



2022-IP12: World Energy Outlook 2022

On 27 October, Executive Director Fatih Birol and the co-lead authors of [World Energy Outlook 2022](#), Laura Cozzi and Tim Gould, presented key findings of the report during a livestreamed press event.

While the COVID pandemic has left evident scars, with open questions over whether it represented a setback for a secure and sustainable energy system or was a catalyst that accelerated the pace of change, the war that Russia has visited on Ukraine has, in the words of the IEA's Executive Director, led to the "first truly global energy crisis".

The market model that saw the flow of gas and oil from Russia to Europe, previously simply considered 'business as usual', is well and truly broken. China was expected to take up much of this slack. However, this had not and was not now expected to happen. With lockdowns affecting Chinese energy demand and adjustments to its economy, its gas demand growth is not as strong as it has been in recent years. All in all, together with its declining oil business, Russia faces a \$1 trillion hole in its hydrocarbon exports and a diminished role in global energy.

The million-dollar question is whether the consequent energy crisis, that is being felt right now across the globe, is going to slow down or accelerate clean energy transitions. Responses to the invasion of Ukraine by governments, businesses and people worldwide will impact directly on the ultimate achievement of a resilient energy system. Early signs are that steps taken to date promise to accelerate clean energy transitions and be a turning point in the crisis. For every dollar spent on fossil fuels in 2021, \$1.5 is being spent on clean energy investments. Indications suggest that, by 2030, this is expected to rise to \$9, i.e., to increase by a factor of six.

Since the Paris Agreement was adopted in 2015, investments in clean energy have risen steadily. Standing at around \$1.3 trillion in 2021, by 2030, investments based on current policies are projected to top \$2 trillion – putting the world on course for an estimated 2.5°C rise, which is still a very worrying prospect. To target 1.5°C, investments of double that, to around \$4 trillion, will be required. However, the IEA believes that prospects are encouraging. Governments around the world are stepping up. With their drive for energy security, their need to meet their climate commitments and simply their wish to become part of the new industrial era, countries are focusing more and more on clean energy.

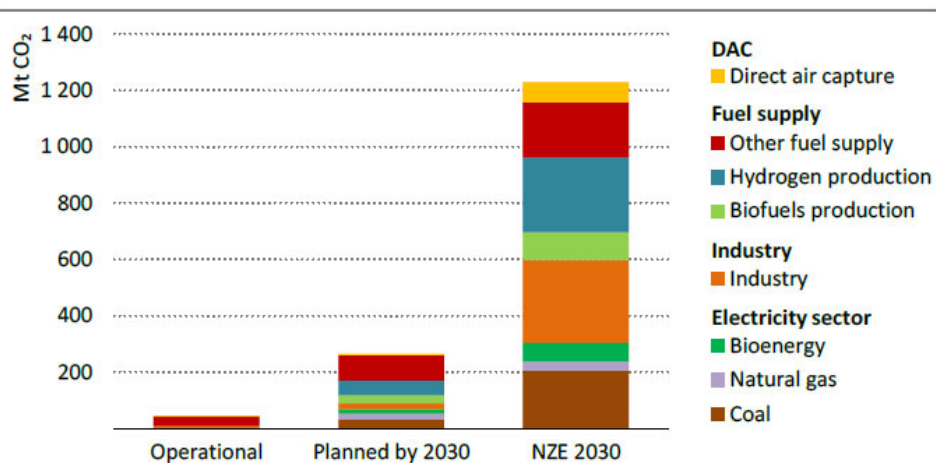
High inflation around the world is troubling. Unlike the '70s, however, which was the last time the world experienced this phenomenon, there are now many more tools in the box to deal with it. Emissions had continued to increase in recent years. Generation across the board – from coal, natural gas, nuclear, solar PV and wind – had all increased. Nonetheless, thanks to the unprecedented response to Russia's aggression from governments around the world, emissions from electricity generation were turning the corner. By 2025, global coal-fired capacity was projected to peak. And, while the decade from 2010 has rightly been dubbed the golden age of gas, competition from low-cost renewables now suggest a diminishing role for the fuel in longer term projections. Generation from solar PV and wind was continuing to



increase markedly. According to the projections, emissions from the power sector are peaking at present and within only a few short years, will go into decline.

Across both the power sector and the industry sector, the IEA points out that CCUS is an essential component of the portfolio of clean energy technologies and a direct beneficiary of the increase in clean energy investments across the globe. However, it also notes that “A rapid acceleration in the deployment of carbon capture, utilisation and storage is needed in the NZE Scenario to deliver deep emissions reductions across the industry, power and fuel transformation sectors and to remove CO₂ from the atmosphere through direct air capture (DAC) and bioenergy equipped with CCUS (BECCS)”. This is clearly illustrated in the figure below ([Figure 3.28 in the World Energy Outlook report](#)).

Figure 3.28 ▶ Global CO₂ capture by operating and planned source relative to the NZE Scenario, 2030



IEA. CC BY 4.0.

Despite the progress being made on CCUS, currently planned capacity for 2030 represents just 20% of the CCUS required in the NZE Scenario

Note: DAC = direct air capture.

Investment in CCUS will have a significant contribution in achieving climate goals. The case for this is very clear made in the report, which is replete with references to the technology. While there are multiple references relating to CCUS in the report, just a few short examples are shown below.

In its Spotlight feature on “Can the world right its investment imbalances?”, it says:

The increase in global investment needs to be concentrated across multiple clean technologies, including renewable generation, efficiency improvements, clean fuels and CCUS, as well as the required infrastructure in the form of expanded and modernised grids and storage.



In its section on “Selected country and regional trends”, it indicates that, via the Inflation Reduction Act and the Bipartisan Infrastructure Act:

..., the United States achieves its stated ambition of net zero emissions from the electricity sector around 2035 through faster deployment of renewables, CCUS, hydrogen and ammonia, and an expansion of nuclear power including development of small modular reactors.

And, in the same section, it goes on to say:

Technologies that aid emissions reductions in hard-to-abate industrial sectors, such as CCUS and low-emissions hydrogen, all are eligible for substantial tax credits, which lay the foundations for strong growth.

In its section on “Priority measures to close the gap with the NZE Scenario to 2030”, it states that:

Between 2031 and 2040, the speed of emissions reductions in the industry and transport sectors accelerates to almost 10% per year, as electrification, low-emissions fuels, and carbon capture, utilisation and storage (CCUS) technologies start to make bigger inroads into the existing stock of assets.