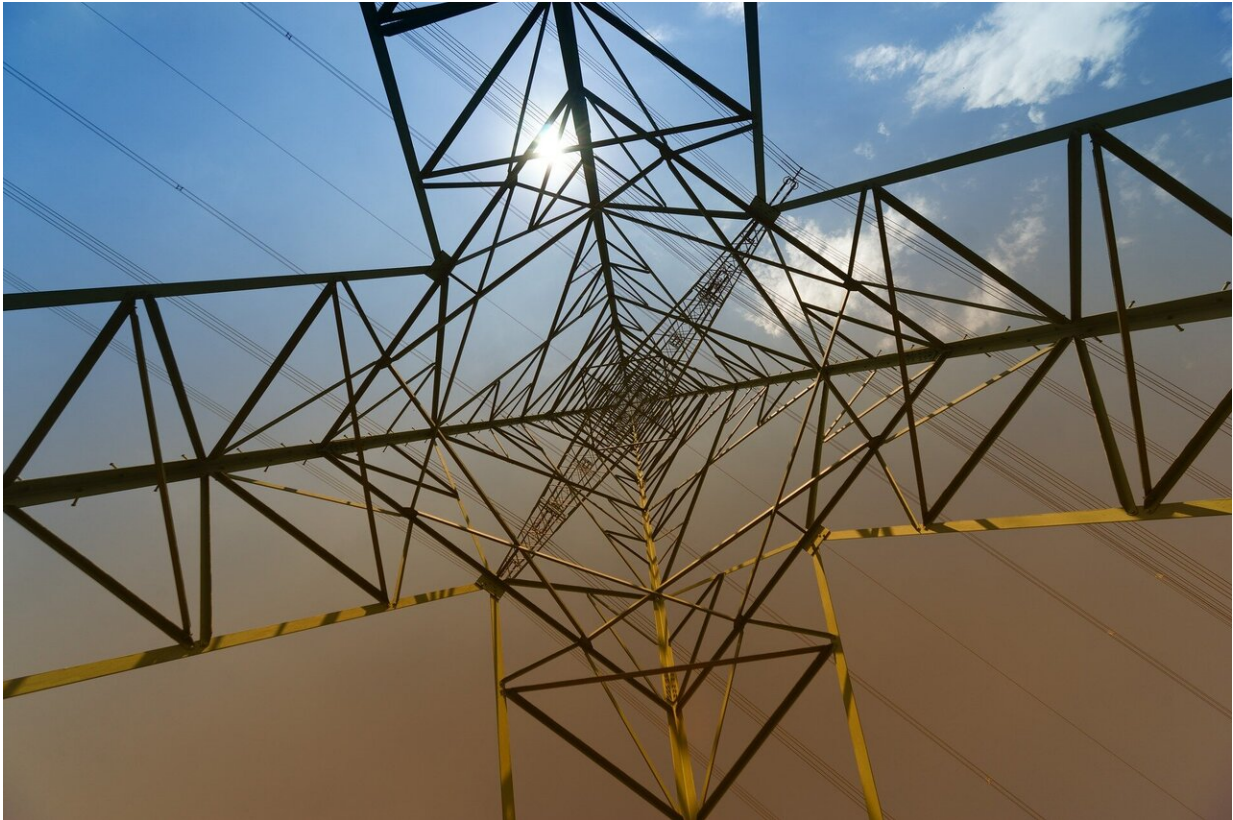


Energy crisis: The five challenges for 2023

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How will the map of global energy change? Will sky-high energy prices boost renewables? How will the industrial landscape shift? What will the lasting economic impacts be? How will the energy crisis affect climate action? These are the five crucial questions that researchers around the world will be asked to focus on in 2023. It will be up to them to find

adequate answers to support government action in the coming months to deal with the emergency.

Identifying the crucial issues in an area that has become key for [global politics](#) and economics, Simone Tagliapietra, researcher in the Faculty of Political and Social Sciences at the Università Cattolica del Sacro Cuore, was commissioned by the journal *Nature* to outline some possible energy scenarios for 2023 together with Andreas Goldthau, director of the Willy Brandt School at the University of Erfurt

In addition to focusing on the new post-war world energy map in Ukraine, they tried to indicate the industrial, economic and social repercussions of the energy crisis, with a focus on the potentially positive effects that it will have in fostering the ecological transition.

"In 2022, energy markets have been on a roller coaster," the researchers argue. For this reason, 2022 will go down in history as an *annus horribilis*. Blame it on an "energy crisis triggered by the Russian invasion of Ukraine" and, as a result, the Kremlin's "geopolitical use of natural gas flows" to Europe. Thus, 2023 will be a crucial year to understand how the energy crisis will evolve and how it will affect the choices that will be made globally to ensure a more sustainable future.

How will the map of global energy change?

"The events of the past year have fundamentally altered Russia's position in global energy markets and the shape of those markets. New alliances are being built and old ones consolidated," says Tagliapietra. For its part, the European Union is approaching major gas suppliers such as Norway, Algeria and the United States, as well as producers in Africa and the Middle East of liquefied natural gas. Russia is shifting lost European exports to Asia.

Europe will see lasting reductions in its consumption of [natural gas](#) as a result of greater energy efficiency, a switch to green alternatives. Faced with this scenario in 2023, "researchers need to consider whether such steps are enough to compensate for lost Russian imports and avoid global supply shortages," says Tagliapietra.

Will sky-high energy prices boost renewables?

The extent to which countries can fast-track the switch to green energy is a key question for 2023. High global oil and gas prices offer an incentive for households and businesses to install [solar panels](#) and heat pumps to lower their energy bills, as many did this year in Europe.

How will the industrial landscape shift?

High costs and limited supplies of energy will reorganize industries, including processes and locations. Some energy-intensive manufacturing sectors, including for aluminum, fertilizers and other chemicals, are starting to move to places offering cheaper energy, such as the United States or the Middle East. Other industries are innovating.

What will the lasting economic impacts be?

The coming year will bring clarity about trends in "deglobalization" and economic nationalism. Some economists predict that reshoring will slow the global energy transition as markets fragment. Researchers also need to watch what happens to the global division of labor that drove the development of clean technologies and slashed the cost of solar panels in the first place—a blend of innovation in the United States, Chinese investments in manufacturing and subsidies in Europe. If countries act in isolation and do so purely competitively, this virtuous circle might break.

"The energy crisis is exacerbating [social inequality](#) within and between countries. Vulnerable households and low- and middle-income nations have been hit hardest by energy cost hikes," says Tagliapietra.

"Researchers must evaluate the implications for national policies and multilateral aid, lending and development policies. They should shed light on the extent to which increasing energy poverty, energy price shocks and [energy](#)-induced inflation weaken [social cohesion](#) and threaten [political stability](#). Rich nations can also be affected, as protests in the United Kingdom and Czech Republic attest."

How will the energy crisis affect climate action?

The ramifications here are potentially severe. Low- and middle-income nations are uneasy with Western responses to the [energy crisis](#); rich countries that are turning to coal to replace Russian imports while calling on poorer nations to do their utmost to decarbonize seem hypocritical

"Social and [political scientists](#) and economists need to identify which bilateral, regional and multilateral mechanisms are best placed to foster climate finance, technology transfer and capacity building as pledged under the Paris climate agreement. A re-examination is needed of cross-border carbon measures," says Tagliapietra.

More information: Energy crisis, the five challenges for 2023, *Nature* (2022).

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