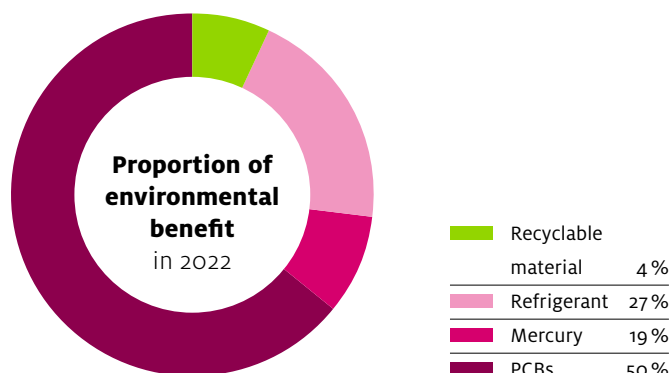


2022 life cycle assessment

Environmental benefit at a glance

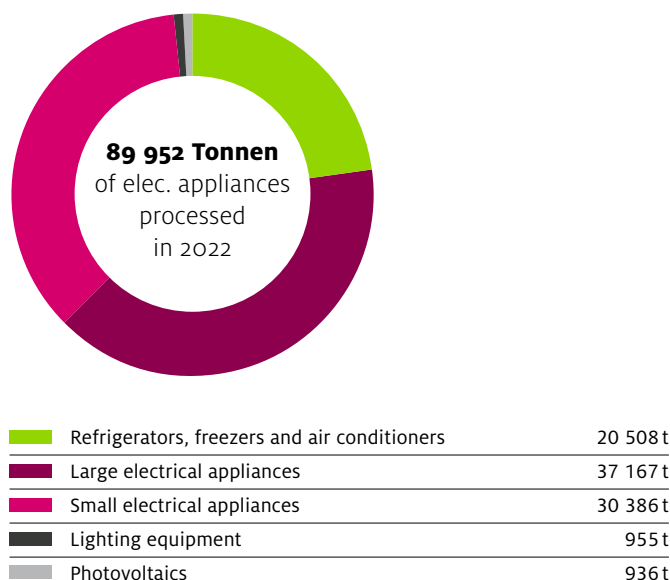
The additional environmental benefit of the recycling system from SENS eRecycling totalled around **1370 billion environmental impact points** in 2022. Ninety-six per cent of the environmental benefit came from the removal of hazardous substances, with 50 per cent of this coming from PCB removal alone, 27 per cent from the removal of refrigerants and 19 per cent from mercury. Material recycling contributed to four per cent of the environmental benefit. The life cycle assessment was calculated based on the reference scenario as a basic assumption (see box).

More information at: www.eRecycling.ch



Recycled materials

Material		2021	2022	since 1990
Iron	t	43 581	42 729	703 778
Steel, stainless steel	t	5 449	5 431	101 642
Aluminium	t	2 927	2 786	43 857
Copper	t	3 661	3 611	51 982
Zinc	t	406	334	9 012
Silver	t	0.0	0.0	<0.25
Gold	t	0.0	0.0	<0.25
Lead	t	0.2	0.2	3.3
Nickel	t	6	8.5	53.7
Ferromanganese	t	50	48.3	653
Plastics	t	6 970	6 776	95 028
Glass	t	1 219	1 462	16 354
Total materials	t	64 271	63 185	1 022 365



Removed hazardous substances

Hazardous substance		2021	2022	since 1990
Refrigerant (CFC, R600a, etc.)	t	76.4	67.1	2 323
Oil	t	53.4	43	1 480
PCBs	t	0.2	0.2	43
Mercury	t	0.5	0.5	9
Others	t	<0.1	<0.1	234
Total haz. substances	t	130.6	110.9	4 090

The life cycle assessment compares the actual situation to the reference scenario. As the proportion of the components that are disposed of (incineration or landfill) is identical in both scenarios, the life cycle assessment does not consider this. This also explains the difference between the recycled materials/hazardous substances and the processed volume.

Reference scenario

Als The life cycle assessment of SENS eRecycling is calculated based on the assumption that, in a scenario "without SENS eRecycling", there would be the same volume of appliances as in the scenario "with SENS eRecycling". In the "without SENS eRecycling" scenario, the economically useful recyclable materials would also be extracted from the appliances. Hazardous substances would not be removed, however, as this process is expensive. The environmental performance of SENS eRecycling is therefore quantified in environmental impact points (UBP). It is calculated as the difference between the actual situation, the scenario "with SENS eRecycling" and the base-line scenario "without SENS eRecycling". You can view the detailed life cycle assessment for 33 years of SENS eRecycling here:

www.eRecycling.ch

Other figures

bn UBP		2021	2022	since 1990
Total	t	91 651	89 952	1 449 387
Refrigerators, freezers and air conditioners	t	20 419	20 508	393 844
Large electrical appliances	t	38 448	37 167	626 251
Small electrical appliances	t	31 207	30 386	410 858
Lighting equipment	t	990	955	18 434
Photovoltaics	t	587	936	2 723

Environmental benefit by appliance category		2021	2022	since 1990
Total	bn UBP	1 487	1 375	230 042
Refrigerators, freezers and air conditioners	bn UBP	676	599	33 404
Large electrical appliances	bn UBP	710	692	22 976
Small electrical appliances	bn UBP	47	32	172 663
Lighting equipment	bn UBP	54	52	998
Photovoltaics	bn UBP	0.07	0.11	0

Environmental benefit by rec. material and haz. substances		2021	2022	since 1990
Material recycling	bn UBP	45	46	756
Coolants and refrigerants avoidance	bn UBP	451	373	29 074
PCB avoidance	bn UBP	724	690	193 966
Mercury avoidance	bn UBP	266	265	5 100
BFR avoidance	bn UBP	1	1	1 147

Environmental benefit per tonne of appliances		2021	2022	since 1990
SENS eRecycling average	mil. UBP/t appliance	16.33	15.44	168.09
Refrigerators, freezers and air conditioners	mil. UBP/t appliance	33.10	29.20	87.87
Large electrical appliances	mil. UBP/t appliance	18.47	18.62	37.83
Small electrical appliances	mil. UBP/t appliance	1.52	1.06	453.73
Lighting equipment	mil. UBP/t appliance	54.08	54.08	54.14
Photovoltaics	mil. UBP/t appliance	0.11	0.11	0.18

Significance of the environmental benefit in the last 33 years

The 230,000 billion environmental impact points (UBP) saved are roughly equivalent to the environmental footprint of the entire population of Switzerland (nine million inhabitants) in seven months.

Evaluation of environmental impact

This study used the ecological scarcity method 2021 (Frischknecht et al, 2021). Evaluation using this method was developed in collaboration with the Swiss Federal Office for the Environment and is well established in Switzerland. One reason for choosing this method was that it takes into account both the environmental situation and the environmental objectives of Switzerland for the assessment and thus is widely respected with regard to sustainability. Another reason was that this method provides an actual evaluation of all important environmental aspects in this life cycle assessment, such as POP emissions and resource consumption.

Although this method reflects Swiss environmental policy, it is also widely accepted at the international level. The results are expressed in environmental impact points (UBP).

Contact

SENS eRecycling

Obstgartenstrasse 28, 8006 Zurich
+41 43 255 20 00, info@sens.ch
[eRecycling.ch](https://www.eRecycling.ch)

Contact for media professionals

Nando Erne

Head of Marketing and Communication
+41 43 255 20 05, nando.erne@sens.ch

SENS eRecycling

As an expert in the sustainable recycling of discarded electrical and electronic appliances in and around the home, lighting equipment and lamps, photovoltaic systems, heat pumps, e-cigarettes, as well as vehicle and industrial batteries, the SENS Foundation plays a crucial role in setting pioneering standards in eRecycling. It conserves resources and thus makes an important contribution to environmental protection.