Product Sustainability Report (PSR)
Category: ovens

Product Sustainability Report (PSR)

The Product Sustainability Report (PSR) provides information about the sustainable aspects of the relevant product category. This is based on extensive environmental data from detailed life cycle assessments (LCAs).

Life cycle assessment (LCA)
under DIN EN ISO 14040

Tools
SimaPro, EcoInvent, UVEK environmental database

Perspectives
Cradle-to-cradle and cradle-to-gate; assessment based on three methods: CO_2 footprint measured in CO_2, the ecological scarcity method measured in environmental impact points and the monetary equivalent value method measured in Swiss francs (CHF).

Category
Ovens

Issued by
V-ZUG AG, Industriestrasse 66,
6302 Zug, Switzerland

Verified by
Carbotech AG, environmental projects and consultancy, Gasometerstrasse 9, 8005 Zurich, Switzerland

Table of contents

About V-ZUG

We have been developing, creating and producing appliances that bring simplicity into our customers' homes and creativity into their kitchens since the company was founded in Zug in 1913.

Our responsible approach to manufacturing high-precision and long-lasting products allows us to make an active contribution to a sustainable future.

V-ZUG has branches in the EU, the UK, China, Hong Kong, Singapore and Australia and distribution partners all over the world, but production takes place in Switzerland, and this is where the decisions are made. V-ZUG currently employs a total of around 2,200 people. Organisationally, it consists of the segments Household Appliances and Real Estate.

Timeless design

Our design language is unobtrusive, timeless and reduced to the essentials. It is uncompromising in terms of quality, the materials used and sustainability. We have carefully formulated the user's interaction with our products in great detail to make it as intuitive as possible and create an emotional connection with our products. That is Swiss quality.

Meaningful innovation

We work tirelessly to find solutions that will make our customers' everyday household tasks easier and deliver perfect results.

We are renowned for our innovative products and attach great importance to their user-friendliness, durability, reliability, performance and energy efficiency. Thanks to our proximity to customers, we are able to develop the right programmes and functions to achieve perfect results, allowing us to make their everyday household tasks easier.

Service

Our qualified service team assists our customers throughout their journey with V-ZUG – from choosing the right appliance for their needs to troubleshooting in the event of an issue, error report or code. We guarantee our customers the help they need.

Every day, we give our all to ensure customers are satisfied with our products and receive the best service. With more than 700 service experts around the globe, we are there for our customers whenever they need us.

Swiss origins

We proudly bear our company's location in our brand name and are acutely aware of the responsibility we bear to our environment. We reflect on our actions and the consequences of these for people and resources in our environment and are committed to ongoing investment in a sustainable future. We are here to stay.

Production location in Zug, headquarters, vertical factory

We have made a conscious decision to remain true to our long-standing production location in Switzerland. To ensure we are optimally prepared for the future, we are part of a visionary urban manufacturing project: the Tech Cluster Zug. Because we are striving tirelessly to achieve state-of-the-art production facilities and improve our environmental footprint, we have not only built our own vertical factory, but also a Multi-Energy Hub.

Production location in Sulgen, the most state-of-the-art refrigerator factory in Europe

We are proud to have opened Europe's most state-of-the-art refrigerator factory in Sulgen in 2022. Here, both products and processes are geared towards maximum sustainability – be it with regard to the energy efficiency of the appliance or the CO_2 neutrality of the production set-up.

Swiss Made

V-ZUG produces more than 80% of the appliances it sells in Switzerland in Zug and Sulgen (2023: 82%, Swiss market). All appliances manufactured in Switzerland meet the strict Swiss Made requirements (i.e. > 60% value generated in Switzerland) and are certified accordingly (Swiss Made, protected designation).

We also have at our disposal a key network of suppliers. More than 60% of our suppliers are based in Switzerland, 30% in neighbouring countries (primarily Italy, Austria, Germany) and roughly 10% are from Asia (primarily electronics).

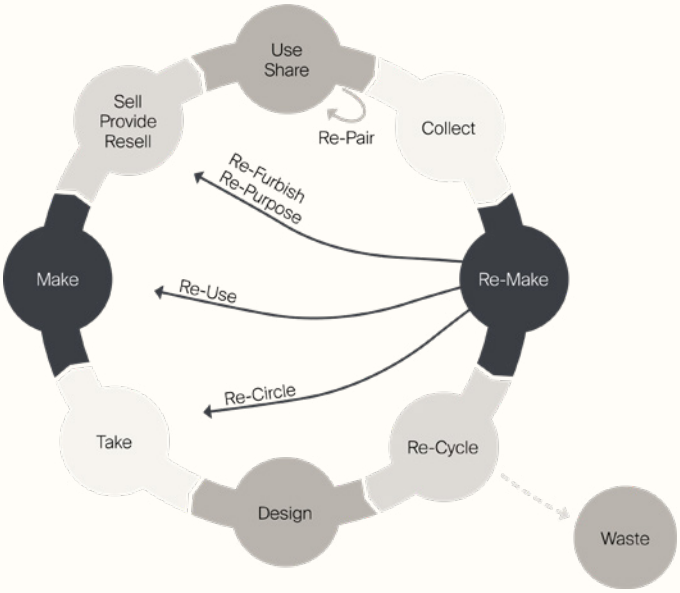
Sustainability at V-ZUG

Sustainability. We see it as the driving force behind the development of our products, the services we offer, the way in which we manufacture, and how we contribute to a society that is fit for the future. Sustainability at V-ZUG comprises three dimensions:

People
Our commitment to our employees and our environment is our top priority – we never cease to invest in these. The wellbeing of our employees, our customers and society as a whole is the driving force behind our aspirations and big ambitions for positive change.

Planet
We manufacture ultra sustainable appliances with the utmost efficiency. We boost the circular economy and our production processes have been CO_2-neutral since 2020, all the while staying true to our motto: achieve the goal first, talk about it later.

Profit
Our success is based on quality, design and durability. These values are reflected in our projects too. Far from being geared towards short-term profit maximisation, they will secure the future of our company for generations to come.



The circular economy
For us, a sustainable product starts at the development stage. This early stage is where we can most effectively influence its “long-term” sustainability. This is when we concentrate on aspects like the durability and repairability of the appliances, low energy and water consumption in use, material selection and modular design – all very much with the circular economy in mind.

We have encapsulated our commitment to sustainability in four targets which provide the framework for our goals, activities and reporting.

Products and services for a future-fit society
Producing an energy-efficient appliance is just one of many sustainability aspects. We think ahead. From procurement, development and manufacturing and servicing right through to re-use and recycling, sustainability throughout the entire life cycle of the appliance is more than just a consideration for us: it is the goal. Measurable, definable and achievable.

Resilient and committed employees
A workforce we care about and whose work is close to our heart. The quality of our products depends on our employees. That is why we incorporate them in the strategic direction of the company, promoting an open, fair and safe working environment, encouraging and facilitating life-long learning and offering a wide range of advancement opportunities.

Environment and climate protection
Thanks to extensive research, measurements, analysis and investment, we have reduced and offset our CO_2 footprint. Our manufacturing operations have been entirely carbon-neutral since 2020. With an internal CO_2 levy, pioneering carbon dioxide reduction initiatives, a life-cycle analysis as well as a reforestation programme we are pursuing real sustainability and setting an example for others.

Entrepreneurship for sustainable prosperity
We are committed to our Swiss location and have invested over 50 million Swiss francs a year in our local production infrastructure in the last three years alone. Our quest for profit, our business partnerships and our entire management set-up are geared towards ethical and sustainable practice and fall in line with our binding code of conduct.

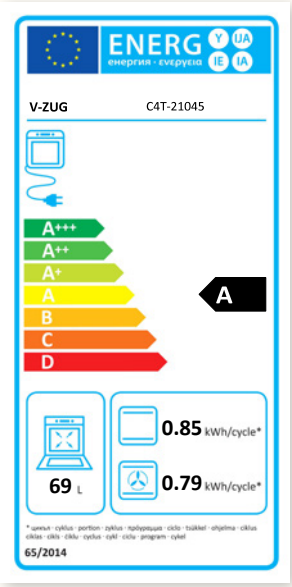
Results of life cycle assessments (LCA)

Product category: Ovens
Product name: Combair (with and without pyrolytic self-cleaning), CombairSteamer
Energy labels (EU): see specific product, predominantly A
Recycling quota*: 74 – 82%
Recovery quota*: 80 – 89% (recycling including combustion with heat recovery)

*Based on own method reflecting the current state of recycling technology in Switzerland

Sens Foundation recycling quota for the white goods appliances category (washing machines, ovens, range hoods, etc.):
73% (according to 2024 annual report)

Underlying data for the life cycle assessment
Country of manufacture [1]: Switzerland
Country of use [2]: Switzerland
Electricity mix [3]: as per Swiss average: 181 g CO_2/kWh



Example for Combair V4000.
All other energy labels are available at vzug.com

User behaviour [4]:
Combair: 42x per year hot air 180°C for 45 min and 58x per year top/bottom heat 200°C for 45 min; pyrolytic self-cleaning model: 3x cleaning per year at 300°C/3.1 kWh, for a period of 17 years[5])

CombairSteamer: 31x per year hot air 180°C for 45 min, 45x per year top/bottom heat 200°C for 45 min, and 25x per year steaming at 100°C for 40 min, for a period of 17 years[5])

Underlying data background:

1) All appliances with the Swiss Made designation are manufactured in Switzerland. That applies to all ovens.

2) The life cycle assessments relate to use of appliances in Switzerland with the corresponding Swiss electricity mix. If the appliance is used in another country, the corresponding results can be requested from V-ZUG.

3) The electricity mix is based on the Swiss average. The emissions from electricity consumption depend on electricity generation. The more sustainable and renewable electricity production is, the smaller the environmental footprint. This can vary significantly from one energy supplier to another. The influence of emissions caused by electricity production is very high.

4) Usage behaviour: theoretical usage behaviour based on internal definitions is used for calculation. Sometimes this is based on service data, other times it is based on the regulatory requirements for the energy label assessment. Usage behaviour with regard to intensity and programme selection influenced the result considerably.

5) V-ZUG defines a theoretical lifespan in years for each product category; this is used as a basis to review the quality in development/production. In addition to the lifespan in years (17 years for ovens), the number of cycles is also considered. But the lifespan in years depends on a number of different factors, intensity of use and care being the most crucial. The lifespan in years also includes potential repairs during this time and beyond. Great importance is attached to repairability (availability of spare parts and repair expertise in the service department).

Life cycle assessments are carried out using three different methods/perspectives.

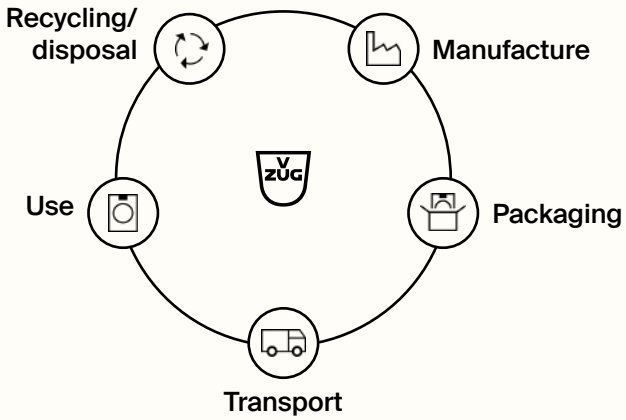
CO_2 footprint in CO_2e/kg:
greenhouse gases differ in their global warming potential (GWP). The climate impact of carbon dioxide (GWP of CO_2 is equal to 1) serves as a benchmark, i.e. the global warming potential of other substances are measured relative to CO_2. The GWP value/CO_2 equivalent indicates the global warming potential of a substance and thus its contribution to the warming of the atmospheric boundary layer.

Environmental impact points:
The method of ecological scarcity provides a comprehensive picture of the environmental footprint and, in addition to the greenhouse gas potential, includes other impact categories such as noise, water, land use, acidification of the soil, toxicity to humans and ecosystems, etc. This method was introduced by the Federal Office for the Environment in Switzerland in 2011 and is constantly being adapted to take into account new findings. The unit is environmental impact points.

Monetary equivalent in CHF:
In cooperation with the Lucerne University of Applied Sciences and Arts (HSLU), V-ZUG has developed a method that shows the environmental costs which, along with the footprint, serve as a basis for the life cycle assessment (in environmental impact points). In most cases, these costs are borne by society. The value is expressed in Swiss francs and is included as a shadow price in V-ZUG's business case considerations.

Important note:
the ecological footprint in the use phase depends largely on the usage behaviour (programme selection, intensity, care, etc.), as well as the electricity mix used.

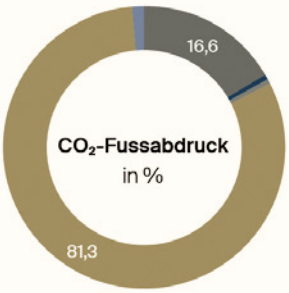
Scope of life cycle assessments:
Life cycle assessments cover the entire product life cycle from production, packaging, use and transport to recycling/disposal (cradle-to-cradle). The "manufacturing" section (also known as grey energy) includes all the materials used as well as the manufacturing process (cradle-to-gate).

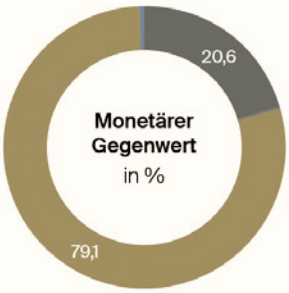


Representation of life cycle assessments in the appliance category
The following three life cycle assessments form an informative cross-section of the entire range of ovens. All ovens are manufactured at the Zug headquarters.

Life cycle assessments (LCA)

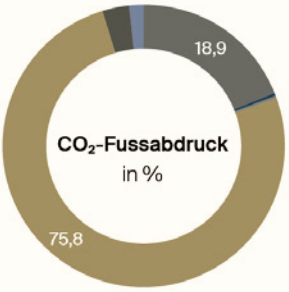
Combair V4000

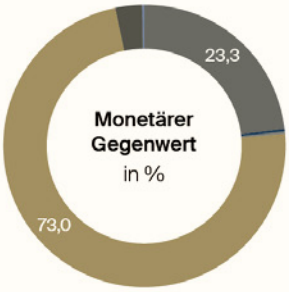




	in % I in kg CO_2e	in % I in UBP	in % I in CHF
Herstellung (cradle-to-gate)	**16,6 I 145**	**14,1 I 372.000**	**20,6 I 185**
Verpackung	0,6 I 5	0,3 I 7.530	0,0 I 0
Transport	0,3 I 2	0,3 I 3.850	0,1 I 1
Nutzung – Strom	81,3 I 710	84,8 I 2.230.000	79,1 I 710
Recycling/Entsorgung	1,2 I 11	0,5 I 13.773	0,2 I 2
Total (cradle-to-cradle)	**100,0 I 873**	**100,0 I 2.627.153**	**100,0 I 898**

Combair V4000 (mit Pyrolytischer Selbstreinigung)

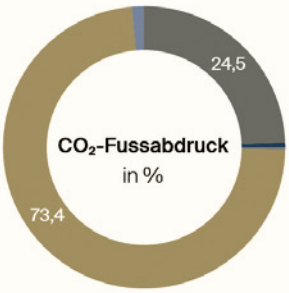


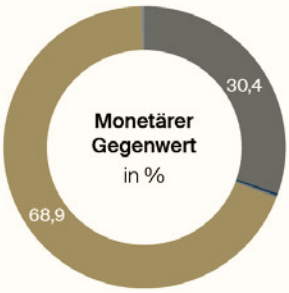


	in % I in kg CO_2e	in % I in UBP	in % I in CHF
Herstellung (cradle-to-gate)	**18,9 I 177**	**16,3 I 457.000**	**23,3 I 226**
Verpackung	0,5 I 5	0,3 I 7.530	0,3 I 3
Transport	0,2 I 2	0,3 I 4.120	0,2 I 2
Nutzung – Strom	75,8 I 710	79,3 I 2.230.000	73,0 I 710
Nutzung – Strom Reinigung	3,1 I 29	3,2 I 90.200	3,0 I 29
Recycling/Entsorgung	1,5 I 14	0,6 I 17.437	0,2 I 2
Total (cradle-to-cradle)	**100,0 I 937**	**100,0 I 2.806.277**	**100,0 I 972**

Life cycle assessments (LCA)

CombairSteamer V2000





	in % I in kg CO_2e	in % I in UBP	in % I in CHF
Herstellung (cradle-to-gate)	**24,5 I 194**	**21,6 I 508.000**	**30,4 I 256**
Verpackung	0,6 I 5	0,3 I 7.530	0,3 I 3
Transport	0,3 I 2	0,2 I 4.060	0,2 I 2
Nutzung – Strom	73,4 I 581	77,3 I 1.820.000	68,9 I 580
Nutzung – Wasser	0,0 I 0	0,0 I 427	0,0 I 0
Recycling/Entsorgung	1,2 I 10	0,6 I 13.715	0,2 I 2
Total (cradle-to-cradle)	**100,0 I 792**	**100,0 I 2.353.732**	**100,0 I 842**

The values of the different models and items vary due to slight differences in design and energy efficiency.

Please refer to the technical data on the website for the detailed value per model offered (in absolute figures, CO_2, environmental impact points and monetary equivalent).

Our commitment to sustainable products

Across all products generally:

- How we design and refine appliances
  - Focus on quality and durability
  - Based on the principles of the circular economy
  - Ongoing improvement energy and water efficiency
  - Enabling repairability (up to 15 years' spare parts availability, extensive repair expertise extending beyond 15 years, competent service teams)

- How we manufacture the appliances
  - Use of 100% renewable electricity in our production operations in Switzerland (from Swiss hydroelectric power)
  - CO_2-neutral production in Switzerland (ongoing reduction of footprint, offsetting residual emissions in the V-Forest (high-quality reforestation)
  - Internal CO_2 steering tax on scope 1+2 emissions (CHF 120/t CO_2)
  - State-of-the-art production facilities and building
  - Advanced waste management

- Resilient and committed employees

- Assuming responsibility in supply chains (human rights, child labour, conflict minerals)

- Driving the transformation from a recycling economy to the circular economy

- Driving forward the decarbonisation of our own vehicle fleet (service vehicles, lorries)

Specific factors for ovens:

- **Timeless design** prevents premature replacement thanks to aesthetics that do not lose their appeal.
- **High-quality materials:**
  - Interior made from European stainless steel.
  - Solid, sturdy handle made from aluminium (made from recycled material in the Advanced Line).
  - Durable, resistant mirror glass with high-end appearance.
  - Solid door with stainless steel frame and triple glazing.
  - Doors can be dismantled for easy cleaning.
  - High-quality door hinges
- **EcoStandby function:** you can achieve the lowest power consumption by choosing the user setting “Hide clock”.
- **Ecological functions** such as “EcoManagement” and “hot air eco”, “top/bottom heat eco” enable economic use.
- Regeneration function: tasty preparation of leftovers prevents **food waste** (only with the CombairSteamer variant).
- **Healthy cooking:** Electronic Steam System (ESS) ensures efficient steam generation and excellent cooking results. Food is heated quickly and gently with steam, while preserving most of its vitamins, minerals, trace elements and flavours (only with the CombairSteamer variant).

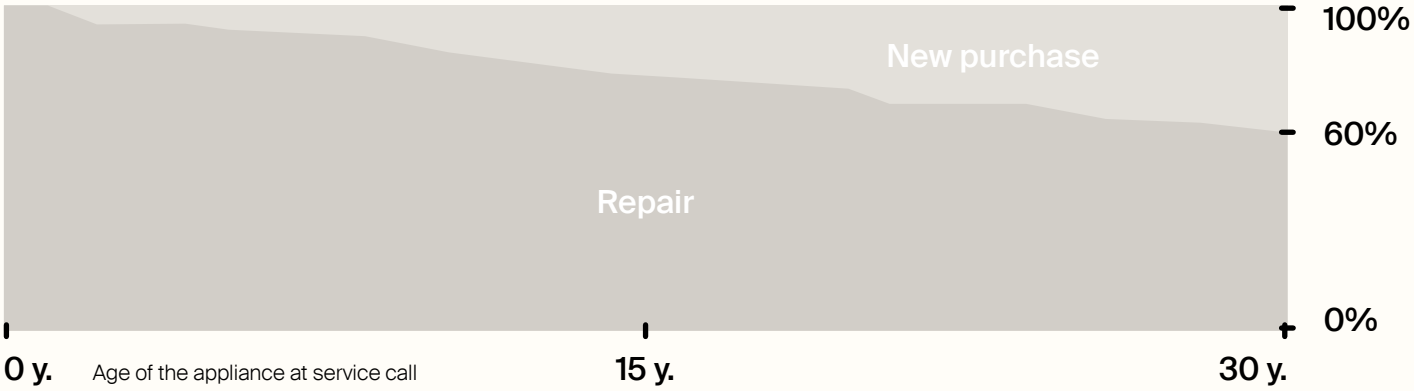
Your contribution to a more sustainable use of our appliances

A large part of our environmental footprint is caused by the use of our appliances. V-ZUG supports an ecological use of the appliances with the following tips and hints:

- **Use leftover heat:** for operating times of 30 minutes or more, switch off the appliance 5–10 minutes before the end of operation.
- Only **preheat** the appliance if this is all the cooking or baking result requires.
- Keep **preheating time to a minimum**.
- **Avoid frequent opening** of the appliance door.
- The applications “hot air humid” and in particular “hot air eco” and “top/bottom heat eco” require less energy than the conventional **operating modes**.
- **Lights** should only be switched on when you need them.
- Use the **EcoStandby** function (hide clock) to achieve the lowest possible power consumption.
- By **consuming** seasonal, regional, unprocessed, plant-based, organic foods and reducing the number of meat-based meals you eat and avoiding food waste, you can shrink your personal carbon footprint.
- **Regeneration, not food waste:** leftover food can be reheated to the highest quality using the regeneration function, thereby avoiding food waste (with CombairSteamer models).
- Use the additional function **“EcoManagement”** and optimise preparation methods for low energy consumption where possible. This shows the average energy consumption of the last 25 operations, the total energy consumption for the last month, the total energy consumption for the last year and the total energy consumption.
- **Use appliances for as long as possible** and have them repaired in the event of a fault. When deciding whether to buy a new product or repair an existing one, take into account grey energy and progress in energy efficiency.
- Buy **renewable electricity** for your own household (contact your electricity provider), or produce your own electricity using a photovoltaic system.
- **Support the V-Forest** climate protection project: offset electricity consumption and the resulting CO_2 emissions through V-ZUG’s CO_2 webshop (Offsetting CO_2 with V-ZUG).

Durability, repairability and customer loyalty

To make a statement about durability, repairability and customer loyalty, we analysed our service data across all product categories for 2023 in more detail. Our service technicians were called out for services over 200,000 times (appliance defective). In each case, we looked at how old the appliance was at the time, whether we could still repair it and whether the customer still wanted to repair it or replace it with a new one.



Results:

- In 43% of cases, the appliances were older than 10 years – the repair rate for 10 years is 90%.
- In 20% of cases, the appliances were older than 15 years – the repair rate at 15 years is 80%.
- In 6% of cases, the appliances were 20 years or older – the repair rate at 20 years is 75% and at 30 years it is still over 60%.
- The oldest appliance (washing machine) was 44 years old; the customer still wanted to repair and we were able to do so (spare part and expertise were still available).
- The result only reflects appliances we were able to assess because of a service call. Not shown here are appliances in good working order and those replaced straight away because of their already advanced age.

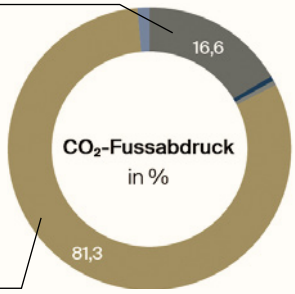
Conclusion:

- Our appliances have a very long service life.
- We can perform repairs even on older appliances (spare parts availability and service expertise)
- The repair service is attractively priced. The majority opt for repair and continue to do so over a long service life.
- Customers are happy to repair because they are very satisfied with the product. Otherwise, they would change appliance or even brand.
- Note: repairing a 25-year-old washing machine makes only limited sense, as the energy efficiency of the successor would be much better and offset embodied energy relatively quickly. Of course, the customer's wishes always come first.
- For perspective: approx. 60% of V-ZUG's appliances on the Swiss market are serviced by V-ZUG's own service department (there are approx. 5.7 million VZ appliances on the market).

Summary

Manufacture is influenced primarily by V-ZUG

Use is influenced primarily by the user



Combair V4000	in % | CO_2e in kg
Herstellung (cradle-to-gate)	**16,6 | 145**
Verpackung	0,6 | 5
Transport	0,3 | 2
Nutzung – Strom	81,3 | 710
Recycling/Entsorgung	1,2 | 11
Total (cradle-to-cradle)	**100,0 | 873**

Timeless design prevents premature replacement

Solid, durable aluminium handle

Interior made from high-quality European stainless steel

Solid door with stainless steel frame, triple glazing, easy to clean, high-quality hinges

"Hot air eco" and "top/bottom heat eco" functions save energy

EcoManagement promotes ecological use

Regeneration function: tasty preparation of leftovers prevents food waste *

EcoStandby for maximum power saving in standby

Durable, resistant mirror glass with high-end appearance

Gentle, healthy cooking with precision steam *

* Only with the CombairSteamer model

Facts

- Swiss Made
- Focus on quality, durability and energy efficiency
- Designed for repairability and the circular economy
- State-of-the-art production facilities in Zug and Sulgen
- Responsible supply chains
- Resilient and committed employees

Legal information

Contact
Marcel Niederberger
Head of Sustainability
Tel.: +41 58 767 63 88
marcel.niederberger@vzug.com

Publisher
V-ZUG Holding AG
Industriestrasse 66,
Postfach, 6302 Zug
Tel.: +41 58 767 67 67

Publication
April 2025