

**Jokeemkan Technologies Ltd**

Make Smart Genius

DIGITAL & TRENDS

Global Investments in Clean Technology

A comprehensive analysis of worldwide clean energy investments, climate tech funding, key markets, technology segments, and the long-term outlook through 2050.

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Jokeemkan Technologies Ltd

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Sources: IEA, BloombergNEF, Net Zero Insights,
IRENA, World Economic Forum & more



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CHAPTER 01

Overview



Global greenhouse gas emissions 1970–2024

Annual greenhouse gas emissions worldwide from 1970 to 2024 (in billion metric tons of CO₂ equivalent)

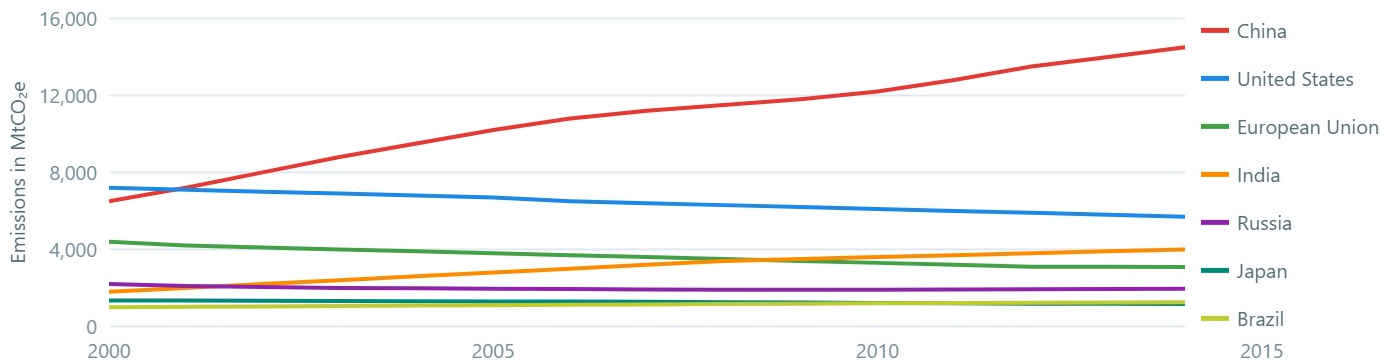


Description: In 2024, global greenhouse gas (GHG) emissions increased by 1.2 percent year-over-year to reach a new record high of 53.21 billion metric tons of carbon dioxide equivalent (GtCO₂e). This represents a more than 64 percent rise in GHG emissions since 1990. The continuous growth in emissions has significant implications for global climate patterns and environmental stability.

Note: Worldwide; 1970 to 2024 · Sources: EDGAR/JRC; European Commission; IEA

Global greenhouse gas emissions in selected countries 2000–2024

Annual greenhouse gas emissions for major economies worldwide from 2000 to 2024 (in million metric tons of CO₂ equivalent)



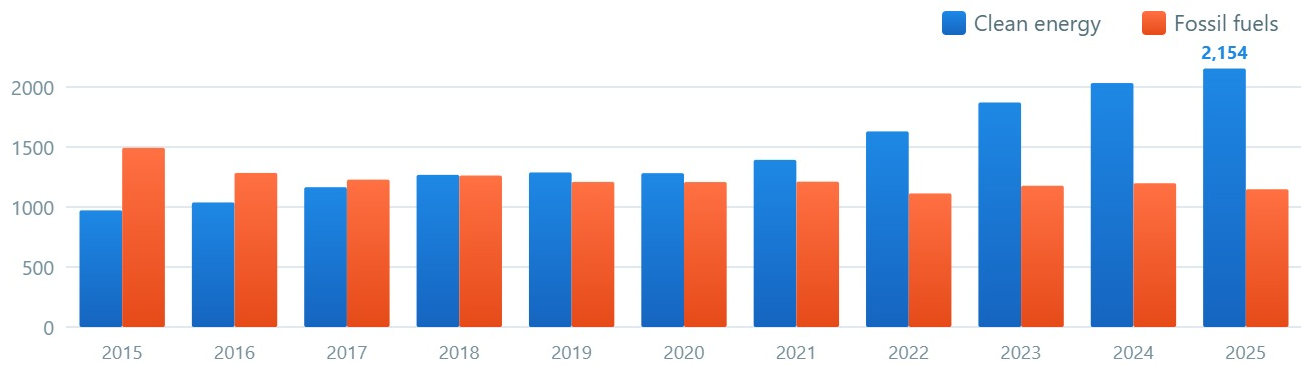
Description: Greenhouse gas (GHG) emissions from the world's major economies have followed very different paths since the year 2000. The United States was the world's largest GHG emitter in 2000, but has slashed its emissions by roughly 16 percent. Meanwhile, GHG emissions in the European Union were 30 percent below 2000 levels in 2024. In comparison, China's emissions grew by roughly 167 percent between 2000 and 2024.

Note: Worldwide; 2000 to 2024; Includes Land-Use and Forestry Change (LUCFC) · Sources: OWID; Expert(s) (Jones et al.)



Global clean energy and fossil fuels investments 2015–2025

Energy investment in clean energy and fossil fuels worldwide from 2015 to 2024, with estimates for 2025 (in billion U.S. dollars)

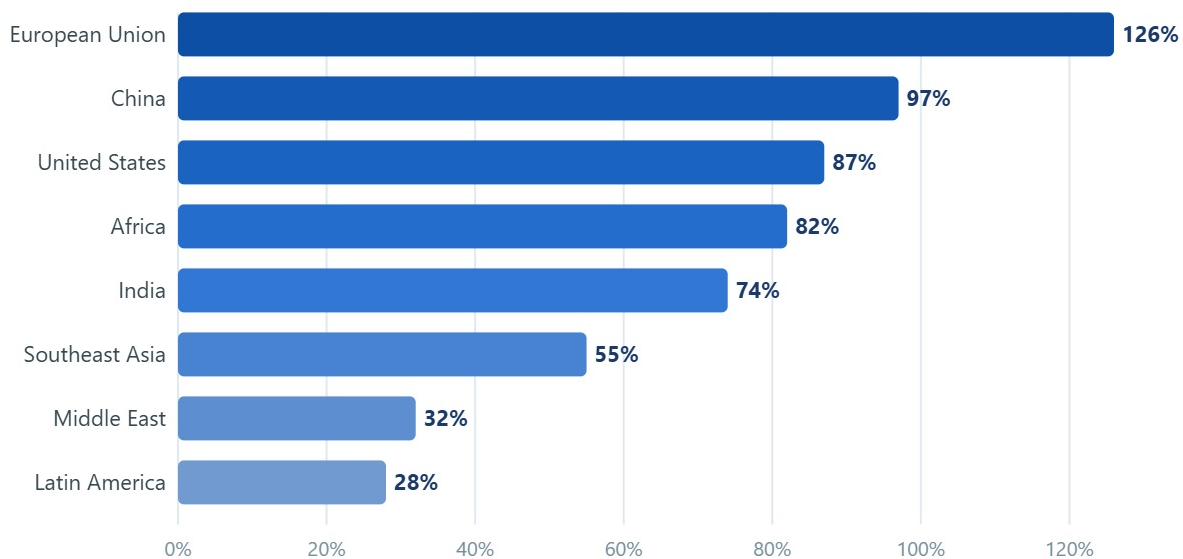


Description: The annual global energy investment in fossil fuels decreased by approximately 20 percent between 2015 and 2024. Meanwhile, annual clean energy investments have grown by almost 70 percent. Clean energy investments are estimated to reach roughly 2.15 trillion U.S. dollars in 2025.

Note: Worldwide; 2015 to 2025; *Estimates. In 2024 U.S. dollars · Source: IEA

Global clean energy investment growth 2012–2025, by region

Percentage change in clean energy investments worldwide from 2015 to 2025, by select country and region



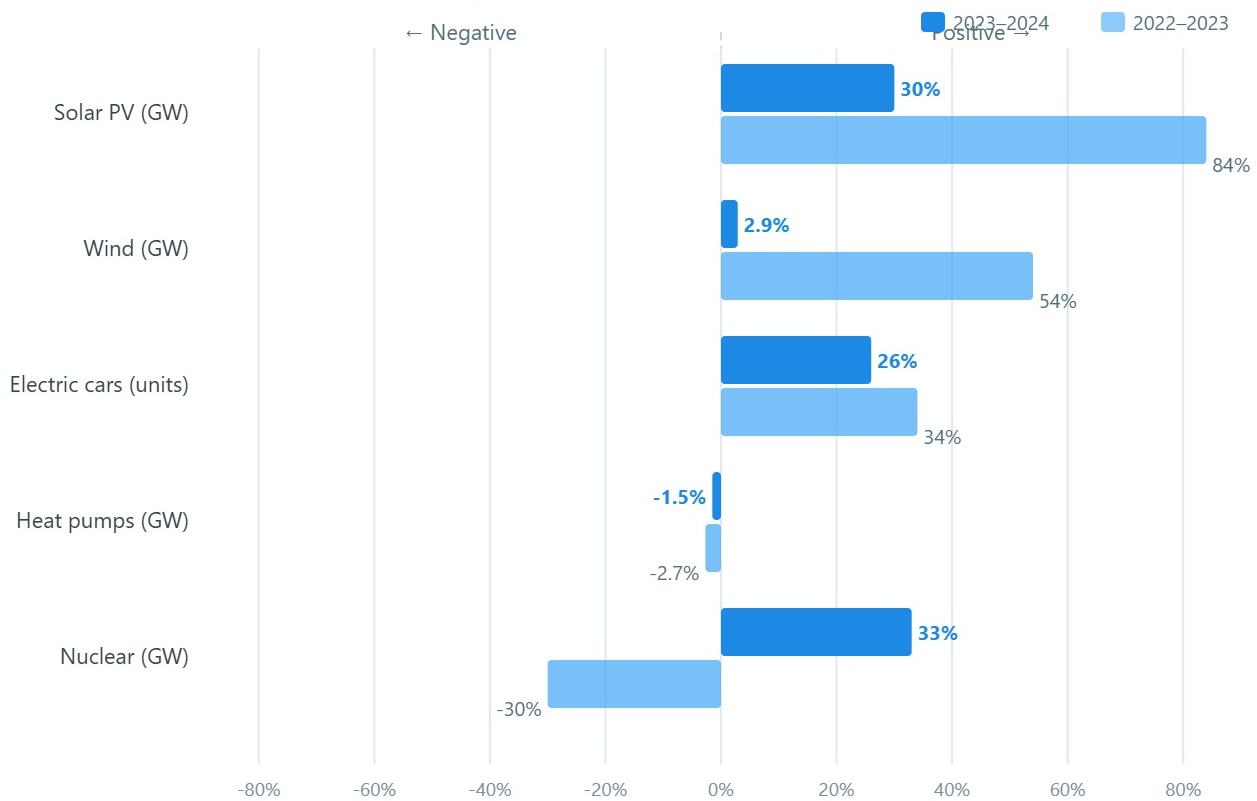
Description: Annual clean energy investment in the European Union grew by 126 percent between 2015 and 2025, to around 390 billion U.S. dollars. China experienced the second-largest growth rate among these countries and regions during this period, with clean energy investment roughly doubling.

Note: Worldwide; 2015 to 2025; 2025 figures are estimates · Source: IEA



Annual change in clean energy deployment worldwide 2024, by key technology

Year-on-year percentage change in the annual deployment of selected clean energy technologies worldwide in 2024



Description: Global clean energy annual deployment increased across several key technologies in 2024. Solar PV capacity grew 30 percent, while wind capacity saw a growth rate of three percent. However, these were notable reductions when compared to the annual growth rates for these technologies the previous year, which were 84 and 54 percent, respectively. In contrast, global sales of heat pumps fell 1.5 percent year-on-year, with sharp annual declines observed in Europe.

Note: Worldwide; 2023 to 2024; Annual deployment refers to sales or capacity additions · Source: IEA

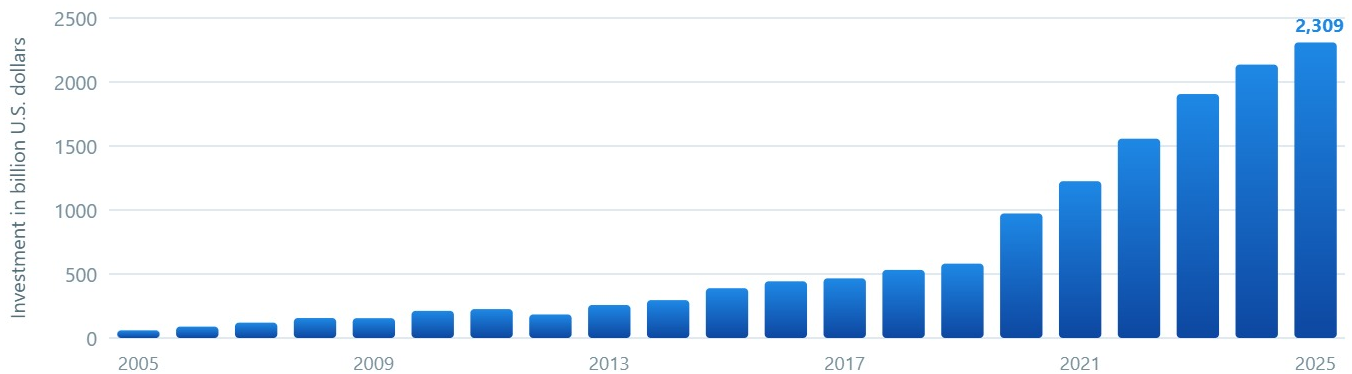
CHAPTER 02

Global Investments



Investments in energy transition worldwide 2005–2025

Investments in energy transition technologies worldwide from 2005 to 2025 (in billion U.S. dollars)

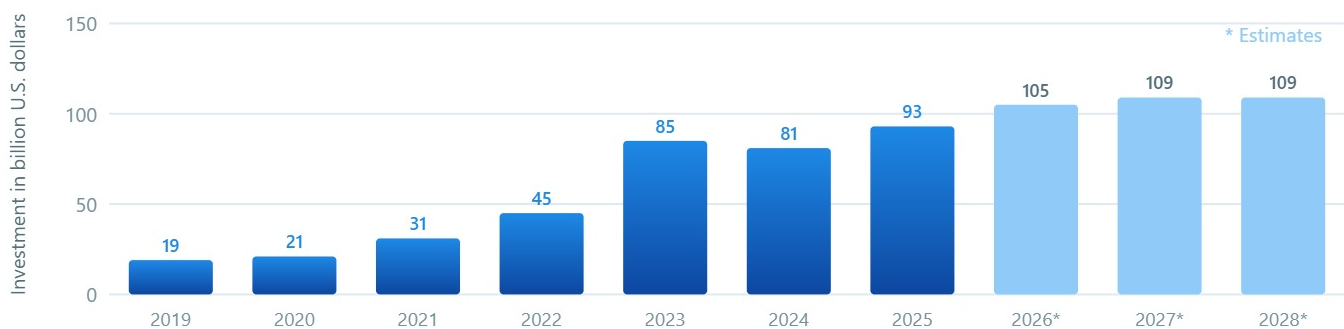


Description: The total global energy transition investment towards decarbonization amounted to over 2.3 trillion U.S. dollars in 2025, which was a record high. That was an eight percent increase compared to the previous year's investments in the energy transition. Electrified transport has emerged as the largest investment sector, while renewable energy investment declined due to market reforms in China.

Note: Worldwide; 2004 to 2025 · Source: BloombergNEF

Global cleantech factory investment 2019–2028

Investments in cleantech factories worldwide from 2019 to 2025, with projections to 2028 (in billion U.S. dollars)



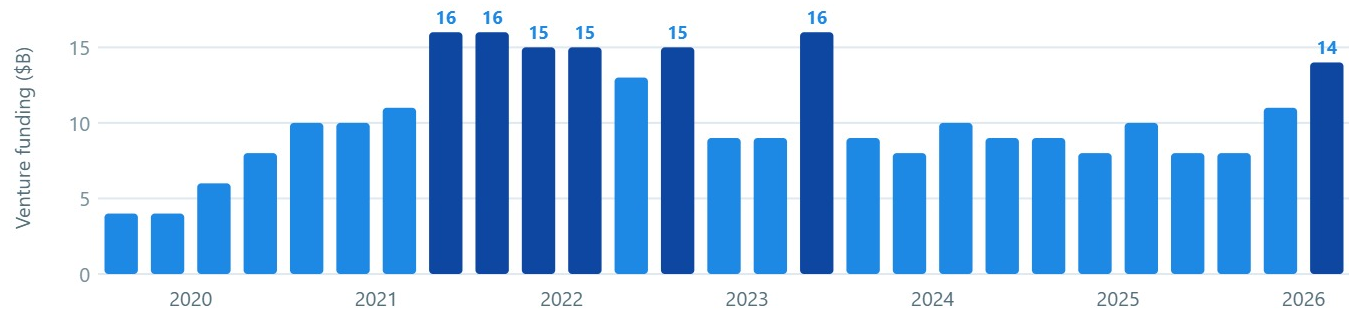
Description: Global investment in cleantech factories fell by 14 percent year-on-year in 2024, to 112 billion U.S. dollars. Nevertheless, annual investments in factory facilities across the manufacture of clean technologies — including solar modules and wind nacelles — have increased almost tenfold since 2018. Investments are forecast to remain above 100 billion U.S. dollars per year until 2027.

Note: Worldwide; 2019 to 2025; *Estimates · Source: BloombergNEF



Global climate technology startup venture funding 2020–2025, by quarter

Venture capital investment in climate technology startups worldwide from Q1 2020 to Q4 2025 (in billion U.S. dollars)

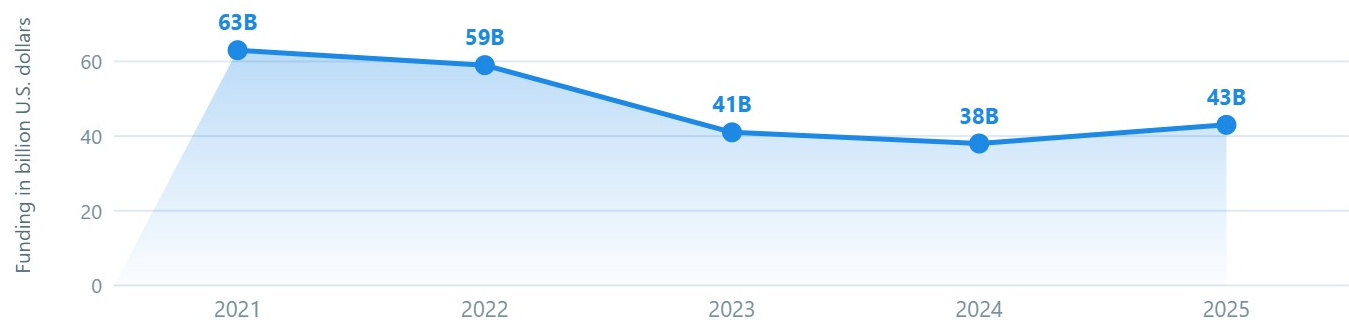


Description: Global quarterly climate technology venture capital funding peaked in Q1 2022 at 16 billion U.S. dollars. After declining through 2023 and 2024, funding showed signs of recovery in 2025 with Q3 activity reaching 14 billion U.S. dollars. The overall trend reflects both macroeconomic headwinds and shifting investor priorities toward more mature clean energy sectors.

Note: Worldwide; Q1 2020 to Q4 2025 · Source: Net Zero Insights; BloombergNEF

Global climate-tech equity financing 2021–2025

Annual equity financing in climate technology ventures worldwide from 2021 to 2025 (in billion U.S. dollars)



Description: Annual climate-tech equity financing reached 63 billion U.S. dollars in 2021, the highest level of the period. Financing declined significantly between 2022 and 2024, reaching a low of 38 billion U.S. dollars in 2024, before recovering to 43 billion U.S. dollars in 2025 as investor confidence returned to the clean energy sector.

Note: Worldwide; 2021 to 2025 · Sources: Net Zero Insights; BloombergNEF

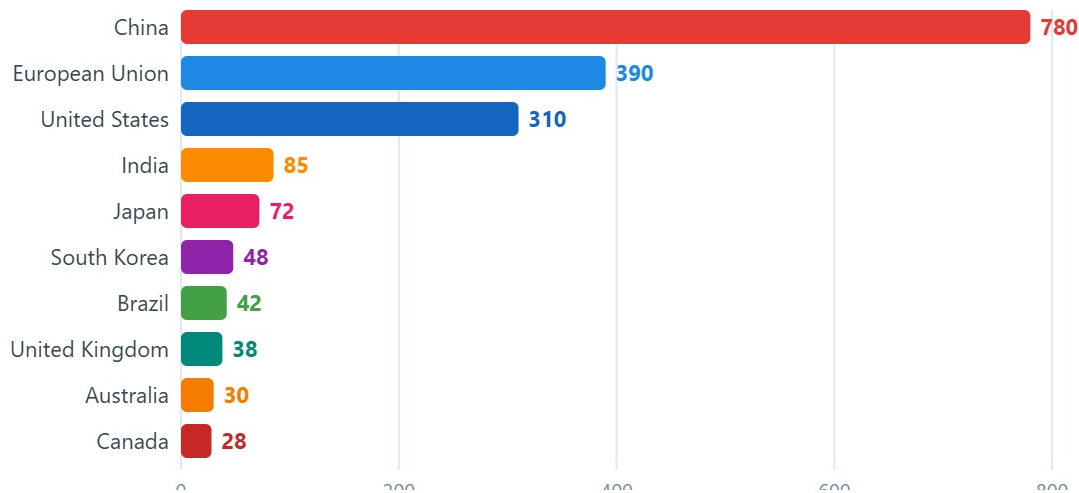
CHAPTER 03

Key Markets



Global energy transition investments 2025, by leading country

Global energy transition investments in 2025, by leading country (in billion U.S. dollars)

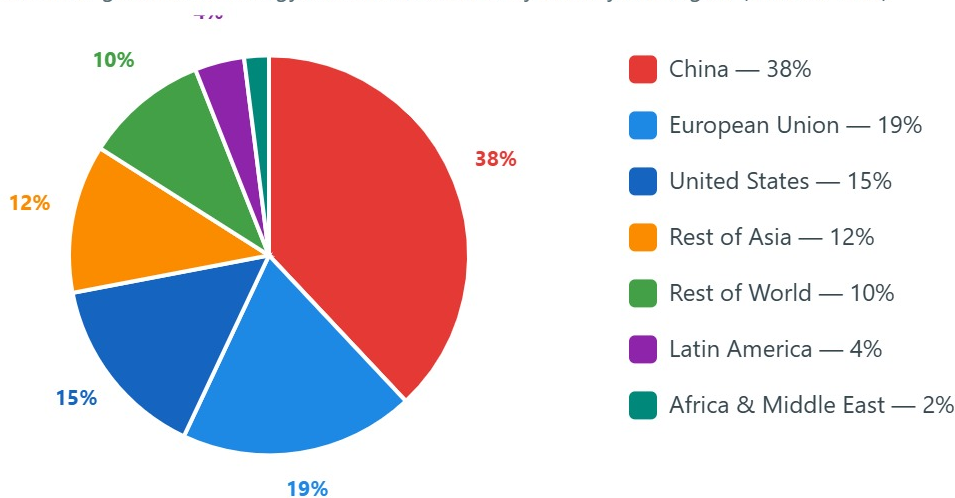


Description: China dominated global energy transition investments in 2025, accounting for approximately 780 billion U.S. dollars — more than double the investment of the next leading region. The European Union and United States followed, reflecting strong policy commitments and clean energy deployment in these regions.

Note: Worldwide; 2025 · Sources: BloombergNEF; IEA

Global clean energy investment shares 2025, by country & region

Distribution of global clean energy investment in 2025, by country and region (share of total)



Description: China held the largest share of global clean energy investment in 2025 at 38 percent, followed by the European Union at 19 percent and the United States at 15 percent. Together, these three economies accounted for nearly three-quarters of all clean energy investment worldwide.

Note: Worldwide; 2025; Percentages may not sum to 100 due to rounding · Sources: IEA; BloombergNEF



Investment in factories for cleantech manufacturing share 2020–2027, by region

Share of investment in factories for cleantech manufacturing worldwide (2020–2023 historic vs. 2024–2027 planned)

Historic investment (2020–2023)



Current plans & announcements (2024–2027)



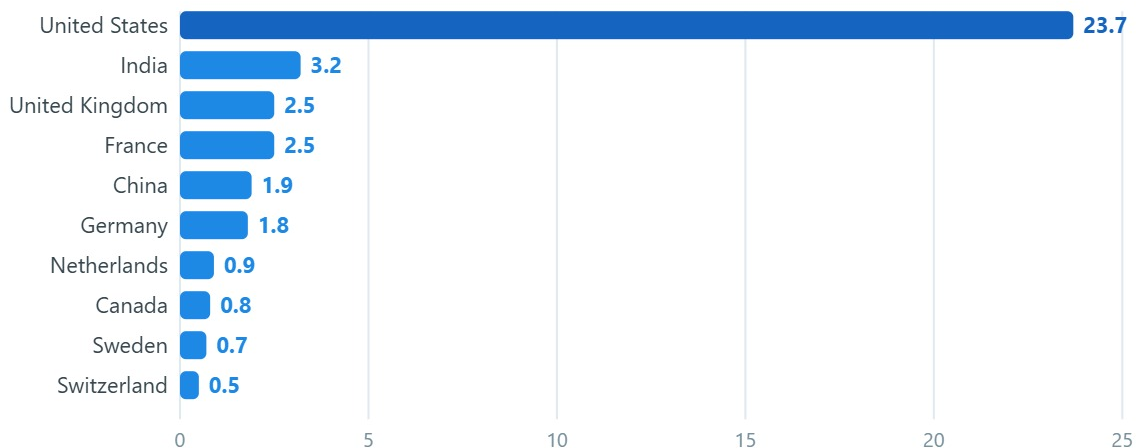
Legend: China (Red), Europe (Blue), North America (Dark Blue), Asia (Orange), Other (Green)

Description: Between 2020 and 2023, approximately 330 billion U.S. dollars were invested globally in factories for manufacturing energy transition-related equipment. China alone accounted for around 90 percent of this total. Under current plans and announcements, a further 704 billion U.S. dollars is expected to be invested worldwide between 2024 and 2027. China's share of investment is expected to fall slightly during this period, as other regions invest large amounts of capital to increase domestic manufacturing capacity.

Note: Worldwide; 2020 to 2027 · Source: IRENA

Global breakdown of climate tech equity funding 2025, by country

Climate tech equity funding worldwide in 2025, by country (in billion U.S. dollars)



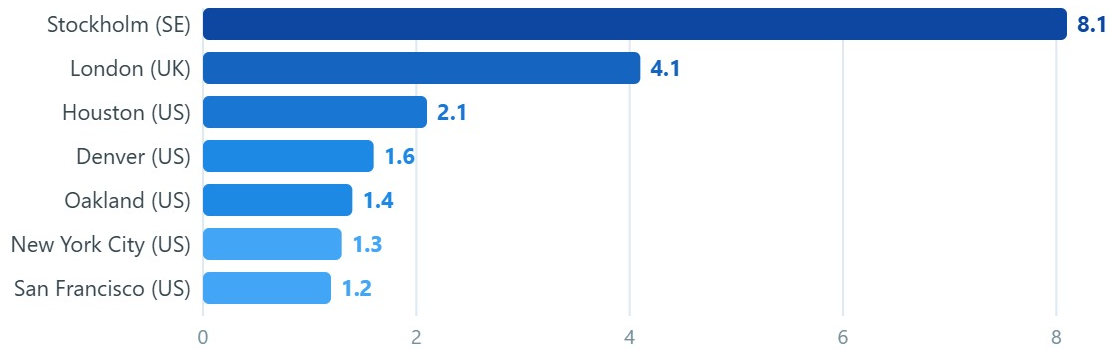
Description: The United States attracted 23.7 billion U.S. dollars of equity funding in private climate tech ventures in 2025. It was followed by India, where funding grew 123.1 percent compared to the previous year, reaching 3.2 billion U.S. dollars.

Note: Worldwide; 2025 · Source: Net Zero Insights



Global climate tech funding 2024, by city

Climate tech funding worldwide in 2024, by organization headquarter city (in billion U.S. dollars)



Description: Stockholm ranked first for global climate tech funding in 2024, attracting a total of 8.1 billion U.S. dollars throughout the year. London followed closely, with organizations in the English city receiving some four billion U.S. dollars. The top seven hubs accounted for a significant share of total climate tech funding globally.

Note: Worldwide; 2024; Top 7 hubs in 2024 by funding (incl. non-dilutive) with 20 or more deals · Source: Net Zero Insights

04

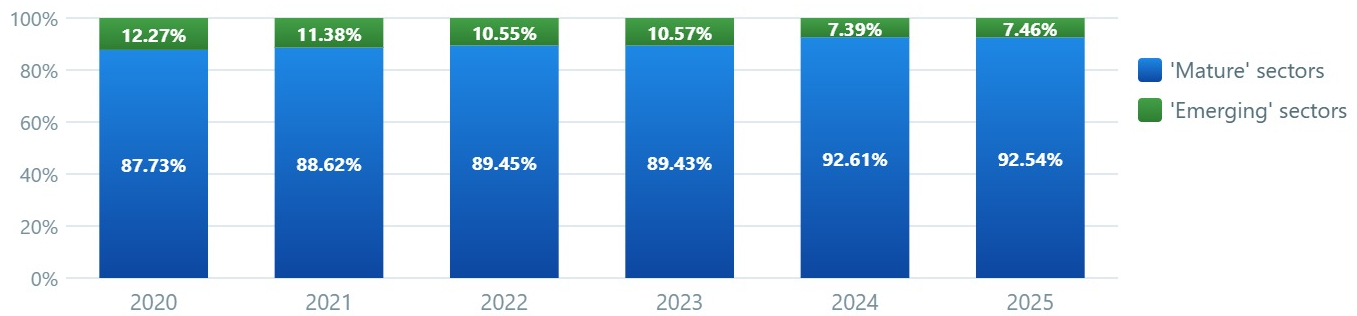
CHAPTER 04

Segments



Energy transition investment shares worldwide 2020–2025, by sector type

Distribution of investments in energy transition technologies worldwide from 2020 to 2025, by sector type

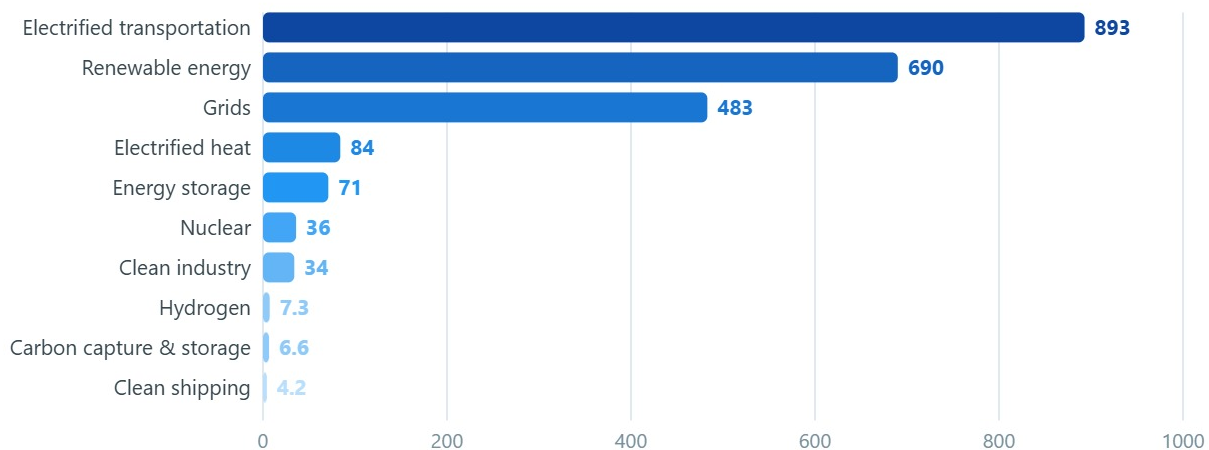


Description: Mature technology sectors accounted for approximately 92.5 percent of global energy transition investment in 2025. The majority of this went toward renewable energy and electrified transportation. Meanwhile, emerging sectors that are yet to be proven at scale accounted for just 7.5 percent of total energy transition investment that year.

Note: Worldwide; 2020 to 2025 · Sources: BloombergNEF

Global energy transition investments 2025, by technology

Investments in the energy transition worldwide in 2025, by technology (in billion U.S. dollars)



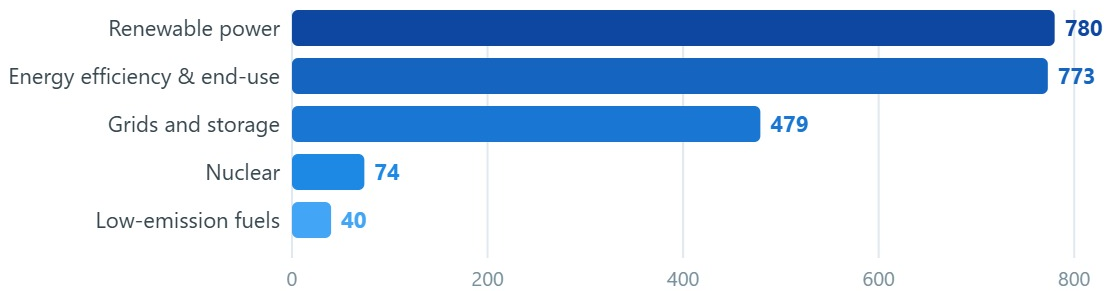
Description: Global investment in energy transition technologies reached approximately 2.3 trillion U.S. dollars in 2025. The electrified transportation sector had the highest investment value overall among all energy transition-relevant sectors worldwide that year, at 893 billion U.S. dollars.

Note: Worldwide; 2025 · Source: BloombergNEF



Global clean energy investment 2025, by subsector

Investments in clean energy worldwide in 2025, by subsector (in billion U.S. dollars, MER 2024)

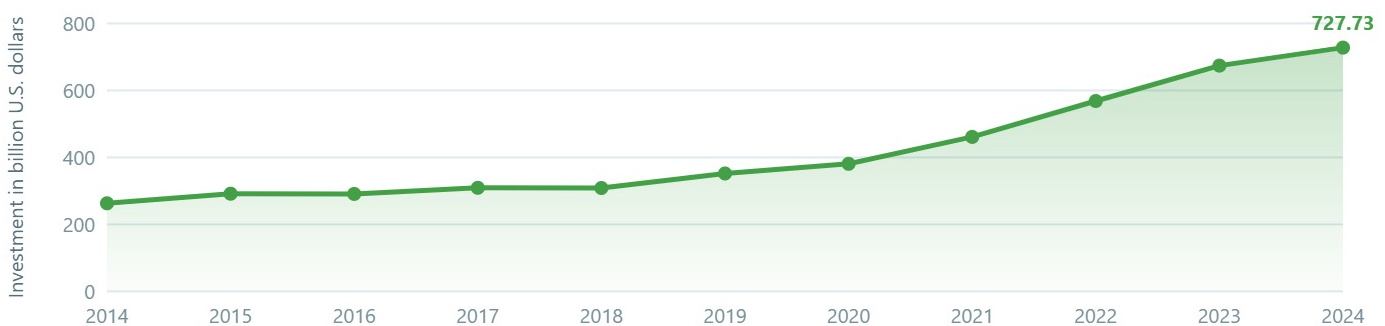


Description: The world invested an estimated 2.1 trillion U.S. dollars in clean energy technologies in 2025. Renewable power was estimated to receive the largest proportion of this total, at 780 billion U.S. dollars. Energy efficiency and end-use received nearly as much at 773 billion U.S. dollars.

Note: Worldwide; 2025; Figures are estimates · Source: IEA

Worldwide investment in renewable energy 2014–2024

New investment in renewable energy worldwide from 2014 to 2024 (in billion U.S. dollars)



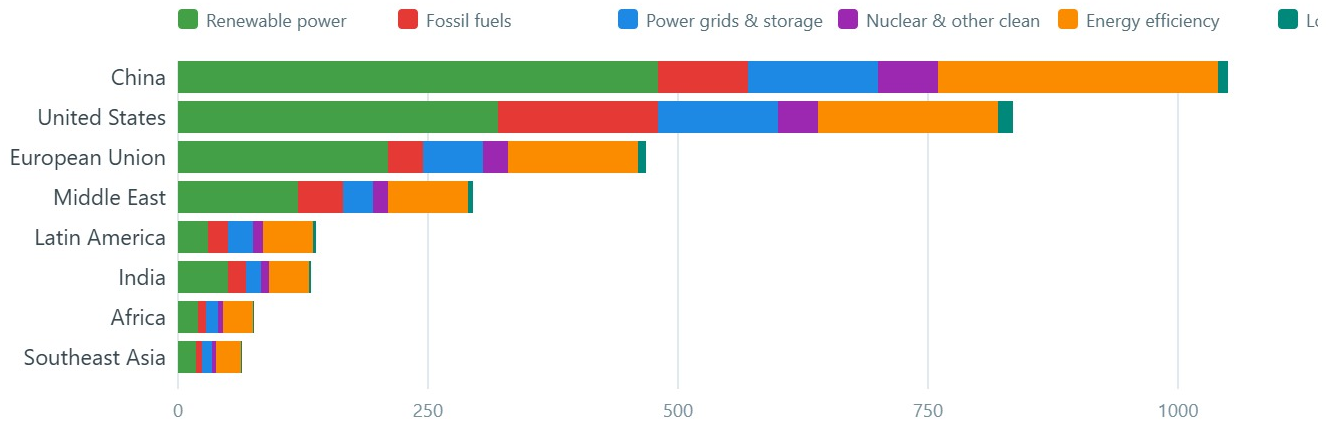
Description: In 2024, the total new investment in renewable energy amounted to approximately 727.73 billion U.S. dollars worldwide. This was an eight percent increase from the previous year, continuing a strong upward trend that has seen renewable energy investment nearly triple since 2014.

Note: Worldwide; 2014 to 2024 · Sources: BloombergNEF; REN21



Clean and fossil energy investment in select global regions 2025, by sector

Estimated investment in fossil fuels and clean energy infrastructure worldwide in 2025, by selected region or country (in 2024 billion U.S. dollars)

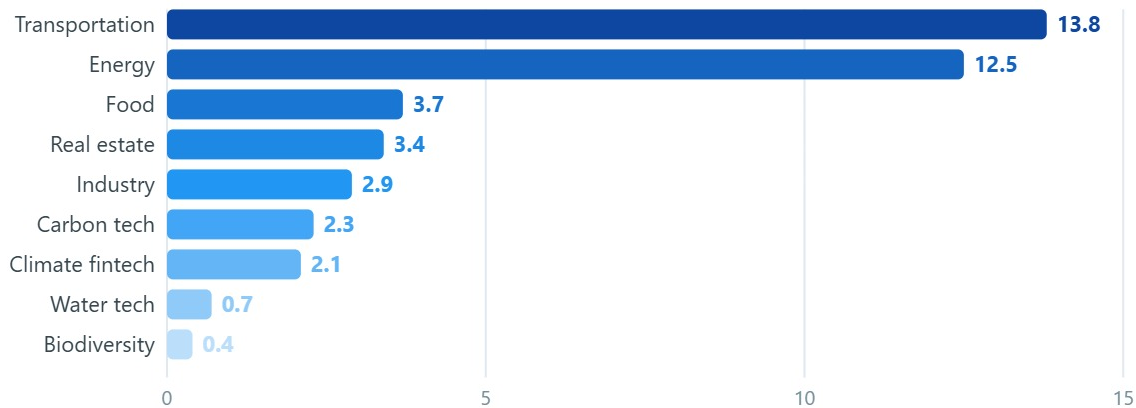


Description: Global investments in clean energy and energy efficiency are outpacing those in fossil fuels, with China and the United States leading the charge. However, while China and the U.S. prioritized clean energy investments, other regions show varying priorities with some still significantly invested in fossil fuel infrastructure.

Note: Worldwide; 2025; *Include modern bioenergy, low-emission hydrogen-based fuels, and fossil fuels with CCS · Source: IEA

Global climate tech venture funding 2024, by segment

Total climate tech venture capital funding worldwide in 2024, by segment (in billion U.S. dollars)



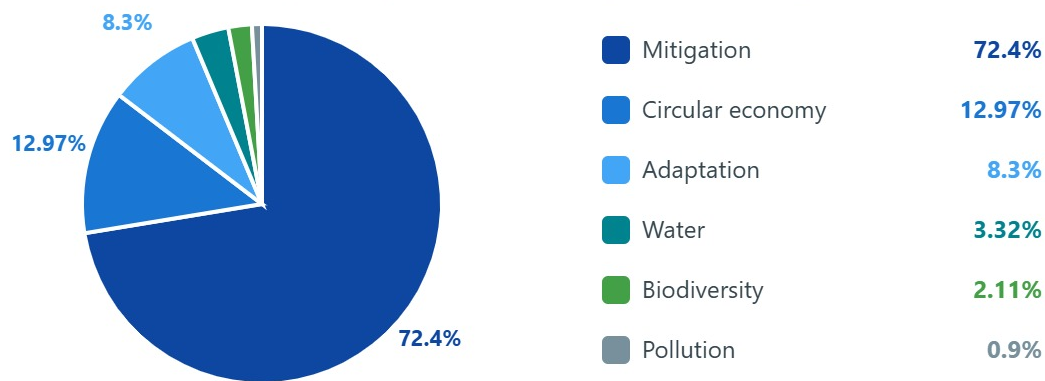
Description: The transportation segment attracted the most climate tech VC investment worldwide in 2024, at roughly 14 billion U.S. dollars. The energy sector followed, with approximately 12.5 billion U.S. dollars flowing into this vertical.

Note: Worldwide; 2024 · Source: Dealroom.co



Global climate tech equity funding breakdown 2025, by objective

Distribution of climate tech equity funding worldwide in 2025, by environmental objective



Description: Climate change mitigation accounted for over 70 percent of equity funding in private climate tech ventures worldwide in 2025. The transition to a circular economy was the environmental objective with the second-largest share of funding that year, at about 13 percent.

Note: Worldwide; 2025 · Source: Net Zero Insights

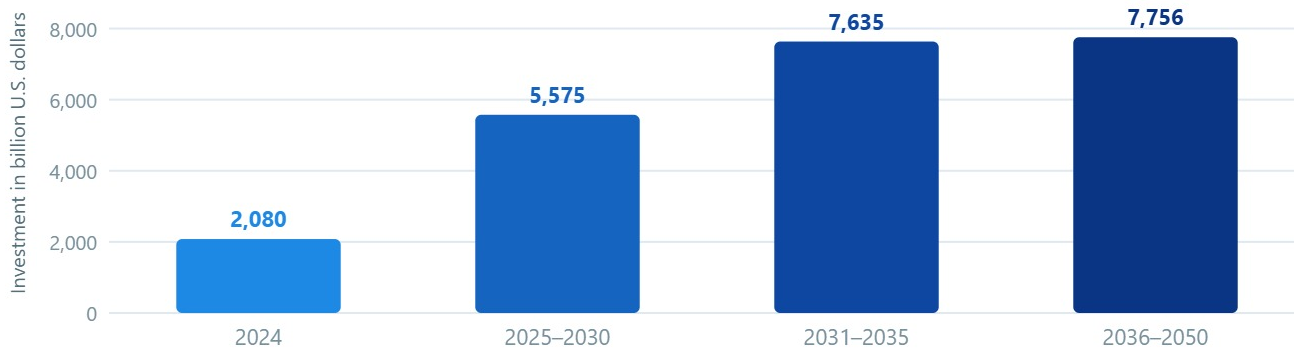
CHAPTER 05

Outlook



Energy transition investment requirements worldwide 2024–2050

Energy transition investment worldwide in 2024, with requirements to reach net zero by 2050 (in billion U.S. dollars)

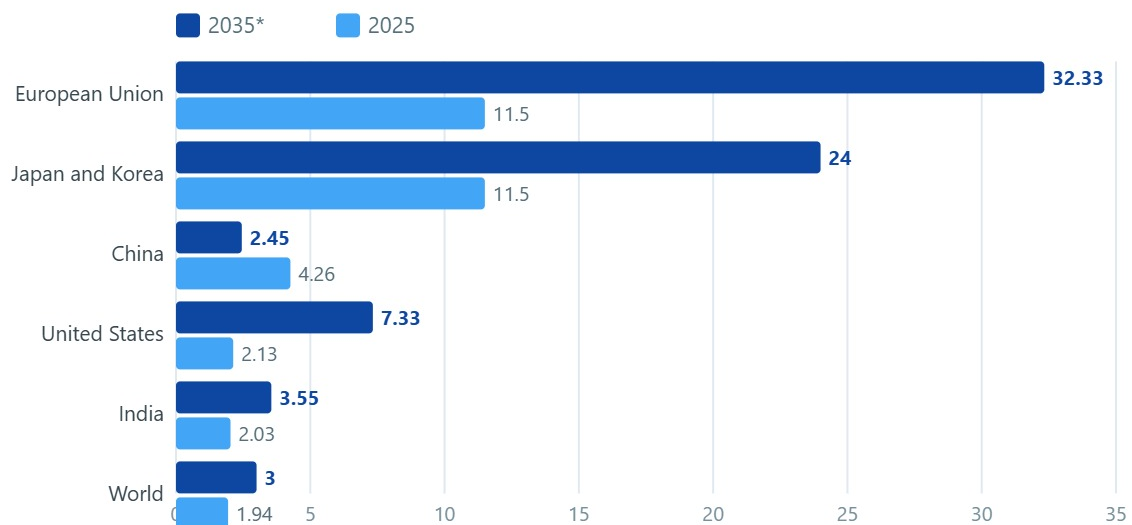


Description: Global energy transition investment totaled 2.1 trillion U.S. dollars in 2024. In a net zero by 2050 scenario, annual clean investment needs to average approximately 5.6 trillion U.S. dollars between 2025 and 2030, giving an immediate investment gap of around 3.5 trillion U.S. dollars, or 168 percent.

Note: Worldwide; 2024 · Source: BloombergNEF

Ratio of clean to fossil energy investment worldwide 2025–2035, by region

Ratio of clean energy to fossil fuel investment worldwide in 2025 and 2035, by leading country or region



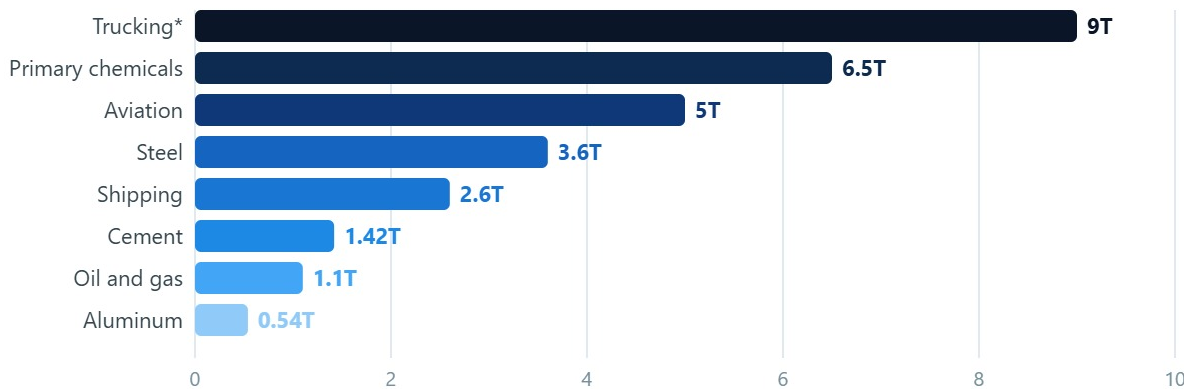
Description: Under the STEPS scenario of the IEA, global clean energy investment is expected to be 3.55 times higher than fossil fuel investment by 2035. In 2025, the European Union recorded the highest regional ratio, at about 11.5.

Note: Worldwide; 2025; *According to IEA's STEPS (Stated Policies Scenario) · Sources: IEA; Moody's; Refinitiv; World Bank



Global investment required for net zero emissions 2023–2050, by industry

Additional investment required by selected hard-to-abate industries worldwide for net zero emissions by 2050 (in trillion U.S. dollars)

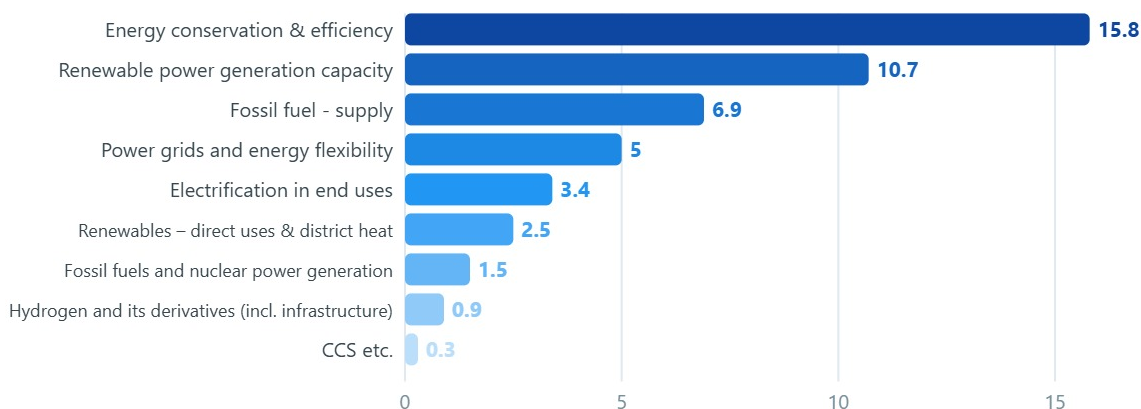


Description: An estimated 30 trillion U.S. dollars in additional investment is required across several industry sectors to reach net zero emissions by 2050. The aviation industry requires five trillion U.S. dollars in investment by mid-century to develop and implement various low-emissions technologies and infrastructure, including sustainable aviation fuels. Meanwhile, the trucking industry requires approximately nine trillion U.S. dollars during this period for areas such as scaling manufacturing.

Note: Worldwide; 2023; *Figure is an approximate · Source: World Economic Forum

Cumulative energy sector investment required worldwide 2024–2030

Cumulative energy sector investment required under a 1.5°C scenario worldwide between 2024 and 2030, by technological avenue (in trillion U.S. dollars)



Description: Cumulative energy sector investment would need to reach 47 trillion U.S. dollars worldwide between 2024 and 2030 under a scenario that limits global average temperature rise to 1.5°C by the end of the century, relative to pre-industrial levels. This amounts to around 6.7 trillion U.S. dollars each year during this period. Almost one-quarter of this total investment would need to go toward renewable power generation capacity.

Note: Worldwide; 2023 · Source: IRENA



Sources

1

Bloomberg

2

BloombergNEF

3

Dealroom.co

4

EDGAR/JRC

5

European Commission

6

Expert(s) (Crippa et al.)

7

Expert(s) (Jones et al.)

8

IEA (International Energy Agency)

9

IMF (International Monetary Fund)

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IRENA (International Renewable Energy Agency)

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Moody's

12

Net Zero Insights

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OWID (Our World in Data)

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Refinitiv

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REN21

16

S&P Capital IQ

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Sightline Climate

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World Bank

19

World Economic Forum



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