

TotalEnergies Energy Outlook 2022

TotalEnergies Publishes its Annual Contribution to the Energy Transition Dialogue

Paris, September 27, 2022 – In view of the forthcoming COP27, the multi-energy Company TotalEnergies aims at improving the understanding of the global energy system and thus contributing to the Energy Transition debate with its annual publication, the *TotalEnergies Energy Outlook 2022* ([document available at this link](#)).

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Published for the fourth consecutive year, the TotalEnergies Energy Outlook 2022 reexamines the two core scenarios – Momentum and Rupture – elaborated by TotalEnergies to achieve the energy transition by 2050, taking into consideration current energy markets and societal trends. It also integrates new Net Zero pledges made since the presentation of last year's Energy Outlook in September 2021, thus strengthening global climate ambition.

- TotalEnergies' **Momentum** scenario is a forward-looking approach based on existing decarbonization strategies of Net Zero 2050 countries, as well as NDCs (Nationally Determined Contributions) of other countries. In addition to major economies like the US, European countries, Japan and South Korea, Momentum incorporates this year new Net Zero 2050 pledges from Australia, Singapore, Taiwan and the UAE. The increasing number of countries with carbon neutrality commitments by 2050 following the COP26 in Glasgow is excellent news for the climate but still results in a 2.1-2.3° temperature increase by 2100 in our models (using IPCC curves AR6 P66).
- TotalEnergies' **Rupture** is a scenario built to reach the objectives of the Paris Agreement by 2050, with temperatures' rise well-below 2°C (P66) vs. pre-industrial levels. It involves dissemination at large-scale of decarbonization drivers to all emerging economies, the construction a new low carbon energy system at a global scale while gradually transitioning from the existing one. It will not happen without richer countries supporting emerging ones by promoting a just energy transition (via investments, technology transfers, training...) with a funding at least at the level forecasted in the Paris agreement (100 B\$/year from 2020).
- By extending a combination of levers already applied in the Rupture scenario onwards to all countries around the world, the TotalEnergies Energy Outlook 2022 gives a **Rupture+** scenario, which allows to limit the temperature rise to 1,5°C (P50). Oil demand in 2050 is comparable to IEA NZE but the trajectory to reach this target is different as new oil projects are still needed until the mid-2030s to meet demand and avoid prices spikes.

“Current energy markets disruptions have reinforced the necessity of dialogue on a global basis about the energy transition, involving worldwide participation of all actors of the society” declared **Patrick Pouyanné, Chairman and CEO of TotalEnergies**. “With this document, in line with our climate ambition to get to Net Zero by 2050 and our ongoing transformation into a multi-energy company putting the sustainable development goals at the core of our strategy,

TotalEnergies intends to share its knowledge of the global energy system, in order to contribute to the decisions that will foster the energy transition and help to tackle climate change.”

Helle Kristoffersen, President Strategy & Sustainability and member of the Executive Committee, will present this document today as an introduction to the Investors Days. This webcast will be streamed live and available for replay at the [following link](#).

Below are some of the key messages from the TotalEnergies Energy Outlook 2022:

- The short-term trajectory of global energy demand is not going in the right direction (pick up in coal use) due to the economic recovery post Covid in 2021 and the current market disruptions. More efforts will be needed to decarbonize while ensuring energy security and affordability.
- Current high energy prices have put energy efficiency at the top of the energy policy agenda in many OECD countries. The current crisis should be an opportunity to increase and anchor energy saving and efficiency measures as they are the fundamental basis of any scenario to reach the Paris agreement objectives.
- In the OECD, the electrification of end-user demand thanks to clean power is a structural evolution that helps reduce emissions and increase energy efficiency. The biggest impacts are to be found in road transport (Light Vehicles, 2-3 wheelers, Heavy Duty Vehicles) and industry. Strong public policies such as the ban on sales of new internal combustion vehicles in Europe and California are important to drive evolutions in demand. Heavy investment in electrical grids at state and interstate levels are fundamental requirements for the success of this electrification.
- In non-OECD countries, in particular in Africa, the switch away from traditional biomass to modern energy is core to increasing energy efficiency while providing affordable energy access, better living standards and economic development to growing populations.
- Renewables, already the main driver of the decarbonization of the power mix, are experiencing a higher and faster penetration as energy security becomes a key concern for many countries.
- With the increased penetration of renewables globally, natural gas keeps a key role in the energy transition to ensure firm power, in addition to pushing out coal in all sectors of final demand. Gas will become greener over time and its growth is accompanied by carbon capture and methane emissions control solutions.
- H₂ and Sustainable Liquid Fuels based on e-fuels are promising decarbonization drivers, but they will not scale up before 2030; in the meantime, renewable diesel and biogas are expected to pick up. Once at scale, hydrogen and hydrogen-based fuels will increase demand for clean power and carbon abated gas by more than 10% by 2050.
- The transition will require a step up in spending to build a new low carbon energy system and maintain the existing one for a while. The current decade is decisive. Investment in low carbon power must double to 2030 to reach 1.5 T\$/year. Meanwhile, investment in new oil and gas developments is required until at least the mid-2030s to satisfy customer demand, even in a well below 2°C scenario.
- Massive investment in clean tech R&D is needed to develop the technologies that will power this new energy system. TotalEnergies is committed to this transition and devotes already more than 60% of its R&D Budget to clean tech.

About TotalEnergies

TotalEnergies is a global multi-energy company that produces and markets energies: oil and biofuels, natural gas and green gases, renewables and electricity. Our more than 100,000 employees are committed to energy that is ever more affordable, cleaner, more reliable and accessible to as many people as possible. Active in more than 130 countries, TotalEnergies puts sustainable development in all its dimensions at the heart of its projects and operations to contribute to the well-being of people.

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