

S&P Global Commodity Insights Predicts a Transformative Shift as Investments in Cleantech Outpace Fossil Fuels for the First Time

Cleantech investments to reach \$670 billion.

LONDON, NEW YORK, and SINGAPORE, Jan. 13, 2025 [/PRNewswire/](#) -- S&P Global Commodity Insights, the leading independent provider of information, analysis, data, and benchmark prices for the commodities, energy, and energy transition markets, has released its latest report on the pivotal trends in clean energy technology for 2025.



"S&P Global Commodity Insights forecasts that cleantech energy supply investments, including renewable power generation, green hydrogen production, and carbon capture and storage (CCS), will reach \$670 billion in 2025, marking the first time these investments will outpace projected upstream oil and gas spending. Solar PV is expected to represent half of all cleantech investments and two-thirds of installed megawatts," said Edurne Zoco, Executive Director, Clean Energy Technology, S&P Global Commodity Insights.

"The new year 2025 is not only bringing to the clean energy sector significant transformations that are reshaping energy production and consumption, but it promises to be pivotal for the clean energy sector, with significant advancements in corporate clean energy procurement and the integration of AI in energy management," said Eduard Sala de Vedruna, Head of Research, Energy Transition, Sustainability & Services, S&P Global Commodity Insights.

The S&P Global Commodity Insights report: *Top Cleantech Trends for 2025*, underscores the growing dominance of renewable technologies like solar PV, but also addresses the challenges and opportunities within the evolving clean energy sector.

The top trends identified in the report include:

Clean Energy Investment Takes Center Stage

In 2025, cleantech energy supply spending is projected to reach \$670 billion, surpassing upstream oil and gas investments for the first time. This shift underscores the growing dominance of renewable technologies, with solar PV expected to represent half of all cleantech investments and two-thirds of installed megawatts. However, despite this significant financial commitment, the overall investment levels remain insufficient to meet urgent climate goals, particularly the target of tripling renewable capacity by 2030. Capital efficiency varies by region, with China projected to add nearly twice as many gigawatts per dollar spent compared to the United States.

Tensions in Cleantech Supply Chains

The global cleantech landscape is shaped by an oversupply of equipment from China, particularly affecting the solar, wind, and battery sectors. Price declines may stabilize in 2025, but competition from Chinese manufacturers is expected to keep prices low, fundamentally altering industry pricing dynamics. A slowing domestic economy in China complicates the maintenance of its expansive supply chain, prompting efforts to control manufacturing growth and raise barriers for new entrants. Projections indicate that China's market share in PV module production will decline to 65% and battery cell manufacturing to 61% by 2030.

Storage Transforms the Power Markets

Battery energy storage is becoming essential for enhancing project economics and mitigating low wholesale electricity prices in regions with high renewable energy penetration. Despite reductions in solar PV costs, the decrease in capital expenditures has not translated into robust project development, largely due to low power purchase agreement expectations. The phenomenon of cannibalization, where excessive midday energy production drives prices down to negligible levels, further discourages project

development in mature markets. To remain competitive, solar projects must integrate battery energy storage solutions, enabling developers to navigate price fluctuations and improve the economic viability of renewable investments.

AI Revolutionizes Clean Energy Technology

A recent report from S&P Global Commodity Insights highlights the growing influence of artificial intelligence (AI) in the cleantech sector, particularly in renewable generation forecasting and grid planning. As intermittent renewable energy sources become more prevalent, the need for accurate forecasts has intensified. AI-powered trading applications are emerging as critical tools to mitigate risks associated with discrepancies—potentially up to 700%—between forecasted and actual energy generation, thereby enhancing energy management and facilitating the integration of renewables into the grid. While AI has great potential to transform the clean energy sector, it also presents a range of risks that will require careful management like cybersecurity breaches, network compromises, anomalous behaviors, and unlawful or unethical practices, among others.

Datacenters Drive Clean Energy Procurement

Datacenters are expected to significantly increase their role in corporate clean energy procurement, with expectations to source approximately 300 TWh of clean power annually by 2030. Currently, datacenters account for around 200 TWh, or 35%, of the global corporate clean energy procurement, a figure projected to rise dramatically over the next five years. North American datacenters are leading this transition, anticipated to represent approximately 60% of the global increase in clean energy procurement by 2030.

The Quest for Deeper Decarbonization

Ammonia is emerging as a key player in low-carbon hydrogen production, contributing significantly to both electrolytic and fossil fuel projects with CCS. In 2025, the CCUS sector is expected to secure approximately 70 million metric tons per year of CO₂ capture capacity, bolstered by recent announcements of carbon management strategies that enhance clarity for CCUS projects. Despite the high costs associated with engineered carbon dioxide removal (CDR) technologies, the last three years have witnessed a surge in CDR offtake removal agreements, demonstrating increasing corporate interest and enhanced government policy support.

To access charts, please click here: [Investment Trends in Clean Energy Technology](#)

For more information on energy transition topics, visit: [Energy Transition Service | S&P Global Commodity Insights \(spglobal.com\)](#)

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