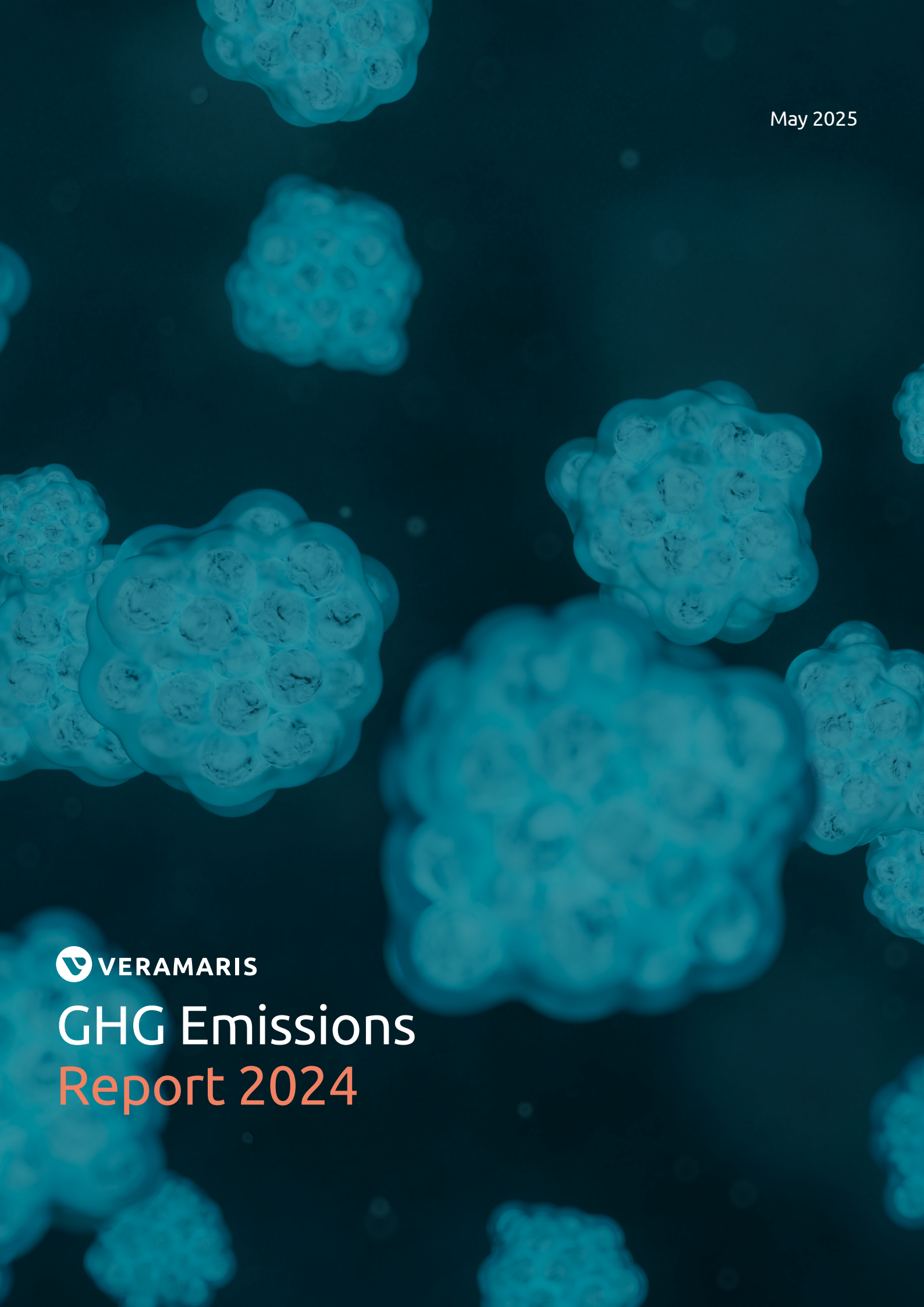

May 2025

VERAMARIS

# GHG Emissions Report 2024

# Veramaris® GHG Emissions Report 2024

**In August 2022, Veramaris committed to reducing its greenhouse gas (GHG) emissions by setting a science-based target (SBT) aimed at urgently limiting global warming to below 1.5°C. Veramaris committed to achieve a 38% reduction in absolute Scope 1 and Scope 2 emissions by 2030 from a 2021 base year.**

Subsequently, in December 2023, Veramaris announced a Scope 3 GHG reduction target to reduce absolute Scope 3 emissions by 22.5% by 2030, also from a 2021 base year, further building on the company's climate commitments.

**Overall, these goals mean that we will reduce our absolute annual GHG emissions by a total of 12 thousand tonnes $CO_2e$ by 2030, baseline 2021.**

We have used the CDP Climate Disclosure Framework for Small and Medium-Sized Enterprises (SMEs) to prepare this disclosure of Veramaris' emissions inventory and report progress against our targets.

## Calculation methodology:

The emissions have been calculated in accordance with the GHG Protocol. Emissions in the following Scopes are calculated and reported:

| Scope | Category | Description |
|---|---|---|
| 1 | | The direct emissions occurring from plants owned by Veramaris. |
| 2 | | Indirect emissions occurring from the generation of energy purchased by Veramaris (excl. emissions in Scope 3.3. |
| 3 | 1 Purchased goods and services | Emissions associated with the production of raw materials purchased by Veramaris |
| 3 | 3 Fuel and energy-related activities | Emissions associated with the upstream value chain of fuels and energy generation from the energy purchased by Veramaris (excl. emissions in Scope 2). |

The GHG reporting is focussing on these Scopes and categories due their relevance.

**Scope 1:** Veramaris' production process solely results in biogenic $CO_2$ emissions. For the emission reporting, these biogenic $CO_2$ emissions are omitted.

**Scope 2:** Veramaris consumes electricity and steam. For electricity, a market-based approach has been used and it therefore has been assumed that none of the emissions occur in Scope 2 as the electricity is 100 % renewable. The renewable electricity is secured from Renewable Energy Certificates (RECs), partly from Power Purchase Agreements (PPAs). The emissions associated with the purchased steam have been split up into Scope 2 and Scope 3.3. The proportion occurring during the incineration of fuel are accounted in Scope 2.This has been done by calculating the proportion of emissions coming from the steam generation and from the fuel supply, respectively. The efficiency of the steam generation was reassessed in 2022 (compared to 2021). The reassessment concluded that the efficiency of the boiler is slightly lower than before. This efficiency adjustment has been considered in the emission calculation from steam for 2022 onwards.

**Scope 3:** At least 95% of the raw material amount purchased by Veramaris are considered in the emission calculation. For the majority of the raw materials, data from Sphera's Managed LCA Content database from 2024 has been used. For Dextrose, the main raw material, primary data for the Suppliers' Product Carbon Footprint has been used. The uptake of biogenic $CO_2$ in the corn is omitted in this reporting.

A significant share of the emissions associated with Dextrose come from the corn cultivation. Therefore, in 2023, Veramaris started participating in the RegenConnect® programme of Cargill. The purpose of this programme is to establish sustainable agriculture practices in order to improve soil health and at the same time sequester $CO_2e$ in the soil. Associated emissions removals & reductions contribute to reducing Veramaris' Scope 3 emissions. As of spring 2025, there is no guidance on how to account for soil carbon sequestration as it is practiced within the RegenConnect® programme. It is expected that the GHG Protocol Land Sector and Removals Guidance which was postponed to the end of 2025 (and has not been published as of date of publication of this document) will bring clarity. In the absence of an official guidance, it has been decided to account the Verified Emission Reductions (VERs) as a reduced Dextrose carbon footprint and thus as a reduction of Scope 3.1 emissions. For transparency reasons, we have also included parallel reporting (with and without VERs). Once guidance on the correct accounting is available, this will be followed. The emissions from fuel and energy related activities are associated with the electricity and steam consumption of Veramaris. The emissions associated with the generation of renewable electricity is accounted in Scope 3.3. The emissions associated with the purchased steam have been split up into Scope 2 and Scope 3.3. The upstream emissions (everything but the incineration of the fuel) are accounted in Scope 3.3.

## Limitations:

We decided to not report Scope 1 and 2 emissions for the reporting year, in metric tons $CO_2e$, per unit of physical activity or economic output. This is because the company operates with one facility and does not disclose production volumes and revenues at facility level. Instead of this, we share our product footprint data directly with customers via an Environmental Product Declaration (EPD).

## Excluded emissions:

Biogenic $CO_2$ emissions have been excluded. Since the biogenic $CO_2$ emissions and biogenic $CO_2$ uptake (from uptake of $CO_2$ during plant growth) are expected to compensate for each other, their exclusion is considered of limited significance. Biogenic $CO_2$ removals associated with the soil carbon sequestration from the RegenConnect® program of Cargill are considered as they are expected to be permanently removed from the atmosphere.

Emissions from other Scope 3 categories beyond category 1 and category 3 are not reported.

## Emissions data:

In 2024, the absolute emissions including Verified Emission Reductions (VERs) from Cargill's RegenConnect® program decreased compared to 2023 – despite an increase in production volume. This was achieved by increasing amount of VERs used to reduce the emissions in Scope 3 and through operational improvements in steam and dextrose efficiency.

| t $CO_2e$ | 2030 (Target) | 2024 | | 2021 (Baseline) |
|---|---|---|---|---|
| | | Incl. VERs[1] | Raw | |
| Scope 1 | 0 | 0 | | 0 |
| Scope 2 | 6.9 | 7.8 | | 11.1 |
| Scope 3 | 27.1 | 35.7 | 40.7 | 35.0 |
| Total | 34.0 | 43.5 | 48.5 | 46.1 |

**Notes:**
[1]Includes Verified Emissions Reductions (VERs).

## MEASUREMENTS:

Summary table for absolute emissions data:

| Scope | Units | Reporting Year 2024 | Baseline Year 2021[3] |
|---|---|---|---|
| Total Energy Consumption | GJ Electric<br>GJ Thermal | 402,640<br>127,218 | 377,470<br>184,437 |
| RECs/PPAs Purchased | GJ Electric | 402,640 | 310,658 |
| Renewable energy in grid mix[1] | GJ Electric | 0 | 66,812 |
| Scope 1 | t $CO_2e$ | 0 | 0 |
| Scope 2 | t $CO_2e$ | 7,808 | 11,079 |
| Scope 3.1 (incl. Verified Emission Reductions[2]) | t $CO_2e$ | 32,307 | 29,673 |
| Scope 3.1 (excl. Verified Emission Reductions[2]) | t $CO_2e$ | 37,306 | 29,673 |
| Scope 3.3 | t $CO_2e$ | 3,354 | 5,344 |
| Total emissions (incl. Verified Emission Reductions[2]) | t $CO_2e$ | 43,469 | 46,096 |
| Total emissions (excl. Verified Emission Reductions[2]) | t $CO_2e$ | 48,469 | 46,096 |

**Notes:**

[1]The electricity Veramaris uses is 100% renewable. This is achieved via RECs partly from PPAs. Since 2024, the renewable share of the grid mix is not accounted for Veramaris anymore hence the total electricity consumption is covered by RECs/PPAs.

[2] Scope 3.1 includes insetting of 5,000 tonnes of $CO_2e$ Verified Emissions Reductions (VERs) from Cargill's RegenConnect® program. Without, considering the VERs, the Scope 3.1 emissions would be 37,306 tonnes $CO_2e$ and the total Scope 3 emissions would be 40,660 tonnes $CO_2e$.

[3] The baseline year 2021 emissions represent the emissions as calculated for Veramaris' SBTi commitment. The emissions have not been recalculated since then.

## ACTION AND IMPACT:

Emission reduction initiatives

| Initiative | Start date | Estimated annual emissions savings in 2024 | Scope category where the emissions saving occurs |
|---|---|---|---|
| **Green electricity**<br>Until 2024, Veramaris purchased green electricity to compensate for the non-renewable share of the electricity mix that is consumed. Since 2024, the electricity provider offers the renewable share as separate product hence the total electricity demand had to be compensated for. The renewable electricity is secured from Renewable Energy Certificates (RECs), partly from Power Purchase Agreements (PPAs). | Since 2021 | Approx. 123,000 t $CO_2e$ | Mainly Scope 2 but also Scope 3.3 |
| **Process Improvement**<br>Sterilization procedures continue to be improved to increase fermentation output. Continuous improvement efforts also have increased yields which have reduced specific carbon footprint. In addition, further improvements in the plant (steam trap maintenance program, better heat integration, reduced compressed air usage) have all contributed to a lower carbon footprint. | Continuous | Approx. 1,300 t $CO_2e$ | Scope 2, Scope 3.1 and Scope 3.3 |
| **RegenConnect®**<br>In 2024, Veramaris participated in the RegenConnect® programme of Cargill. The purpose of this programme is to establish sustainable agriculture practices in order to increase soil health and at the same time sequester $CO_2$ in the soil. In the absence of an official guidance, it has been decided to account the Verified Emission Reductions (VERs) as a reduced Dextrose carbon footprint and thus as a reduction of Scope 3.1 emissions. | Since 2023 | 5,000 t $CO_2e$ | Scope 3.1 |

**(1) Green electricity:**
Calculated based on: Difference between emissions of electricity in 2024 with carbon footprint of the supplied electricity grid mix and the emissions of electricity in 2024 with a carbon footprint considering the PPAs and RECs (since 2024, the electricity provider offers the renewable share as separate product hence the total electricity demand had to be compensated for).

**(2) Process improvements:**
Calculated based on: Emissions reduction due to reduced specific steam and sugar demand in 2024 compared to 2023 (applying the respective emission factors from 2024). In the GHG Emission Report 2023, the process improvements had been compared with the base year 2021, for the GHG Emission Report 2024 it has been decided to compare it to the previous year.

## LEGAL NOTICE



**Veramaris® V.O.F**
Alexander Fleminglaan 1
2613AX Delft
Netherlands

**www.veramaris.com**

VERAMARIS