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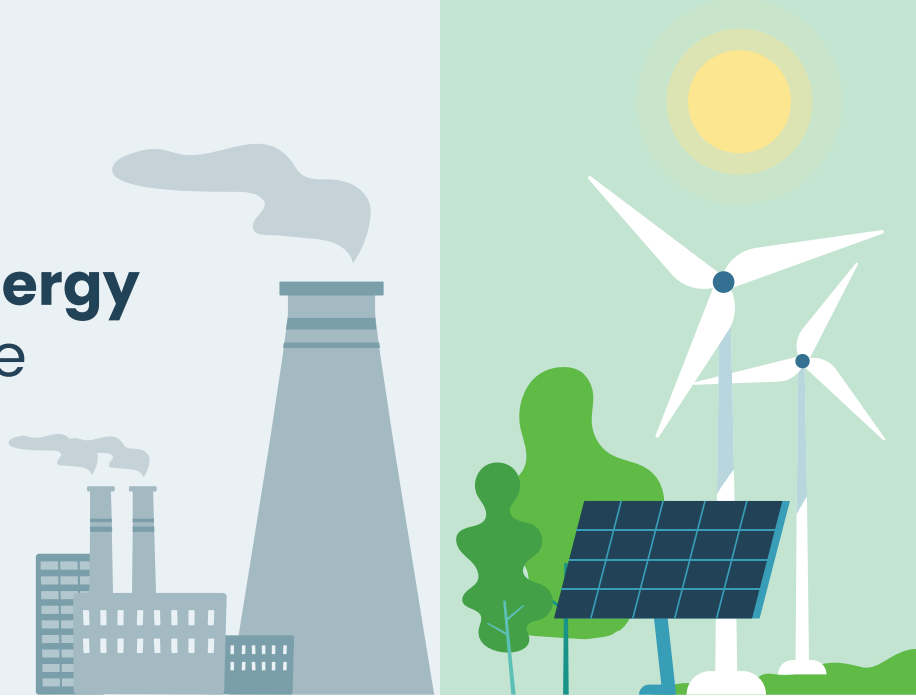
Insights for New Energy

How to Navigate the Bumps, Potholes and Detours of the Energy Transition

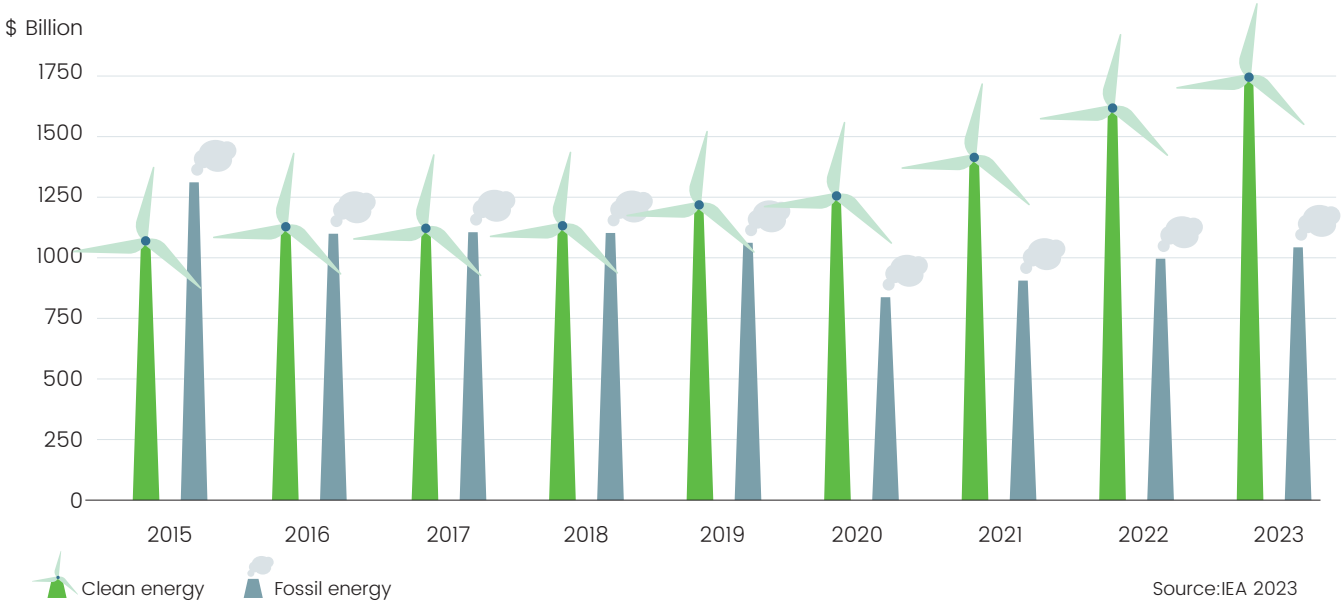


$1.7 T

Global investment in clean energy is on pace to reach $1.7 T in 2023, with investments in solar power alone expected to surpass oil production for the first time, according to the International Energy Agency.

While the pace may ebb and flow and there's a question as to whether that's enough to meet net zero climate goals, we are now clearly at a turning point in the energy transition.

GLOBAL ENERGY INVESTMENT IN CLEAN ENERGY AND FOSSIL FUELS 2015-2023



Source:IEA 2023

In the U.S., funding and subsidies from federal legislation like the Infrastructure Investment and Jobs Act (2021) and Inflation Reduction Act (2022) are **set to accelerate investment in clean energy projects.** And with the recently proposed EPA rules on power plant carbon emissions, the U.S. is embarking on a wholesale transformation of the power sector away from coal and toward renewable energy technologies, low carbon fuels and carbon capture.

But the energy transition journey won't be a smooth one – companies can expect bumps, potholes, detours and the occasional wrong turn along the route.

In our research and work with clients in the energy industry we're seeing some of the key resource and technology challenges companies are facing as they invest in clean energy tech. Oil and gas majors, for example, are pumping the brakes on the pace of their transition as they struggle to profit in wind and solar markets at the same time they realize record profits in their traditional oil and gas businesses.

Some key challenges with the energy transition we are seeing over both the short and long-term include:

Critical Minerals: Automakers and clean energy companies are ramping up demand for batteries, wind turbines and solar panels, but the mining companies that supply the raw materials for these products will be hard pressed to produce enough copper and other critical minerals to meet the need in ways that are simultaneously affordable, sustainable and in the timeframes needed.

Infrastructure: Energy companies seek ways to capture and store carbon emitted by power plants, ethanol and fertilizer production and other CO2 emission sources but face long timelines, steep costs and organized opposition to new pipelines for transporting CO2 to locations where it can be stored deep underground in geologic formations.

Low Carbon Fuels: Projects for low carbon fuels to power hard-to-decarbonize sectors like steel, cement, aviation and off-grid applications, among others, require new technologies, new business models and new partnerships with technology providers and off-takers – all at a commercial scale not yet proven.

Transmission: Clean energy developers want to build out new wind farms and solar fields in the U.S. but are stymied by bottlenecks in the nation's transmission lines.

Successfully navigating these and other challenges in the energy transition will require companies to be more nimble and open, yet remain disciplined in their approach to strategy and execution.

Strategy, based on deep insights on market, technology and policy trends, must open the aperture for companies to assess new adjacencies and partnerships. It's on the periphery that companies will discover ways to leverage their assets and capabilities for growth and profit.

The energy transition, by its very nature, will require new combinations of corporates and startups, financing and technology, and policy expertise and go-to-market execution.

To keep pace with the changes in technology and competitive landscape, companies must **build a robust innovation pipeline of prototypes, pilots and partnerships to support rapid moves into new markets and technologies.** And this must all be supported by a disciplined governance process for innovation, including scaling of new concepts, to maintain a focus on learnings and results.