

Tipping the scales*

***Is the clean energy revolution really
keeping 1.5 alive?**

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Earth is on track to have the hottest year on record. September 2023 was [declared the hottest September ever](#), the latest in a sequence of extraordinarily hot months across the globe. September's record temperature anomaly was of particular significance: a startling 1.75 degrees Celsius above its pre-industrial era reference.

The record month of September was influenced by additional factors beyond effects solely attributable to climate change. 2023 is an El Niño year, meaning that we would expect to see warmer than average global temperatures ([see our previous blog for an explainer on El Niño and its effect on global temperatures](#)). But the fact that we saw temperatures, even temporarily, reach and even surpass 1.5 degrees [surprised many scientists](#), particularly given that much of El Niño's heat is not expected to appear until 2024.

The combination of climate change and El Niño

is increasingly [having a devastating impact](#) across the planet. [A recent study in Science](#) estimates that previous El Niño events have caused \$4.1 trillion and \$5.7 trillion in global income losses for 1982-83 and 1997-1998 respectively. And due to climate change, the effects of El Niño are projected to significantly worsen in the years ahead. Under the current mitigation pledges scenario, El Niño events are projected to cause \$84 trillion of losses in the 21st-century.

The window in which we can keep average global warming to within 1.5 degrees of the pre-industrial era is closing fast. The only way in which we can achieve this is by dramatically reducing global greenhouse gas emissions to net-zero by the mid-21st century. However, for this in turn to happen, the energy sector needs to lead a seismic shift in how the world is powered. If this one sector fails, climate breakdown will be all but inevitable.



Is there a glimmer of hope?

At this point, for once in a climate blog, there is perhaps a chance to allow ourselves some much needed optimism.

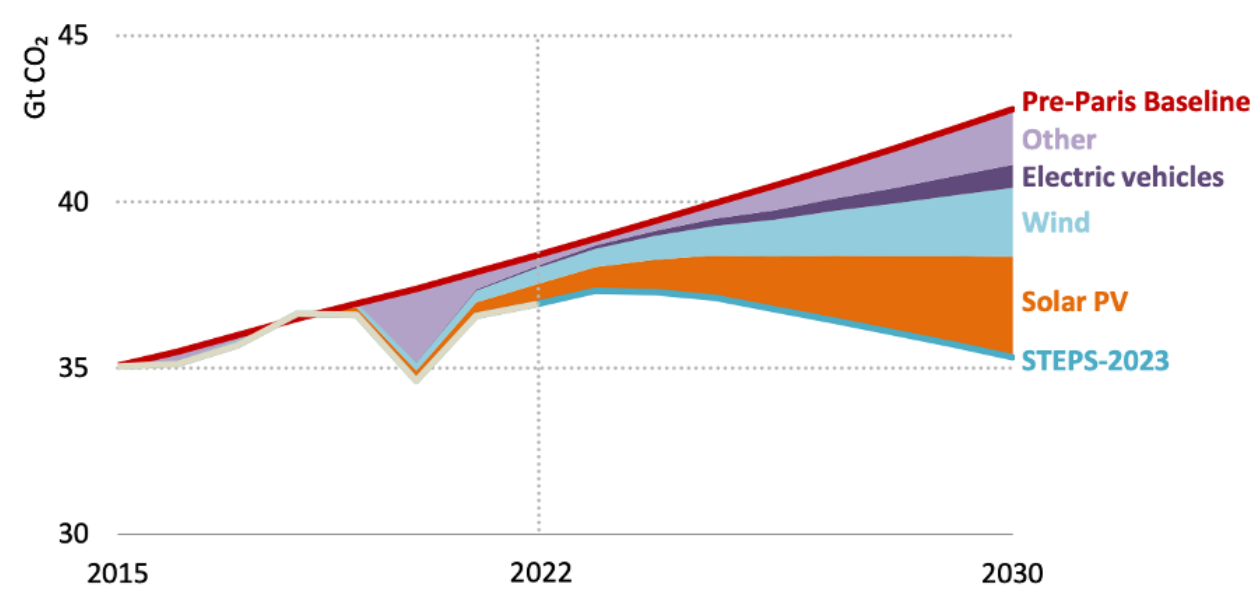
In its most recent [Net Zero Roadmap](#), the International Energy Agency (IEA) anticipates that global emissions from the energy sector are set to peak in the next year or so. The effect of renewable energy is, it claims, starting to tip the scales.

Under the IEA's 2021 Net-Zero (NZE) Scenario, it was projected that technologies not yet available on the market would account for nearly half of the emissions reductions needed in 2050 to reach net zero. Simply put, half of the emissions reductions needed to bring about net-zero would come from

technology not yet tested on a mass level. However, that percentage has, only two years later, fallen to around 35%.

Progress in the energy sector has been remarkably rapid: for example, [car manufacturers in China recently announced they have developed the first sodium-ion batteries for electric vehicles](#), which could end up being manufactured on a commercial scale as early as the end of this year. This is hugely significant for the energy sector. Lithium is the most expensive and least readily available ingredient in EV batteries. Sodium-ion batteries are made from an abundant material, which could unlock cheaper batteries for electric vehicles.

Figure 1. Global CO₂ emissions from the energy sector. Credit: International Energy Agency, Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach.



So where does this leave the financial services sector? Although clean energy now offers attractive returns in its own right, investors face complex decisions in what projects to back in the energy sector. Short term factors such as economic uncertainty, rising costs, and energy security concerns can often outweigh longer term considerations.

But the need could not be clearer. A record \$1.8 trillion is expected to be invested in clean energy in 2023. This needs to more than double to around \$4.5 trillion per year by the early 2030's to be in line with the IEA's NZE pathway. Put simply, to drive the energy sector's transition, an unprecedented level of private capital investment is required.

What are we doing to help at ESG Book?

In addition to ESG Book's large collection of publicly disclosed corporate carbon emissions and our emissions estimates model, covering emissions data for approximately 40,000 companies worldwide, we will shortly be releasing our unique Sustainable Revenues data product.

This is a revenue segmentation dataset designed on ESG Book's proprietary framework. The dataset focuses on company revenues from high-impact, climate-positive and climate-negative activities to support financial decision-making in driving a low carbon transition.

Our Sustainable Revenues solution is aimed at

collecting sustainable and unsustainable revenue data reported by companies based on the nature of their economic activities. This tells us and our clients how well aligned to a net-zero economy the business model of a company is, based on the products and services from which it makes its money.

This new data module focuses on carbon-equivalent emissions, and helps provide enhanced insights around scope emissions disclosures. It's a solution designed to enable investment towards low carbon and more sustainable solutions in support of a net-zero future which may still be bright.

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