



IS TOTALENERGIES ON TRACK FOR 1.5°C?

**Reality check for financial
institutions**

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Publication date:

May 2022

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EXECUTIVE SUMMARY

TotalEnergies is often presented as “best in class” among its peers. However, based on our calculations using the company’s own carbon intensity projections, the French oil and gas giant is not on track to meet the 1.5°C climate goal. The company may have committed to achieve carbon neutrality in 2050, but is not planning or committed to the deep greenhouse gas (GHG) emissions cuts required to stabilize global warming below 1.5°C. Even under the conservative assumption that TotalEnergies does reach its emissions targets by 2050 and reduces its production in line with the IEA’s Net Zero-based 1.5°C scenario (referred to as the 1.5°C scenario in this briefing),¹ the company will have emitted at least 31.8% more GHG than what is authorized under a 1.5°C compatible carbon budget. Given TotalEnergies will increase production levels until at least 2024, it will be overshooting its share of the remaining carbon budget to limit global warming to 1.5°C as soon as 2035. The overshoot will happen even earlier if Total increases production until 2030 as announced.

Why? Because the pathway to net zero matters much more than the final destination and TotalEnergies’s short term plans are incompatible with efforts to stay below 1.5°C. Despite efforts to showcase a pro-renewable energy and diversification strategy, the investment strategy will remain oil and gas intensive. TotalEnergies is the top European oil and gas developer according to the Global Oil and Gas Exit List (GOGEL) and the 7th largest globally. In 2030, TotalEnergies’ investment strategy and energy mix will still be very focused on oil and gas, further jeopardizing the fossil fuel decline and any longer term climate ambitions.

Our methodology

This briefing analyzes to what extent the company is aligned with a 1.5°C reference scenario. This scenario was computed by the Transition Pathway Initiative, based on the IEA Net Zero Scenario and on a IPCC scenario, to provide pathways for greenhouse gasses emissions and energy production.

A company is considered aligned if its cumulative GHG emissions fit within the 1.5°C carbon budget. To make these calculations, we considered its “climate” ambitions and targets, to calculate a conservative estimate of its cumulative GHG emissions. We also look at other indicators indicating the direction the company is taking: near term oil and gas production trend, CAPEX trends and energy mix forecasted in 2030, and reliance on offsets. To find out more about our methodology, please look at [our methodology](#).

KEY FINDINGS



+32%

Excess of 1.5°C Carbon budget by 2050



2035

Year of the carbon budget overshoot



+20%

Oil and gas production between 2016 and 2024



N°1

Biggest European oil and gas developer



> 70%

Near term CAPEX dedicated to oil and gas



< 15%

Renewable share in the 2030 energy mix

1. TOTAL ENERGIES' DECARBONIZATION PATHWAY WILL EXCEED ITS 1.5°C CARBON BUDGET

a. Emission levels will remain too high for too long

In 2020, TotalEnergies pledged to “achieve carbon neutrality by 2050 for its global business, together with society”, aiming for net zero worldwide on both operated activities (scope 1 and 2) and indirect emissions (scope 3).² Although the company fails to provide strong and holistic intermediary emission targets, this goal has been reasserted at its 2022 Capital Market Day.³ **However, committing to distant carbon neutrality targets is not enough to keep global warming below 1.5°C.** In fact, TotalEnergies' CEO made it very clear in February 2022 that the company was aiming for a 2°C world, not 1.5°C. This in itself should raise concerns for financial institutions that have committed to stabilizing global warming below 1.5°C.⁴ Our analysis shows that TotalEnergies' short-to-medium term strategic and operational orientations (looking at indicators such as GHG emissions and CAPEX allocation) are not consistent with keeping its emissions within a 1.5°C-compatible range by 2050 and therefore put the climate at risk.

Although TotalEnergies has pledged to reduce its scope 1 and 2 emissions by 15% by 2025 and its average carbon intensity of sold energy products⁵ by 20% by 2030 (see table 1 in the annex), these targets will not stop the company's absolute emissions from increasing quickly in the short term.

TotalEnergies' carbon intensity hardly decreases before 2025 and decreases very

slowly until 2035. According to the company's own projections and our calculations, between 2021 and 2035, **TotalEnergies' carbon intensity is on average 30.4% higher than the maximum carbon intensity levels allowed by the 1.5°C reference scenario** (see graph 1).

In other words, **each unit of energy the company will produce until 2035 (and beyond) will consistently emit too much GHG.** Given that oil and gas production levels will also remain high, TotalEnergies will keep releasing high levels of GHG emissions. For TotalEnergies to align with a 1.5°C decarbonization pathway, its absolute emission levels must decrease.⁶ **For absolute emissions to decrease, fossil fuel production must decrease.** Currently, none of Total's projections commit to reducing hydrocarbon production levels (see part 2 of this briefing).

b. TotalEnergies will exceed its 1.5°C carbon budget by 2035

Given that TotalEnergies does not plan to reduce carbon intensity fast enough, but does plan to increase its oil and gas production, its absolute emissions are growing quickly. **By 2050, our analysis shows that TotalEnergies will exceed its 1.5°C carbon budget by at least 31.8%** (see graph n°2).

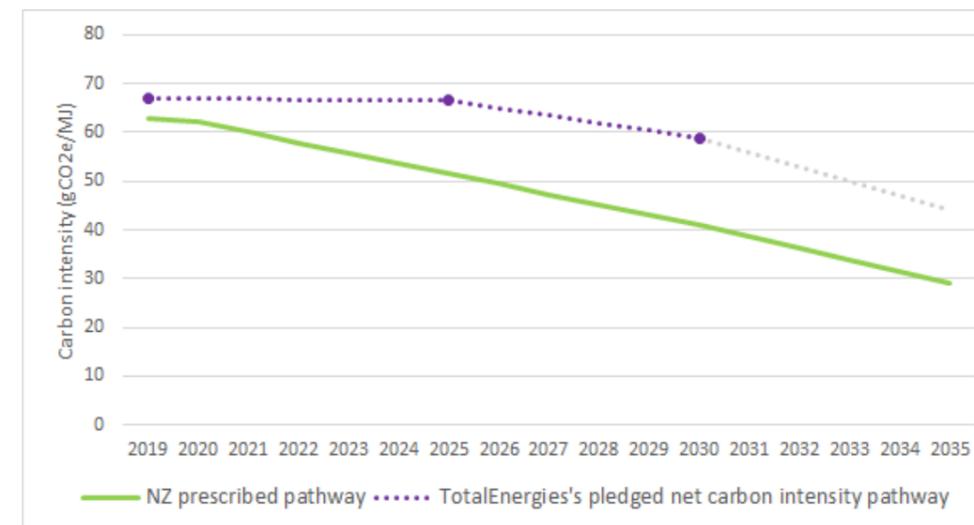
This carbon budget overshoot could keep increasing. Production levels will rise until 2024 as it is developing new oil and gas assets,

and could keep rising in the medium-term as TotalEnergies has discovered reserves that have not yet entered the field evaluation or development stage, and is investing in further exploration of undiscovered reserves (see chapter 2).

Given TotalEnergies will increase production levels until 2024, **the major will overshoot its**

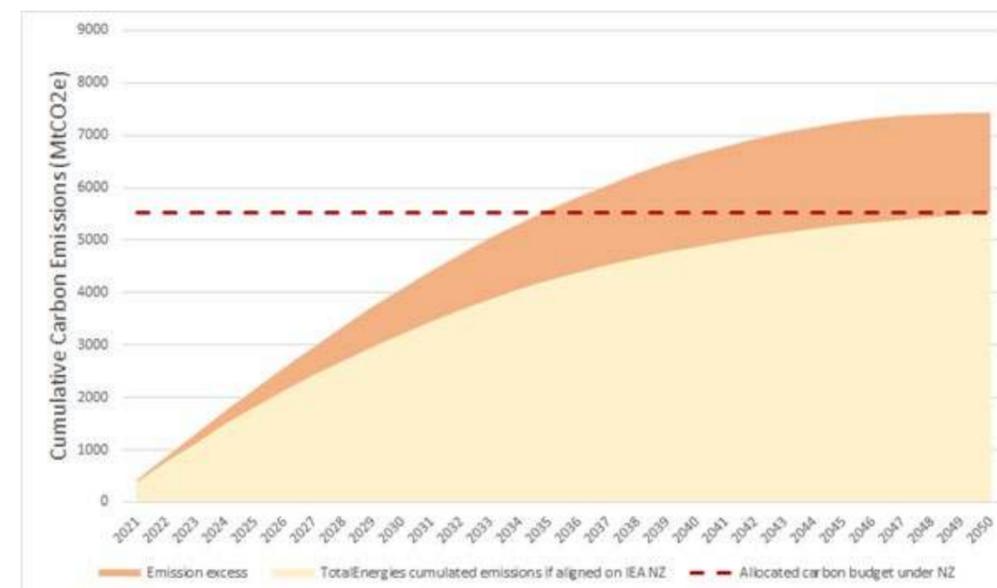
allocated carbon budget as early as 2035. This will happen even earlier if the major increases production until 2030 as announced, instead of aligning on the 1.5°C reference scenario.⁷ Based on TotalEnergies' own carbon intensity projections, Reclaim Finance calculations indicate that 73.4% of Total's carbon budget would be consumed as early as 2030.

Graph N°1. TotalEnergies' short and mid term decarbonization pathway



Source: Reclaim Finance based on TotalEnergies' forecasted carbon intensity pathway, based on the company reported emissions, carbon intensity and decarbonization targets.⁸ "Net Zero prescribed pathway" based on TPI's work on IEA Net Zero scenario and an IPCC scenario (see methodology).

Graph N°2. TotalEnergies' 1.5°C carbon budget overshoot



Source: Reclaim Finance based on a) production forecasts using company data and the 1.5°C reference scenario's demand projections b) the 1.5°C reference scenario carbon intensity pathway c) the company's pledged carbon intensity pathway.

c. Unsustainable reliance on offsets

The company plans to offset 15 MtCO₂e per annum from 2030: a third of that capacity would be Nature-based solution (NBS), and the rest would come from Carbone Capture Utilization and Storage (CCUS). According to our calculations based on the company's projections, offsets will cover 13.4% of absolute emission

reductions required to meet Total's 2030 targets.⁹

By 2050, TotalEnergies aims to rely even more on such technologies and use them to meet 18.6% of the absolute emissions reduction required to meet its 2050 targets. Practically, the company will need to both grow a forest of more than 2 millions acres,¹⁰ and open 34 to 67 new CCUS centers¹¹ (bearing in mind that there are only 28 CCUS centers across the planet for the time being).

TPI's data shows that TotalEnergies is not aligned with the net zero carbon budget

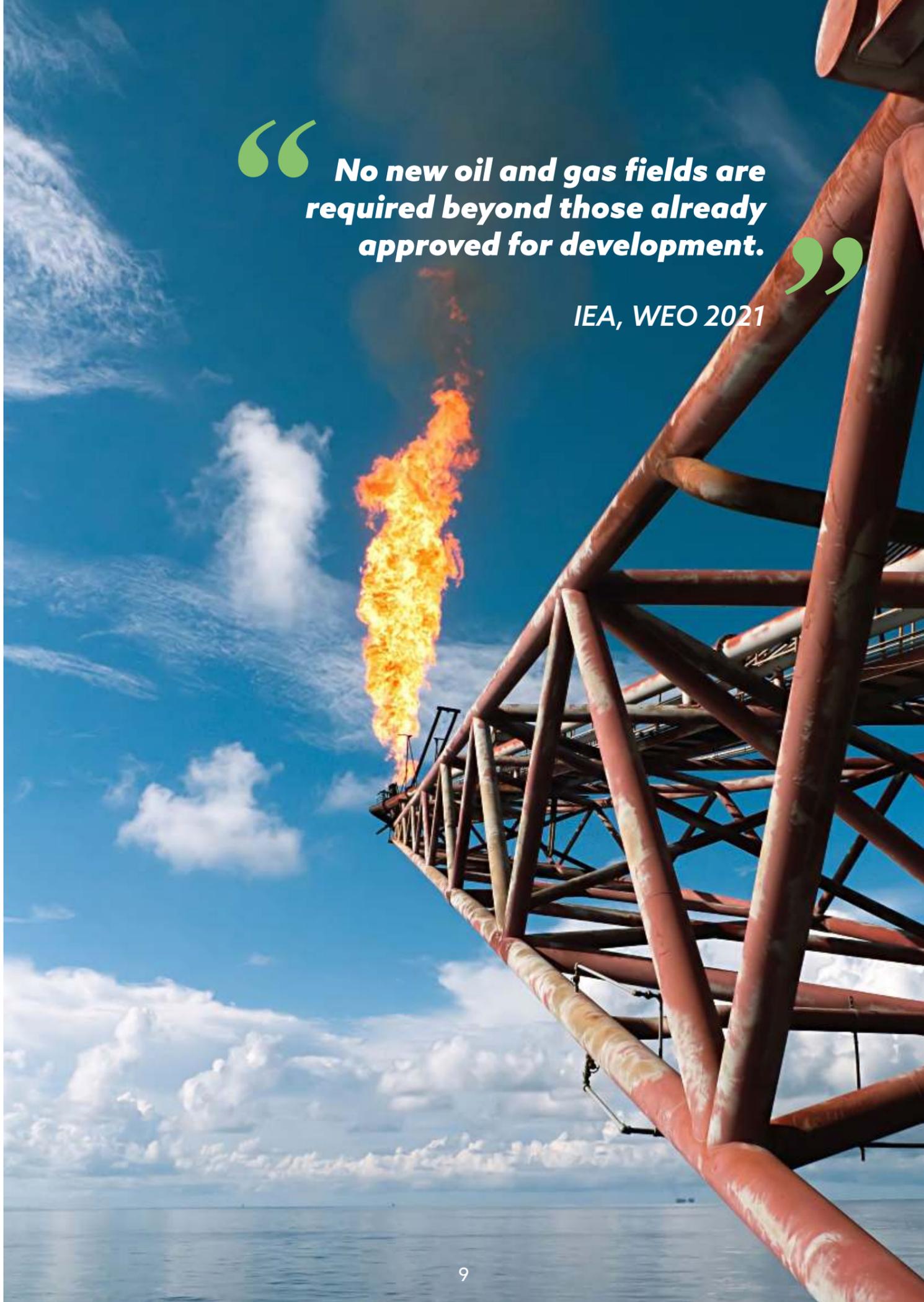
In November 2021, TPI updated its energy sector benchmark,⁸ stating that among other companies, TotalEnergies is "aligned with 1.5°C" on the ground that the company's carbon intensity is predicted to converge with the scenario's pathway in 2047. However, this conclusion is misleading. TPI declares a company aligned as soon as the carbon intensity of the company falls below the carbon intensity level allowed by the IEA scenario that same year. TPI's approach, centered only on carbon intensity, does not take into account excess GHG emissions and fossil production stocks built up by Total between today and 2047.

On the contrary, our stock-based method (based on carbon budgets), considers the cumulative GHG emissions piling up each year as a result of annual fossil production. If both carbon intensity and oil and gas production remain high, then GHG emissions increase quickly and fall short of the remaining carbon budget to stay below 1.5°C. For a company to be deemed "aligned" (in the short, mid or long-term), its absolute emissions must fall within the carbon budget allocated by the IEA 1.5°C reference scenario in that same time frame (short, mid or long term).

TPI's own analysis shows that TotalEnergies projects to reach net zero carbon intensity only by 2047. Until 2047, TPI's data clearly indicate that carbon intensity levels remain high. This is part of the reason why TotalEnergies cannot be deemed "aligned" in our methodology.⁹

"Carbon neutral LNG" - A dangerous marketing claim?

TotalEnergies claims to sell "carbon-neutral" liquefied natural gas (LNG) cargoes, whose emissions have supposedly been offset or "avoided". However, most of these emissions were not canceled out. Studies have shown that tree plantations and supposed forest protection projects often have much lower carbon benefits than claimed and can negatively impact local communities. Furthermore studies have shown that the carbon offsets market is rife with fraud, flawed methodologies, opacity and conflicts of interest. As a result the great majority of offsets generated since the late 1990s — around 85% of the Kyoto Protocol Clean Development Mechanism's offsets — do not represent emission reductions or removals. The use of offsets justifies selling more fossil fuels, ultimately leading to more emissions.



“ No new oil and gas fields are required beyond those already approved for development. ”

IEA, WEO 2021

2. TOTALENERGIES' INVESTMENT AND PRODUCTION STRATEGY IS OIL AND GAS-DRIVEN

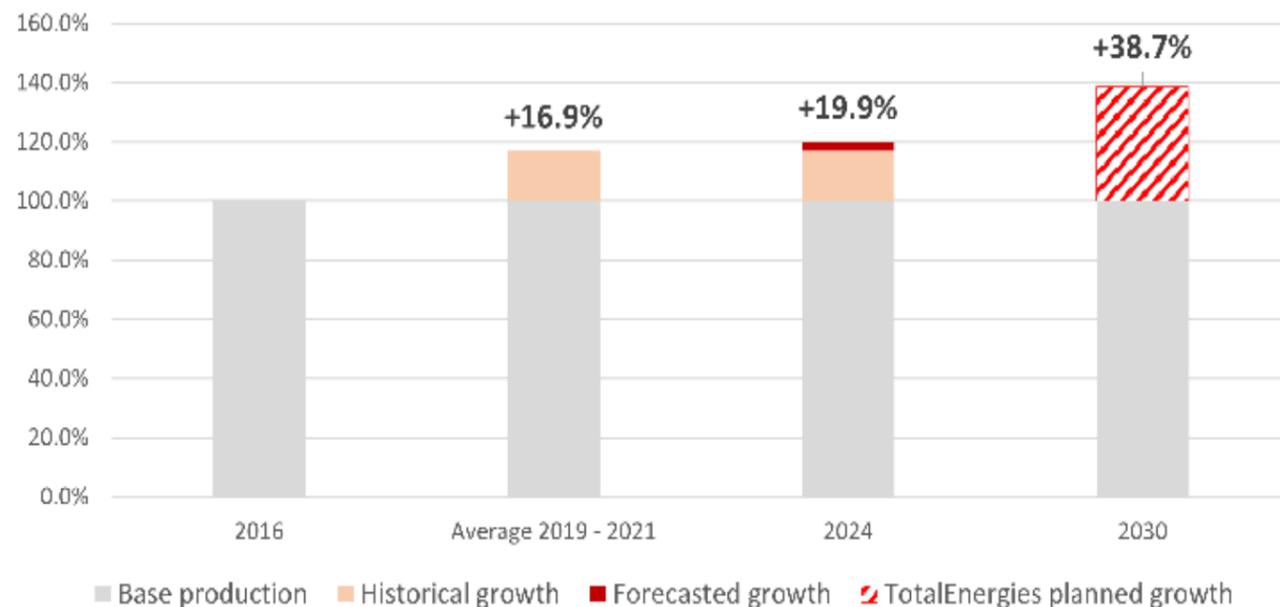
a. Total still plans to increase oil and gas production

Reducing oil and gas production is a crucial part of any credible decarbonization pathway and is required to achieve deep emission cuts. Both the UN Production gap report and the 2021 World Energy Outlook Net Zero scenario entail a decline in fossil fuel production during

this decade.¹⁴ According to Carbon Tracker models,¹⁵ to align with the IEA's Net Zero scenario, **oil and gas companies will need to drastically cut down on hydrocarbon production: by at least 38% by 2030 in the case of TotalEnergies.**

Yet, TotalEnergies is currently not demonstrating efforts to reduce production in line with what climate science requires.

Graph N°3. TotalEnergies' expected and potential production growth from 2016 to 2030



Source: Reclaim Finance calculations based on Rystad Energy UCube

Quite the opposite:

- Recent oil and gas production levels¹⁶ have grown by 16.9%¹⁷ since 2016, after the Paris agreement was signed. TotalEnergies is currently developing new oil and gas fields which will lead to an increase in production of 2.6%¹⁸ by 2024¹⁹ compared with recent levels²⁰ (overall, a 19.9% growth since 2016).
- Beyond 2024, Total's oil and gas production levels will depend on whether or not Total develops more oil and gas assets (see next section). According to TotalEnergies'

own data, our calculations show the company's oil and gas production is due to increase by 18.4% by 2030 compared with 2020. This amounts to an increase of 38.7% since 2016.

TotalEnergies defined its decarbonization targets against its 2015 levels (see table 1). It is therefore unclear how the major aims to reach them: since that year, it increased its production by 20.8%, and aims to keep on this track with fossil fuel production plans leading to a 43.3% growth by 2030.

Why increasing gas production is toxic for the climate

TotalEnergies aims for oil production to peak in this decade but is essentially switching from one fossil fuel to another. Our calculations reveal that **fossil gas production is due to increase by 35.5% by 2030 compared with 2019 levels**, mainly driven by the development of Liquefied Natural Gas (LNG) capacity. Gas production results in methane leaks in the atmosphere at different stages (eg. venting during extraction and evaporation during transportation of LNG by boat).

Methane is a potent greenhouse gas with a warming potential 85 times that of CO₂ over 20 years. According to the IPCC, methane emissions have nearly tripled since pre-industrial times and are increasingly responsible for rising temperatures. The IEA net zero roadmap is also adamant that there is no room for both new oil and new gas fields in the 1.5°C carbon budget.

b. Total is the top oil and gas developer among the European majors

While TotalEnergies's 2021 strategy aims to lock in 100 GW of renewable energy capacity by 2030, it's still overshadowed by the major's ongoing efforts to expand fossil fuel operations across the world.

- In 2020, the company's resources under production amounted to 18,744 mmboe,²¹ the equivalent of 20 years of production (at its recent level).
- According to the Global Oil and Gas Exit List, TotalEnergies is the top European

expansionist and ranks 7th globally. Currently, there are more than 4,306 mmboe²² worth of assets being developed, which will allow Total to quickly add the equivalent of 5 years of production to its production portfolio.

- TotalEnergies also has 9,599 mmboe²³ of discovered hydrocarbon reserves that have not yet entered the field evaluation or development stage.
- TotalEnergies is also still involved in exploration, looking for further undiscovered oil and gas reserves to extract. From 2019 to 2021, TotalEnergies spent, on average, \$837 million²⁴ per year on exploration.

TotalEnergies is increasingly tapping into unconventional oil and gas reserves. According to the Global Oil and Gas Exit List, more than a quarter of the oil and gas reserves currently being developed by TotalEnergies will come from the Arctic, ultradeep water and fracking which all entail heightened risks for communities, biodiversity and the climate. In the Arctic, Total Energies' production level is due to increase by 28% this decade.²⁵ TotalEnergies is also a partner in the Arctic-

LNG 2 terminal project in the Russian Arctic which will double LNG capacity in the Arctic.

c. Total's investments will remain heavily focused on fossil fuels

TotalEnergies may be massively investing in renewables; a quick look at the CAPEX allocation

demonstrates that the major's investment strategy is still focused on fossil fuels.

By 2025, the company aims to dedicate 25% of its annual CAPEX²⁷ to the Electricity and Renewable business line. Although this is an increase from 2020 levels (15.4%), it means that around 70% or more²⁸ of its CAPEX will still be going to oil and gas in 2025.

As a result of this investment strategy, Total's energy mix in 2030 will still be fossil fuel-heavy: 15 % of the energy will be produced by the "renewable and electricity" activity (which also includes fossil gas turbines). In other words,

in 2030, assuming the company meets its targets, TotalEnergies will be producing five to six times more fossil fuels than renewables.²⁹ In an interview, Total's CEO confirmed that in 2035 oil and gas will still be "Total's core business".³⁰

The company argues that it is in the process of "diversifying" its energy mix. However, for the time being, TotalEnergies' diversification strategy is adding renewable energy capacity on top of its oil and gas production, instead of replacing it. As long as Total maintains high levels of fossil fuel productions, it will not achieve the deep emission cuts - 50% by 2030 - required to keep climate change in check.

Tilenga and EACOP- a project affecting livelihoods and ecosystems across East Africa

Despite calls from civil society and many financial institutions refusing to support the project, TotalEnergies' board recently approved the Final Investment Decision for 10 billion USD to develop the 1,445 km-long East African Crude Oil Pipeline (EACOP) connecting two oilfields across Uganda and Tanzania. The company claims that the project has been designed to minimize its environmental impact and will benefit the local communities. However, tens of thousands of people are being displaced in the process and 14,000 will lose their land. During the production phase, the pipeline will carry up to 216,000 barrels of crude oil per day and could emit up to 33 million tons of CO2 per year according to the Swedish Environmental Research Institute, representing more than 30 times the annual emissions of Uganda and Tanzania together. Friends of the Earth France, alongside other organizations, has filed a legal suit against Total²⁶ in France for not complying with its duty of care obligations.

Does Total really need oil and gas cash flow to fund its renewable energy investments?

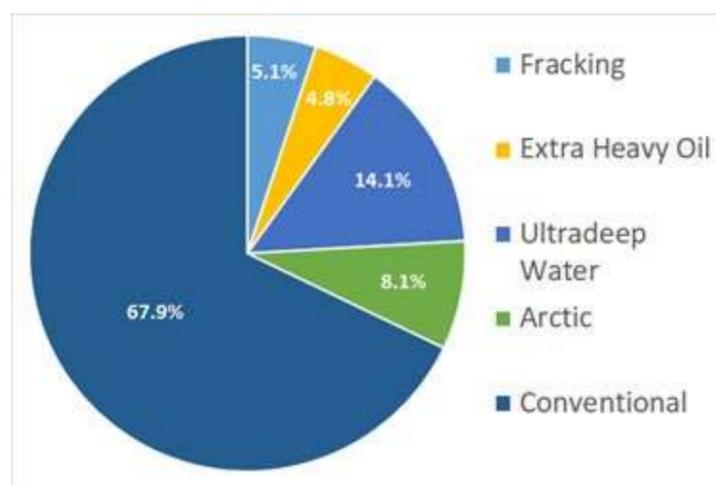
This argument is increasingly being used by oil & gas majors to advocate for sustained fossil fuel production.³¹ While cash flows and investments are indeed fungible and fossil revenues can partially be used to power "green investment", the picture is much more complex and nuanced: it cannot be assumed that renewable energy investments could not be sustained without fossil revenues.

First of all, there is no systematic correlation between fossil cash flows and green investment. In 2021, TotalEnergies' cash flows from exploration and production steadily increased (from \$3.8 to 4.9 billion) while the net investments in its Integrated gas and renewables Business Unit declined from \$2.6 bn to -\$302 million.

Secondly, the majors' argument only holds if they pursue an aggressive investment strategy and reinject most of their revenues in (green) investment. However, the numbers don't add up. TotalEnergies is not planning to spend the lion's share of its cash flow on renewable energy investments: out of the 20 to 30 billion of cash flow that TotalEnergies expects to generate each year from 2022 to 2025, only \$3.3 to \$3.7 billion will be spent on CAPEX and less than 25% of the CAPEX will be dedicated to renewables.³² The rest of the cashflow will essentially be allocated to dividends and share buybacks.

Finally, some investors consider that having fossil-based revenues is not a condition but an obstacle to increased green investments, since the cost of capital for renewable energy projects is now much lower than for new fossil assets. For example, New York-based hedge fund Third Point has recently acquired \$750 million of Shell stock and advocated for the company to separate its oil & gas activities from its initiatives in renewable energies, arguing that legacy business in the former prevented aggressive investment in the latter.³³

Graph n°4. TotalEnergies' short term expansion plan



Source: Urgewald analysis based on data from Rystad Energy

Table 1. TotalEnergies' pledged mitigation targets³⁴

Base year	Target year	Reduction target ³⁵	Net target	Geographical scope	Emission scope	Emission type ³⁶
2020	2025	-50%	No	World	1 & 2, methane emissions under operational control	Absolute
2015	2025	-15%	No	World	1 & 2, operational control	Absolute
2020	2025	-80%	No	World	1 & 2, methane emissions under operational control	Absolute
2015	2030	-20%	Yes	World	1 & 2 & 3, carbon intensity of sold energy products	Intensity
2015	2030	-40%	Yes	World	1 & 2, operational control	Absolute
2015	2030	-30%	No	World	3, final use of sold oil energy products	Absolute
2015	2030	-2%	No	World	3, final use of sold energy products	Absolute
2015	2030	-30%	No	Europe	1 & 2 & 3	Absolute
2015	2050	-100%	Yes	World	1 & 2, operational control	-
2015	2050	-100%	Yes	World	3, final use of sold products	-
2015	2050	-100%	Yes	Europe	1 & 2 & 3	-

REFERENCES

1. In this briefing, we analyze companies alignment against a 1.5°C reference scenario computed by the Transition Pathway Initiative. The latter based its work on the IEA Net Zero Scenario and on a IPCC scenario, to provide pathways for greenhouse gas emissions and energy production. See our methodology for more information. All following mentions of "1.5°C reference scenario" refer to this output from the TPI.
2. TotalEnergies, [Getting to Net Zero, 2020](#) ; TotalEnergies, [Sustainability Climate 2022 Progress Report, 2022](#)
3. TotalEnergies, [Strategy and Outlook, 2021](#)
4. TotalEnergies, [Climate: a conversation with Pouyanné, 2017](#)
5. To simplify, the "carbon intensity of sold energy products" of the company is referred to by "carbon intensity" of the company in the rest of this briefing.
6. To analyze whether or not a company's decarbonization pathway is aligned with the 1.5°C carbon budget, it's critical to look at two indicators simultaneously: the carbon intensity pathway and the production pathway. Any company aligning on the emissions pathway but producing too much - or the other way around - will end up emitting too much GHG. The overarching goal being for absolute emissions to decrease, we hence look at the carbon intensity and production pathway of the company and compare it to the benchmark described by the 1.5°C reference scenario.
7. This is a conservative hypothesis: due to lack of reliable data regarding TotalEnergies' production plans, we make the assumption that the company's production levels will decrease in accordance with the IEA Net Zero demand projections. However, nothing in TotalEnergies' current plans confirms this direction. In fact, we estimate that TotalEnergies' hydrocarbon production will have increased by 2030 (see chapter 2). Reported climate data are sourced from <https://services.totalenergies.fr/system/files/atoms/files/document-enregistrement-universel-2020.pdf>
8. This calculation was done using the volume of offsets projected by TotalEnergies in its 2020 annual report and the "Climate roadmap in action"
9. See our methodology for calculation details
10. According to current CCUS centers' offsetting capacities, on average 1.5MtCO₂e/y. Carbon Tracker Initiative, [Oil companies should hedge their bets on CCUS and offsetting, 2021](#)
11. TotalEnergies, [Total Delivers its First Carbon Neutral LNG Cargo, 2021](#)
12. Bloomberg, [The Fictitious World of 'Carbon Neutral' Fossil Fuel, 2021](#). Most of the offset market does not even remove carbon from the atmosphere. Renewable energy generation and preventing deforestation accounted for 66% respectively of all offsets used by December 2020).
13. According to the [2021 Production Gap report](#), global oil and gas production must fall by 4% and 3% respectively each year by 2030. According to the [2021 World Energy Outlook](#), global oil and gas demand will fall by 20% and 10% respectively by 2030.
14. Carbon Tracker Initiative, [Adapt to Survive: Why oil companies must plan for net zero and avoid stranded assets, 2021](#)
15. To establish "recent production levels" and avoid a "covid effect", we calculated an average annual production level based on 2019, 2020 and 2021 production data.
16. Based on Rystad Energy UCube data collected by Reclaim Finance.
17. Based on Rystad Energy UCube data collected by Reclaim Finance.
18. Data on production levels is very reliable until 2024 and takes into account the production profile of reserves under production as well as oil and gas fields currently under evaluation or development. After 2024, the production levels will depend on the company's plans that have not yet been made public.
19. To establish "recent production levels" and avoid a "covid effect", we calculated an average annual production level based on 2019, 2020 and 2021 production data.
20. Data collected by Reclaim Finance on Rystad UCube Energy database.
21. Urgewald analysis based on data from Rystad Energy.
22. Data collected by Reclaim Finance on Rystad UCube Energy database.
23. Data collected by Reclaim Finance on Rystad UCube Energy database.
24. See [Global Oil and Gas Exit List, 2021](#).
25. Analysis by Reclaim Finance in 2021 using data collected on the Rystad UCube Energy database. See full report: [Drill, Baby, Drill](#)
26. Les Amis de la Terre, [Total, rendez-vous au tribunal](#)
27. Source : TotalEnergies, [Strategy and Outlook, 2021](#)
28. This number is likely an underestimate. Given that TotalEnergies does not disclose investments in renewable energy alone, but in renewable and electricity, this includes gas power plants. The group currently owns [8 combined cycle gas turbine \(CCGT\) plants](#). This capacity of 3.5 GW is due to reach 5 GW by 2025 according to Total's strategy outlook. This means that in effect, less than 25% of the CAPEX will be allocated to renewables.
29. In a recent interview in French newspaper Les Echos, CEO Pouyanné made this argument [Patrick Pouyanné \(PDG\) : « TotalEnergies ne fait pas de greenwashing ! »](#)
30. TotalEnergies, [Climate: a conversation with Pouyanné, 2017](#)
31. TotalEnergies, [Avis de convocation – Assemblée Générale Mixte, 2021](#)
32. p. 70 & 71 of TotalEnergies' 2021 [Strategy Outlook](#)
33. The New York Times, [Activist Investor Third Point Calls for Breakup of Shell, 2021](#)
34. According to Reclaim Finance calculations, based on TotalEnergies' hydrocarbons and primary energy-equivalent renewable production plans. Refer to the methodology and datasheet for further details.
35. A net target is a target the company aims to achieve using offsets.
36. Targets can apply either to the absolute emissions (absolute amount of GHG emissions) or to the intensity of emissions (amount of GHG emissions per unit of energy produced)

Credits

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IS TOTALENERGIES ON TRACK FOR 1.5°C? Reality check for financial institutions

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 some financial actors, 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.

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