



PRESS RELEASE

## ***TotalEnergies Energy Outlook 2023***

### **TotalEnergies publishes its annual report on scenarios for the global energy system**

**Paris, November 14, 2023** - In the run-up to COP28, the multi-energy company TotalEnergies contributes to the energy transition's debate with its annual publication *TotalEnergies Energy Outlook 2023*, which presents scenarios for the evolution of energy demand and the global energy system ([documents available at this link](#)).

#### **TotalEnergies Energy Outlook 2023**

Published for the fifth year running, the *TotalEnergies Energy Outlook 2023* updates the Momentum and Rupture scenarios for the global energy system up to 2050 developed by TotalEnergies. This year, it compares them with a Current Course & Speed scenario to better assess the impact of the various decarbonization levers that will enable the energy transition to be completed by 2050.

Analysis of the 2000-2021 period shows that the energy transition has started but is not progressing fast enough: over this period, better use of energy has led to decoupling energy demand growth from GDP growth; however, the share of fossil fuels in energy is still around 80%, as growth in energy demand is linked to growth in the world's population, and investment in low-carbon energies is insufficient to meet this demand growth.

TotalEnergies Outlook 2023 distinguishes three geographical zones: NZ50 countries, the forty countries (mainly from the OECD) that have committed to achieving net carbon neutrality by 2050; China; and Global South, the rest of the world. According to demographic forecasts, the world's population will increase by 1.7 billion between now and 2050 in Global South. Living standards are expected to more than double in Global South, and energy demand to rise by more than 70%, while it will remain stable in China and fall by 20% in NZ50 countries. Between now and 2050, the challenge will be to reconcile the energy transition with this growth in Global South.

The **Current Course & Speed** scenario, which continues current trends in the transformation of the energy system, results in a temperature increase of more than 3°C degrees by 2100 and is therefore unsustainable. It extends the energy efficiency gains observed over the average of the last 5 years, i.e., 2.0%/y compared with 1.4%/y over the last 20 years, but this is not enough to enable NZ50 countries and China to achieve their 2050/2060 targets. World investments in low-carbon energies are not sufficient to be deployed in Global South.

TotalEnergies' **Momentum** scenario is a forward-looking approach integrating the decarbonization strategies of NZ50 countries, as well as the NDCs (*Nationally Determined Contributions*) of the other countries. It implies: (i) significant energy efficiency gains in all countries (2.4%/y over the period 2021-2050 vs. 2.0%/y in Current Course & Speed scenario), (ii) green electrification of road transport, in NZ50 countries and in China, (iii) phasing-out coal in NZ50 countries, a sharp reduction in China and slight growth in the Global South countries, (iv) use of natural gas as a transition energy for electricity and industry in all countries, (v) increasing use of hydrogen after 2030 in the NZ50 countries and China, particularly in industry,

and (vi) the levelling off of global demand for plastics and the deployment of recycling in NZ50 countries. In this scenario, fossil fuels still cover half of the growth in energy demand in Global South due to insufficient low-carbon investment. It results in a temperature increase of 2.1 to 2.2°C by 2100.

**Rupture** is a scenario designed to achieve a temperature increase of less than 2°C by 2100. It implies: (i) a wide diffusion to the whole world of the decarbonization levers developed by NZ50 countries and China, while meeting the legitimate growth expectations of Global South, (ii) an increased penetration of electricity and renewable energies in Global South, (iii) an even more significant reduction of coal in China and Global South, (iv) the extension of the transport revolution: increased penetration of electric vehicles worldwide and sustainable liquid fuels in aviation and marine, (v) increased penetration of new energies (green hydrogen in industry and transport, e-fuels, biofuels and biogas.) and (vi) increased plastics recycling in China and Global South. This transition will not happen without rich countries supporting Global South by promoting a just energy transition (through investment, technology transfer, training, etc.). It yields a temperature increase of 1.7 to 1.8°C by 2100.

*"Our collective challenge is to move away from the 'Current Course & Speed' scenario, without compromising growth in emerging countries and in a way that is acceptable to people in more advanced countries," said **Helle Kristoffersen, President Strategy & Sustainability**. "With this document, 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 combat climate change."*

**The main findings of the TotalEnergies Energy Outlook 2023 are as follows:**

- The energy transition has started, but 2022 saw a further increase in energy-related CO<sub>2</sub> emissions. Despite their commitments, many NZ50 countries continue to burn coal to generate electricity, producing ~2 Gt of CO<sub>2</sub> emissions (some even increased their coal-fired electricity generation in 2022).
- The pace and scale of deployment of the new low-carbon energy system needs to be significantly accelerated:
  - ✓ promote better use of energy and massive progress in energy efficiency,
  - ✓ accelerate the increase in investment in clean energy worldwide, not just in OECD countries,
  - ✓ and finally, that the developed economies commit to fully support the Global South's transition (through financial, technological, and skills transfers).
- Another challenge is to reduce fossil fuel consumption at the right pace:
  - ✓ In Global South, fossil fuels remain an affordable solution for providing growing populations with access to energy, and therefore greater prosperity.
  - ✓ In NZ50 countries, an accelerated transition means retiring existing assets at country, industry, and household levels, and investing in new low-carbon assets.
  - ✓ The transition will not take place without social acceptability (both between North and South and within NZ50 countries) and without genuine efforts in terms of climate justice.
- In the short term, no-regrets actions are:
  - ✓ phase-out coal from the electricity mix in NZ50 countries,
  - ✓ invest massively in electricity networks and adapt them to the complexity of the low-carbon electricity system,
  - ✓ tend towards elimination of methane emissions from fossil fuel production processes,

- ✓ decarbonize road transport,
- ✓ and support the energy transition in the Global South through North-South financing, technology transfer and training.

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### 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, more sustainable, more reliable and accessible to as many people as possible. Active in nearly 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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