

Chief economist's introduction



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The challenges and uncertainties facing the global energy system are at their greatest for almost 50 years, since the time of the last great energy shocks of the 1970s.

Most immediate is the impact of the terrible events taking place in Ukraine, with its tragic toll on lives and communities. The war also threatens to lead to shortages in food and energy, which could detract materially from health and wellbeing across the globe. From an energy perspective, the growing shortages and increasing prices highlight the continuing importance of energy 'security' and 'affordability' alongside 'lower carbon' when addressing the energy trilemma.

This immediate challenge sits alongside the need for the world to achieve a deep and rapid decarbonization consistent with meeting the Paris climate goals. Considerable progress has been made in sovereign pledges to achieve net zero, but those growing ambitions have yet to translate into tangible progress on the ground: carbon emissions have risen in every year since the Paris goals were agreed (other than in 2020 at the height of the COVID-19 pandemic). The world remains on an unsustainable path.

Added to those challenges, as COVID-19 restrictions around much of the world are relaxed and economic activity recovers, energy consumption is expanding sharply increasing the demands on available energy supplies and highlighting fragilities in the system.

Responding to those multiple challenges and uncertainties requires timely, objective and comprehensive data. That is the role bp's *Statistical Review of World Energy* has been playing for the past 71 years and continues to play this year.

This year's data show a sharp bounce back in global primary energy in 2021, increasing by almost 6% and more than reversing the sharp fall in energy consumption in 2020 as much of the world locked down. Primary energy use in 2021 is estimated to be more than 1% above its 2019 level.

In many ways, this sharp rebound in energy demand is a sign of global success, driven by a rapid recovery in economic activity as the widespread distribution of effective vaccines allowed for an easing in COVID-19 restrictions in many parts of the world and a return to our everyday lives. But it also highlights that the pronounced dip in carbon emissions in 2020 was only temporary: carbon equivalent emissions from energy (including methane), industrial processes, and flaring increased by 5.7% last year. Smoothing through the impact of the pandemic, emissions were broadly unchanged over the past two years.

Encouragingly, renewable energy, led by wind and solar power, continued to grow strongly and now accounts for 13% of total power generation. Renewable generation increased by almost 17% in 2021 and accounted for over half of the increase in global power generation over the past two years.

The low-carbon energy sources and technologies needed to achieve a fast and deep decarbonization exist today – wind and solar power, biofuels, blue and green hydrogen, CCUS (carbon capture, use and storage), and carbon dioxide removals. The challenge is to apply them at unprecedented pace and scale. At bp, we remain committed to playing our role as we pursue our net zero ambition. I hope this year's Review is of use to others following a similar pathway. I would like to thank all those who help us compile the Review, including the governments and statistical agencies around the world who have contributed their official data again. The *Statistical Review* would not be possible without your continuing support and transparency.

Thank you.

Spencer Dale
Chief economist
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