ASSESSMENT OF TOTALENERGIES' CLIMATE STRATEGY





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Analysis, research and drafting by:

Louis-Maxence Delaporte, Energy Analyst, Iouis-maxence@reclaimfinance.org Henri Her, Energy Analyst Bastien Gebel, Junior Energy Analyst

Written with the contribution of:

Lucie Pinson, Executive Director Clément Faul, Research Manager Rémi Hermant, Sustainable Policy Analyst Maude Lentilhac, Oil and Gas Campaigner Agathe Masson, Stewardship Campaigner

Graphic design:

Jordan Jeandon Léo Martin, Digital Project Officer Hele Oakley, Copy editor

Publication date:

April 2024

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INTRODUCTION

While a growing number of institutions are disengaging from the oil and gas sector, deeming it incapable of transformation, others believe that oil and gas companies are essential to the energy transition and that their support is indispensable to the massive development of renewable energies. Considering this: What is the actual situation? To what extent does TotalEnergies contribute to the development of sustainable solutions? Given that we can't limit global warming to 1.5°C without gradually reducing hydrocarbon production, has TotalEnergies given up on developing new oil and gas projects?

To assess TotalEnergies' climate strategy and provide our analysis, Reclaim Finance relied on the International Energy Agency's (IEA) Net Zero Emissions by 2050 Scenario (NZE).¹ The NZE is based on a 1.5°C trajectory and includes:

- A drop in oil and gas production of 21% and 18% respectively by 2030, compared with 2022 levels.
- A halt to the development of new oil and gas production projects and liquefied natural gas (LNG) terminals.
- A 67% increase in total annual investment in energy, with a 2.3fold increase in annual investment in energy transition, covering clean energy supply, end-use and energy efficiency. This would mean investing ten dollars in the transition by 2030, six in energy supply – mainly electricity – for every dollar invested in fossil fuels, i.e. a 6:1 ratio.

TotalEnergies ranks as the 14th biggest oil and gas producer and the 6th biggest oil and gas upstream developer worldwide. The company is the 11th largest LNG export terminal developer.²

As one of the top European integrated oil and gas companies and one of the largest greenhouse gas (GHG) emitters globally, TotalEnergies is among the few companies in the world whose climate transition (or lack thereof) in the coming years will have a determining impact on our collective ability to limit global temperature rise to 1.5°C. In 2020, the company pledged to achieve carbon neutrality across its entire operations on an absolute basis by 2050 or sooner.³ I am also calling on CEOs of all oil and gas companies to be part of the solution. They should present credible, comprehensive and detailed transition plans in line with the recommendations of my High-Level Expert Group on netzero pledges.

> Antonio Guterres, Secretary-General of the United Nations, March 2023

KEY FINDINGS

1. The investment strategy of TotalEnergies prioritizes the oil and gas sector and redistribution to shareholders, to the detriment of climate solutions

- TotalEnergies invested in oil and gas rather than in renewable energy:⁴ For every dollar invested in 2023 in its integrated power business – including renewable energy and gas power – TotalEnergies invested 2.5 dollars in oil and gas.
- TotalEnergies remunerates shareholders rather than investing in renewable energy: For every dollar invested in 2023 in its integrated power business, TotalEnergies distributed 3.4 dollars to its shareholders through dividends and share buybacks.

2. The energy strategy of TotalEnergies will continue to rely on the development of new fossil fuel projects

- With TotalEnergies' oil and gas production from its currently producing fields and already committed short-term expansion plans, the company's production in 2030 will be 36% higher than the level required to align with the NZE. In terms of short-term expansion, TotalEnergies ranks as the 6th biggest oil and gas upstream developer.
- Yet, TotalEnergies will have to develop additional discoveries or acquire fields beyond those already under short-term expansion to meet its 2030 oil and gas production target. Its existing operating

fields and short-term expansion plans will not be sufficient to reach its 2-3% yearly increase in oil and gas production by 2028. With the company's current strategy, its 2030 production will be 59% higher than the NZE.

TotalEnergies is constructing and plans to develop new liquefaction terminals in the coming years. Consequently, with its current LNG strategy, its 2030 total net liquefaction capacity will be 173% higher than the NZE.

3. TotalEnergies' diversification strategy remains marginal and partly relies on gas and unsustainable energies

- Oil and gas extraction will still represent more than 80% of TotalEnergies' energy mix by 2030. The company will account for 2.3% of the worldwide oil and gas production in the NZE.
- TotalEnergies' renewable strategy relies on acquisitions of capacities rather than on organic development of new capacities. With 66 gigawatts (GW) of net installed renewable power capacities in 2030, and a renewable production above 70 TWh in 2030, renewable energy will represent less than 10% of TotalEnergies' energy mix. The company will produce 0.4% of the worldwide renewable power production in the NZE.
- By 2030, TotalEnergies will double its gas power production by 2030 compared to 2023 level. Gas power will represent 3.5% of the company's energy production mix in 2030.
- TotalEnergies will produce 1 million tonnes per annum (Mtpa) of low carbon hydrogen and e-fuels in 2030, that include green and blue hydrogen. Hydrogen and e-fuels will represent 3.9% of its energy production mix in 2030.
- By 2030, TotalEnergies will develop unsustainable renewable energies such as Sustainable Aviation Fuel (SAF) and biogas. In 2030, bioenergy will represent around 1.3% of the company's energy production mix.



1. CURRENT ENERGY PRODUCTION

otalEnergies accounts for 1.8% of global oil and gas production.⁵ In 2023, TotalEnergies extracted 523 million barrels of oil (mmbbl) and 267 million barrels of oil equivalent (mmboe) of gas.⁶ Beyond exploration and production, TotalEnergies is also active in other energy segments such as oil and gas transportation, oil refining, hydrogen, solar, wind and gas power generation and retail.

The company's power production is composed of gas power, hydropower and renewable energy – wind, solar and battery storage. TotalEnergies owns 18 operating gas plants⁷ and generated in 2023 14.5 terawatthours (TWh) of electricity through gas. With net installed renewable capacities reached 13 GW, primarily solar energy (65%) and wind energy (31%),⁸ TotalEnergies generated 18.9 TWh through renewable energy.⁹ 57% of TotalEnergies' power production comes from renewable sources and 43% from gas. Renewable capacities are located in India, North America, and South America due to the acquisition of shares in renewable energy producers such as Adani Green in India, Clearway in the United States and Casa dos Ventos in Brazil. **Growth in renewable energy in 2023 was driven by acquisitions rather than by organic developments.**¹⁰

94.7% of TotalEnergies' current energy mix is composed of oil and gas extraction, 2.9% of renewable power, 2.2% of gas power and 0.2% is composed of bioenergy.

2. CASH-FLOW ALLOCATION

he future energy mix and GHG emissions of a company are determined by its current energy mix and its investment strategy.

From 2021 to 2023, TotalEnergies invested US\$989 million per year in oil and gas exploration, making it the 15th largest investor in this area over those three years.¹¹ The investments reveal the importance of oil and gas expansion in the company's long-term strategy, which includes the search for new fields that once discovered could come into production in decades.

Information in TotalEnergies' 2023 annual report¹² shows how the cash and cash flows generated from its operational activities were spent in 2023:



- 1. TotalEnergies invested US\$4.9 billion in its integrated power business, which includes solar, wind energy, power storage as well as hydroelectricity and gas power.
- TotalEnergies invested US\$12.6 billion in oil and gas, including US\$7.5 billion in oil and gas exploration and production, US\$3.2 billion in its integrated LNG business and US\$1.9 billion in refining and chemicals. In total, for every dollar invested in integrated power, more than 2.5 dollars were invested in oil and gas.
- 3. TotalEnergies provided its shareholders with US\$16.6 billion through dividend payments (US\$7.8 billion) and share buybacks (US\$8.8 billion). In total, for every dollar invested in integrated power, 3.4 dollars were distributed to shareholders.

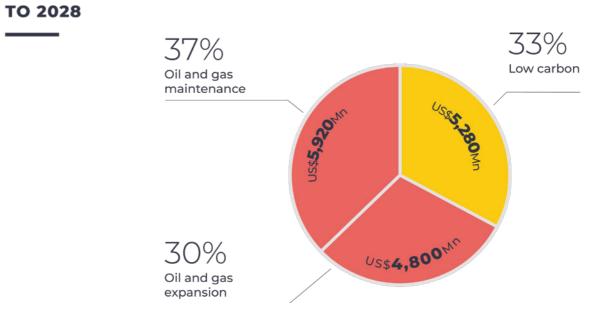
TotalEnergies' net investment plan remains fossil-fuel driven. It plans to invest around US\$16 billion per year on average from 2024 to 2028, including US\$11 billion in oil and gas.¹³ US\$5 billion per year, 30% of total net investments, will be growth CAPEX dedicated to new fossil projects while US\$6 billion will be maintenance CAPEX dedicated to already existing infrastructures. US\$5 billion per year, one third of TotalEnergies' total net investments, will be dedicated to integrated power and low carbon molecules that include various activities such as renewable energy, hydrogen, bioenergy, and e-fuels as well as investments in gas power.¹⁴



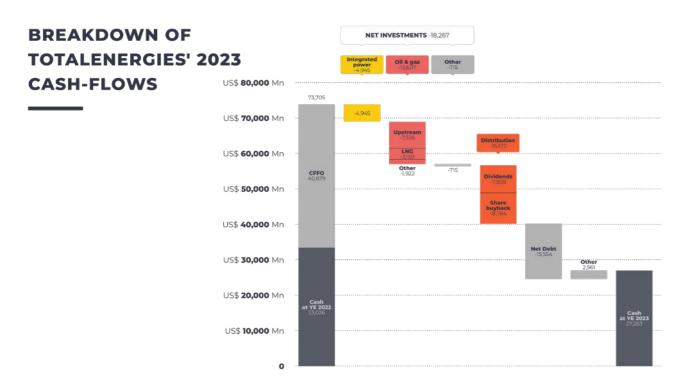
Source: TotalEnergies, 2023 Universal Registration Document, 2024

Total annual energy investment needs to increase by 67% by 2030 according to the NZE, which includes a shift from fossil fuels to clean alternatives. Investments in clean energy supply, end-use and efficiency are multiplied by 2.3 times by 2030 in the NZE, with 10 dollars spent in these areas for each

TOTALENERGIES' CAPEX PLAN







Source: TotalEnergies, 2023 Universal Registration Document, 2024

dollar spent on fossil fuels, 6 dollars of which are for sustainable power supply.¹⁵ In its 2023 report, the IEA established that oil and gas companies must allocate more than 50% of their capital expenditure (CAPEX) in clean energy by 2030.¹⁶

TotalEnergies, Sustainability and Climate Workshop, 2024

3. FOSSIL FUEL STRATEGY

a. Upstream expansion plans

The IEA published the NZE in May 2021¹⁷ to provide a pathway to meet global energy needs while maintaining a 50% chance of keeping global temperature increases below 1.5°C. It was used as the reference scenario in the IEA's World Energy Outlook (WEO) 2021 and was updated in the WEO 202218 and WEO 2023.¹⁹ The NZE projects a halt to the development of any new oil and gas fields for which a Final Investment Decision (FID) was not approved by January 1st, 2022, plus an end to the construction of LNG terminals.

The Intergovernmental Panel on Climate Change (IPCC) also highlights the risks associated with the development of any new fossil fuel projects. This concurs with a large and growing body of scientific evidence showing the need to immediately end fossil fuel development, and a growing consensus on this in net-zero policy discussions.

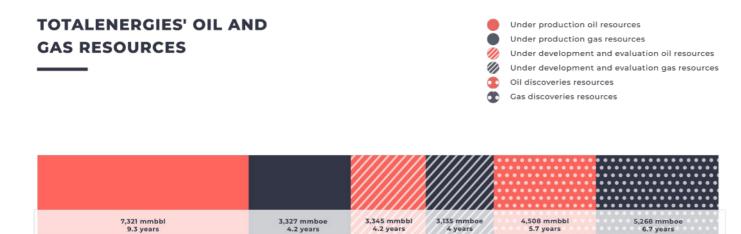
According to the 2023 Global Oil and Gas Exit List (GOGEL), TotalEnergies is the 6th top global oil and gas upstream short-term developer. The company accounts for 3.5% of global short-term expansion plans, with 57.1% of its short-term expansion plans not obtaining a FID before 2022 - therefore overshooting the NZE. Among TotalEnergies' main projects that are yet to enter production or have a FID obtained before 2022, Reclaim Finance identified new oil and gas projects considered to be climate bombs.²⁰ TotalEnergies is exploring or developing oil and gas in 53 countries²¹ - which is more than any other company - then expand in countries that are not yet dependent to the fossil fuel extraction industry. Thus, among its climate bombs, are some upstream and LNG projects such as Mozambique LNG²² and Papua LNG.²³

These projects would give TotalEnergies significant additional resources even though it already has enough to extract oil and gas for several years. As of April 2nd, 2024:

- TotalEnergies has 10,648 mmboe of resources under production, including 7,321 mmbbl of oil and 3,372 mmboe of gas. This represents the equivalent of 13.5 years of production at 2023 levels.
- TotalEnergies has 6,479 mmboe of resources under development or field evaluation, including 3,345 mmbbl of oil and 3,135 mmboe of gas. This represents 8.2 years of production at 2023 levels.
- TotalEnergies owns 9,776 mmboe of oil and fossil gas discoveries, including 4,508 mmbbl of oil and 5,268 mmboe of gas. This represents 12.4 years of production at 2023 levels.

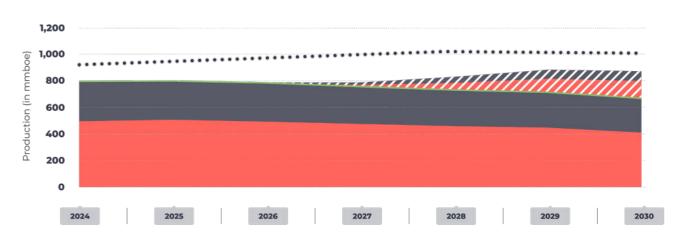
b. Upstream production

Oil and gas production should decrease by 20.9% and 17.9%, respectively, between 2022 and 2030 according to the NZE.²⁴ In this scenario, the rate of oil and gas production declines due to a combination of the natural depletion of existing oil and gas fields and the absence of new fields to fill the gap, despite the reliance on negative emissions. Oil and gas production



Source: Rystad Energy, accessed in April 2024

TOTALENERGIES' PRODUCTION TRAJECTORY



Source: Rystad Energy on oil and gas production and expansion, accessed in April 2024; TotalEnergies investor presentations on company production targets.

would need to decline much faster without this reliance. Negative emissions include the deployment of technologies unproven at scale, such as carbon capture, utilization and storage (CCUS). Other prominent 1.5°C scenarios with no or low overshoot also show oil and gas production declining by 2030. These include the One Earth Climate Model (OECM),²⁵ the net zero climate scenarios from the Network for Greening the Financial System (NGFS),²⁶ and the IPCC's 1.5°C with no or low overshoot scenarios filtered to limit to reasonable volumes the reliance on negative emissions (e.g. CCUS, nature-based solutions (NBS), etc.).²⁷

The following chart compares TotalEnergies' planned oil and gas production level by 2030 with:

- TotalEnergies' production by 2030 if it aligns with the NZE (i.e. TotalEnergies' production level from its producing fields and its fields currently under development with a FID obtained before 2022).
- TotalEnergies' production by 2030 if it carries out its short-term expansion plans (i.e. TotalEnergies' production from its fields currently under production, under development and under field evaluation).



Oil production from fields sanctioned under the NZE Gas production from fields sanctioned under the NZE Oil production from fields unsanctioned under the NZE Gas production from fields unsanctioned under the NZE Production trajectory aligned with the NZE Company production targets

In 2030, with oil and gas from currently producing fields, fields under development and under evaluation, TotalEnergies' production level will be 36% higher than the NZE.

While TotalEnergies was formerly forecasting a steady oil production, the company now targets an increase of its oil and gas production by 2-3% per year by 2028, with a rise of both its oil and gas production.²⁸ With its already committed short-term expansion plans, TotalEnergies still could not achieve its target. In other words, to reach its production target, TotalEnergies will have to develop part of its discoveries and/or acquire new fields. Assuming the conservative hypothesis that TotalEnergies will reach plateau in 2028, TotalEnergies' 2030 production target for oil and gas will be 59% above NZE alignment.

With its production target, TotalEnergies' 2030 oil and gas extraction will represent 81.5% of its energy production mix and 2.3% of the global oil and gas production in 2030, according production level of the NZE.

TotalEnergies plans to become mostly a gas player by 2030, with gas representing 50% of its upstream production compared to 34% of its 2023 extracted resources. As of April 2024, gas accounts for 31% of all resources present in TotalEnergies' fields already under production. Gas also represents 48% of its resources from fields under development and under evaluation, and 54% of its resources from discovered assets.²⁹ Furthermore, along with its 2030 gas production target and retained resources, TotalEnergies intends to increase its LNG business.

c. LNG terminal net capacities

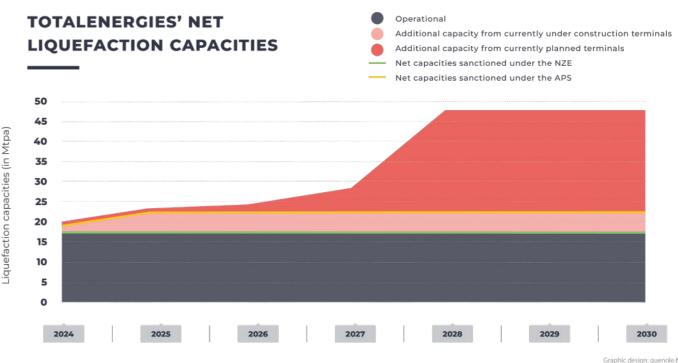
Under the NZE, gas demand by 2050 is met with all existing LNG terminals. Under the IEA's Announced Pledges Scenario (APS), gas demand is met with operational and under construction facilities. In either case, no new LNG terminal plans are necessary to meet demand. With its current plans, none of TotalEnergies' LNG expansion plans are aligned with the NZE, while only the infrastructure already under construction is aligned with the APS.³⁰

- TotalEnergies' gas-oriented strategy relies on new midstream infrastructure that will be commissioned in the coming years. Indeed, TotalEnergies owns existing LNG export terminals, and both constructs and plans to construct new LNG export terminals in the coming decade.
- TotalEnergies is a shareholder of existing export terminals such as Yamal LNG and Arctic LNG 2 in Russia, Ichthys and Gladstone in Australia, Cameron LNG in the United States. TotalEnergies' operational export terminals net liquefaction capacity reaches 17.1 Mtpa.³¹
- TotalEnergies is already constructing additional liquefaction capacities with Mozambigue LNG, Nigeria LNG in Africa and ECA LNG in North America. These would add net liquefaction capacities of 5.2 Mtpa to its portfolio.³²
- Moreover, TotalEnergies plans to construct additional liquefaction capacities with projects such as North Field LNG in Qatar, Papua LNG in Papua New Guinea, and Rio Grande LNG in the United States. These would add net liquefaction capacities of 24.5 Mtpa to its portfolio.³³

With its current LNG plans, TotalEnergies' 2030 total net liquefaction capacity will increase by 29.6 Mtpa to 46.7 Mtpa. Then, it will exceed the APS by 110% and the NZE by 173%.

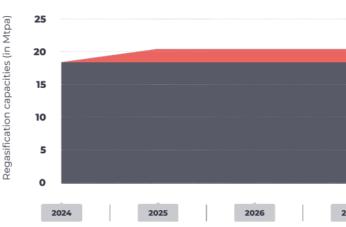
- TotalEnergies also owns existing LNG import terminals and plans to construct new LNG import terminals in the coming decade.
- TotalEnergiesisalreadythemainshareholder of the existing import terminals Le Havre FSRU in France and detains shares in the LNG import terminals Dhamra - Eastern Coast LNG in India, South Hook LNG in the United Kingdom and Cameron LNG in the United States. These import terminals' net regasification capacity reaches 18.4 Mtpa.³⁴

TotalEnergies plans to construct new regasification capacities with Matola LNG in Mozambique. These would add net liquefaction capacities of 1.9 Mtpa to its portfolio.35



Source: Enerdata LNG database for operational terminals and Global Oil and Gas Exit List 2023 for under construction and planned terminals, accessed in January 2024

TOTALENERGIES' NET REGASIFICATION CAPACITIES



Source: Enerdata LNG database for operational terminals and Global Oil and Gas Exit List 2023 for under construction and planned terminals, accessed in January 2024

•	Operational Additional capacity from currently planned terminals	
027	2028 2029 2030	

4. DIVERSIFICATION STRATEGY

a. Sustainable energy

The NZE projects strong growth in renewable energy production, from 27 exajoules (EJ) in 2021 to 80 EJ by 2030, led by solar and wind capacity additions.

In 2023, TotalEnergies generated 18.9 TWh of electricity from renewable sources, primarily solar and onshore wind generation.³⁶ TotalEnergies' net renewable energy installed capacities are composed of 65% solar energy, 31% wind energy and 4% hydropower and storage.37 It aims to develop its renewable energy activity, with a net renewable generation above 70 TWh by 2030 and a capacity increase from 13.1 GW today to 66 GW by 2030.38 Analysis of TotalEnergies' major purchases³⁹ of renewable energy capacity over the last few years shows that the acquisition of existing capacity is more prominent than the development of new capacity. From the beginning of 2020 until the end of 2023, TotalEnergies increased its gross installed renewable energy capacity by 19.4 GW, from 3 GW to 22.4 GW, primarily through acquisition of existing installed capacities. Indeed, during this period, the company fully acquired Total Eren in 2023 (3.5 GW),⁴⁰ acquired 50% of ClearWay in the United States in 2022 (3.9 GW),⁴¹ 20% of Adani Green in 2021 (3 GW) and 50% of Adani Green's solar assets in 2020 (2.3 GW).⁴²

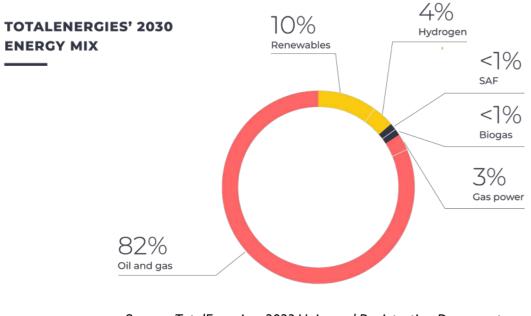
As TotalEnergies is developing new oil and gas upstream and LNG projects, additional renewable capacities do not change the company's fossil-based business model.⁴³ If TotalEnergies meets its targets, the maximum renewable power energy share of the company's energy production mix in 2030 would remain under 10%, while oil and gas extraction will represent 82% of its energy production mix.

Overall, **TotalEnergies will represent less than** 0.4% of global renewable energy production in 2030, according production level of the NZE.⁴⁴

b. Unsustainable diversification

In 2023, 43% of TotalEnergies' electricity production was fossil-based, with 14.5 TWh being generated using gas.⁴⁵ Gas combustion is one of the main contributors to carbon dioxide (CO2) and methane emissions and should be replaced by sustainable solutions - i.e. gas power is unsustainable. By 2035, advanced economies should achieve a carbon neutral power sector, according to the NZE.⁴⁶ Nevertheless, TotalEnergies plans to double its gas power production to 30 TWh by 2030, representing slightly less than a third of its net electricity production then.⁴⁷ Its strategy is already being implemented as shows the 1.5 GW gas plants acquisition in Texas in November 2023.48 Gas power will represent 3.5% of TotalEnergies' energy production mix in 2030.

The NZE also projects strong growth in hydrogen production, from 94 megatonnes (Mt) in 2021 to 180 Mt by 2030, led by "lowcarbon hydrogen" capacity addition. Of this, one-third is produced from fossil fuels – therefore unsustainable – and two-thirds from water-based electrolysis.⁴⁹ To meet the NZE scenario's production targets, electrolytic hydrogen production capacity should reach 720 GW to 850 GW by 2030.⁵⁰



Source: TotalEnergies, <u>2023 Universal Registration Document</u> and <u>Sustainability and Climate progress report</u>, 2024



TotalEnergies does not report hydrogen production yet and intends to reach a production of 1 Mtpa of "clean" hydrogen and e-fuel by 2030.⁵¹ Clean hydrogen include green hydrogen as well as blue hydrogen with CCUS.⁵² If TotalEnergies meets its targets, **in 2030, hydrogen will represent 3.9% of its energy production mix.**

The NZE projects strong growth in bioenergy production, with an increase of biofuel from 133 Mtpa in 2021 to 367 Mtpa by 2030 and of biomethane from 278 TWh to 1,944 TWh by 2030. By then, TotalEnergies targets a SAF production of 1.5 Mtpa and biogas production of 10 TWh.⁵³ TotalEnergies' bioenergy production will represent 1.3% of its energy mixat the end of the decade. Most biomethane is produced via methanization using feedstock such as plant crops, livestock effluents, food and catering effluents, and sewage sludge. Likewise, most biofuel production currently uses so-called conventional feedstocks, such as sugarcane, corn and soy. Due to feedstocks use, emissions from direct and indirect landuse change, increased fertilizer use and carbon emissions from energy-intensive refining, both biofuels and biomethane can have a higher emissions factor than fossil diesel.54 In addition to the climate impacts of land-use change, biofuels can divert crops from food production to energy production, leading to higher food prices.55

5. EMISSIONS TARGETS

TotalEnergies pledged mitigation targets for 2025 and 2030 using a 2015 baseline. These were measured in intensity terms on scopes 1, 2 and 3 for 2025, and in intensity and absolute terms on scopes 1, 2 and 3 for 2030. In 2023, TotalEnergies' CO2e emissions were 390 MtCO2e, including 45 MtCO2e of scope 1 and 2 emissions and 355 MtCO2e of scope 3 emissions. Scope 3 emissions are by far the largest, representing 91% of the company's emissions. However, while scope 3 represents the most significant part of the company's GHG emissions, TotalEnergies can increase its scope 3 emissions by more than 12% by 2030 with its current targets.

Using the IEA's energy supply data from the NZE in the WEO 2023, Reclaim Finance calculated TotalEnergies' GHG emissions trajectory. **By 2030, the company's targeted**

carbon intensity will be 6.4% higher than the NZE.

TotalEnergies relies heavily on CCUS and NBS. The company will offset 5-10 Mtpa of CO2e from 2030 through NBS to reduce its scope 1 and 2 emissions⁵⁶ and capture 10 Mtpa CO2 to reduce its scope 3 emissions.⁵⁷ These technologies have a significant place in the company's decarbonization plan: 5% of its absolute emissions reduction by 2030 is planned through using CCUS and offsets. As highlighted by the IPCC, however, CCUS in the energy sector still has limitations to overcome before it can be scaled up, which means it comes with limited potential and prohibitive costs. Too high reliance on these types of mitigation approaches represents a material risk factor for TotalEnergies' ability to reach its decarbonization targets.⁵⁸

Base year	Target year	Reduction target	Emission scope	Emission Type
2015	2025	-15%	1 & 2 & 3	Intensity
2020	2025	-17%	1 & 2	Absolute
2015	2025	-2%	3	Absolute
2015	2030	-25%	1 & 2 & 3	Intensity
2015	2030	-40%	1 & 2	Absolute
2015	2030	-2%	3	Absolute

Source: TotalEnergies' Sustainability and Climate progress report, page 38, 2024



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- reforming process combined with a CO₂ capture and storage process with a carbon footprint of less than 36.4 g CO₂/MJ
- 53. TotalEnergies, Sustainability and Climate progress report, page 36, 2024
- 54. Nature, 'Bioenergy-induced land-use-change emissions with sectorally fragmented policies', June 2023
- 55. Reclaim Finance, Factsheet Bioenergy, 2023
- 56. TotalEnergies, Sustainability and Climate progress report, page 31, 2024
- 57. TotalEnergies, Sustainability and Climate progress report, page 38, 2024
- 58. IPCC, Climate Change 2022: Mitigation of Climate Change Summary for Policymakers, p 40, 2022

Useful links

Methodology - Glossary

Credits

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52. In particular, TotalEnergies includes in "clean hydrogen" produced from natural gas using the steam

ASSESSMENT OF TOTALENERGIES' CLIMATE STRATEGY

Reclaim Finance is an NGO affiliated with Friends of the Earth France. It was founded in 2020 and is 100% dedicated to issues linking finance with social and climate justice. In the context of the climate emergency and biodiversity losses, one of Reclaim Finance's priorities is to accelerate the decarbonization of financial flows. Reclaim Finance exposes the climate impacts of financial players, denounces the most harmful practices and puts its expertise at the service of public authorities and financial stakeholders who desire to bend existing practices to ecological imperatives.

contact@reclaimfinance.org

