

# The low-carbon transition by the numbers

## It's the heat

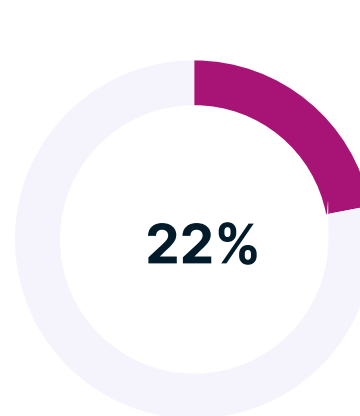
2024 is rivaling last year as the **hottest year** on record. Average global temperature for the 12 months ending in August was the **highest ever recorded** — **1.64°C (3°F) above preindustrial levels** — for any 12-month period, [according to EU Copernicus](#). (The Paris Agreement aims to constrain warming to 1.5°C (2.7°F)).

**Over 5 billion people** this year — nearly one-fifth of the planet's population — have endured **at least one day where the heat index topped 39.4°C (103 °F)**, the threshold considered life-threatening, [The Washington Post](#) reports.

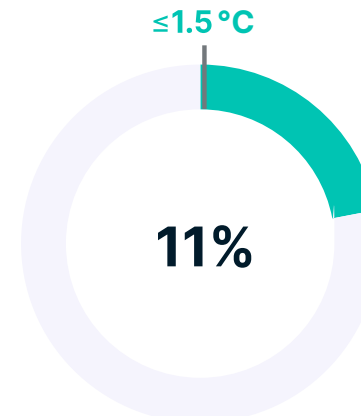
## Companies not where they need to be

Listed companies are likely to burn through their share of the **global carbon budget** for limiting the rise in average global temperatures to 1.5°C (2.7°F) by **October 2026**, according to the MSCI Sustainability Institute's [latest Net-Zero Tracker](#).

- **Nearly two-thirds (62%)** of listed companies are on a trajectory that **would warm the planet by more than 2°C (3.6°F)** above preindustrial levels, while **11% align with projected warming of 1.5°C (2.7°F)**, as of May 31, 2024, based on MSCI's Implied Temperature Rise metric.
- **Emissions from listed companies contribute about 20%** of global greenhouse gas emissions (Scope 1).
- **Just over one-fifth (22%)** of listed companies have set a **decarbonization target** to be in line with a science-based pathway, as of May 31, 2024, an **increase of eight percentage points** from a year earlier.



Share of listed companies that have set science-based climate targets



Share of listed companies that align with the goal of holding the rise in average global temperatures to 1.5°C above preindustrial levels

Date by which the world's listed companies are expected to burn through their remaining 1.5 °C carbon budget



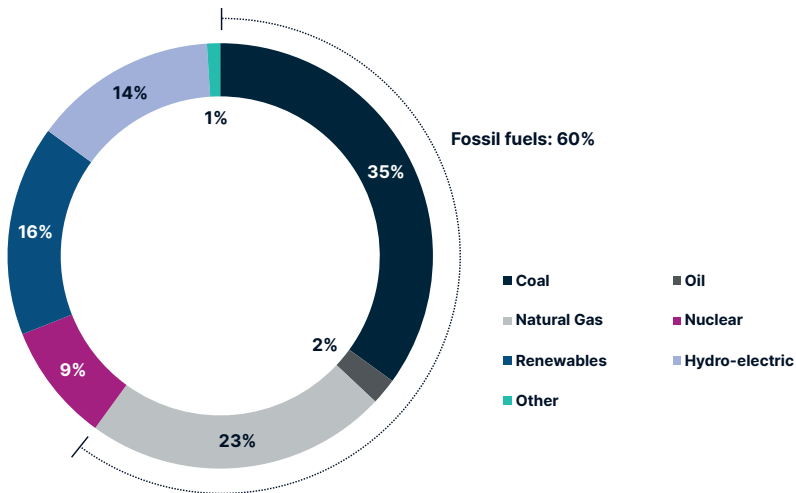
Source: MSCI Sustainability Institute, data as of May 31, 2024

## The energy supply picture:

Fossil fuels supplied **60% of total energy demand** globally last year, according to the latest [Statistical Review of World Energy](#).

- **Renewables (solar, wind and hydro) accounted for 30% of electricity** generated in 2023; if you include nuclear, low-carbon energy provided about **40% of electricity** generated last year.
- **Renewables accounted for nearly 86% of new global electricity generation capacity in 2023**, [according to data](#) from the International Renewable Energy Agency.
- **China added 55% of all renewable generation capacity in 2023; more than the rest of the world combined.**

### Global electricity generation in 2023



Source: MSCI Sustainability Institute, based on data from the Statistical Review of World Energy

## The energy demand picture:

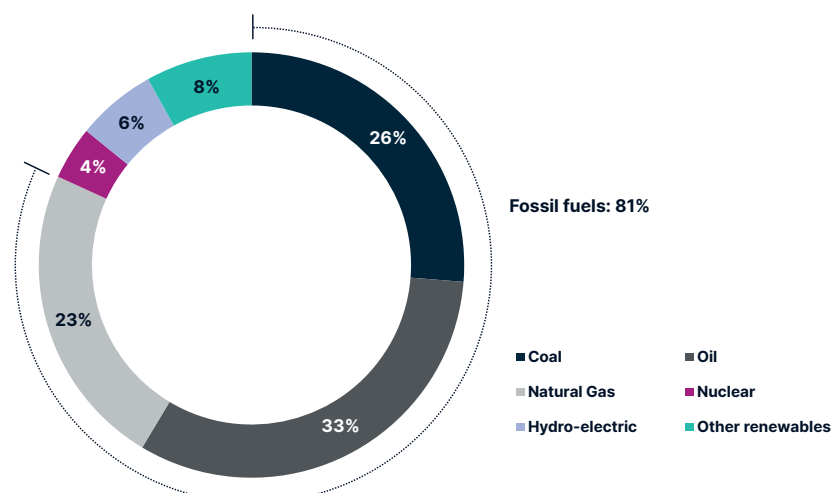
**Global consumption of energy** reached a **record high** of 620 exajoules ( $17 \times 10^4$  terawatt hours) in 2023, **up 2%** from a year earlier. (An exajoule is [24 million tons](#) of oil equivalent.)

- **CO2 emissions from the combustion of fossil fuels** is by far the largest source of energy-related greenhouse gas emissions, contributing around 81% of the total.

**The Global South** accounted for **56% of the world's total energy consumption**.

- The **Asia Pacific region** was responsible for **85% of the Global South's demand** (and **47% of global demand**).
- **Electricity demand in both North America and Europe**, meanwhile, **fell -1% and -2.4% respectively**, from a year earlier.

### Global primary energy consumption generation in 2023



## Progress check

**Renewable energy capacity** is expected to reach **8,000 gigawatts by 2030**, or about 27% short of the roughly 11,000 GW of global power generation that would be required to meet the **global goal of tripling global capacity** from 2022 levels by 2030, [the International Energy Agency](#) reported in June. The IEA says:

- **Advanced economies** need to increase generation capacity to a growth factor of 2.5x from its current 1.9x.
- **Emerging and developing economies** should raise the growth factor to 3.4x from 2.4x.

## The investment opportunity

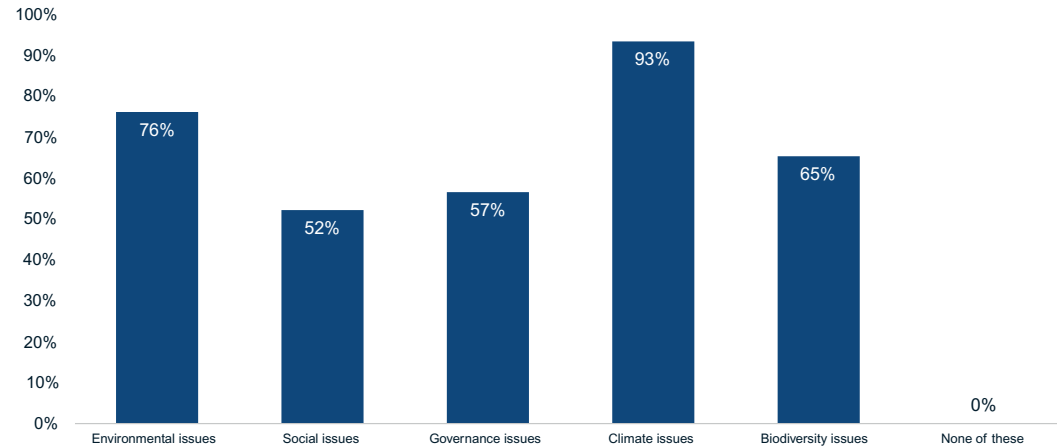
The world's biggest investors overwhelmingly say that **climate change** is the sustainability issue most likely to affect the **performance of investments in the next two to five years**, [a survey](#) published this year by Stanford's Graduate School of Business and the MSCI Sustainability Institute finds.

**Investment in clean technologies and infrastructure in the U.S. totaled nearly half a trillion dollars (USD 493 billion)** in the two years ending June 30, 2024, **up 71%** from the two years that preceded the Inflation Reduction Act, [according to data](#) compiled by Clean Investment Monitor.

Since passage of the Inflation Reduction Act, listed **companies upstream from the power-generation value chain** (including clean-energy equipment manufacturing, batteries, electric-vehicle components and mineral processing) have announced **more than USD 137 billion of investments** in areas where the act offers manufacturing and investment incentives, [finds MSCI ESG Research](#) based on data as of Sept. 6, 2024.

- **Battery-storage-related investments** accounted for two-thirds (66%) of this, followed by **electric-vehicle components** (16%) and **solar-panel parts** (12%).

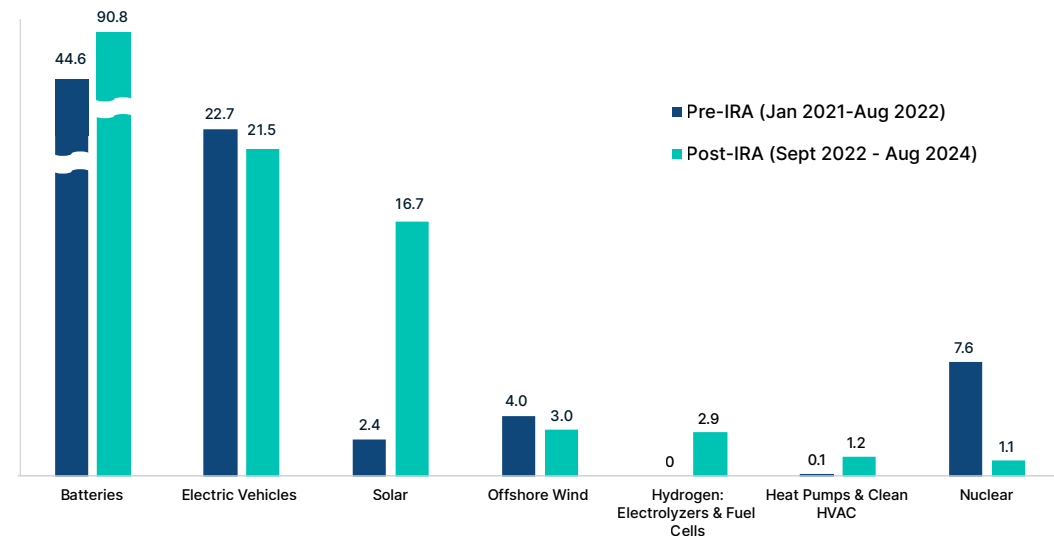
## Which sustainability issues do you believe are most likely to affect the performance of an investment over the next 2 to 5 years



Source: Stanford-MSCI Sustainability Institute survey

## Tracking climate-friendly investment

USD Millions of announced investment

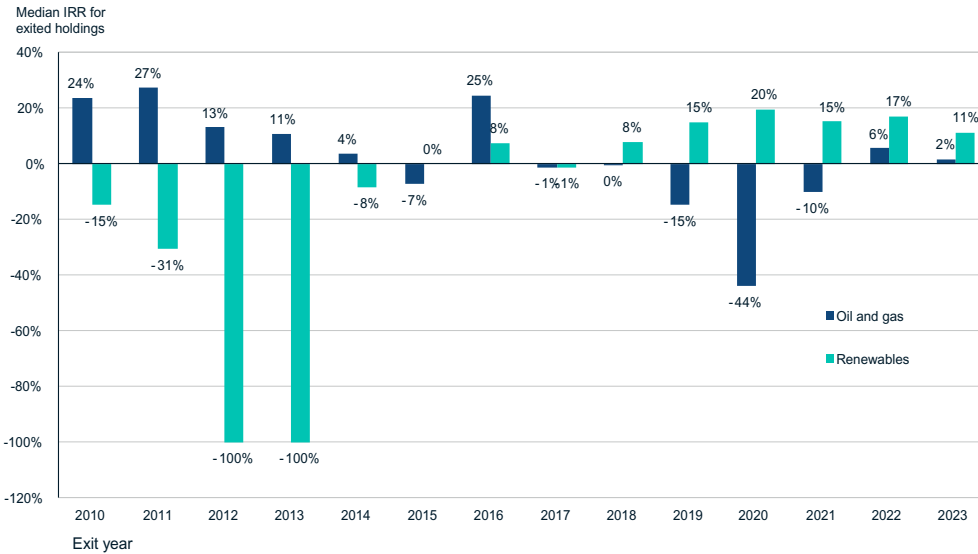


Source: Stanford-MSCI Sustainability Institute survey

# The investment opportunity

Exits from renewables by private capital groups have yielded higher returns than exits from oil and gas from each of the eight years ended Dec. 31, 2023, [according to data](#) from MSCI ESG Research.

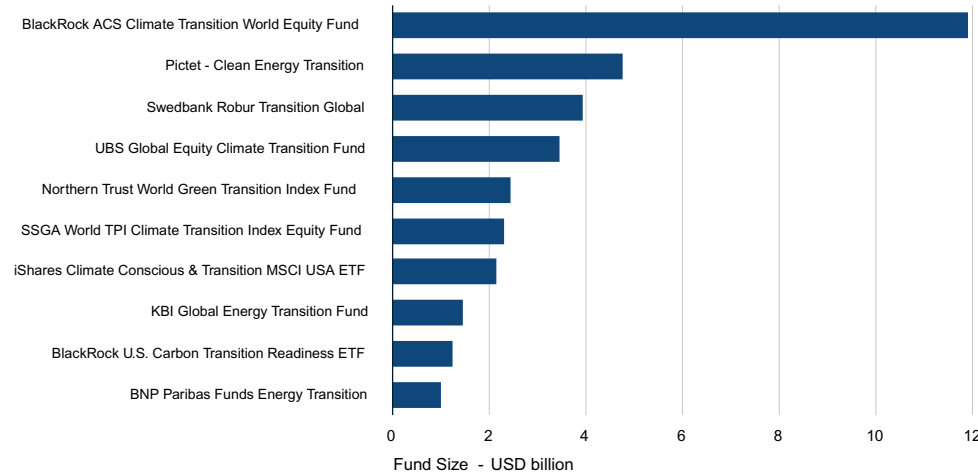
## Returns from exits by private capital groups



Source: MSCI ESG Research, based on 1,403 unique exited holdings in 419 unique private-capital funds, as of Q4 2023

Transition funds are on the rise, [reports MSCI ESG Research](#), which notes that funds aiming to capitalize on the shift to a low-carbon economy managed more than **USD 50 billion** as of July, with 70% of those funds launched in the last four years.

## Top transition funds by size



Source: MSCI ESG Research, based on holdings as of March 31, 2024

## The financial costs of climate change

- **Global GDP would be 7-10% less by 2050** than in a world without climate change if average temperatures were to rise 2°C (3.6°F) to 2.6°C (4.7°F), [according to data](#) from the Swiss Re Institute, which notes that floods, tropical cyclones and storms made more destructive by climate change cause expected losses of USD 200 billion annually currently.
- **Costs from extreme heat could rise 4x for listed companies in aggregate**, if global temperatures rose 3°C (5.4°F) from preindustrial levels, compared with a 1.5°C (2.7°F) warming scenario, [MSCI ESG Research finds](#).
- **41% of company locations** globally are exposed to **at least one flood type** (from extreme rainfall, from rivers overflowing their banks, or from high tidal water and storm surges), data from MSCI GeoSpatial Asset Intelligence [shows](#).
- **Climate change will make the world about 19% poorer** in the next 26 years compared with a world that were not warming, [estimate scientists](#) at the Potsdam Institute for Climate Impact Research.
  - **These damages, which are irreversible, are 6x larger than the cost of mitigation** needed to limit global warming to 2°C (3.6°F).

Read more at  
[msci-institute.com](https://www.msci-institute.com)

