

# Clean energy surge won't meet net-zero goals

By Benjamin Storrow

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Global clean energy spending surged by 27 percent in 2021, according to a [report](#) released yesterday by BloombergNEF. But the analysis says such investments must triple over the next three years to put the world on track for net-zero emissions.

The findings highlight the growing momentum to transform the world's energy systems. The \$755 billion spent in 2021 outpaced the \$595 billion spent in 2020 and dwarfed the \$264 billion spent in 2011.

Renewables continue to lead the transformation, accounting for \$366 billion in 2021. But last year was especially notable for the surge in spending on electric transportation, which grew 77 percent to \$273 billion. The only clean energy sector that didn't see an increase in spending was carbon capture and sequestration, BNEF found.

The rise in clean energy spending was especially notable, as it came in a year when the clean energy sector faced new challenges in the form of a supply chain crunch that raised costs on everything from solar modules and wind turbines to battery packs, said Albert Cheung, BNEF's head of analysis.

"Against this backdrop, a 27 percent increase in energy transition investment in 2021 is an encouraging sign that investors, governments and businesses are more committed than ever to the low-carbon transition, and see it as part of the solution for the current turmoil in energy markets," Cheung said.

Still much more investment will be needed if the world is to get on track for net-zero emissions. BNEF estimates clean energy spending must average nearly \$2.1 trillion over the next three years to set the world on a path to essentially halt emissions by midcentury.

And analysts said it is not enough to merely add clean technology. The world also will need to reduce its consumption of fossil fuels.

But so far, the opposite is happening. Even as the world moves to adopt cleaner technologies, it is consuming more fossil fuels than ever.

Surging electric demand and rising gas prices helped coal generation rise 9 percent on the year, with global emissions from electricity hitting an all-time record, [according](#) to the International Energy Agency.

Investment in oil and gas also is expected to rebound amid an upswing in oil prices. When IEA [estimated](#) global energy spending last summer, it predicted spending on oil and gas production would increase by 10 percent in 2021.

Oil prices, meanwhile, have continued to climb, stoking expectations that drillers would increase spending this year. The U. S. Energy Information Administration predicts global oil consumption will surpass 100 million barrels per day in the second quarter of 2022 — putting the world on track to set a new crude consumption record for the year.

The rise in fossil and renewable energy points to the world's insatiable appetite for energy, said Nikos Tsafos, an analyst who tracks energy markets at the Center for Strategic and International Studies.

The dynamic is highlighted by China, a country that led the world in clean energy spending (\$266 billion) but relied on coal to generate nearly two-thirds of its electricity. Electricity demand there rose 10 percent in 2021, according to IEA, continuing a long-standing trend.

Between 2003 and 2020, China essentially added a United States' worth of new energy demand, Tsafos said.

"We don't have a good mental model for decarbonization in a system that has an insatiable appetite for energy," he said.

Tsafos predicted renewables and clean technology would begin to eat into the market share of fossil fuels when demand stopped growing. But "we don't really know what those inflection points are," he said.

Morgan Bazilian, who leads the Payne Institute for Public Policy at the Colorado School of Mines, echoed that point. Most decarbonization studies are economic models that plot pathways based on costs. But the world's existing energy systems are deeply embedded in society.

That makes it easier to add renewables than to stop consumption of fossil fuels, he said. That dynamic is especially true for developing countries that favor economic growth over addressing climate change.

"It is just difficult for society to stop things. It is just easier to keep going," Bazilian said.

*This story also appears in Climatewire.*