

# Investment Trends

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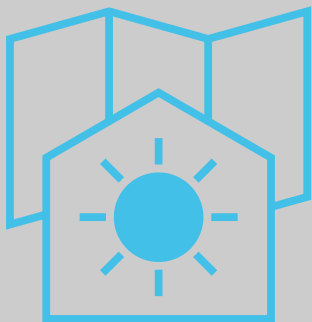


**Is China the  
ultimate  
environmental  
sinner?**

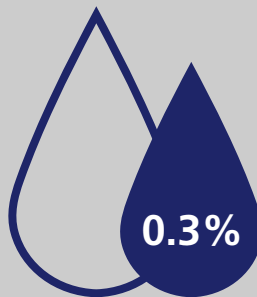
**Water – the  
essential liquid**

<b>1</b> No poverty	<b>7</b> Affordable and clean energy	<b>13</b> Climate action
<b>2</b> Zero hunger	<b>8</b> Decent work and economic growth	<b>14</b> Life below water
<b>3</b> Good health and well-being	<b>9</b> Industry, innovation and infrastructure	<b>15</b> Life on land
<b>4</b> Quality education	<b>10</b> Reduced inequalities	<b>16</b> Peace, justice and strong institutions
<b>5</b> Gender equality	<b>11</b> Sustainable cities and communities	<b>17</b> Partnerships for the goals
<b>6</b> Clean water and sanitation	<b>12</b> Responsible consumption and production	The global goals for sustainable development Quelle: <a href="https://sdgs.un.org/goals">sdgs.un.org/goals</a>

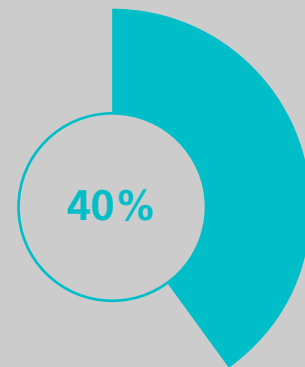
**In our special series on investment trends, we focus on sustainable development goals of the United Nations (UN), where no major progress has been achieved so far.**



**China has installed more solar panels in 2023 alone than the US have in their entire history.**



**Only 0.3% of the fresh water on earth is accessible in principle.**



**By 2024, 40% of all new cars sold in China will be electric.**



**Silke Humbert**  
Sustainability economist

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Main gate to Haikou City, China



MSCI ESG rating of selected investment opportunities

**13** Climate action

# Is China the ultimate environmental sinner?

China is the largest emitter of greenhouse gases and at the same time insists on its status as a developing country at environmental conferences. While the western world continues to reduce the use of coal as an energy source, China is building new coal-fired power plants. Is China the big scapegoat when it comes to climate change?

When it comes to successful efforts to reduce greenhouse gases in the West, it usually only takes a short time before China is brought into the picture. China's preference for coal-fired power plants in particular causes bitter offence in the West. "All well and good. But what is the point of our efforts if China builds a new coal-fired power plant every fortnight?" they say. So the roles seem to be clearly assigned: The West acts in a value-orientated manner and is concerned about environmental and climate protection, while China pollutes the environment with its vigorous growth and yet innocently insists on its status as a developing country at all climate conferences. But is it really that simple?

## What initially speaks against China

At first glance, this does indeed appear to be the case. While many countries have set themselves the goal of achieving net zero by 2050 as part of the Paris climate summit, China has lowered the bar. The Middle Kingdom is giving itself until 2060 to become climate-neutral. At almost 90%, China's share of fossil fuels in its energy supply is immensely high. In Switzerland on the other hand, it is just under 50%. Due to China's large reserves, coal is the favoured fossil fuel. As a result, more than half of the world's coal-fired power

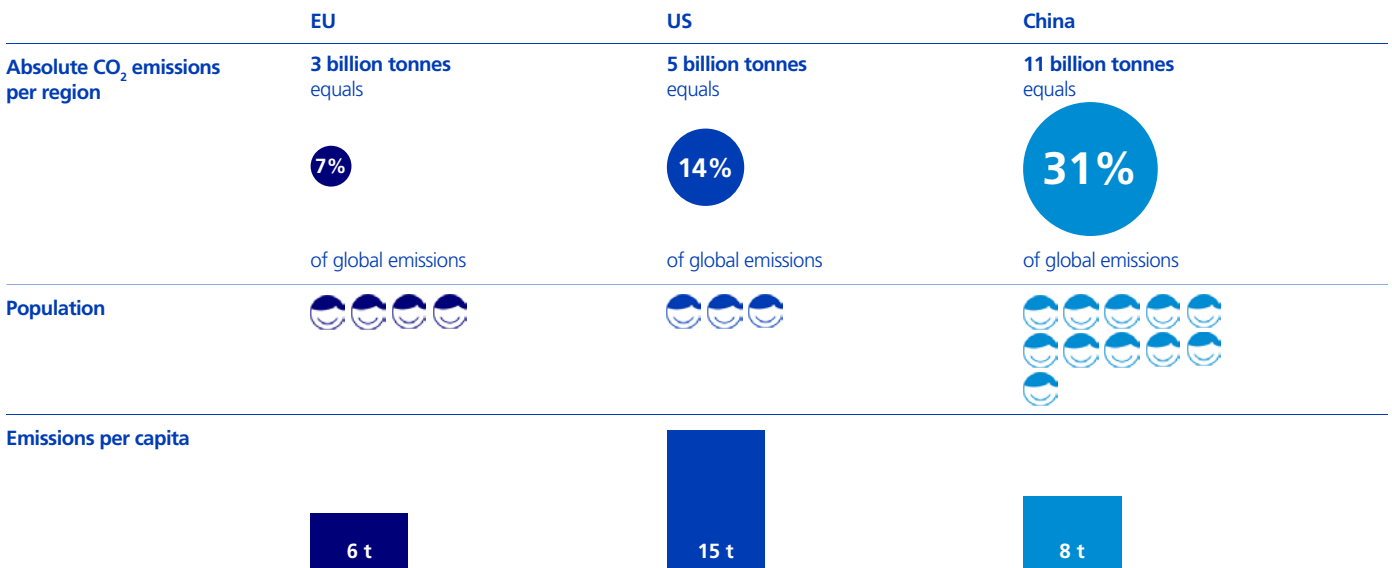
plant capacity is now located in China. And the boom in the construction of coal-fired power plants is still ongoing. In 2023, new coal-fired power plants with a total capacity of 47,000 megawatts were built in China.<sup>1</sup> Putting this into a global context, this corresponds to 90% of the net new coal-fired power plant capacity added in 2023. It is therefore not surprising that China has now become the country with the highest carbon dioxide emissions. Figure 1 shows that China now emits over 30% of this globally. In the US, the proportion is less than half at 14%, and in the EU it is only 7%.<sup>2</sup>

However, as soon as the size of the population is taken into account, the ratio changes. China's emissions per capita are then only slightly higher than those in the EU, while the US emissions per capita are around twice as high. In addition, around 8% of Chinese emissions are attributable to products that are exported. China also has many other characteristics that do not fit the image of the typical environmental sinner: The Chinese solar industry, the supply chains for and sales of electric cars and the installation of national trading for CO<sub>2</sub> pricing. So what are the arguments in favour of and against China?



Photovoltaic plant in China

**Figure 1: The biggest polluter? A matter of perspective**  
Carbon dioxide emissions for the EU, US and China in 2022



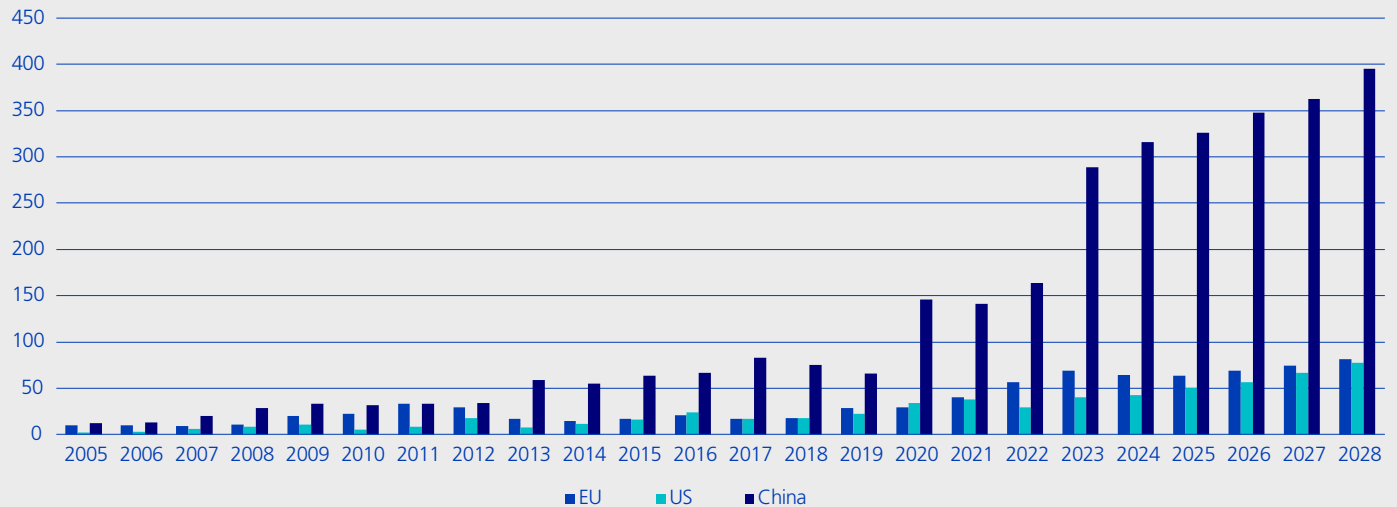
Source: Our World in Data, Global Carbon Budget, Zürcher Kantonalbank.

**President Xi Jinping – the great environmentalist?**

You will look in vain for a Chinese Greta Thunberg.<sup>3</sup> We have also never heard of Chinese climate activists that superglue themselves to the road. While we in the West are used to the issue of environmental protection being put on the agenda by activist groups, in China it is a matter for the bosses. The theory of the two mountains goes back to Xi Jinping himself.<sup>4</sup> In China, golden and silver mountains symbolise something of inestimable value. In a now famous speech, Xi Jinping postulated that clear waters and green mountains should themselves be regarded as golden and silver mountains. This may seem surprising for a country

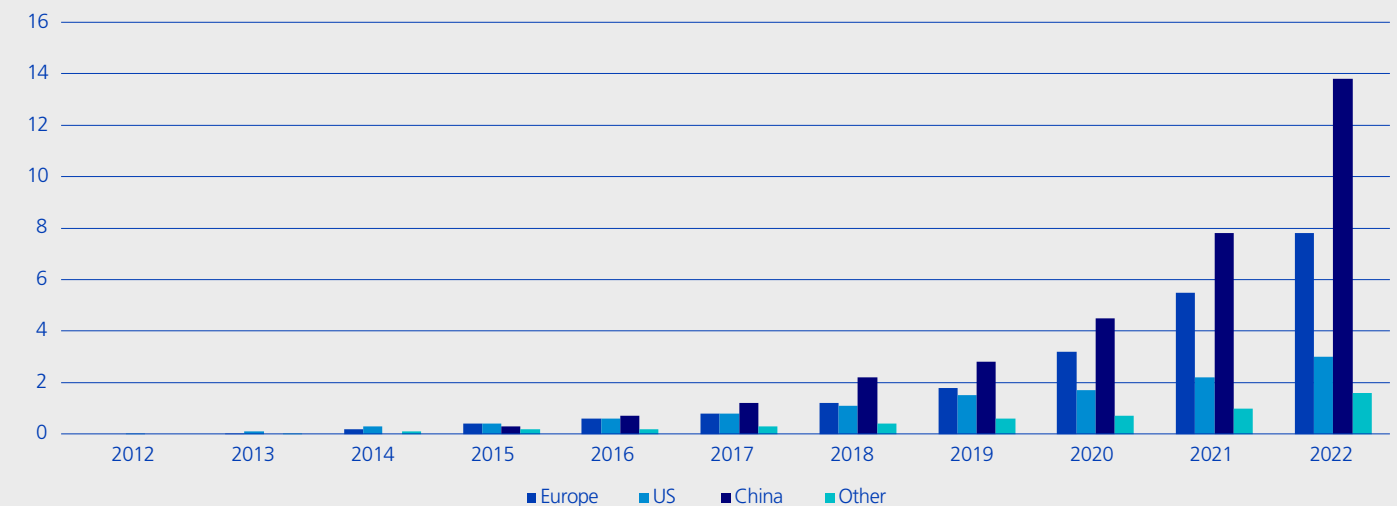
that is known as the workbench of the world and causes high levels of air pollution with its many coal-fired power stations. And yet this is precisely where the connection lies. The high level of air pollution, which has led to Chinese people no longer being able to open their windows, has ensured that the importance of a clean environment has increased at a political level. Xi Jinping has repeatedly emphasised that the first stage of economic development was at the expense of the environment, but that we must now try to do business in harmony with nature. Another buzzword that the Chinese rulers often use in this context is "ecological civilisation".

**Figure 2: China outperforms the US and EU**  
Renewable energy capacity in gigawatts (GW)



Source: International Energy Agency: Renewable Energy Progress Tracker, Zürcher Kantonalbank

**Figure 3: Strong growth for electric cars in China**  
In millions



Source: International Energy Agency, Zürcher Kantonalbank

The fact that the Chinese rulers are serious about this can be seen, for example, from the fact that the third action plan to promote air quality was published in 2023. Environmentally friendly energies instead of coal, industrial decarbonisation and green transport play a major role in this. Another indication is that China's 14th five-year plan includes binding environmental targets, while the economic development targets are only guidelines.

### **China is a leader in green technologies**

China's economic recovery after the end of the Zero COVID strategy was followed by a high demand for electricity, which was generated to a large extent by coal. The energy efficiency targets that China has set itself for 2025 have therefore receded into the distance. However, this does not mean that China has completely missed the target. One of the milestones formulated as a target is that carbon dioxide emissions should peak by 2030 and decrease thereafter. And this target is getting ever closer: the enormous expansion of solar power in the electricity mix means that the green share is constantly increasing. In 2023 alone, China will have installed more solar panels than the US have in their entire history. Experts from Bloomberg assume that China will reach its self-imposed target of 1,200 GW of renewable energy capacity by 2024. Figure 2 shows the renewable energy capacity compared to the EU and the US with a forecast until 2028.

## «China has installed more solar panels in 2023 alone than the US have in their entire history.»

China is also ahead when it comes to electric vehicles (see figure 3). More than half of all electric vehicles are on the roads in China. Last year, one in three new cars sold there was electric – in Europe it was one in four and in the USA one in ten.

The Chinese are also pushing ahead with bidirectional charging. Car batteries are to be intelligently integrated into the power grid. Time-dependent tariffs will allow them to be increasingly charged during off-peak times and at the same time act as mobile storage units that not only supply the car with electricity, but also the household. If required, it should also be possible to send electricity back into the

## «By 2024, 40% of all new cars sold in China will be electric.»

grid. Bidirectional charging kills two birds with one stone: the demand for electricity at peak times is reduced and fewer external electricity storage units are required. China wants to set up 50 pilot programmes for this in various regions by next year. So there are good reasons that speak both against and in favour of China. What is the overall assessment and what will the verdict be in the future?

### **It is not appropriate to pass the buck to China**

The fact that China has greatly expanded its position in green technologies in recent years can be seen in the results of scientific research. While the EU was still ahead in terms of the number of scientific publications on environmentally friendly technologies over ten years ago (see figure 4), the Middle Kingdom is now in first place. In order to obtain information about the quality of research, the number of times a publication is cited is counted. Here, too, China is ahead of the EU, but has not yet caught up with the US. As it takes several years for research results to manifest themselves in sales and profits in the real economy, it can be assumed that China will retain its leading role in green technologies for the foreseeable future.

But why are so many coal-fired power plants being built in China? There are three reasons: Firstly, the issue of energy security is a top priority after, for example, hydropower was able to supply less electricity in 2023 due to severe drought. Overinvestment in coal-fired power plants is therefore accepted. Secondly, coal-fired power plants are seen as a kind of standby service for peaks in demand. As solar and wind power are linked to weather conditions, China wants to have an energy supplier that is independent of the weather when demand is high. Thirdly, experts speak of a flaw in the local governments' incentive system. In any case, the steadily decreasing utilisation of coal-fired power plants suggests that China will not need the large number of coal-fired power plants.

The world is full of contradictions and China's role in climate protection is a good example of this. In absolute terms,

**Figure 4: China has reached the top within ten years**

Number of scientific publications on green energy in the EU, US and China

	2010			2021		
	1 <sup>st</sup> place	2 <sup>nd</sup> place	3 <sup>rd</sup> place	1 <sup>st</sup> place	2 <sup>nd</sup> place	3 <sup>rd</sup> place
Solar	EU	China	US	China	EU	US
Wind	China	EU	US	China	EU	US
Li-Ion batteries	EU	China	US	China	EU	US
Heat pumps	EU	China	US	China	EU	US
Carbon capture and storage	EU	US	China	China	EU	US

Source: European Commission: Single Market Economics Briefs (2024). Understanding EU-China economic exposure. Frank Vandermeeren, Zürcher Kantonalbank

China is both the largest emitter of carbon dioxide and a pioneer in green technologies. It would therefore be premature for the West to pass the buck to China as an environmental sinner without getting a comprehensive picture. If emissions are to be compared fairly, both the stage of development of a country and the size of its population must be taken into account. And here, too, it is clear that China emits roughly the same amount of carbon dioxide per capita as the EU, but significantly less than the US or the UK at the time when these regions each had a similar gross domestic product per capita.

**Sustainability view (ESG)****(E) Environmental**

- + Companies with partially positive ecological ambition (emission efficiency)
- Companies with their own reserves of fossil energy sources

**(G) Governance**

- Possible exposure to companies with below-average ownership and management structures

For additional information on specific investment topics, please contact your client advisor.

1 Global Energy Monitor

2 Our World in Data

3 There were indeed individual young people who became active in the Fridays for Future demonstrations, however they were quickly stopped.

4 Carbon Brief ([www.carbonbrief.org](http://www.carbonbrief.org))





MSCI ESG rating of selected investment opportunities

## 6 Clean water and sanitation

# Water – the essential liquid

Water is essential to our lives and there is no substitute for it. What is the situation regarding water as a valuable resource and what can we do to ensure that we can continue to rely on an affordable and high-quality water supply?

"Water is running out." How often have we read this headline? The world's population and prosperity are growing – which means there won't be enough water. Combined with climate change, everything will get even worse, we read. Droughts, water shortages and declining water quality – and yet the water flows reliably from our taps when we turn them on. We can also drink from the many wells without having to worry about falling ill afterwards. So no problem at all? At least that's the case for us in Switzerland. But how do water shortages occur in the first place? Water doesn't just disappear on its own.

### Increasing demand...

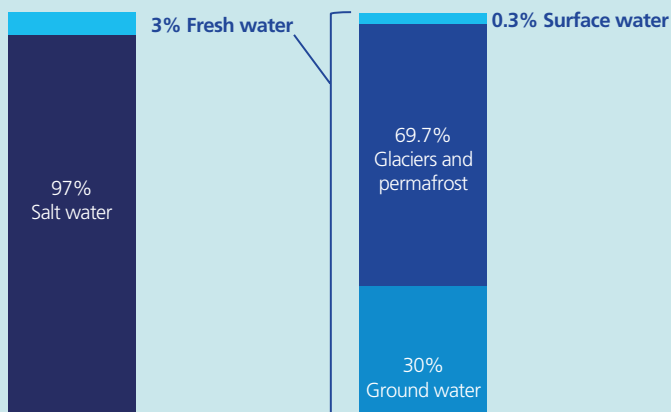
The economic perspective is first and foremost on supply and demand. The demand for fresh water is indeed increasing. This has to do with an increasing population and rising prosperity. The United Nations (UN), for example, calculates that the demand for water has grown by 1% annually over the last 40 years.<sup>1</sup> The UN also estimates that global demand for water will increase by 20 to 30% by 2050. Who actually uses the water? Globally, the greatest demand is in agriculture. Its share of water demand is around 70%. Industry and cities roughly share the remaining demand.

**Figure 1: Water distribution on earth**

Lots of water, little fresh water

Only 3% of the water on earth is fresh water.

Only 0.3% of the fresh water on earth is accessible in principle.



Source: World Bank, Zürcher Kantonalbank

### ... meets a theoretically constant supply

Although water covers the majority of the earth's surface, only about 3% of it is fresh water, the rest is salt water. Two thirds of this fresh water is inaccessible because it is trapped in glaciers or permafrost, for example. The remaining third consists mainly of ground water. Only 0.3% of fresh water is found on surfaces that are accessible in principle, such as lakes, rivers and wetlands (figure 1).

### Is water really running out?

Water follows a cycle that starts again and again. Put simply, water evaporates over the oceans, while the salt remains in the sea. The wind then carries the water vapour over the land masses, where it falls as rain over the earth and collects in rivers, lakes and ground water. From there, the water returns to the oceans. From a scientific point of view, the amount of water is therefore constant. Climate change does not change this. However, warmer air can store more water vapour. This means that the water does not disappear, but is

invisibly bound in the air. This leads to less, but increasingly heavy rainfall. More frequent droughts and floods are a consequence of this. A higher average global temperature therefore does not directly lead to a decrease in water on and in the earth, but it does lead to unpredictable rainfall patterns that are much more difficult to deal with. As the demand for water is constantly rising due to the growing world population and increasing prosperity, a water gap is actually emerging. We can influence how big this gap will be, as the following two passages show.

**Influential factor 1: Extraction rates**

The first definition of sustainable behaviour comes from forestry: only cut down enough trees to keep the forest standing. This principle also makes sense when it comes to water extraction. The reservoir of ground water is around 100 times larger than the amount of surface water and appears to be inexhaustible at first glance. However, the renewal rate of ground water is significantly lower than that of surface water (figure 2). While all surface water is theoretically renewed within five years, the same process often takes thousands of years for ground water. The fact that agriculture, industry and private individuals rely on ground water is widespread throughout the world. Far too little attention has been paid to date to whether extraction rates can keep pace with renewal rates. In a major study, scientists from the Swiss Federal Institute of Technology (ETH) in Zurich and the University of Santa Barbara in California recently analysed 1,700 ground water systems worldwide. They were able to show that ground water reserves are dwindling more and more and that the decline has even accelerated since the 2000s.<sup>2</sup>

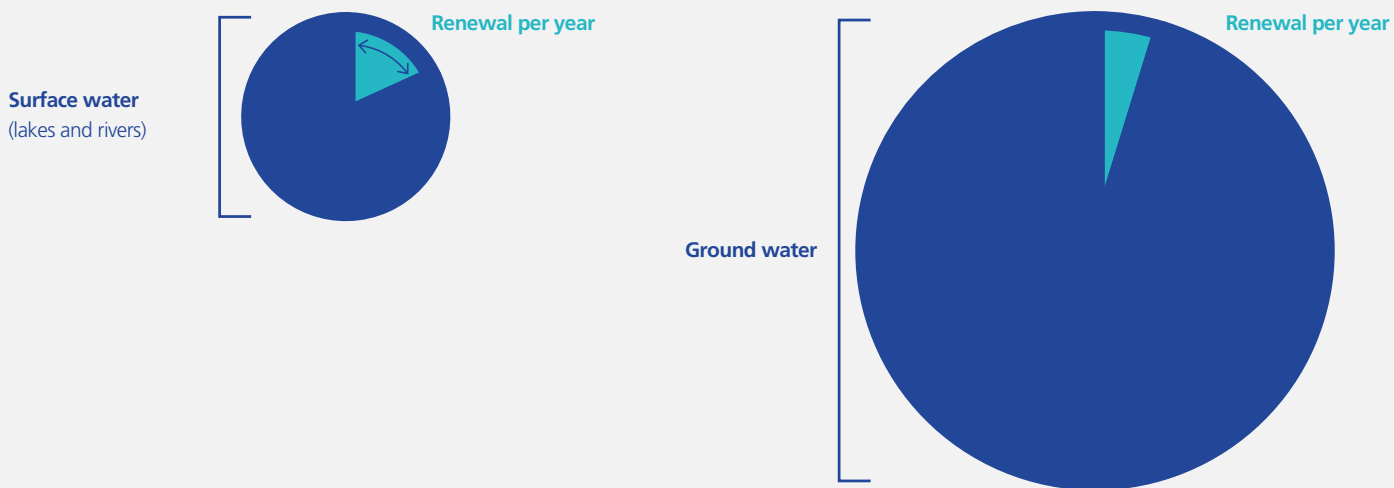
**Influential factor 2: Water pollution**

Used water should only be returned to the water cycle after careful reprocessing to prevent large-scale contamination. Poor water quality occurs in both emerging and developed countries, even if the problems are completely different. In the emerging countries, the difficulties are mostly due to inadequate wastewater treatment. While the wastewater from more than half of all households worldwide is treated, this is significantly less the case in emerging countries.<sup>3</sup> The difficulties in developed countries, on the other hand, are caused by the intensive use of chemicals. On the one hand, the use of fertilisers is damaging the soil and water. One third of the monitoring stations in Germany, for example, document that the EU nitrate limits are being exceeded. In addition, the industry is constantly developing new chemicals that cannot yet be filtered out in water treatment plants. The US Environmental Protection Agency receives over 1,000 manufacturing notifications for new chemicals every year. The so-called "perpetual chemicals" (PFAS) are particularly challenging. Due to their favourable properties, they are widely used, but cannot be organically degraded. Their concentration in fresh water increases steadily as long as they are not filtered out. However, filtering out nitrate and perpetual chemicals increases the cost of clean fresh water.

**Conclusion and specific need for action**

The increasing demand for water with a decreasing amount of available water inevitably leads to a water gap. High extraction rates and water pollution are exacerbating the problem. In future, it will become more difficult and more expensive to obtain clean water. Closing this gap will

**Figure 2: Lots of ground water, but only very slowly to renew itself (schematic diagram)**  
Volume and renewal rate of accessible fresh water



require more efficient water utilisation and better water protection. The first area includes technologies such as reliable pipework, efficient pumps and intelligent water meters. The second area includes effective preventive measures for particularly water-intensive and water-polluting industries. The third area is water supply. It is predominantly in public hands. Here it is important that state water suppliers systematically invest in a sustainable, future-proof water infrastructure.

## Sustainability view (ESG)

### (E) Environmental

- + Companies with positive ecological ambitions (water conservation, water efficiency)
- + Companies with low CO<sub>2</sub>e intensity
- Companies with (still) high water consumption in some cases

For additional information on specific investment topics, please contact your client advisor.

- 1 Partnerships and cooperation for water (2023). The United Nations World Water Development Report.
- 2 Jasechko S., Seybold H., Perrone, D. et al. (2024). Rapid groundwater declines in many aquifers globally but cases of recovery. *Nature*.
- 3 United Nations (2021). *Progress on Wastewater Treatment*.



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