

CARBON FOOTPRINT MANAGEMENT PLAN

Kuohu Artesian Waters Oy, 2024–2025

Carbon Footprint Management Plan	
ORGANIZATION:	Kuohu Artesian Waters Oy ¹
MONTH / YEAR:	01/2026
VERIFICATION SCOPE:	Product Carbon Footprint / product certification
OWNER:	Kuohu Artesian Waters Oy
APPROVER:	
CREDITS:	Preferred by Nature, https://www.preferredbynature.org/
CONTACT PERSON:	Kuohu Artesian Waters: Jenni Hamm, CEO 3PL Consulting: Tomasz Raczka

Carbon Footprint Management Plan

Kuohu Artesian Waters Oy, 2024–2025

This Carbon Footprint Management (CFM) Plan sets out Kuohu Artesian Waters Oy's commitment to measure and monitor its product carbon footprint over time while continuously reducing its GHG emissions to lessen the negative impacts of climate change. The CFM plan also consequently helps the organisation to protect and enhance future business growth and value creation.

All measurements and foundations for Kuohu Artesian Waters Oy CFM are in accordance with the Preferred by Nature Carbon Footprint Management Standard. Documents regarding certification process, same as two previous ones, will be stored for minimum 5 years in our accounting office as well as in the cloud.

This plan contains the organisation's products detailed and real carbon footprint management and monitoring approach including the waste, GHG emissions reduction targets, and an action plan for achieving reductions over time.

Furthermore, the CFM plan evaluates the quality of the organisation's carbon footprint efforts relating to data collection and calculation methods, data sources, processes, and activities that contribute to material emissions, as well as any estimates or assumptions used in calculations. Data quality assessments also indicate areas for improvement over time.

Any question regarding this CFM plan may be forwarded to:

Contact person

Name: Jenni Hamm

Position: CEO

Email: info@kuohuwater.com

Definitions

Product definition – Kuohu Artesian Waters Oy is producing bottled drinking water (chemical formula H_2O): still water and carbonated water. Our water originates from world-wide cleanest freshwater Artesian wells, located in Kuohu, Finland, not treated chemically, certified according to EU norms and standards. High quality, safe and sufficient drinking water is essential for public health and well-being as states EU Drinking Water Directive 2020/2184 which “will make water safer to drink and will reduce the administrative burden for companies that produce the relevant materials and products, as well as for national authorities and conformity assessment bodies”³⁷.

Packaging – Our packaging is crucial and has biggest impact on our Carbon Management Plan and policy, and we carefully select all our suppliers:

Bottles, which are lightest possible, made of infinitely recyclable glass, stand for over **69,00%** of our emissions in 2024, and for **88,00%** of our emissions in 2025, and their Lifecycle Assessment is in compliance with ISO 14044 standards. Glass is virtually inert, which means the bottle doesn’t interact with the contents it holds. Bottles are produced by Estonian division of the O-I company^{8,7}, just a few hours’ drive from Kuohu plant, and their Lifecycle Assessment is in compliance with ISO 14044 standards⁴. O-I’s defined their targets **in Sustainability Executive Reports**:

- to reduce GHG emissions by 25% by 2030 (achieved 10% by 2024),
- to reduce their global water usage by 25% by 2030,
- to reach 40% renewable energy use by 2030 (achieved 35% so far) and to reduce total energy consumption by 9%,
- to increase recycled content to 50% by 2030 (achieved 40% by 2024),

to reduce waste by reuse + recycling to become a “Zero Waste” organization.

This supplier was screened by Kuohu Artesian Waters Oy on start of collaboration and is also monitored today as the most crucial in our processes. We have recently studied their 2024 Sustainability Report only to confirm that O-I are very consequent and reliable partner: they added to their targets heat recovery and using combustion technology but also moving to energy use as replacement to gas use in their production processes worldwide. They also measured that currently 96% of their plants are located in areas where communities have access to glass recycling and started with them a new exciting programme called [Glass4Good](#)⁶. This means much less energy used in the melting process than when using virgin materials and that local community recycling of glass contributes to the health and well-being of communities. O-I Estonia explain that “cullet is [their] main ingredient and [...] other raw materials needed for glass are silica sand, soda ash and limestone [...] sourced locally (so) impact on the environment is limited as much as possible”.

Pallets – which were EPAL pallet type, represented as much as **20,01%** of our emissions in 2024, and – after partial change to lighter and recycled wood pallets and DEFRA emission factor change – for only **0,68%** of our emissions in 2025. Pallets were from our company launch the second biggest factor responsible for our emissions, and we started replacing them first with lower-emission recycled paper substitutes, where only possible, and then with recycled wood pallets with much lower emission factor.

Aluminium caps, from a Polish division of Guala Closures Group⁵, who defined their 2022-2030 Sustainability Program, use 100% of renewable energy (currently 62%) and reduced the use of water in production by 28,4% over last 5 years. In several types of business replacing steel with aluminium brings very positive emission reductions, due to their much lower weight. However for Kuohu, although small and very light, aluminium caps stand for **4,16%** of our emissions in 2024 mostly due to amounts of electricity used in their production and after our supplier confirmed that they are using mostly recycled material in their production process for us it went down to only **0,49%** of our emissions in 2025. That is directly resulting from saving of 95% of the energy needed for primary production and this approach is expected to develop further, because 75% of all aluminium ever produced is still in use³⁷. We have additionally adjusted their design recently for practical reasons which has not had any impact on their unit nor total weight.

Carton packaging – stands for **3,25%** of all our emissions in 2024, and grew to **7,89%** of our emissions in 2025 even if they are made in 85% from recycled materials, and our vendor measures their CO2 footprint with FEFCO tool (the European Federation of Corrugated Board Manufacturers <https://www.fefco.org/>). Recently, we have changed their design from painted bicolour to raw corrugated paper and single colour paint, it has changed their mass, so it will be reflected in our emission results, and will be reflected in next period report.

Labels and stretch foil, stand for **1,16%** of Kuohu emissions in 2024 and grew to **2,54%** of our emissions in 2025, and are produced from 100% recycled raw materials. Our major supplier, UPM Raflatec, declares that “all plastic packaging used in our production units will be reusable, recyclable or compostable, with no waste taken to landfills by 2025”. We have not received any evidence confirming percentage of recycled material used by our other plastic packaging elements’ vendor, Bestbak, so we calculated emissions using the factor for primary (virgin) “average plastic”.

Above changes, compared to base year as well as to previously audited year, are important and result from proper diagnosis of emissions’ origin but also our education progress resulting in higher awareness and DEFRA 2025 factor adjustments, directly connected to overall market education and changed attitude to use all available recycled material. Following that approach, Kuohu Artesian Waters Oy today uses everywhere material from producers who are engaged with environment much better than markets’ average and their target of recycled material in production is always 50% or more.

Cradle-to-gate approach – Life cycle stages from the extraction or acquisition of raw materials to the point at which the product leaves the storage of the Organisation undertaking the assessment, so the same assumption as in previously audited periods.

GHG Greenhouse gases

CO₂ Carbon dioxide

Organisation Background

Kuohu Artesian Waters Oy was founded in Finland and has been focused on producing and distributing high-quality drinking water only.

From day one, the company is as environmentally aware as possible: infrastructure, utilities, staff, packaging materials and operations are all nature friendly.

The groundwater area called Kaistinmäki is protected by Finnish law: the 1,5 km² forested area around Kuohu village alone, hides assumed 750 000 m³ of ground water. The depth of the wells is between 50 and 200 meters, and the water rises naturally to the surface.

Kuohu water is soft and low on minerals. Kuohu village including the area around has 230km of firm and solid bedrock underneath, and it is the key to the incredible purity and taste of our waters: the natural filtration process takes years. Water is bottled at the source, and the process ensures sustainability of groundwater reserves.

Whole process from the pumping to the bottling uses zero of plastic. This maintains the purity of the water and makes it free of microplastics and safe for human consumption and health. Even the CO² used by Kuohu for its sparkling water is a side product from a nearby plant.

Kuohu Artesian Waters Oy is committed to the sustainable future of the planet's food supply. Efforts related to energy efficiency and the control of greenhouse gases are at the heart of our strategy and requirements of its shareholders, customers and partners. The company monitors its GHG product emissions through Annual Corporate Inventories of Greenhouse Gas Emissions, based on the methodology learnt from its certification Partner.

The measurement results, including waste, are openly published and new targets are defined for every consecutive year, to achieve optimal reduction of GHG emissions. We invested in solar energy production on-site and consequently purchase green energy only. Also, we plant our own trees in springtime to add value to our presence in the area.

Any of the remaining and non-reducible amounts of the GHG emissions are and will be balanced with the offset, whose beneficiaries will be people living in less developed economies and they will be bound to the very company product – pure consumption water – as closely as possible.

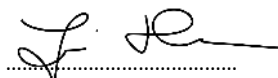
In all matters regarding Kuohu Artesian Waters Oy certification, we are following the Preferred by Nature Carbon Footprint Management Standard.

1. Company Climate Policy

January 2026

Kuohu Artesian Waters Oy takes responsibility for its business practices and the GHG emissions resulting from our production. This responsibility is and will be carried out through the following guidelines:

- Kuohu Artesian Waters Oy demonstrates a prominent level of commitment and adopts best practices towards climate change mitigation.
- Kuohu Artesian Waters Oy has been consistently working on reduction of annual GHG emissions level by avoiding unnecessary emissions, improving energy efficiency and waste management where possible, and maintaining climate responsible business practices across its value chain – hereby improving our product carbon footprint.
- Kuohu Artesian Waters Oy ensures that related business policies, such as procurement and travel policies, are aligned with intentions described in this policy statement.
- Kuohu Artesian Waters Oy identifies and acts upon areas and practices where reasonable investments can result in significant GHG emission reductions. These are described in this Carbon Footprint Management Plan.
- Kuohu Artesian Waters Oy has established a method for annual monitoring and reporting of our production GHG emissions, focusing strictly on its Product. Monitoring, Documentation, and Reporting is complete, consistent, accurate, relevant, and transparent, and complies with Preferred by Nature's Carbon Footprint Management Standard (Preferred by Nature Carbon Footprint Management Standard). We add packaging properties and make reports available from our IT system and exact and accurate data collected from our vendors' invoices and media consumption meters.
- Kuohu Artesian Waters Oy continuously communicates consistently and transparently about our climate policy, reduction targets and plans, as well as achievements.
- Kuohu Artesian Waters Oy ensures that any carbon credits used to offset unavoidable or non-reducible GHG emissions come from credible, sustainable, and additional projects.
- Kuohu Artesian Waters Oy will continuously work towards carbon neutrality by 2026 through a combination of emissions reductions and high-quality credits and offsetting initiatives, so that there will be no net increase in the global emission of greenhouse gases to the atmosphere associated with our company.
- Kuohu Artesian Waters Oy will demonstrate efforts to encourage business partners and clients to also adopt climate-friendly business, production, and consumption behaviours and practices.



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Jenni Hamm, CEO

2. Kuohu Artesian Waters Oy CFM Overview and Approach

The following outlines the focus of our carbon footprint along with relevant processes and quality management measures related to our plan.

- i. Subject of analysis: we have one product group which is drinking water, and it is the subject matter for CO₂ Neutral footprint certification. We are defining and justifying all emission-generating activities within the product life cycle. Its stages include land-use change, raw material acquisition and preprocessing, production, distribution and storage, and end-of-life. We illustrate emissions in a process map.
- ii. Justification of base year: The baseline of emissions and removals from Kuohu Water was production between August 2022 and December 2022 and currently we are reporting year 2024 and 2025. All data used is based on real BI reports and bills and not mostly assumed as in our first-year report.
- iii. Staff responsibilities:
 - Monitor and daily adjust production environment cleanliness, as well as periodically monitor the purity and safety of the Product, including external laboratory testing.
 - Assure that the assessment consistently and accurately reflects the GHG emissions and waste related to the Product.
 - Ensure the completeness of the calculations, including all emission sources identified in the production system.
 - Report the results in a transparent and double-checked internal system. Therefore, analysis and study, including packaging, logistics and production is divided between Kuohu Artesian Waters Oy and 3PL consulting partner, supporting Kuohu since the company launch and first CMP report.
 - Kuohu Artesian Waters Oy and 3PL consulting partner collect and input data into the calculating tool for scopes 1,2 and 3 in the process of production.
 - The decarbonization plan for scopes 1,2 and 3 is always conducted by the Kuohu Artesian Waters Oy and 3PL consulting partner with the support of Preferred by Nature.
- iv. Staff training:
 - Each employee is trained as planned in the initial CMP and signs clearly explained Kuohu Waters Oy environmental policy from his or her employment day one,
 - Production manager, responsible for all on-site operations, has been trained in PCQI and obtained HACCP certificate.
 - Safety has been also additionally inspected by authorities and we have customized employee instructions.
 - Our operational training plan develops alongside our growing experience.
 - Employees are continuously encouraged to come along with their ideas (Kaizen approach),
 - On-the-job training courses are provided at a minimum of 2 times per year.
- ii. Documentation: The information relevant to the assessed Product was obtained through forms and the results accounted for in calculators, both developed in Microsoft Excel. All scopes 1, 2 and 3 GHG emission are managed (data collection and calculation), and results are publicly disclosed on Kuohu Artesian Waters Oy's website and Sustainability Report

- iii. Data collection:
 - Kuohu Artesian Waters Oy together with its 3PL consulting partner, continues to collect data in the initially agreed way: directly from production process, from invoices and media meters, vendors supplies' documents and waste collection partners' documents.
 - Data is inserted in the files on regular basis, so that emissions and "offenders" impact are analyzed in real time in the same predefined forms and calculation tool, initially aligned with the methodology of the Preferred by Nature.
 - Emissions amounting to less than 1% of the total GHG footprint are also monitored, to keep records on their impact in following short terms.
- i. Calculation tools: The calculation tool, specially developed to meet the approach contemplated in the assessment and has been consequently used since the GHG emission reduction project started. The accounting method involved the most relevant and recent data available by international protocols (IPCC, GHG Protocol/ WRI, Ecoinvent, among others). This tool was verified by Preferred by Nature partner. For scopes 1 and 2 GHG emissions calculation, Kuohu Artesian Waters Oy uses a software developed by Preferred by Nature which contains a database of the most current emission factors available for each type of emission source (e.g., internationally accepted references such as the GHG Protocol as well as DEFRA).
- ii. Performance monitoring: An internal audit is conducted periodically, since production start quarterly, to monitor GHG emissions from our production. Aggregated data is used to adjust our operational policy and to communicate with vendors.
- iii. Offsetting procedures: Our offsetting options are and will be related to our mission: consumption of best quality water. For that reason, Kuohu Artesian Waters Oy has been supporting a carefully selected initiative in an underdeveloped country to build water wells or drinking water treatment installations (<https://marketplace.goldstandard.org/collections/projects/products/terraclear-clean-water-access-families-laos>).

3. Carbon Footprint Results

3.1. Base year carbon footprint and boundaries

3.1.1. Product Carbon Footprint

Emissions of greenhouse gases were accounted for in the production of Kuohu water with a management system at just one plant in Kuohu, Finland, where we have our production and storage facilities as well as offices. The assessment is prepared based on all operations, meters, invoices and reports including emissions from 100% of activities related to Kuohu product.

In Scope I we measure direct emissions from operations and waste.

In Scope II we measure indirect emissions from generated and purchased electricity, heat and cooling. Due to its symbolic scale, we added it and measured as part of Scope I.

In Scope III we measure indirect emissions which occur downstream or upstream in our value chain.

Optimizing GHG emissions have been in minds of investors, company management, consultants, architects, production line supplier and packaging suppliers.

Although Kuohu Artesian Waters Oy was founded in 2019, for reasons related to Covid and because we are offering a sophisticated niche product, our sales are still developing slowly. At the same time, Kuohu water has been recognized and even awarded by recognized bodies:

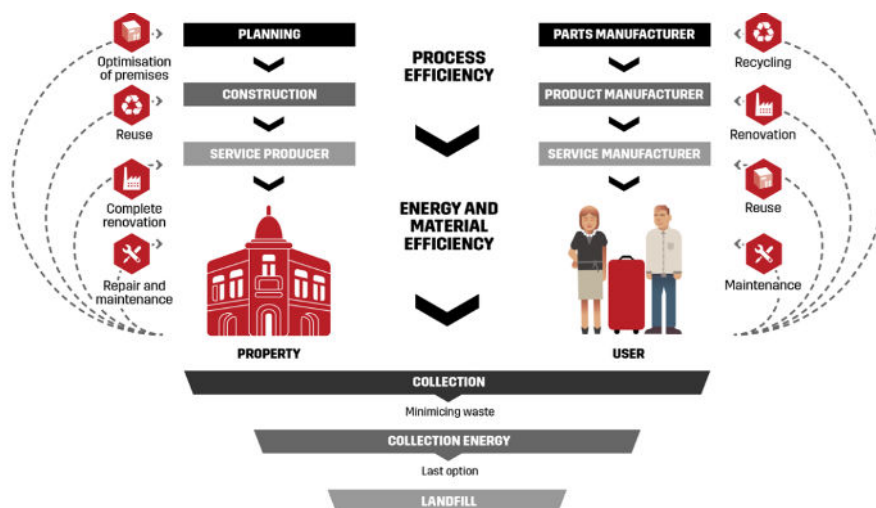
1. 'Silver Medalist in the Sparkling Super Low Minerality category' at the FineWaters Taste & Design Awards, San Sebastian 2024,
2. Kuohu Deep Rock 200 nomination as 'Best Water in the World for Wine' by Tastingbook experts and sommeliers in February 2025
3. In 2005, our water won the Silver Medal among non-carbonated bottled waters at the Berkeley Springs International Water Tasting.

Since Kuohu Artesian Waters Oy production started in 2022, we have been with the same vendors, who continuously improve their environmental awareness and policies:

1. **Bertolaso** production line, production efficiency was improved in 2024 and 2025,
2. electricity provider **VENI** Energy Group, guarantees supply of 100% green energy,
3. glass bottles' vendor **O-I** Estonia, with new and ambitious sustainability targets,
4. aluminum caps provider **Guala Closures** DGS Poland, more and more focused on recycled content,
5. Labels are still produced by **UPM Raflatac**, who developed mechanical and chemical recycling methods for plastic labels,
6. Cardboard supplier is **Smurfit Westrock**, formerly Smurfit Kappa group.
7. EPAL pallets from **different Finnish suppliers**, but here we have introduced lighter recycled wooden pallets from local suppliers for bigger cargo and longer routes.
8. As planned, we are also gradually implementing recycled paper pallets, the reason being mostly their low GHG emission factor compared to EPAL wooden pallets, however not as competitive as recycled pallets.

We are aware that collaboration with local and least distant companies also means lower GHG emissions.

Waste management regarding our broken glass, aluminium, paper and plastic, is in hands of a Finnish company Lassila & Tikanoja, <https://www.lt.fi/en/company>, who are the circular economy experts: their target is to "keep materials, properties and factories in productive use for as long as possible and we enhance the use of raw materials and energy (...) to create more value with the circular economy for our customers, personnel and society in a broader sense. (...) Our objective is to continuously grow our actions' carbon handprint, our positive effect on the climate. We assume our social responsibility by looking after the work ability of our personnel as well as offering jobs to those who are struggling to find employment". The scheme below shows their business concept:



According to latest report from Kuohu Artesian Waters Oy waste recycle rate is 98%. It is only +1% from year 2024, despite much bigger growth in production and sales. Carbon footprint 5,734 tons. -43% compared to 2024.

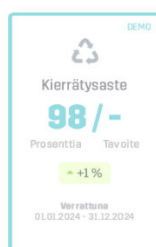
It includes all waste except water.



Vesmiehentie 28
KUOHU ARTESIAN WATERS OY

Tammi 2025 — Joulu 2025

AVAINLUVUT



Production waste kg	2025	2024	Y2Y	Comment
Waste water (rinsing bottles and prod. Line)	1167 500l	581 000l	200,95%	recycled or reused, all water including wash, rinsing and household waste
Broken glass (bottles)	29 092kg	32 420kg	89,73%	R12.2 will be fully re-used
Broken aluminum closures	5,81kg	1kg	581,00%	R12.2. will be fully re-used
Broken cardboards (total carton trash)	2 500kg	1 440kg	173,61%	R12.2. will be fully re-used
Broken pallets	0,00kg	20,00kg	0,00%	R12.2. will be repaired and re-used
Clear plastic waste from bottle pallets etc.	200,00kg	300,00kg	66,67%	R12.2. will be fully re-used
From waste service company report or invoice, the kg's are not exact, all recycled!!				
Metal Waste	169,00kg	202,00kg	83,66%	R12.2. will be fully re-used
Energy Waste	659,00kg	660,00kg	99,85%	R12.1 Production of waste-based fuel before its delivery for utilization as energy (R1)
Bio waste	728,00kg	672,00kg	108,33%	R3.3 Anaerobic treatment of organic waste, where the resulting output is used as a recycled product, material or substance for fertilization or soil improvement
Paper	144,00kg	144,00kg	100,00%	R12.2. will be fully re-used

This is for us proper, externally confirmed evidence, that Kuohu is on the right path, and our policy, vendors, trainings, supervision and employees' engagement are correct and consistent.

It is important to mention that from 12.2025 factor for waste was changed by DEFRA, and 0,021294 is from now 0,004868568 which is a major change. As the awareness grows, waste amount and its not recyclable content is decreasingly harmful to environment.

We are proud to have a waste management partner sharing our values and which works to mitigate climate change and preserve natural resources by "replacing virgin raw materials with secondary raw materials, replacing fossil fuels with renewable bioenergy and developing new solutions for the circular economy." Consumption, which has been major trend in most developed and developing countries, must now redefine societies' approach and result in more respect towards nature, its cleanliness and its resources.

The base year for our CFM plan, calculated in 2023 and which was affected by pandemia, is now recalculated for 2024 (previous DEFRA report and factors) and 2025 (12.2025 DEFRA report and factors), and amounts to:

Total (Absolute) GHG emissions: 55,249730 tCO₂e in 2024 and 46,494666 tCO₂e in 2025 (versus 36,826246 in 2023)

Intensity (Ratio) terms: (i.e. 1000 litres of our product), 1,306279 tCO₂e per unit in 2024 and 0,621324 tCO₂e per unit in 2025 (versus 1,3300 tCO₂e per unit in 2023)

Relevant emissions: CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, and NF₃

Emissions by Scope:

	Scope 1	Scope 2	Scope 3	Biogenic if known ¹
2023	0 tCO ₂ e	1,0027665 tCO ₂ e	35,07619 tCO ₂ e	- tCO ₂ e
2024	0 tCO ₂ e	0,636881 tCO ₂ e	54,62849 tCO ₂ e	- tCO ₂ e
2025	0 tCO ₂ e	0,251079 tCO ₂ e	46,469558 tCO ₂ e	- tCO ₂ e

3.1.2. Product Carbon Footprint

Kuohu Artesian Waters Oy has one product group in several variants in its offer – drinking water. Its GHG emissions are measured within the product life cycle **"cradle-to-gate"**.

In this approach, Kuohu Artesian Waters Oy includes in its measurements:

- the land-use change,
- the raw material acquisition and pre-processing,
- production including energy use,
- own storage.

¹ See Section 3 of Standard for more details on reporting of biogenic emissions and removals.

The unit of analysis will be the total amount of emissions in tCO₂e.

In our analysis, all emissions accounted for less than 1% of the total carbon footprint will be left out which is in accordance with the Preferred by Nature Carbon Footprint Management Standard.

Our products are the following:

	Product Name	Bottle label EU and UK
1	Kuohu Artesian Water Bedrock Still 0,75l	6429810457004
2	Kuohu Artesian Water Sparkling 0,75l	6429810457028
3	Kuohu Artesian Water Bedrock Still 0,375l	6429810457011
4	Kuohu Artesian Water Sparkling 0,375l	6429810457035
5	Kuohu Artesian Water Still Deep Rock 0,75l	6429810457059

Production and filling the bottles from own sources and their storage are in the same plant in Kuohu, so there are no transportation needs nor resulting emissions from them.

The base year for our CFM plan was 2022, where we tried to prepare our most probable forecast. Due to various reasons, they turned to be much lower, and we are hereby adjusting it as a reference. In further years, when we learnt more about the market and best customers for our very sophisticated Product, our sales volumes are developing slower but steadily.

Data calculated in [2024 and 2025](#) versus the base year 2022 amount to:

Total (Absolute) GHG emissions: 55,249730 tCO₂e in 2024 and 46,494666 tCO₂e in 2025 (versus 7,6640 tCO₂e in the base year 2022 and 36,826246 tCO₂e in 2023)

Intensity (Ratio) terms: 1,306279 tCO₂e per unit in 2024 and 0,621324 tCO₂e per unit in 2025 (versus 1,12924 tCO₂e in the base year 2022 and 1,3300 tCO₂e per unit* in 2023) per *(1000l of finished product). This shows expected progress, considering our volumes are lower than we initially assumed.

Relevant emissions: CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, and NF₃

Emissions by life cycle stage:

All electricity used at Kuohu Artesian Waters Oy plant is provided by a green energy supplier, and in our emission calculations we are using the emission factor of 0,45g per kWh as recommended by the IPCC (The Intergovernmental Panel on Climate Change, the United Nations body for assessing the science related to climate change) and BNL (Brookhaven National Laboratory on behalf of the U.S. Department of Energy's Office of Science) for 2024 and – following recommendations from DEFRA – 0,19 g per kWh as advised by Finnish sources including Annual Climate Report 2025.

An impressive 95% (according to other sources 90%) of Finland's electricity production came from fossil-free sources, including nuclear (35-38%), wind (over 25%), hydro (14-18%), and solar power (ca. 2% and growing), up to 3% are imported from Nordic countries.

This change for greener energy was very rapid and resulted from change of policy of the Finnish government over the last 25 years, and wind part for 2015–2025 years (share of energy grew from 5% to 25%) could be only best example for other countries: Finland subsidized investors and mandated to connect wind farms which resulted in lowest cost wind farms. It helped Kuohu Artesian Waters Oy to find a provider and buy only green power from Veni Energia and consistently contributes to national emission reduction policy.

For Kuohu 2024 and 2025 were again organic production and sales development years, directly reflecting our market and new customers' demand, where we kept in our minds necessity to monitor GHG emissions:

1. our Product turns out even more sophisticated niche product, so its sales are developing more slowly than forecasted,
2. use of water was limited with a stabilized production process (related to optimizing hygienic regime),
3. breaking glass (much lower than in starting years 2022–2023),
4. breaking pallets and cardboards (much lower than in starting years 2022–2023),
5. breaking foil and aluminum caps are very low (much lower than in starting years 2022–2023)

The dominating factor for all emissions is still glass: it stands for 69,00% in 2024 and (after enormous reduction in recycled pallet emission factor used) grew to 88,00% in 2025 of total emissions and 69,80% and 87,63% of Scope 3. Kuohu bottles' weight can hardly be reduced any more, but its recycling is never ending and the hardly affects the nature because its quality is not depreciated during the cycle, **however most recent feedback from the manufacturer is positive – we will approach O-I again and discuss potential options**

2nd factor in emissions, where Kuohu concentrated the most since 2023, with 20,01% in 2024 dropped drastically to 0,68% in 2025 of total emissions, and 20,25% and 0,49% of Scope 3 respectively, is wooden pallets: although it can be handled 20–25 times with the cargo, its weight has significant impact on total emissions of Kuohu. Thanks to use of paper pallets but even more of much lighter than EPAL wooden recycled pallets as well as to factor change in DEFRA 2025 (its impact on GHG emissions dropped a lot more than we expected), we noticed an incredible reduction progress. **Because of new emission levels and using recycled pallets, from 2025 pallets are no longer 2nd factor in emissions, but 6th.**

3rd factor (and after the update 3rd in 2025) in emissions is the aluminium caps with 4,11% in 2024 and 0,49% in 2025 of total emissions and 4,16% and 0,49% of Scope 3 respectively. Problem with this material is that during its production massive amount of electric energy is used, however our vendor's confirmation that they are currently using >50% of recycled material and effectively up to 95% less energy for their production, entitled us to use different factor for 2025 emissions' calculation. As a result, aluminium caps are now close to our last emissions offender, the waste.

4th offender (and after the update 2nd in 2025) is carton packaging, with 3,25% in 2024 and 7,89% in 2025 of total emissions and 3,29% and 7,86% share in Scope 3 respectively. Kuohu changed the packaging to recycled paper only with very symbolic paint, but its weight is still crucial.

5th is stretch foil and labels with 1,16% in 2024 and 2,54% in 2025 of total emissions and 1,17% and also 2,53% in in Scope 3 respectively.

6th factor is waste as total: it stands for 1,323% in 2024 and 0,322% in 2025 and 1,339% and 0,335% of Scope 3 respectively.

Looking at above results, pallets are no longer subject for major changes and reductions must be focused on packaging: bottles, cartons and caps. We will approach also our bottles' supplier to consider further weight reduction of this packaging; however we predict a major challenge here due to direct impact on production line settings.

Our consistent policy to reduce emissions in best ways available, where we have on the one hand discovered options on our own and on the other benefit from DEFRA adjustments wherever materials are made of recycled components, are bringing us closer to our 2026 goals.

2025 DEFRA changes in 2025 showed us the most desired direction: every production material used had visibly reduced factors, if they were made of not virgin type, but recycled material. Our vendors are all going this direction, although we still need such confirmation from aluminium caps supplier which as for today are our big offender.

Out of currently used production materials, we will focus on packaging weight reduction, where pallets are crucial again, because this is reflected in our intensity ratio which we optimized by 50% Y2Y, year 2025 versus 2024, and plan to reduce it further in 2026.

3.2. Carbon Footprint emissions and removals over time

Kuohu Artesian Waters Oy monitors the carbon footprint continuously and compares it with the carbon footprint of the previous year like in table below: base year, completed 2023 and the planned reduction rates and absolute values expected by the company in the following years.

Slower sales development is certainly affecting our GHG reduction plans in 2024 and 2025 versus the base year. We verified our approach to emissions' reductions and concentrated on pallets: we have partially replaced EPAL pallets with lighter pallets from recycled paper and continue to do so where only it is possible, although paper pallets manufacturing market is not as developed as we would wish and we will have to diversify our purchasing.

Our target is further reduction of emissions per 1000 litres of the product sold to the market: after base year we observed that it grew and it resulted from post-covid market slowdown mostly, but in further years, with gradual volume (litres) growth, it started dropping. Year 4, 2026, with forecasted sales on the level of over 225 000l, and properly managed packaging issues, should bring Kuohu expected results.

c	Base Year	Year 1	Year 2	Year 3	Year 4
	08.2022-12.2022	01.2023-12.2023	01.2024-12.2024	01.2025-12.2025	01.2026-12.2026
Absolute in tCO₂e	7,6640	36,8262	35,9882	46,4946	137,6928
% reductions	-	481%	470%	607%	1797%
Intensity per tCO₂e	1,12924	1,33000	1,30628	0,64629	0,18268
% reductions	-	17,78%	15,68%	-42,77%	-83,82%

The % reduction refers to Base Year 2022.

3.2.1. GHG Emissions Reductions and Removals

The carbon footprint is consequently and carefully monitored annually and compared with the carbon footprint of the base year. The table below shows the reduction rates and absolute values completed and expected by the Kuohu Artesian Waters Oy company.

Measure	Base year	2023	2024	2025	2026
Absolute	7,66 tCO ₂ e	36,83 tCO ₂ e	35,99 tCO ₂ e	46,49 tCO ₂ e	137,69 tCO ₂ e
% reductions	-	481%	98%	129%	296%
Intensity (tCO ₂ e per unit)	1,12924 tCO ₂ e per 1 000 litres	1,33000 tCO ₂ e per 1 000 litres	1,30628 tCO ₂ e per 1 000 litres	0,64629 tCO ₂ e per 1 000 litres	0,18268 tCO ₂ e per 1 000 litres
% reductions	-	17,78%	-1,78%	-50,52%	-71,73%

Table shows real data and proves how challenging it is to assure the GHG emissions' levels continuous reduction, especially for a company which has been as green as possible from its day one.

4. GHG emissions reductions

4.1. Reduction targets

Kuohu Artesian Waters Oy is committed to lowering its climate impact by setting ambitious emissions reduction targets. These targets represent an important tool for driving GHG emissions reductions across the organisation and its value chain.

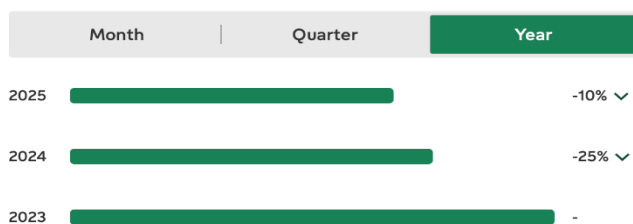
Becoming carbon neutral means that an individual, company, product, or activity results in net-zero carbon dioxide (CO₂) emissions over a defined period or lifecycle.

Certifying our company product after first few years of operations is not less complex than when Kuohu Artesian Waters Oy was just a start-up: we employ much more than average level of ecological awareness, fully covering our business concept and its operational aspects, from personnel education, through production line and media consumption, through packaging features, vendor selection process and development plans. Such approach makes bigger reduction targets even more difficult for Kuohu.

Crucial reduction actions which we took were improving energy efficiency and switching to renewable electricity but also focusing on lower-carbon materials and – most of all – reuse systems (e.g. recycled pallets instead of single-use). We are aware that pallets made from recycled paper are much less durable than wooden ones and their use is limited to local and short-distance deliveries (up to 1000km EU countries), whereas other markets will have to use wooden pallets, which is still fine, but they should be the recycled type and be further recyclable by next users by all means.

We are proud to report valuable progress in energy consumption reduction: compared to 2023, even if our production grew, we have recorded 2 times year-to-year decrease:

Yearly consumption comparison ⓘ



It was possible thanks to production process adjustments and achieving desired production line efficiency, and – last but not least – proper education and approach of our employees.

On top of that, we continuously benefit from our own energy production from solar panels:

15 265kWh in 2024 and 25 287kWh in 2025, and we sold a surplus we were not able to use at the time of production, 2 019kWh in 2024 and 3 460kWh in 2025.

Because of the grid decarbonisation and much lower use of fossil fuels replaced with solar panels and wind power plants, the emission factor for electric energy is also reduced by DEFRA from 0,00450 tCO₂e to 0,001680 tCO₂e.

Additionally, however, UK Government GHG Conversion Factors for Company Reporting, are now no longer supporting this factor for specific regions or countries due to major differences in energy production details and Finland is among cleanest here and only factor available in official governmental documents is 0,000190 tCO₂e for upstream which is our target.

4.2. Other considerations

Company strategy was significantly adjusted: Product is positioned much higher and promoted as exceptional premium drinking water whose sales are not even close to most known and popular consumption waters.

Lower volumes also mean a bigger challenge to Kuohu Artesian Waters Oy and we have to even more carefully monitor our GHG emissions with much less impact of the scale effect factor.

4.3. Reduction plans

Kuohu Artesian Waters Oy intends to lower its GHG emissions across its business activities, both with reference to its products and its operations and infrastructure, through the following actions:

Description	Status	Timeframe (implementation)	Reduction amount
Focus on production materials made of recyclable material	Procurement is focused on purchasing materials with lower factors	2026	GLASS: We do not know the potential, due to not known feasibility of glass packaging mass reduction PALLETS: to use everywhere possible recycled and recyclable
Product packaging: consequently, replace the EPAL pallets with lighter type	We are using recycled paper pallets. We started using recycled pallets in 2025.	2026	We will increase the use of recycled pallets to >80% in 2026 to keep their impact on total emissions below 1%.

Assuring low level of waste	We know and follow the way to have all waste recycled.	2026	in 2026 we want to keep waste impact on total emissions below 0,5%.
Prevention interventions	Repeat and develop pro-ecological training for employees	2026	This action guarantees proper waste management as well as emissions from media.

Consequently, we will continue and develop other actions:

Description	Status	Timeframe (implementation)	Reduction amount
Prevention interventions	Education and training of staff underway	2024-2027	Potentially 1-2tCO ₂ e per year
Circular Economy (materials and emissions)	Partnership with circular economy partners in waste management	2023-2025	Potentially 1-1,5tCO ₂ e per year

Vendors selection

We are aware of the GHG emissions and impact which specific electricity production sources have. We will continue purchasing energy from 100% green sources and we will use our solar panels for our own energy production which reduces the amount purchased.

Kuohu is and will remain very low emission company, but thanks to its plan and strategy it will consequently contribute to the 2026 GHG emission reduction target of intensity per tCO₂e by 83,82% versus the base year.

We carefully select and continue collaboration with selected vendors, learn from them, and screen new ones:

Packaging suppliers all using big percentage of recycled material:

- a) glass bottles ("At O-I we believe that glass should never be trash"), carton packaging, labels, aluminium caps and paper pallets. O-I target is to increase recycled content to 50% average by 2030 (achieved 40% by 2024), which also means that from 2025 we can use emission ratio for recycled and not virgin material made products (1402,7767 versus 823,19954 kg CO₂e).
- b) cardboard packaging – Smurfit Westrock are today already using as much as 56% of recycled fibre: "Approximately 56% of our raw material is recycled fiber and the balance comes from renewable wood (...) Our timber is often a natural side product from woodchips and tops of trees too small for sawmills, as well as trees that are removed to support healthy growth in the forest"³⁸. Because our cartons and paper layers are made of recycled material, we are using from 2025 not 1288,50358 but 1068,77475 kg CO₂e factor).
- c) aluminium caps – Guala Closures is declaring the use of 52% of certified recycled material in their production, so instead of using factor for virgin aluminium at 9115,90131, we are entitled to use 995,0779 kg CO₂e factor).

- d) **Labels, stretch foil** – our vendors are using fully recycled raw material for their production, so from 2025 instead for factor for virgin plastic at 3172,49932, we are using 1575,39106 kg CO₂e factor).
- e) Our **electricity** supplier is targeting 100% renewable energy for all clients by 2030 (90% by 2025) but in case of Kuohu they already supply 100% of green energy which is confirmed with attached here proper certificate. Indicator from Finnish government, strangely however, is higher than from DEFRA, although it is in fact much greener than in most other parts of the world (0,00019 versus 0.00017 kg CO₂e factor).
- f) even though we are purchasing our energy from above 100% green energy supplier, we are using also our own solar panel farm which contributes to Finland increased the share of green energy production to 95% of its total energy production in 2024. Our own energy production was 15,265MWH in 2024 and 25,287MWH in 2025 and we reduced total used energy by own production, but excluded its part sold to buyers (production was higher than current demand).
- g) we consequently educate our own personnel to keep their level of green awareness high and our business decisions and executions with the lowest emissions possible and it is now well visible in our energy consumption reduction.
- h) Input data quality: In order to obtain results closest to reality, Kuohu reduces the uncertainties of the input data from operations which are collected in real time to guarantee the accuracy of the calculation of emissions for scopes 1 and 2. We also have a parallel data aggregation with our 3PL consulting partner, to have that part of the process double checked and verified periodically.

With planned sales on the level, which is almost 49% increase versus 2025 volume, intensity ratio is expected to drop again:

c	Base Year	Year 1	Year 2	Year 3	Year 4
	08.2022-12.2022	01.2023-12.2023	01.2024-12.2024	01.2025-12.2025	01.2026-12.2026
Absolute in tCO ₂ e	7,6640	36,8262	35,9882	46,4946	137,6928
% reductions	-	481%	470%	607%	1797%
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% reductions	-	17,78%	15,68%	-42,77%	-83,82%

The % reduction refers to Base Year 2022.

It is worth repeating that use of recycled wooden pallets has biggest impact on final emission numbers and Kuohu will consequently move from use of 25kg EPAL pallets to lighter recycled 15kg pallets when shipping its goods to customers.

We also observed that paper pallets whose DEFRA emission factor seemed most attractive in previous years, is no longer our best option, due to world-wide trend to use recycled packaging items.

Other commitments of Kuohu Artesian Waters Oy in its emission reduction plan include:

1	Choosing green appliances	When buying office equipment or replacing it, we will always look for most efficient options based on energy saving.
2	Choosing efficient office lighting	Apart from choosing LED bulbs using less energy, we maximize use of natural light, and we installed motion sensors that switch lights off when not being used, and dimmable lights that can be adjusted to different situations.
3	Optimizing heating and air conditioning	Careful analysis of the ideal heating for our building is the key to a more energy-efficient heating and cooling system, lowering our energy bill, and ensuring thermal comfort for employees.
4	Reducing food waste	We are aware that the UN's Food and Agriculture Organization study proved that 1/3 of all food produced is lost or wasted worldwide. We consequently educate our personnel that wasting food also means wasting all the energy and resources used to grow it, so we will promote composting it.
5	Promoting a paperless culture	We print most necessary documents only and keep them online, in emails and in the cloud. As studies showed, an average of \$80 per employee saving is possible per year. The paperless policy additionally reduces costs and our company's CO2 emissions. We have better organization, more collaboration between employees, increased efficiency, and more security.
6	Promoting any waste recycling	We promote recycling and how to sort trash correctly, provide recycling bins and instructions.
7	Avoid single-use cups, silverware, and plates	We invest and use reusable mugs, glasses, silverware, and plates.
8	Promoting greener commutes	Employees are encouraged to carpooling, traditional or e-biking and using electric vehicles, and in the future also their free charging in the site.
9	Using rechargeable batteries	Small appliances, remote controls, calculators, radios, fire alarms, will use rechargeable batteries wherever possible. Also, in case of forklifts, we choose to use Li-Ion batteries and not acid batteries, as their emissions are twice as low and more nature friendly.
10	Rethinking the way we drink coffee	We buy and promote coffee from environmentally friendly suppliers: recycling their packaging or composting their waste.
11	Using energy-efficient building options	Our lighting, heating, and cooling of offices and operation areas are continuously optimized to ensure energy efficiency. Reviewing and assessing what can be improved is a part of routine sustainability audit and action plans.
12	Providing organic and FairTrade food and drinks	If we decide to provide any food and drinks, we will make sure they are organic and FairTrade certified whenever possible. This ensures that they are produced in the most sustainable way possible, both in terms of growing the food as well as providing fair employment to local producers in developing countries.
13	Total elimination of plastic water bottles and replacing them with glass bottles	Consequently, Kuohu Artesian Waters Oy core business, we 100% resign from any plastic waste and emissions connected with water bottles. Water is essential, but not plastic bottles. As water producers, we ensure an unlimited supply of water.

All Kuohu Artesian Waters Oy employees have been trained and signed the Kuohu Artesian Waters Oy environmental policy document.

5. Offset Projects and Carbon Credits

5.1. Carbon Offset targets

Kuohu Artesian Waters Oy is committed to compensating all remaining GHG emissions. Carbon credits represent a pathway for mitigating global emissions outside of our organisation and value chain while providing an opportunity to invest in projects that align with our mission and help other societies to build new wells to increase the use of cleaner and healthier drinking water in other parts of the world.

The following carbon credits have been purchased from Terraclear – Clean water access for families in Laos and align with the principles for offsetting outlined in the Preferred by Nature CFM Standard (see final pages of this document).

<https://marketplace.goldstandard.org/collections/projects/products/terraclear-clean-water-access-families-laos>

Project	Scheme	Amount / % compensation	Year	Purchase status	Neutral
Terraclear – Clean water access for families in Laos	Gold Standard	55,24973tCO ₂ e	2024	Retired / Applied	Yes/ No
		46,494666tCO ₂ e (100%)	2025		

Note: % compensation refers to portion of total carbon credits associated with project for that year

The reason for selecting this project is its compatibility with our mission: to offer the purest and healthiest water, both for the people and the environment.

Thanks to the project, as we read in the Gold Standard web site, it is delivering:

- 15,000 tons of CO₂e are saved annually by the project,
- 20–30 liters of clean water – the average daily household consumption fully met by each filter,
- 65,000 households benefited from filter use.

For every 1000 carbon credits purchased:

- \$15,800 value of avoided forest degradation,
- 12 hectares of avoided forest degradation,
- 25 cases of Acute Lower Respiratory Infection (ALRI) treatment avoided.

5.2. Carbon Neutrality

Kuohu Artesian Waters Oy intended to have carbon neutral products starting from its base year.

That means that we continuously measure and reduce our carbon footprint and offset whole remaining non-reducible emissions. For that reason, our organisation has met its reduction targets according to the requirements in this standard and is ready to be assessed by Preferred by Nature.

Kuohu Artesian Waters Oy intends to reach carbon neutrality for our product by 2026. Our main purpose for pursuing carbon neutrality and choosing targets is our environmental awareness, and apart from our own, we are requesting nature-friendly actions from our suppliers, whom we select also considering their carbon neutrality standards. Secondly, our own employees are internally educated to work according to our standards, but we also help them choose more ecological ways of life. From the moment we decided to “go green”, we have been doing everything to reduce emissions and balance the remaining part with the offset.

6. Data Quality

6.1. Data Quality Assessment

Kuohu Artesian Waters Oy attempts to collect and apply data that is actual and accurate to the greatest extent possible. This includes locating primary data for all activities under our control (and in particular Scope 1 and 2 emissions).

Kuohu Artesian Waters Oy also collects primary data for Scope 3 emissions, where only possible, by using actual data calculated or collected by suppliers, activities or processes. In any cases where primary data cannot be obtained, the organisation uses credible secondary data from recognized sources.

We look at life cycle databases, similar processes within the organisation, industry-averages, financial information, scientific studies, or government publications. Similar secondary sources are also used to collect emission factors where real emissions are not available through direct measurement or suppliers.

The following table provides a brief overview of data quality issues that may/could arise due our data collection and measuring methods. The table represents potential data quality issues for current year 2022 and has been established based on the results of our data quality assessment process (see second table below).

Category or Process	Source	Quality issue	Results Δ
Scope 2 emissions	Various	Emission factors vary	+/- 0% difference of emissions

Although the company has only been operative for a short period, data which we are using are already taken from actual measurements, meters and bills. We keep collecting all data to use them as even more accurate and exact to use them with next years' computations.

Our organisation produced an assessment of the data quality based on the completeness, time representativeness, technological representativeness, geographical representativeness. We also provide a quantitative evaluation when possible (scale from 1 to 5).

The following table demonstrates the results of our data quality assessment based on the factors and data quality indicators as described in Section 3 of the Preferred by Nature Standard.

Considerations	Completeness	Age	Fit	Geography	Reliability
Calculation methods	5	5	N/A	N/A	5
Emission Factors	5	5	5	5	5
Primary data	5	5	5	5	5
Secondary Data	5	5	5	5	5
Sources	5	5	5	5	5
Scope 2 Data	5	5	N/A	5	5
Significant emissions	5	N/A	N/A	5	5
Allocation methods	5	5	5	N/A	5
Use / End of life	0	0	N/A	0	5

Note: Scale 1:5. Fit refers to technological representativeness, or degree to which data reflects actual technologies (e.g., process design, operating conditions, material types or quality, output over time) used to perform activity or produce good)

6.2. Data Quality Improvement Plan

Kuohu Artesian Waters Oy is committed to improving its data collection methods and sources to better reflect emission totals and reductions that are accurate and relevant.

Based on this, the organisation is taking ongoing measures to enhance the quality of data by incorporating industry best practices, using the most recent resources, and prioritising the use of primary data. The following demonstrates our actions to reduce data uncertainty and quality issues in the future.

Area of improvement	Action Plan	Effects on results	Status
Scope 2 emission factors	Secure data from utility provider	Eliminated errors	Ongoing / Implemented
Scope 2 Heating	Update emission monitoring system	Eliminated errors	Ongoing / Implemented
Scope 3 (Material X)	Invoices and details	Eliminated errors	Ongoing / Implemented
End of life	Contact local EPR	Eliminated errors	Ongoing / Implemented

We successfully implemented controlling system and collect all data from reliable sources.

7. Climate Communications, claims, and labels

7.1. Public reporting

Kuohu Artesian Waters Oy communicates the results of its carbon footprint as well as its progress on GHG emissions reductions on an annual basis. The information is available in the following documents.

We publish our CFM Report on our website, it is shown to our employees with specific elements referring to collaboration during most talks with our vendors. We openly talk and underline our emission reduction policy during contacts with existing as well as new customers.

Report Description	Name and Date	Content / Purpose	Link
Carbon Management Plan	26.01.2026	1. CFM Plan 2. Policy	1. Certifying body 2. www.kuohuwater.com
Carbon Management Plan for public use	26.01.2026	1. CFM Plan	1. www.kuohuwater.com
Annual Report	tbc	Financial Results Forecasts, Targets	As per Finnish legal requirements

All documents regarding certification process will be stored for minimum 5 years in the registered accounting office as well as in the cloud. Only single pieces and excerpts will be printed and available in company office and its quality board.

7.2. Additional Information

Kuohu Artesian Waters Oy prepared its own environmental policy documents which are shared with its suppliers and employees where it explains its Carbon Footprint Management Plan and requires above parties to accept them and follow to any extent possible.

7.3. Claims and Labels

Kuohu Artesian Waters Oy uses CFM claims and labels to demonstrate our climate efforts to stakeholders. This document along with the official company website which is available at <https://www.kuohuwater.com/home> serve as supporting evidence to stakeholders wishing to validate the appropriateness of our claims and label use. In particular, we validate that the information supporting our claims and labels are clearly accessible, do not misrepresent any emissions or results, and appropriately identify the parts of the business or product under investigation; carbon footprint results as well as reductions and offsets achieved; date of verification and approvals.

The following demonstrates an overview of our verification scope(s) and related claims and labels.

Date of verification approval: 29/01/2026

Date of Label and/or claim use approval:

	CFM Label	CFM claim	Evidence
Product			
Measuring CO ₂	N/A	N/A	N/A
Reducing CO ₂	N/A	N/A	N/A
CO ₂ Neutral	N/A	N/A	N/A
Product			
Measuring CO ₂			
Reducing CO ₂			
CO ₂ Neutral			

7.3.1. Additional product information

All aspect of Kuohu Artesian Waters Oy production and the very product are considered important in Kuohu CFM Plan. It is also important for Kuohu to buy the CO₂ used for carbonating its water only from suppliers for whom CO₂ is not their own target product, but CO₂ is not a product, it is produced in the process of manufacturing their own products, so it can be considered a utilized by-product.

References (excerpt)

	Source	Notes
1	Greenhouse gas reporting: conversion factors 2021 for use by UK and international organizations to report on 2021 greenhouse gas emissions	https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021
2	Greenhouse Gas Equivalencies Calculator	https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
3	BESTBACK SMURFIT KAPPA /today Smurfit Westrock/ - FEFCO GMP FINAL 2020.pdf - International Good Manufacturing Practice Standard for Corrugated Board	https://www.fefco.org/sites/default/files/2020-2019/March/FEFCO%20GMP%20FINAL%202020.pdf
4	EPAL pallets in the multi-use system	https://www.epal-pallets.org/eu-en/the-success-system/ecological
5	Closures supplier's website	https://gualaclosuresdgs.pl/ https://www.gualaclosures.com/sustainability/approach

6	O-I Estonia bottle suppliers' environmental policy	https://www.o-i.com/sustainability/ https://www.o-i.com/sustainability/glass-recycling/ https://www.o-i.com/sustainability/glass4good/
7	O-I Sustainability Executive Report 2024	https://www.o-i.com/sustainability/sustainability-report/
8	Solar energy emissions	https://www.carbonbrief.org/solar-wind-nuclear-amazingly-low-carbon-footprints/
9	the world's most consistent and transparent life cycle inventory database	https://ecoinvent.org/
10	Electricity supplier VENI Energy Group	https://venienergy.com/
11	How photovoltaics can contribute to GHG emission reductions of 55% in the EU by 2030	https://www.sciencedirect.com/science/article/pii/S1364032120301301
12	Business flights CO2 compensation calculator	https://compensaid.com/contribute/split
13	Guala caps Technical Specifications	Packing Material - Caps from Guala Technical Specification 28x154 9002-1-12-1 S SVELON 546 water and alcohol.pdf
14	UPM Raflatac labels	UPM RAFLATAC LABEL Forest PP Clear FTC 50 RP74 PET 30 PCR 2.pdf
15	DOXA stretch foil	CFM Component -Stretch Foil Doxa Reborn.pdf
16	Aluminum production emissions 1	https://international-aluminium.org/statistics/greenhouse-gas-emissions-intensity-primary-aluminium/
17	Aluminum production emissions 2	https://aluminiuminsider.com/leaders-emerge-in-the-aluminium-industrys-race-to-zero-carbon/#:~:text=At%20present%2C%20the%20global%20average.CO2%20per%20ton%20of%20aluminium.
18	Choosing the ways to reduce GHG in the office	https://www.travelperk.com/guides/ways-businesses-can-reduce-carbon-footprint/how-to-reduce-office-carbon-footprint/
19	Acid and Li-Ion forklift battery emissions	https://lithiumbalance.com/lead-acid-and-lithium-ion-battery-comparison-for-forklifts-and-industrial-material-handling-applications/
20	Department for Business, Energy and Industry Strategy	https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2020 UK program but many factors can be used in other countries.
21	UNFCCC National Inventory Submissions	https://unfccc.int/ghg-inventories-annex-i-parties/2021 Select NIR of country. Number of fuel emission factors are included within the first 100 pages.
22	Association of Issuing Bodies	https://www.aib-net.org/facts/european-residual-mix Information to use for Scope 2 emissions in EU.
23	International Energy Agency	https://www.iea.org/subscribe-to-data-services/co2-emissions-statistics Requires purchase. Scope 2 emission factors by country.
24	NL Government	https://www.co2emissiefactoren.nl/lijt-emissiefactoren/ NL program but various factors can still be used in other countries.
25	European Environment Agency	http://efdb.apps.eea.europa.eu/?source=%7B%22query%22%3A%7B%22match_all%22%3A%7B%7D%7D%2C%22display_type%22%3A%22tabular%22%7D Variety of energy and fuel emission factors for EU but not user friendly.
26	National emissions per country	https://www.eea.europa.eu/data-and-maps/daviz/co2-emission-intensity-6#tab-googlechartid_googlechartid_googlechartid_googlechartid_chart_11111 National average emission factors for Scope 2, EU.

27	Ecometrica	https://emissionfactors.com/ Free but requires sign up. Limited daily searches.
28	Ecoinvent	https://www.ecoinvent.org/home.html Free access allows you to search across a variety of process and materials to access data however calculations are required to obtain approximate emission factors. For advanced carbon/LCA users.
29	Simapro, Gabi, other LCA software 1	https://simapro.com/ Requires yearly license. Strong background in carbon management or LCA, along with some training or tutorials, is required.
30	Simapro, Gabi, other LCA software 2	http://www.gabi-software.com/international/index/
31	IPCC	https://www.ipcc-nggip.iges.or.jp/EFDB/main.php Highly technical. Accessible online or via download.
32	GHG Protocol Database	https://ghgprotocol.org/life-cycle-databases Various databases noted by GHG Protocol https://ghgprotocol.org/life-cycle-databases
33	ICROA References	https://www.icroa.org/The-ICROA-Code-of-Best-Practice Various databases endorsed by ICROA. New Zealand and Australia are particularly helpful.
34	Google Scholar / Scientific Journals	https://scholar.google.com/ See Google Scholar or other peer reviewed studies. Science journals often use credible databases and emission factors in their studies, which can be referenced. However not all studies are available without subscription.
35	Greenhouse gas emissions in Finland, 1990–2021	https://statfin.stat.fi/PxWeb/pjweb/en/StatFin/StatFin_khki/s_tatfin_khki_pxt_138v.px/
36	Statistics Finland – Documentation of statistics Greenhouse gases	https://stat.fi/en/statistics/documentation/khki#Basic%20data%20of%20the%20statistics
37	Drinking Water Directive (DWD) – the EU’s main law on drinking water	https://environment.ec.europa.eu/topics/water/drinking-water_en https://eur-lex.europa.eu/eli/dir/2020/2184/oj
38	Smurfit Westrock Sustainability Report 2024	www.smurfitkappa.com/-/m/files/publications---global/sr-2024-downloads/smurfit_westrock_sustainability_report_2024.pdf?rev=8fa6453fc2294a2a894c5bedcc52de80
39	ENVIRONMENTAL PROFILE REPORT Life-Cycle inventory data for aluminium production and transformation processes in Europe February 2018	https://european-aluminium.eu/wp-content/uploads/2022/10/european-aluminium-environmental-profile-report-2018-executive-summary.pdf

Appendix I: Kuohu Artesian Waters Oy environmental policy document shared with its suppliers

This document is shared with Kuohu Artesian Waters Oy suppliers explaining our Carbon Footprint Management Plan. Suppliers are supposed to written accept it and follow to any extent possible.



June, 2022

Kuohu Artesian Waters Oy is a Scandinavian producer and exporter of high-quality drinking water.

The company's mission is to bottle and distribute the purest water, both for the people and the environment.

We are committed to the sustainable future of the planet's food supply. We are and will always be committed to initiatives that are connected to environmental sustainability. From the day Kuohu Artesian Waters Oy was founded in 2019, it is as environmentally aware as it is possible: infrastructure, product, packaging and operations are designed to be nature friendly. Our product is bottled at the source to ensure sustainability of groundwater reserves.

The Company monitors its GHG emissions through Annual Corporate Inventories of Greenhouse Gas Emissions, following the NEPCo Carbon Footprint Management Standard.

The measurement results are published and new targets are defined for every consecutive year to additionally reduce GHG emissions. We purchase wind energy and additionally invest in own on-site solar energy production for all our operations. We plant our own trees during spring time to add value to our presence in the area. Any of the remaining and non-reducible amounts of the GHG emissions are balanced with the offset, whose beneficiaries are communities living in less developed economies where pure water consumption needs support.

Kuohu Artesian Waters Oy environmental responsibility is based on the following guidelines:

1. we established annual monitoring + reporting of our GHG emissions, focusing on our Products,
2. we consistently and transparently communicate our climate policy, our reduction targets and achievements.
3. we reduce our annual GHG emissions level by avoiding unnecessary emissions, improving energy efficiency and maintaining climate responsible business practices across our value chain,
4. we reasonably invest where significant GHG emission reductions can be achieved,
5. our procurement and travel policies are aligned with this policy,
6. Kuohu Artesian Waters Oy target is to be 100% carbon neutral by 2026 through a combination of emissions reductions and offsetting initiatives.
7. Kuohu Artesian Waters Oy encourages its employees, business partners and clients to also adopt climate-friendly business, production, and consumption behaviours and practices.

Jenni Hamm, CEO

Hereby, as a representative of a Vendor or a Supplier of Kuohu Artesian Waters Oy, I declare to adhere to the above policy and endeavor to reduce GHG emissions in our company, during our representatives' business trips and at our workplaces. I also declare that nature conservation will have a large and growing impact on our way of doing business, life and education of our employees and living environment.

Company name, printed name, position held and signature

Appendix II: Kuohu Artesian Waters Oy environmental policy document shared with its employees and B2B service providers



June, 2022

Kuohu Artesian Waters Oy is a Scandinavian producer and exporter of high-quality drinking water.

The company's mission is to bottle and distribute the purest water, both for the people and the environment.

We are committed to the sustainable future of the planet's food supply. We are and will always be committed to initiatives that are connected to environmental sustainability. From the day Kuohu Artesian Waters Oy was founded in 2019, it is as environmentally aware as it is possible: infrastructure, product, packaging and operations are designed to be nature friendly. Our product is bottled at the source to ensure sustainability of groundwater reserves.

The Company monitors its GHG emissions through Annual Corporate Inventories of Greenhouse Gas Emissions, following the NEPCo Carbon Footprint Management Standard.

The measurement results are published and new targets are defined for every consecutive year to additionally reduce GHG emissions. We purchase wind energy and additionally invest in own on-site solar energy production for all our operations. We plant our own trees during spring time to add value to our presence in the area. Any of the remaining and non-reducible amounts of the GHG emissions are balanced with the offset, whose beneficiaries are communities living in less developed economies where pure water consumption needs support.

Kuohu Artesian Waters Oy environmental responsibility is based on the following guidelines:

1. we established annual monitoring + reporting of our GHG emissions, focusing on our Products,
2. we consistently and transparently communicate our climate policy, our reduction targets and achievements.
3. we reduce our annual GHG emissions level by avoiding unnecessary emissions, improving energy efficiency and maintaining climate responsible business practices across our value chain,
4. we reasonably invest where significant GHG emission reductions can be achieved,
5. our procurement and travel policies are aligned with this policy,
6. Kuohu Artesian Waters Oy target is to be 100% carbon neutral by 2026 through a combination of emissions reductions and offsetting initiatives.
7. Kuohu Artesian Waters Oy encourages its employees, business partners and clients to also adopt climate-friendly business, production, and consumption behaviours and practices.

.....
Jenni Hamm, CEO

Hereby, as an employee of Kuohu Artesian Waters Oy or its B2B service provider, I declare that I adhere to the above policy and endeavor to reduce GHG emissions in my household, on my way to and from work, during business trips and at my workplace. I also declare that nature conservation will have a large and growing impact on my way of life and the education of my family, partners, friends and living environment.

.....
Printed name and signature

Scanned copies of Kuohu Artesian Waters Oy employees' environmental policy document with their signatures



August, 2025

Kuohu Artesian Waters Ltd is a Scandinavian producer and exporter of high-quality drinking water.

The company's mission is to bottle and distribute the purest water, both for the people and the environment.

We are committed to the sustainable future of the planet's food supply. We are and will always be committed to initiatives that are connected to environmental sustainability. From the day Kuohu Artesian Waters Oy was founded in 2019, it is as environmentally aware as it is possible: infrastructure, product, packaging and operations are designed to be nature friendly. Our product is bottled at the source to ensure sustainability of groundwater reserves.

The Company monitors its GHG emissions through Annual Corporate Inventories of Greenhouse Gas Emissions, following the Preferred by Nature Carbon Footprint Management Standard.

The measurement results are published and new targets are defined for every consecutive year to additionally reduce GHG emissions. We purchase CO2 free energy and additionally use own on-site solar energy production for all our operations. Any of the remaining and non-reducible amounts of the GHG emissions are balanced with the offset, whose beneficiaries are communities living in less developed economies where pure water consumption needs support.

Kuohu Artesian Waters Oy environmental responsibility is based on the following guidelines:

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3. we reduce our annual GHG emissions level by avoiding unnecessary emissions, improving energy efficiency and maintaining climate responsible business practices across our value chain,
4. we reasonably invest where significant GHG emission reductions can be achieved,
5. our procurement and travel policies are aligned with this policy,
6. Kuohu Artesian Waters Oy target is to be 100% carbon neutral by 2026 through a combination of emissions reductions and offsetting initiatives.
7. Kuohu Artesian Waters Oy encourages its employees, business partners and clients to also adopt climate-friendly business, production, and consumption behaviours and practices.


Jenni Hamm, CEO

Hereby, as an employee of Kuohu Artesian Waters Oy or its B2B service provider, I declare that I adhere to the above policy and endeavor to reduce GHG emissions in my household, on my way to and from work, during business trips and at my workplace. I also declare that nature conservation will have a large and growing impact on my way of life and the education of my family, partners, friends and living environment.

.....
Position held and signature



June, 2022

Kuohu Artesian Waters Oy is a Scandinavian producer and exporter of high-quality drinking water.

The company's mission is to bottle and distribute the purest water, both for the people and the environment.

We are committed to the sustainable future of the planet's food supply. We are and will always be committed to initiatives that are connected to environmental sustainability. From the day Kuohu Artesian Waters Oy was founded in 2019, it is as environmentally aware as it is possible: infrastructure, product, packaging and operations are designed to be nature friendly. Our product is bottled at the source to ensure sustainability of groundwater reserves.

The Company monitors its GHG emissions through Annual Corporate Inventories of Greenhouse Gas Emissions, following the NIPCon Carbon Footprint Management Standard.

The measurement results are published and new targets are defined for every consecutive year to additionally reduce GHG emissions. We purchase wind energy and additionally invest in own on-site solar energy production for all our operations. We plant our own trees during spring time to add value to our presence in the area. Any of the remaining and non-reducible amounts of the GHG emissions are balanced with the offset, whose beneficiaries are communities living in less developed economies where pure water consumption needs support.

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7. Kuohu Artesian Waters Oy encourages its employees, business partners and clients to also adopt climate-friendly business, production, and consumption behaviours and practices.

Jenni Haines, CEO

Hereby, as an employee of Kuohu Artesian Waters Oy or its B2B service provider, I declare that I adhere to the above policy and endeavor to reduce GHG emissions in my household, on my way to and from work, during business trips and at my workplace. I also declare that nature conservation will have a large and growing impact on my way of life and the education of my family, partners, friends and living environment.

Printed name and signature

Markku Kangaslehto



June, 2022

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6. Kuohu Artesian Waters Oy target is to be 100% carbon neutral by 2026 through a combination of emissions reductions and offsetting initiatives,
7. Kuohu Artesian Waters Oy encourages its employees, business partners and clients to also adopt climate-friendly business, production, and consumption behaviours and practices.

Jenni Haines, CEO

Hereby, as an employee of Kuohu Artesian Waters Oy or its B2B service provider, I declare that I adhere to the above policy and endeavor to reduce GHG emissions in my household, on my way to and from work, during business trips and at my workplace. I also declare that nature conservation will have a large and growing impact on my way of life and the education of my family, partners, friends and living environment.

Printed name and signature

Joonas Virtanen



August, 2025

Kuohu Artesian Waters Oy is a Scandinavian producer and exporter of high-quality drinking water.

The company's mission is to bottle and distribute the purest water, both for the people and the environment.

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The Company monitors its GHG emissions through Annual Corporate Inventories of Greenhouse Gas Emissions, following the NIPCon Carbon Footprint Management Standard.

The measurement results are published and new targets are defined for every consecutive year to additionally reduce GHG emissions. We purchase 100% wind energy and additionally invest in own on-site solar energy production for all our operations. We plant our own trees during spring time to add value to our presence in the area. Any of the remaining and non-reducible amounts of the GHG emissions are balanced with the offset, whose beneficiaries are communities living in less developed economies where pure water consumption needs support.

Kuohu Artesian Waters Oy environmental responsibility is based on the following guidelines:

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6. Kuohu Artesian Waters Oy target is to be 100% carbon neutral by 2026 through a combination of emissions reductions and offsetting initiatives,
7. Kuohu Artesian Waters Oy encourages its employees, business partners and clients to also adopt climate friendly business, production, and consumption behaviours and practices.

Jenni Haines, CEO

Hereby, as a representative of a Kuohu or a supplier of Kuohu, I declare that I adhere to the above policy and endeavor to reduce GHG emissions in my company, during business trips and at our own clients' locations where nature conservation will have a large and growing impact on my way of life and the education of my family, partners, friends and living environment.

Printed name and signature: Jero Heinonen



Alkuperätakuutodistus

VENI Energia takaa tällä todistuksella, että
Kuohu Artesian Waters Oy
hankkima sähkö on alkuperätakuumerkittyä 100 % hiilidioksidivapaata energiaa.

Todistuksen tyyppi	Alkuperätakuu
Ajanjakso	2024
Alkuperä	Eurooppa
Tuotantomuoto	Vesi, Tuuli, Aurinko, Bio, Geoterminen, Ydinvoima*

*Lopullinen tuotantomuotojen jakauma määräytyy kun alkuperätakuut kuuletetaan toteutunutta kulutusta vastaavasti



Ilkka Salonen
Country Director

VENI Energia

1/15/26, 2:01 PM

Guarantee of Origin Diploma

Alkuperätakuutodistus

VENI Energia takaa, että **Kuohu Artesian Waters Oy** hankkima sähkö on kokonaisuudessaan fossiilivapaasti tuotettua.

Todistuksen tyyppi:	Alkuperätakuu
Ajanjakso:	2025
Tuotantoalue:	Eurooppa
Tuotantomuoto:	Vesi- ja ydinvoima



Kjell Martin Grimeland, CEO
VENI Energie



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Dear Jenni,

Many thanks again for supporting Gold Standard certified climate projects. The carbon credits you purchased have been transparently retired in our [Impact Registry](#). Your contribution represents **197 tonnes of CO2** prevented from entering the atmosphere and verified benefits to local communities and ecosystems.

Your purchase certificate can be viewed and downloaded from the following link on our Impact Registry: https://gsf-fulfill-order-production.herokuapp.com/retirement_certificates/030c28e1-0c69-4ddc-b3a9-f9eff4fd1a47

If you would like to receive periodic updates on the marketplace and the impact of the projects, please [subscribe here>>](#).

For more information about how to reduce your carbon footprint and support a climate secure and sustainable future, please visit our [website](#).

Many thanks again for your support!

The Gold Standard Team

[View your order](#)



We are delighted to confirm the retirement of
197 Verified Emission Reductions (VERs)
for
Kuohu Artesian Waters Oy
on 04/11/2022

Terraclear - Clean water access for families in Laos - (197x)

*These credits have been retired, saving **197 tonnes of CO2 emissions**
from being released into the atmosphere.
Thank you for investing in a safer climate and more sustainable world.*

Order number: [GSM15668](#)

Gold Standard®

Retirement certificates are hosted on the Gold Standard Impact Registry, [view your certificate](#).

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