

Energy Transition



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ENERGY TRANSITION FOSSIL FUEL SMART GRIDS RENEWABLE ENERGY

Decarbonization Over the Next Couple of Decades!

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Director - Energy, Climate & Resources
Eurasia Group

Balancing Energy Investments the most Challenging for Governments in the next Decades

It is an awkward situation for any government especially in the West that have net-zero targets. The hardest hit here is probably the Europeans because they have net zero commitment by 2050. This means they can't commit to long term oil and gas investments beyond 20 years, even as they still need gas for the next couple of years or even up to three decades. At the same time, on the environmental and policy side, all the money are needed to invest in green solutions. The oil and gas industry says, no, we need money for the next 20 years to make energy affordable. So, this is going to be the among the most challenging aspects of the entire energy transition for the next decades.



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Diverging energy transition approaches between US and Europe?

The overall goal and direction are similar - decarbonization over the next couple of decades. But the way we're going to get there is very different between and across the Atlantic. The US has a more pragmatic approach, which means the long-term goal of decarbonization does not mean that in the short or medium term they can't produce a fair bit of oil and gas, whereas in Europe there's a much stronger sense to decarbonize as fast as possible. The US is the biggest oil and gas producers, and the wider Europe is not, which is dependent on imports of fossil fuel.

How can Europe maintain competitiveness and achieve net zero goals with high energy prices?

I think Europe has a chance to maintain its competitiveness and could benefit greatly from investing into improved efficiency - using less energy while still producing the same amount of goods. They are investing in more oil and gas access from the US, although it comes at a premium. The high prices are pushing them into investing in alternative local clean energy sources such as offshore wind in the North Sea and concentrated solar in Iberia, as well as clean hydrogen. Natural gas is now part of clean hydrogen as part of that net zero policy, and the EU has officially now endorsed carbon capture and storage, which will enable ongoing use of oil and gas as low carbon solutions.

China's approach to decarbonization?

The Chinese have taken a pragmatic and domestically folk-centric approach to energy security and climate change. The price shocks of natural gas and LNG last year triggered by the cut of Russian gas in Europe has impacted the rest of the world, including China. The country's response has been that they've approved 3mt/yr of additional coal mining capacity. If you start digging for more coal, that means you're going to use it and not just for the next two years. But they are also investing into a massive greening of its industry, be it electric vehicles, solar and so forth. They're taking one step backwards and then two steps forward.

Source: Two-Minute Warning Interview

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WEEKLY SOUNDING

RENEWABLES

Renewables tend to attract more women because there is a more multidisciplinary nature in the field. IRENA's analysis for the renewable energy sector showed women are about a third of the renewable energy workforce, which is way better than the oil and gas where it's about 22%.

Dr. Rabia Ferroukhi

Director of Knowledge, Policy and Finance Centre
International Renewable Energy Agency

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The Role of Electric Vehicles in the Energy Transition

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Electric Vehicle Technology (EV)

With motor vehicles being the largest producers of greenhouse gases worldwide, the impact of electric vehicles and EV charging stations on the energy transition can be significant. According to the Electric Power Research Institute (EPRI) and the NRDC, vehicles are responsible for about 60 percent of carbon pollution. In COP26, the United Nations' 2021 climate change conference in Scotland, the transition to zero-emission vehicles was one of the top priorities to achieve the goals of the Paris Agreement. Along with hydrogen and solar, electric vehicles are one of the technologies that will fuel the energy transition. Although data from the International Energy Agency in 2021 shows that the sales of EVs doubled from the previous year to a new record of \$6.6 million, the full transition to EVs will require the adoption of measures favouring EVs including subsidies, tax credits, and other complex considerations. However, if government plans materialise and the sales of EV vehicles continues on an upwards trend, we could achieve milestones in the economic diversification required for reducing our dependence on oil, a matter of crucial importance especially for the MENA region.

How do EVs contribute to reducing emissions and facilitating the energy transition?

Smart grid technology:

With the help of energy management that smart grids enable; the use of electric cars can offset a significant number of emissions. Smart grid technology is an effective solution to meet the power system demand while reducing carbon emissions. A study by the Electric Power Research Institute shows that smart grid can help reduce greenhouse gas emissions by up to 211 million metric tons. The data collected from sensors and in-built trackers can help energy generation optimisation and lower emissions. Overall, done efficiently and in seamless communication with connected EVs, a smart grid could completely change the way electric energy is stored, managed, and distributed.

Increase the demand for renewable energy:

As more EVs are deployed, there will be an increased demand for electricity, particularly during peak charging times. This increased demand can be met through the deployment of renewable energy sources, such as solar and wind power, which can help to further reduce carbon emissions. EV charging can be paired with on-site renewable energy generation---most commonly by co-locating EVs with on-site solar energy systems, and in some cases batteries. According to the World Resources Institute, daytime charging syncs with peak solar output, while night-time charging can often align well with wind output.

Improve energy efficiency:

EVs convert more of the energy stored in their batteries into motion than gasoline-powered vehicles convert the energy stored in gasoline into motion. According to the National Resources Défense Council (NRDC) in the United States, EVs typically have an energy conversion efficiency of around 60-80%, while gasoline-powered vehicles typically have an energy conversion efficiency of only around 20%. Overall, EVs can reduce greenhouse gas emissions and dependence on fossil fuels; thereby facilitating the energy transition. Despite the benefits of EVs for the energy transition, there are several challenges faces their full adoption. This includes access to reliable and clean electricity. A study by the Energy for Growth Hub estimates that a staggering 45% of the world's population does not have access to reliable power. Additionally, affordability is a major barrier, and government subsidies are not possible for poor nations. Therefore, international cooperation and the implementation of government policies is necessary to power the transition to EVs.

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INSIGHTS

Fossil Fuel Phase Out, Version 2.0



Bill Spindle

Fomer International Affairs Fellow in India
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Prime Minister Modi could inject new life into the global climate fight by re-upping India's COP27 proposal.

Indian Prime Minister Narendra Modi regards himself as a bold, even radical, decision maker. I found this out when arrived in New Delhi as The Wall Street Journal's South Asia bureau chief in November of 2016, at just the moment when the prime minister invalidated nearly all of India's circulating currency. More such decisions followed, all of them controversial, from subverting the status of Kashmir to amending the country's immigration laws. Four years later I left on the eve of Modi slamming on the tightest nationwide Covid lockdown the world had seen to that point. My six months traveling the country by rail last year, investigating the impacts of climate change and reporting on India's efforts to transition towards a greener energy system, convinces me that Modi should make another bold move. This one would be more beneficial for India, cast Modi into the global leadership role he's long yearned for, and inject new life into the global climate fight. Modi should use India's presidency of the G-20 countries this year — a year when the global climate summit COP28 will also be held in the petrostate of the United Arab Emirates — to call for the phase out of all fossil fuels, beginning with India's use of coal. Bold though this would be, it wouldn't actually be the first time India has made such a proposal.

At COP27 last year, India floated exactly that proposition. Then, it was almost certainly a tactic for deflecting criticism India received at the previous summit, COP26 in Glasgow, Scotland. The COP26 summit came to a close with India a target of scorn for forcing the dilution of strong language calling for the end of coal use. India — backed by the world's biggest coal user, China, and with the tacit approval of the U.S.



— would only go as far as calling for an eventual phase out of coal. That set the stage for its COP27 maneuver in Sharm El-Sheikh calling for a phase out not simply for coal, but for all fossil fuels. India was surprised when the European Union grabbed the idea and ran with it. The E.U. proposed a deal that would support more climate funding for poor countries — specifically a fund aimed at paying developing countries compensation for climate damage historically caused by rich countries — in return for them backing the fossil fuel phase out. Indian officials were likely relieved when petrostates Russia and Saudi Arabia shot down the gambit — again, with the tacit consent of the U.S. — and the E.U. went along with a developing world climate financing mechanism anyway. But between then and now, a lot has happened. Russia's invasion of Ukraine has underscored the urgent importance of energy security — including the easy availability of fossil fuels, especially domestically plentiful ones, like coal for India.

Source: *The Adventure (r)*

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