

Don't wait for COP: the end of fossil-fuel age must start now

UN climate conferences are too beholden to oil and gas interests. Like-minded nations must come together to keep climate hopes alive.

The COP27 United Nations climate conference held in Egypt in November was a mixed bag (*Nature* 612, 16–17; 2022). Although countries recommitted to the goal of the 2015 Paris climate agreement – to limit global warming to 1.5°C above pre-industrial temperatures – they made no commitments to phase out fossil fuels. Some even pushed to abandon the 1.5°C target, saying it is not realistic on the basis of current trends. Thankfully, they were outnumbered.

This could well prove to be a temporary victory, however: the question of burying the 1.5°C target will re-emerge later this year, at COP28 in Dubai, which is part of a major oil- and gas-producing region. The fight to decarbonize energy supplies is one the world cannot afford to lose.

At present, humanity is on a path to between 2.2°C and 3.4°C of warming, with 2.4°C the most likely value if countries deliver on the emissions reductions they promised to make by 2030, according to the Climate Action Tracker, an independent group of researchers that monitors government action on climate. But temperature increases are likely to be at the higher end of the range if pledges are not kept and business continues as usual.

If 1.5°C is to be achieved, the world must immediately halt new oil and gas development and transition rapidly to renewable energy. That's one of the conclusions of a cross-party report from members of the UK House of Commons, which was published last week (see go.nature.com/3qqkthx). The report draws extensively on evidence from the research community, including the parliamentarians' expert adviser Jim Watson, the director of the UCL Institute for Sustainable Resources in London.

The need to stop the issuing of new licences for oil and gas development to achieve 1.5°C is also accepted by the International Energy Agency (IEA), the intergovernmental body established to ensure global energy security. Yet just a handful of nations and regions have formally committed to issuing no more such licences as part of the Beyond Oil and Gas Alliance. Meanwhile, the cartel of some of the largest oil- and gas-producing countries, OPEC, expects global oil demand to increase from 97 million barrels per day in 2021 to 110 million barrels in 2045, mainly owing to the increased energy needs of low- and middle-income countries.

There is, however, one important caveat to this scenario: it's not clear whether the OPEC estimates, which were published in October 2022, account for the latest landmark

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climate bill signed into law by US President Joe Biden last August. The United States is the world's leading producer and consumer of oil, representing around one-fifth of the global total. Biden's deal, together with earlier legislation from 2021, will invest more than US\$500 billion in climate and energy technologies over the next decade. The law will release significant funding and tax credits to hasten the shift to clean-energy generation, decarbonize industry and promote electrification in transport. It also includes funding for improving households' energy efficiency, and for training and development programmes to help former fossil-fuel workers find jobs. These are rare – if not unprecedented – actions from a major oil producer.

However, the US legislation leaves the door open to new oil and gas leasing by the federal government, which the Biden administration had wanted to shut down. The provision, which reflects concerns about energy prices and the loss of fossil-fuel jobs, came courtesy of Joe Manchin, a Democratic senator from coal country in West Virginia, whose vote was crucial for the law's approval by Congress.

Government action to regulate existing markets and foster new ones can work to bend the climate curve. Take electric vehicles (EVs). A decade ago, global sales stood at just 120,000 a year. By 2021, annual sales worldwide had reached 6.6 million – double the number in 2020 – according to the IEA, and 2 million were sold in the first quarter of 2022 alone, 75% more than in the same period of 2021.

There are many reasons for this increase, the IEA says in its *Global EV Outlook 2022* report (see go.nature.com/3vyyrsu), including subsidies and the provision of accessible charging. But, the report says, “sustained policy support is the main pillar”. This includes legislation to phase out internal combustion engines in new cars by specific dates, giving industry little choice but to shift. So far, more than 20 countries have said that they will do this over the next 10 to 30 years, including several middle-income nations.

The question that researchers, industry leaders and policymakers need to ask this year is what kinds of policy (or regulation) could similarly bend the curve in broader energy markets; in freight transport, aviation and shipping; in industrial processes such as cement and steel manufacture; and in food production and farming. Do countries need to start setting end dates? Can the EV experience be repeated in other sectors? And can researchers model the consequences of such actions, both good and bad?

The COPs have created momentum and pressure for coordinated action, but the influence of oil and gas interests will continue to limit their ambition. As a group, lobbyists representing the fossil-fuel industries outnumbered almost all national delegations to COP27. That's why more countries must commit to ending new oil and gas development, either independently or collectively, through partnerships such as the Beyond Oil and Gas Alliance.

It's clear that technologies for decarbonization are either ready or well on their way to being ready. The same cannot be said for their implementation. Researchers, campaigners, industry and, above all, decision makers must figure out which policy steps are needed, and which will work, to unlock the future we all want to see.