

Waste per person per year

USA	900 kg
Switzerland	670 kg
EU	500 kg
Sub-Saharan Africa	200 kg

670 kg per capita per year in Switzerland
52 % recycling rate
100 % collection rate

So much waste!

As well as metaphorical rubbish, we also produce very real rubbish – in Switzerland, around 670 kilograms per person per year. However, when it comes to assessing the environmental impact, there are more important factors than the sheer volume.

With 670 kilograms of household waste per year (of which 148 kilograms ends up in rubbish bags), Switzerland ranks in the upper middle range from a global perspective. The US tops the list with around 900 kilograms; the EU average is slightly above 500 kilograms, while in the sub-Saharan region the figure is around 200 kilograms.

What does this mean for the environment? The absolute waste volumes are actually less decisive than the waste treatment method. In Switzerland, just under half the waste is incinerated and 52 per cent is recycled. In the EU, the recycling rate stands at 48 per cent, albeit with significant variations: from 12.4 per cent in Romania to 62.8 per cent in Austria. The US recycling rate is roughly 37 per cent, and countries in the sub-Saharan region only recycle around 4 per cent.

Recycling rate

Austria	62.8 %
Switzerland	52 %
EU	48 %
USA	37 %
Romania	12.4 %
Sub-Saharan Africa	4 %

How well the Swiss waste management system works is demonstrated, on the one hand, by the collection rate and, on the other, by landfill figures. The collection rate is almost 100 per cent. Other developed regions also collect over 90 per cent, while the rate is significantly lower in West Asia and North Africa (75 per cent), Oceania (45 per cent), Central and South Asia (37 per cent) and sub-Saharan Africa (36 per cent).

Global forecast

2025	→	2.5 billion tonnes
2050	→	3.7 billion tonnes

Another key factor is disposal in a landfill. In Switzerland, combustible waste cannot go into landfills, these are restricted to hazardous waste. Similar regulations apply in Japan, Sweden and Austria. By contrast, on average across Europe, 30 to 40 per cent of waste is sent to a landfill, while in the USA the figure is more than half. In parts of Africa, Asia and South America, there are no waste incineration plants at all – all the waste ends up in landfills.

Globally, there is a clear trend towards an increase in the waste volume. According to forecasts, the volume of household waste is set to rise from just under 2.5 billion tonnes at present to over 3.7 billion tonnes by 2050.

Source for Switzerland:
Source for EU countries:
Source for global data:
Source for USA:

<https://www.admin.ch/de/newnsb/EcpWws7Ra2HcY1fJ88uP4> (in German)
https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Municipal_waste_statistics
Global Waste Management Outlook
<https://www.euwid-recycling.de/news/international/global-waste-index-2025-abfallaufkommen-pro-kopf-steigt-in-den-usa-weiter-stark-an-130625/>

**1 million
nappies per day
(Switzerland)**

**7 per cent
of household waste
consists of nappies
500 years
for a disposable
nappy to
decompose**

So many nappies!

During the first few years of life, disposable nappies have a significant impact on an individual's carbon footprint. Where waste incineration is not an option, this creates a problem that will endure for centuries.

In Switzerland, around one million nappies are disposed of every day; they account for over 7 per cent of household waste. That is a considerable amount, but thanks to the 29 waste incineration plants spread across the country, Switzerland can handle this. Worldwide, the vast majority of nappies end up in landfill sites, where it takes up to 500 years for them to decompose. The main reason for this is the absorbent core, which is made from plastics such as polyethylene, polypropylene and superabsorbent polymers.

**29 waste
incineration plants
(Switzerland)**

**\$80 billion
global market for
nappies
40 per cent
of these are used
by adults**

The pile of nappies is set to grow. While birth rates are falling in many industrialised countries, demand for nappies is rising in emerging and developing countries. At the same time, demographic trends are changing the market: in Japan, sales of adult incontinence products have long outstripped those of baby nappies – a trend that is also becoming apparent elsewhere. Adult products already account for around 40 per cent of the \$80 billion market.

Solutions to the problem are known, but they are only of limited practical use. Waste incineration is not an option due to the costs; cloth nappies are unpopular because they are so inconvenient. Biodegradable nappies seem more promising, and companies, start-ups and research projects are working on them; however, there is as yet no product in sight that could offer a serious solution to the global mountain of nappies.

Proportion in household waste:

Number of waste incineration plants:
Market size babies vs. adults:
Japan:

https://www.bafu.admin.ch/dam/de/sd-web/HaAvGLEqJ26Z/erhebung_der_kehrlichtzusammensetzung_2022.pdf (in German)
<https://vbsa.ch/artikel/kennzahlen-kva-2024> (in German)
<https://www.fortunebusinessinsights.com/de/windelmarkt-106137> (in German)
<https://www.bbc.com/news/business-68672186>
<https://www.fortunebusinessinsights.com/de/windelmarkt-106137>

180 → 400 ZB
of data per year
(today → 2 years
from now)

945 TWh
of electricity
consumed by data
centres per year

So much digital waste!

The growth in the volume of global data – and consequently in electricity consumption – shows no sign of abating. However, by no means all data that are being stored are useful.

Social media posts, promotional emails, concert recordings lasting several minutes, cat videos or make-up tutorials. A great deal of what was once created, for reasons both good and bad, is stored, even though there is no longer any use for it. This digital waste sits on servers, consumes electricity and produces CO₂. Data centres account for around 1.5 per cent of the electricity consumed worldwide; this figure is set to rise to 3 per cent by 2030. Estimated energy consumption: 945 terawatt hours.

1.5 → 3 %
share of global
electricity
consumption
(by 2030)

50 %
of all corporate data
remain unused

When it comes to digital waste, artificial intelligence is both a source of hope and a threat. The threat lies in allowing vast amounts of new content to be generated – resulting in yet more digital waste. Around 180 zettabytes of data are generated each year; according to estimates, this figure is set to rise to almost 400 zettabytes per year within the next two years. One zettabyte is equal to 1 trillion – in numbers: 1,000,000,000,000 – gigabytes.

The hope, in turn, is that AI can help companies organise their data more effectively. So far, for many people, it has been more of a struggle than a success: around half of the data remain unused, 90 per cent of companies say they struggle to analyse the data effectively – and some are not even aware that the data exist. Incidentally, because the data might yet prove to be useful, companies do not refer to them as “digital waste” but as “dark data”.

The sober outlook: private individuals are unlikely to curb their data usage. There is greater hope that companies will manage their data as they are becoming an increasingly significant cost factor.

**9,000 tonnes
of space debris in
Earth’s orbit**

**100 million
debris objects
larger than 1 mm**

**7 km/s
velocity of small
debris**

**2029:
launch of the first
active clean-up
mission**

**So much space
debris!**

Tonnes of space debris end up in the sea every year. However, the majority remains in orbit, where it is becoming more and more of a problem.

Outer space is infinite, and yet parts of it are becoming cramped due to an overabundance of spatial debris floating around. At altitudes of between 200 and 2,000 km, over 100 million objects larger than 1 millimetre orbit the Earth, along with 500,000 objects up to 10 centimetres in size and 25,000 objects that are even larger – the latter are tracked. The total mass of space debris in orbit is estimated at around 9,000 tonnes.

The fact that this figure continues to rise is due to the boom in space travel, the launch of thousands of new satellites every year – and the so-called Kessler effect: collisions create additional debris, which can trigger further collisions. Even small fragments are dangerous because they travel at speeds of up to 7 kilometres per second. This is why nothing is left to chance at the ISS: as soon as the risk of collision exceeds 1:10,000, the space station will manoeuvre out of the trajectory.

One small consolation: a proportion of the space debris continuously disappears into thin air. Several hundred tonnes enter the Earth’s atmosphere every year, where most of them burn up; the rest usually end up in the sea. Not everything is left to time: larger fragments are regularly directed into the atmosphere above the South Pacific, where they burn up – or are transferred to a higher “graveyard orbit” where they pose less of a collision risk.

To keep outer space usable in the long term, there is only solution: clean it up. This has been the subject of discussion for a long time and is finally set to begin in 2029. ClearSpace, a Swiss start-up funded by the European Space Agency (ESA), has developed an autonomous robotic arm designed to collect space debris piece by piece.

Orbital debris, number of objects:
Entry into the atmosphere:
Disposal orbits:
ClearSpace:

<https://orbitaldebris.jsc.nasa.gov/faq/#> (Question 3)
ISS evasive manoeuvre (Question 9)
<https://www.tagesschau.de/wissen/weltraum/weltraumschrott-ozonschicht-100.html>
(in German)
<https://orbitaldebris.jsc.nasa.gov/faq/#> (Question 14)
https://www.esa.int/Space_Safety/ClearSpace-1

93,000 cubic metres of radioactive waste in Switzerland

10 % of the waste → 99.8 % of activity

So much radioactive waste!

In total, 93,000 cubic metres of radioactive waste will be emplaced in Switzerland's deep geological repository. Yet while the volume is important, even more important is the question: how will the activity of the waste evolve over time?

Most of the radioactive waste that will eventually end up in Switzerland's repository consists of low- and intermediate-level waste (L/ILW): around 44,000 cubic metres of waste, once packaged, will require approximately 77,900 cubic metres of space. High-level waste (HLW) requires significantly more packaging. Out of a total of 8,200 cubic metres, only 1,500 cubic metres actually consist of radioactive waste – a volume of approximately 10 × 10 × 15 metres. Although HLW makes up only around one-tenth of the total volume, it accounts for 99.8 per cent of the total activity. But what will happen with the waste after the final closure of the deep geological repository? After one million years, most of the radioactive waste will have decayed. To assess the post-closure safety of the repository, Nagra even considers a time period of one million years.