

# Equinor's challenge: which way to Paris?



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## About ACCR

The [Australasian Centre for Corporate Responsibility \(ACCR\)](#) is a not-for-profit, philanthropically-funded shareholder advocacy and research organisation that engages with listed companies and investors globally, enabling and facilitating active stewardship. Our research team undertakes company-focused research into the climate transition plans of listed companies, offering analysis, research and insights to assist global institutional capital understand investment risks and opportunities during the energy transition. For more information, follow ACCR on [LinkedIn](#).

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# 1. Executive Summary

Equinor ASA (“Equinor”) has an opportunity to take material steps towards Paris alignment by changing its portfolio and strategy.

While Equinor is taking commendable steps to transition its business, such as managing its Norwegian scope 1 emissions and being an early leader in offshore wind, Equinor’s Energy Transition Plan still falls short of the Paris Agreement’s goals, and investors are calling for more.

At the 2023 annual general meeting, the majority owner, the Norwegian government, laid down its clear expectations:

The company sets targets and implements measures to reduce greenhouse gas emissions in both the short and long term in line with the Paris Agreement.<sup>1</sup>

This report considers what Equinor can do to move closer towards Paris alignment without materially diluting shareholder value. It finds there are two crucial changes the company can make: stopping exploration of new oil and gas reserves worldwide, and halting development of pre-FID fossil fuel projects outside of the Norwegian Continental Shelf (NCS).

The International Energy Agency’s (IEA) only Paris-aligned scenario, the Net Zero Emissions by 2050 (NZE), has no need for new exploration or new conventional long-lead time projects, and highlights that some high-cost operating assets will not reach the end of their technical lives. To reduce emissions *in line* with the Paris Agreement would require Equinor to make broad changes to its fossil fuel strategy. This report, however, focuses on the two most commercially pragmatic steps that will move Equinor *closer* to Paris alignment.

We analysed Equinor’s exploration activities and found that, although exploration outcomes are uncertain, Equinor is unlikely to generate positive free cash flow from exploration until the 2050’s. Based on our global industry, least-cost evaluation of Equinor’s alignment with the IEA’s NZE pathway, we found that its major international unapproved oil and gas projects are neither Paris-aligned, nor relatively low-cost. Our review of Equinor’s international oil and gas investments to date found they have been capital intensive and are forecast to erode value.

Equinor’s unapproved international projects represent 67% of the emissions<sup>2</sup> from its total unapproved projects, making these recommendations a material step towards Paris alignment.

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<sup>1</sup> Equinor, [Minutes of the 2023 Annual General Meeting of Equinor ASA](#), p2

<sup>2</sup> Equinor entitlement basis

## Key Findings

**Equinor could take material steps towards Paris alignment by stopping exploration of new oil and gas reserves worldwide, and halting the development of pre-FID fossil fuel projects outside of the Norwegian Continental Shelf (NCS).** Our analysis suggests this would not materially dilute shareholder value, and would avoid 67% of the potential emissions from Equinor's total unapproved projects.

**Equinor's oil and gas exploration will inhibit a timely and orderly energy transition, by:**

- **directing Equinor's resources away from the transition.** Although exploration is inherently uncertain, Equinor's exploration portfolio is not forecast to generate positive cash flow until after 2050. This is too late to start reinvesting cash flows to support the energy transition, and reduces access to capital to fund the transition over the coming decades
- **producing a surplus beyond the requirements of a Paris-aligned world**
- **unnecessarily locking-in fossil fuel dependence beyond 2050.** The majority of the future fossil fuel volumes from Equinor's exploration portfolio are likely to remain unproduced in 2050
- going against the IEA's statement to the oil and gas sector that "companies aligned with the results of the NZE scenario would not invest in new exploration".<sup>3</sup>

**None of the major unapproved oil and gas projects Equinor is seeking to develop outside of the NCS are Paris-aligned, nor are they relatively low-cost compared to all other unapproved oil and gas projects globally.**

**To date, Equinor's international oil and gas production - in 16 countries outside of Norway - has not generated adequate value accretion for the company.** Despite absorbing large amounts of capital, with \$94 billion of capex (nominal, post-approval) on top of ~\$14.5 billion in net acquisition and pre-FID costs (nominal), international projects are expected to deliver a negative net present value (NPV) return of -\$3.6 billion.

**Since Equinor's IPO in 2001, increasing international production has not been a key driver of Equinor's total shareholder returns (TSR).** In this period, the key driver of TSR was the oil price. This correlation is similar for peers in the industry.

**Equinor's capital allocation strategy is optimistic, and highly sensitive to commodity price volatility.** Around 60% of global oil unapproved supplies have a lower break-even price than Equinor's. The NPV of its unapproved, international projects would drop by 50% when assessed using the forward Brent curve, rather than Equinor's optimistic oil price assumption of \$75/bbl, indicating the company's future projects may not be as valuable as they seem.

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<sup>3</sup> IEA, [The Oil and Gas Industry in Net Zero Transitions](#), 2023, p149

## Recommendations

In terms of fossil fuel production, four key changes are suggested for Equinor to reduce emissions “in line with the Paris Agreement”. The first two are particularly commercially pragmatic recommendations and are the focus of the research in this report.

1. **Stopping exploration of new oil and gas reserves worldwide**
2. **Halting development of pre-FID fossil fuel projects outside of the Norwegian Continental Shelf (NCS).**

Becoming Paris-aligned would also require Equinor to:

- **stop developing Norwegian fossil fuel projects.** Equinor is a leader amongst oil and gas companies globally in minimising scope 1 emissions, particularly when operating within Norway. Nonetheless, none of Equinor's unapproved projects are consistent with the IEA's NZE scenario.
- **develop a strategy around winding down operating assets.** The IEA's NZE scenario sees much less oil and gas consumption than there are fossil fuel projects that are operating or committed. To meet the goals of the Paris Agreement, the oil and gas industry needs to consider how to wind down assets in a way that minimises costs, ensures energy security and provides a just transition.

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## 2. Exploration and the energy transition?

Since 2021, the IEA has consistently stated in its NZE scenario, which is aligned with the Paris Agreement and a 1.5°C global warming limit, that there is no need for new oil and gas developments. In 2023, it said that new oil and gas fields are not compatible with achieving a 1.5°C target.<sup>4</sup> The IEA's message to the oil and gas sector is clear - "companies aligned with the results of the NZE scenario would not invest in new exploration".<sup>5</sup>

However, over the last five years, Equinor has spent \$8.3bn on exploration capex, which is an average of 18% of net profit after taxes (NPAT) from continuing operations over this same time period.<sup>6</sup> Recently, Equinor provided two justifications for why it is continuing oil and gas exploration when the "world is in the midst of a climate crisis that urgently needs to be addressed":<sup>7</sup>

There are two main reasons why Equinor continues to explore for oil and gas: Because the world still needs a safe and stable energy supply, and because the energy transition needs financial muscle.<sup>8</sup>

ACCR analysis, however, suggests Equinor's ongoing exploration does not play a supportive role in the energy transition, and will instead inhibit a timely and orderly transition.

### Exploration reduces access to capital for the energy transition

While Equinor states its domestic and international exploration provides "financial muscle" to support the energy transition,<sup>9</sup> ACCR's modelling of Rystad data shows exploration is reducing, rather than providing, access to capital that can fund the energy transition over the coming decades.

Cumulative free cash flows (FCF) from new discoveries for Equinor are forecast to arrive too late to start reinvesting cash flows to support the energy transition.

This is evident at both a portfolio and project level.

- Portfolio level: although exploration outcomes are highly uncertain, Rystad data shows Equinor is unlikely to see positive cumulative free cash flow (FCF) from undiscovered projects until after 2050 (Chart 1).
- Project level: Equinor is not likely to be able to reinvest cash flows from exploration activities

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<sup>4</sup> IEA, [The Oil and Gas Industry in Net Zero Transitions](#), 2023, p113

<sup>5</sup> IEA, [The Oil and Gas Industry in Net Zero Transitions](#), 2023, p149

<sup>6</sup> Bloomberg Finance L.P.; Used with permission of Bloomberg Finance L.P

<sup>7</sup> Equinor, [Why are we continuing with oil and gas? Here are two of the reasons](#)

<sup>8</sup> [Camilla Aamodt, Equinor's strategy manager for exploration and production in Norway.](#)

<sup>9</sup> Equinor, [Why are we continuing with oil and gas? Here are two of the reasons](#)

towards the energy transition when it is needed most, due to its track record of taking an average of 13 years from discovery to start of production. This time period is similar to the IEA's findings for the global, conventional oil market.<sup>10</sup>

Therefore, even with Equinor's optimistic projection of a 2.5-year payback period,<sup>11</sup> it would take around 16 years before cash flows from these newly discovered resources could be redirected to support the energy transition. The period from being granted exploration rights to achieving a discovery, estimated by the IEA at approximately 7 years,<sup>12</sup> can further prolong this timeline.

### Chart 1: Cumulative FCF from new discoveries for Equinor projected to remain negative until post-2050, which will be too late to start reinvesting cash flows to support the energy transition



Source: Rystad Energy, ACCR modelling

It is worth noting, future discoveries may be more or less attractive than Rystad data currently assumes. So if it all goes well, exploration may provide some funds in the 2040s. If it does not go well, it will be a drain on funds until well beyond 2050.

### Untimely and potentially unhelpful energy supply

While Equinor states oil and gas exploration is needed to help meet the world's need for a "safe and stable energy supply",<sup>13</sup> ACCR's analysis shows that under the NZE scenario, where existing and

<sup>10</sup> IEA, [World Energy Outlook 2022](#), p353

<sup>11</sup> Equinor, [2024 Capital Markets Update](#), p31

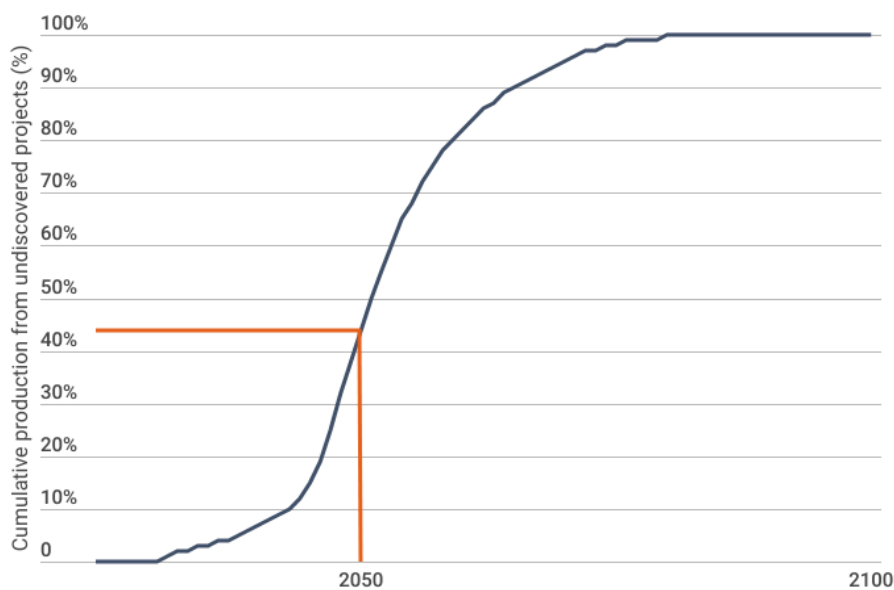
<sup>12</sup> IEA, [World Energy Outlook 2022](#), p353

<sup>13</sup> Equinor, [Why are we continuing with oil and gas? Here are two of the reasons](#), 2023

approved oil and gas projects cover energy needs until 2050,<sup>14</sup> Equinor’s future oil and gas discoveries are forecast to:

- produce a surplus beyond the requirements of a Paris-aligned world. For charts showing how supply from existing and approved oil and gas projects already meets demand to 2050 in the NZE scenario, see Appendix C.
- provide most of its fossil fuel energy too late to help transition to a net zero economy by 2050.
  - The majority of Equinor’s production from fields yet to be discovered will play no role in helping to transition to a net zero economy, but will risk locking in fossil fuel dependence post-2050.
  - Historically, it has taken Equinor 13 years to start production from a newly discovered field, and 27 years to achieve 50% reserves production. Although exploration is highly uncertain, Rystad forecasts see 55% of Equinor’s reserves from new discoveries remaining unproduced by 2050 (Chart 2).

**Chart 2: Fossil fuel lock-in risk from continuing exploration, with 55% of future discovered assets remaining unproduced in 2050**



Source: Rystad Energy, ACCR modelling

<sup>14</sup> IEA, [The Oil and Gas Industry in Net Zero Transitions](#), 2023, Fig 1.11, 1.13, 1.18



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### 3. International unapproved projects - not Paris aligned or low-cost

ACCR has modelled Equinor's major, unapproved international oil and gas projects for Paris alignment and cost-competitiveness against all other unapproved oil and gas projects globally. We found none of these projects are consistent with the goals of the Paris Agreement, nor are they relatively low-cost.

Equinor's unapproved international projects represent 67% of the potential emissions<sup>15</sup> from its total unapproved projects portfolio, making these recommendations a material step towards Paris alignment.

#### *ACCR's NZE alignment methodology*

To test whether oil and gas projects are Paris-aligned, ACCR has developed a global industry, least-cost evaluation of alignment with the IEA's NZE pathway. It assesses project alignment by examining individual unapproved projects in the context of all producing, approved and non-approved projects in the global oil and gas industry. This method:

- removes the opportunity for companies to use a range of self-selected voluntary decarbonisation metrics and targets to claim Paris alignment
- provides investors with valuable insight into financial assumptions, and therefore investment decisions, which are not Paris-aligned.

For a full description of our methodology see Appendix C.

#### **International unapproved oil projects**

There are four major unapproved international oil projects in Equinor's pipeline: Roncador expansion and Bacalhau expansion in Brazil and Bay du Nord and Bay du Nord Core in Canada.

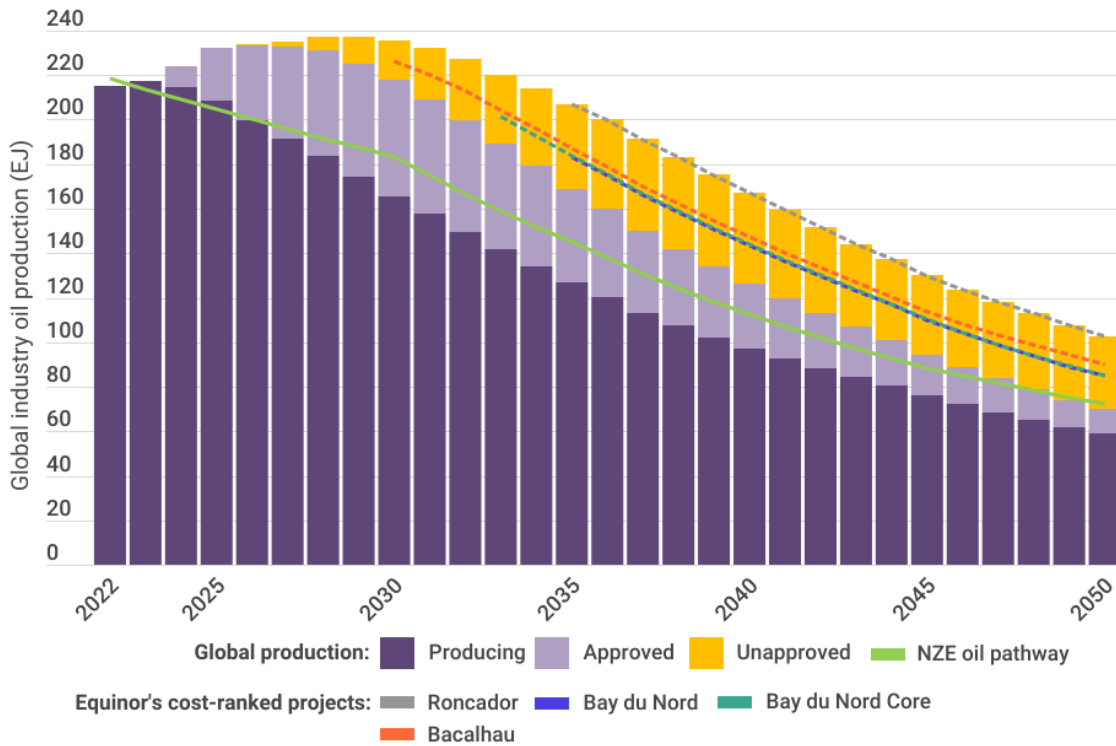
- None are aligned with the IEA NZE scenario pathway (Chart 3), and are therefore not Paris-aligned.
- All sit within the 40th-100th cost percentile of unapproved projects on a least-cost basis (see cost percentile rankings in Table 1).
  - Even Equinor's least expensive international unapproved oil projects are more expensive than 40% of global unapproved oil projects.

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<sup>15</sup> Equinor entitlement basis

- Equinor’s most expensive project, Roncador, is one of the most expensive unapproved oil projects in the world.
- All have production profiles extending well beyond 2050 (Table 1), meaning these projects risk locking in fossil fuel dependence and delaying the energy transition.

**Chart 3: Global industry oil supply - Equinor’s unapproved oil projects are not aligned with the Paris Agreement, and all sit within the 40th-100th cost percentile of unapproved global oil projects**



Source: Rystad Energy, IEA extended dataset, ACCR modelling

**Table 1: Major unapproved international oil projects in Equinor’s pipeline - all projects are conventional and long-term, sitting well outside the top cost-quartile of globally unapproved oil projects**

Project	Start-up year	Final year of production	Total production (MMbbl) <sup>16</sup>	Production weighted cost percentile <sup>17</sup>
Roncador expansion, Brazil	2034	2064	548	100
Bay du Nord, Canada	2034	2072	448	40
Bay du Nord Core, Canada	2032	2072	537	40
Bacalhau expansion, Brazil	2030	2065	650	50

Source: Rystad Energy, ACCR modelling

Note that we have categorised projects based on approval date ('approved' vs 'unapproved'). This definition matters for unconventional projects, where a whole project may be 'approved', even though FID is made in multiple stages for sub-components of the project. As a result of this, some of Equinor’s pre-FID unconventional projects, including part of the Marcellus shale projects, are considered 'approved' in our analysis. The break-even price<sup>18</sup> of these are, on average, higher than the rest of Equinor’s global portfolio, and only 20% of the forecast volumes can be produced for less than \$35/bbl.

### International unapproved gas projects

Equinor has two major unapproved international gas projects in the pipeline: Tanzania LNG (Block 1/4 and 2); and Block 2 (Domestic) in Tanzania.

- Neither are aligned with the IEA NZE scenario pathway (Chart 4), and are therefore not Paris-aligned.
- None of Equinor's unapproved international gas projects are in the top quartile of unapproved gas projects. The two sit at the 36th and 61st cost percentile of unapproved global gas projects respectively - making the latter more expensive than 61% of global unapproved oil projects.

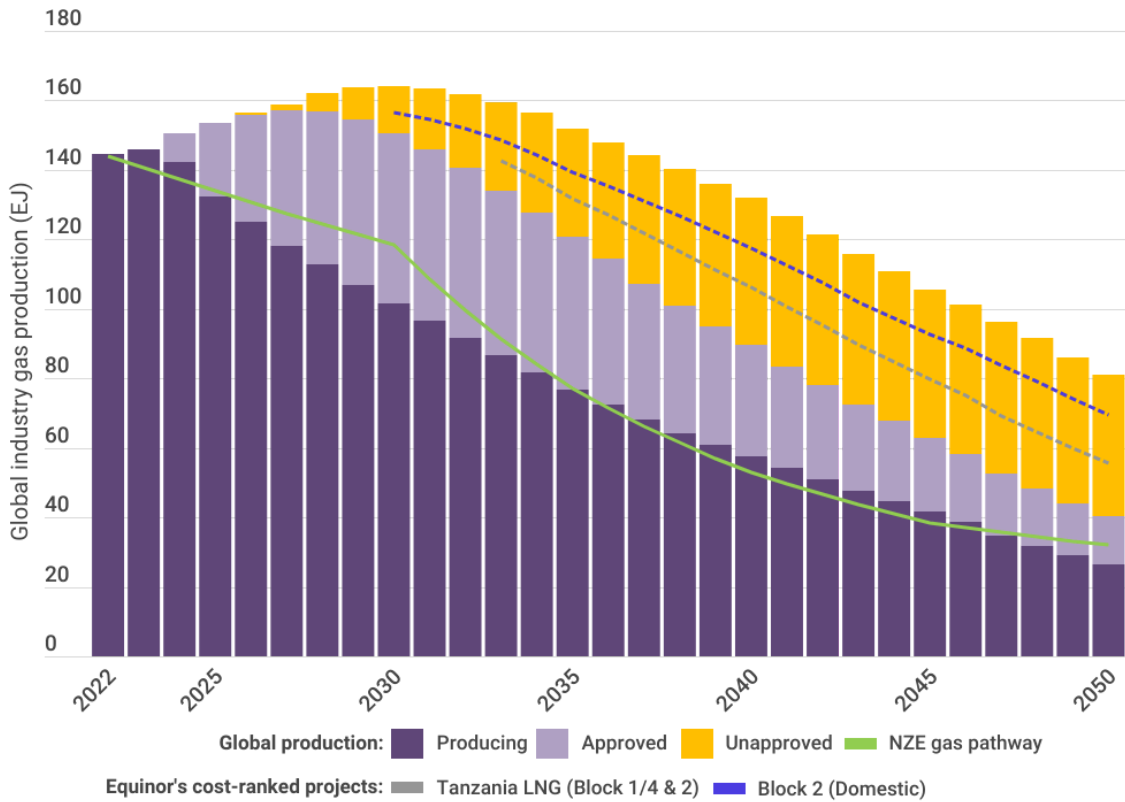
<sup>16</sup> This figure represents the total output generated by the project, and does not specifically denote Equinor’s entitlement

<sup>17</sup> Average percentile ranking of a project from the start of its production until 2050, relative to other unapproved projects and weighted by annual production

<sup>18</sup> Volume weighted average

- Both projects are long-dated, producing well into the second half of the century (Table 2). These projects involve substantial upfront capex and may encourage fossil fuel lock-in.

**Chart 4: Global industry gas supply - Equinor’s unapproved gas projects are not aligned with the Paris Agreement, and all sit at the 36th and 61st cost percentile of unapproved global gas projects**



Source: Rystad Energy, IEA extended dataset, ACCR modelling

**Table 2: Major unapproved international gas projects in Equinor’s pipeline - both projects are conventional and long-term, sitting well outside the top cost-quartile of globally unapproved gas projects**

Project	Start-up year	Final year of production	Total production (MMboe) <sup>19</sup>	Production weighted cost percentile <sup>20</sup>
Tanzania LNG (Block 1/4 and 2), Tanzania	2032	2085	3,940	36
Block 2 (Domestic), Tanzania	2029	2100	360	61

Source: Rystad Energy, ACCR modelling

### *International unapproved LNG projects*

The Tanzania LNG project (Block 1/4 & 2) is not only incompatible with the Paris Agreement, but it will be coming online during a forecast LNG supply “glut”<sup>21</sup> (Chart 5).

Under the NZE scenario, existing projects can already meet LNG demand. According to IEA forecasts, when projects currently under construction come online, this will result in a LNG glut and depress prices, with 70% of under-construction projects failing to recover their cost of capital under the NZE scenario, or 40% under the Announced Pledges Scenario (APS).<sup>22</sup>

The Tanzania LNG project has also faced:

- an impairment of \$982 million in 2021<sup>23</sup>
- significant regulatory delays since exploration commenced in 2011<sup>24</sup>
- a 40% increase from the initial estimated cost of \$30 billion.<sup>25</sup>

<sup>19</sup> This figure represents the total output generated by the project, and does not specifically denote Equinor’s entitlement

<sup>20</sup> Average percentile ranking of a project from the start of its production until 2050, relative to other unapproved projects and weighted by annual production

<sup>21</sup> IEA, [The Oil and Gas Industry in Net Zero Transitions](#), 2023, p47

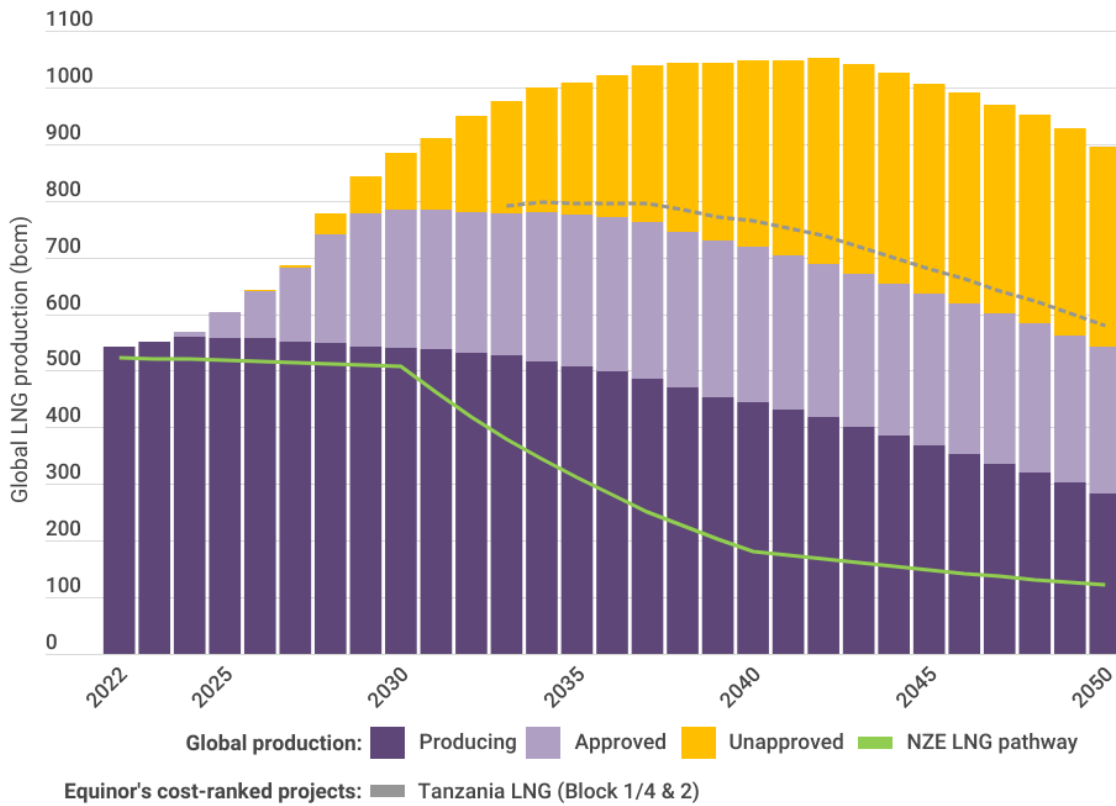
<sup>22</sup> IEA, [The Oil and Gas Industry in Net Zero Transitions](#), 2023, p47

<sup>23</sup> Equinor, [Impairment at Tanzania LNG Project](#), 2021

<sup>24</sup> Reuters, [Equinor, Shell and Exxon agree LNG project with Tanzania](#), 2023

<sup>25</sup> Business Insider Africa, [African countries are already booking stakes in Tanzania’s \\$42 Billion LNG project](#), 2023

**Chart 5: Global LNG supply - Equinor's unapproved LNG projects are not aligned with the Paris Agreement. Given the expected LNG glut, there is no room for already approved projects in the NZE scenario**



Source: Rystad Energy, ACCR modelling

## 4. Equinor is not creating value by increasing international production

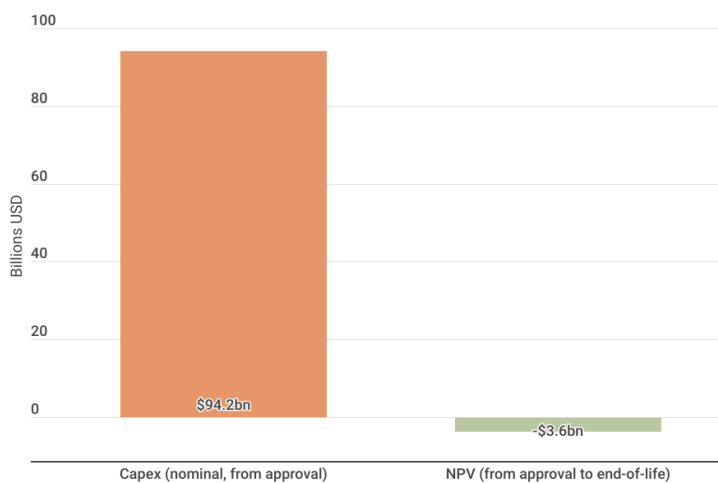
Equinor’s international projects have not generated adequate returns for investors. This underperformance is spread across the portfolio, with no single country or project responsible.

Our analysis<sup>26</sup> estimates that, over their lifetime, Equinor’s international projects have:

- an NPV of -\$3.6 billion<sup>27</sup>
- absorbed \$94 billion in capex (nominal) for development
- cost ~\$14.5 billion in net acquisition<sup>28</sup> and pre-FID costs (nominal).

As a side note, on an accounting basis, Equinor has accumulated significantly more losses than our cash flow analysis estimates, with Equinor’s United States operations suffering impairments of \$21.5 billion between 2007 and 2019.<sup>29</sup>

**Chart 6: Close to \$100bn of capex on international projects is forecast to erode -\$3.6bn of NPV**



Source: Rystad Energy, ACCR modelling

### Understanding Equinor’s international expansion

After small forays into the United Kingdom in the 1970s, and Russia in the 1980s, Equinor has produced oil and gas in 16 countries outside of Norway. It has somewhat concentrated its portfolio

<sup>26</sup> Our methodology is defined in Appendix B

<sup>27</sup> From approval year to end-of-life of each international asset

<sup>28</sup> Detailed M&A History (S&P Capital IQ) reconciled with company reporting

<sup>29</sup> PwC, [Equinor in the USA: Review of Equinor’s US onshore activities and learnings for the future](#), 2020, p6

and is currently operating in 12 countries, with a further two divestments announced.<sup>30</sup> In 2022, production outside of Norway made up 29% of proved reserves<sup>31</sup> and 27%<sup>32</sup> of production.

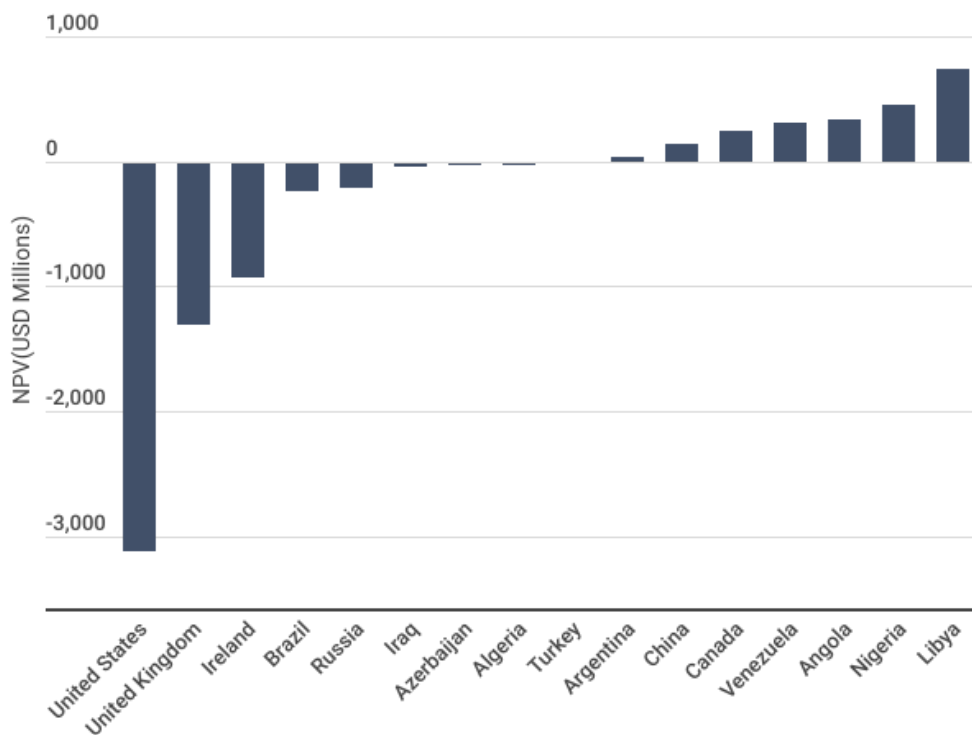
## Potential causes of sustained underperformance

The underwhelming international performance is not due to any individual project, or group of projects.

- Projects with over \$1 billion of capex had, on average, negative NPVs; but these were hugely variable, ranging from -\$1.6 billion to \$0.5 billion.
- Smaller projects, as a whole, generated a marginally positive NPV of \$1.3 billion from a capex cost of \$45 billion.

Equinor published a frank review of its operations in the United States, which identified a range of specific causes for the losses incurred from these assets.<sup>33</sup> However, even if the US assets were removed from the NPV analysis, Equinor’s international operations will generate less value than their acquisition costs.

**Chart 7: Equinor’s NPV by country**



Source: Rystad Energy, ACCR modelling

<sup>30</sup> Equinor, [2024 Capital Markets Update](#), p9

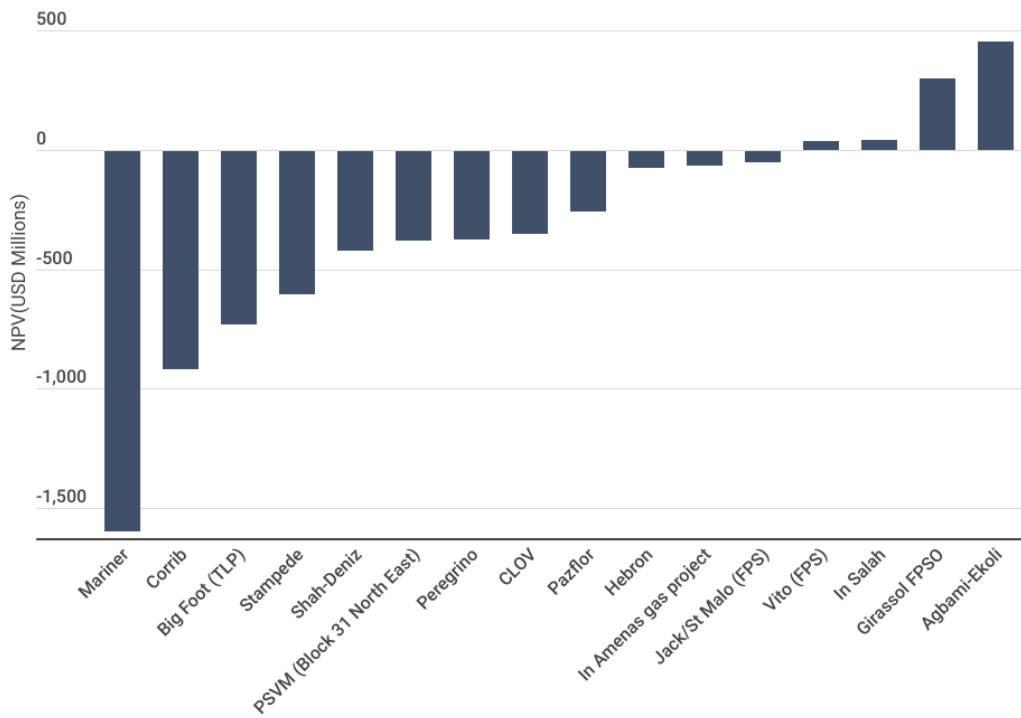
<sup>31</sup> Equinor, [2022 Annual Report](#), p96

<sup>32</sup> Equinor, [2022 Annual Report](#), pp 102,111

<sup>33</sup> PwC, [Equinor in the USA: Review of Equinor’s US onshore activities and learnings for the future](#), 2020



**Chart 8: Equinor's underwhelming international performance stems from a trend of negative NPVs in projects with capex exceeding \$1 billion, not isolated to any specific project**



Source: Rystad Energy, ACCR modelling

## 5. International production growth has not improved shareholder returns

Since Equinor's IPO in 2001, increasing international production has not been a key driver of Equinor's total shareholder returns (TSR). In this period, the key driver of TSR has been the oil price. This correlation is similar for peers in the industry.

This is evident when assessing Equinor's TSR in two key phases:

1. **2001(IPO)-2007. TSR was a strong 32% p.a in US\$, and correlated with a 148% oil price appreciation.**
  - Equinor's international production levels more than tripled from a low base
  - domestic production growth (excl. Norsk Hydro merger) was reduced slightly, which reflects peak Norwegian continental shelf (NCS) production in the early 2000s (Chart 9) - a trend that has continued.
2. **2007-2023. TSR was significantly lower at 5% p.a. in US\$, as the oil price remained broadly flat.**
  - Equinor's international production growth (excl. Norsk Hydro) accelerated, with an increase in production levels from 307 kboe/d to 579 kboe/d
  - domestic production (excl. Norsk Hydro) declined slightly
  - The modest 5% p.a. TSR, based on the international portfolio analysis above, is likely to be mostly due to the high returning domestic business.

**Table 3: Equinor's TSR relative to production growth and the oil price (excl. Norsk Hydro acquisition) - Equinor has not created material value by increasing international production**

	IPO in 2001 - 30/06/2007	1/07/2007 - 21/12/2023
WTI <sup>34</sup> oil price growth (%)	148%	1%
Domestic production growth ex-Norsk Hydro merge (thousand barrels per day)*	-36	-43
International production growth ex-Norsk Hydro merger (thousand barrels per day)**	184	272
<b>TSR(US\$ basis, % p.a.)</b>	<b>32%</b>	<b>5%</b>

\* Production growth is estimated from 31/12/2000 - 31/12/2007

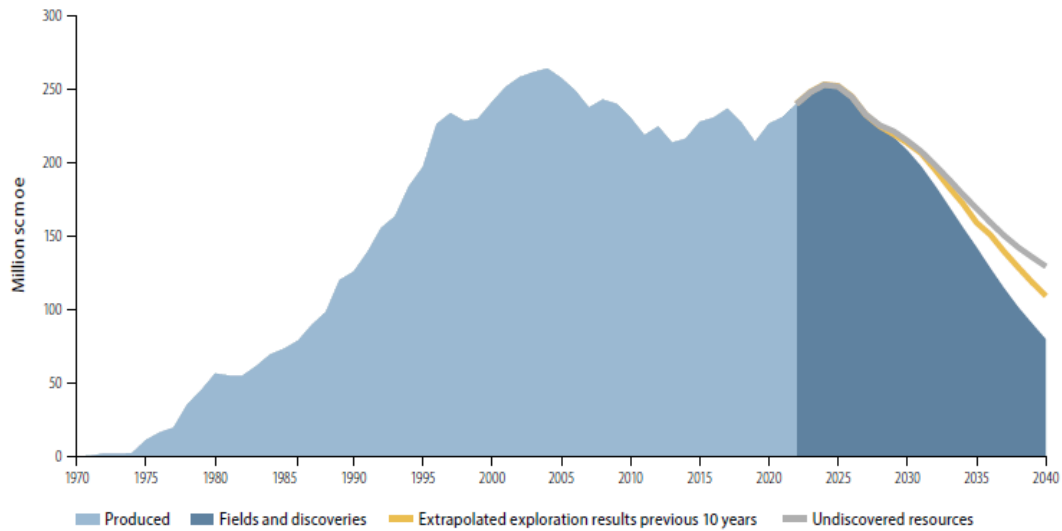
\*\* Production growth is estimated from 31/12/2007 - 31/12/2023

Source: Bloomberg Finance L.P.; Used with permission of Bloomberg Finance L.P., ACCR modelling

<sup>34</sup> West Texas Intermediate

Given the industry faces long-term structural decline, it is unsurprising that the futures market as well as several large US and European oil and gas companies are forecasting lower long-term oil prices. If these forecasts are correct, history suggests an international production growth strategy is unlikely to deliver sufficient TSR for Equinor, and that an alternative strategy for cash flow deployment should be considered.

**Chart 9: Production outlook for oil and gas from the Norwegian Continental Shelf (NCS) to 2040**



Source: Resource Report 2022, Figure 1.1 pg6, Norwegian Petroleum Directorate

## 6. Capital allocation strategy - optimistic & sensitive to commodity price

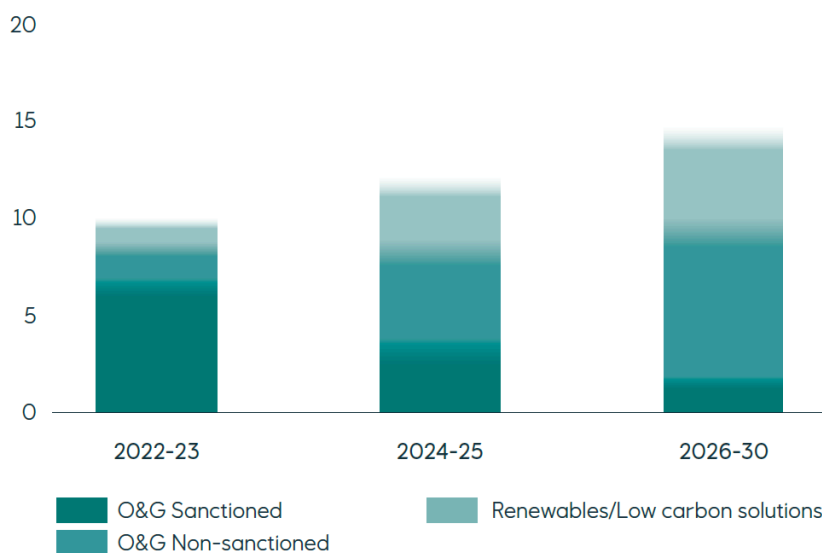
With an optimistic oil price assumption and a break-even price that is uncompetitive against the majority of global unapproved oil supply, Equinor’s unapproved projects may not be as valuable as it predicts. **ACCR analysis found that lowering Equinor’s oil price assumption to the forward Brent price is forecast to slash the NPV of Equinor’s pre-FID international projects by 50%.**

The company’s intentions to accelerate capital allocation into oil and gas over the next decade<sup>35</sup> (Chart 10) is therefore cause for concern.

**Chart 10: Equinor’s sanctioned and unsanctioned O&G capex appears to be higher in 2026-30 than in 2022-2023**

**Capex allocation**

Bn USD average per year (Organic capex net to Equinor after project finance)



Source: 2022 Energy transition plan, p21

Equinor's oil price assumptions are optimistic relative to the forward Brent curve, as well as peers’ oil price assumptions. They currently assume:<sup>36</sup>

- an oil price of \$75/bbl would lead to a payback period of 2.5 years and an IRR of over 30%
- that new supply in the next 10 years is projected to break-even at under \$35 per barrel.

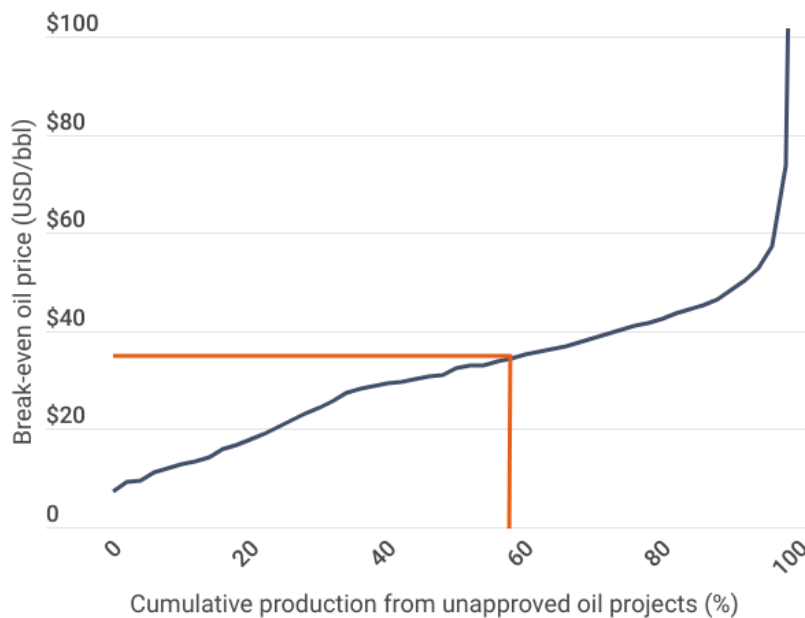
<sup>35</sup> Equinor, [2022 Energy transition plan](#), p21

<sup>36</sup> Equinor, [2024 Capital Markets Update](#), p31

Equinor has a long history of making optimistic assumptions. In early 2013, it was forecasting a payback period of three years for new investments based, in part, on an oil price assumption of \$110/bbl,<sup>37</sup> with a lot of this growth outside of the NCS. Given that Equinor’s international projects have chronically underperformed, it is evident that these estimates were optimistic. A report commissioned by Equinor concluded that “the [\$21.5 billion] losses in the US onshore business were mainly caused by impairments triggered by lower than expected oil and gas prices”.<sup>38</sup>

Compared to the break-even prices of global unapproved oil projects, Equinor’s break-even price for its unapproved projects does not have a cost advantage. Around 60% of global unapproved oil supplies have a lower break-even price than Equinor’s (Chart 11).

**Chart 11: Around 60% of unapproved oil projects have a lower break-even price than Equinor’s average of \$35/bbl**



Source: Rystad Energy, ACCR modelling

Beyond the optimistic capital allocation strategy, Equinor’s international oil and gas expansion strategy involves project execution risks which differ from domestic projects. Internationally, Equinor:

- doesn’t have a proven track record (as highlighted in sections 4 and 5)

<sup>37</sup> Statoil, [High quality growth](#), 2013, slide 8

<sup>38</sup> PwC, [Equinor in the USA: Review of Equinor’s US onshore activities and learnings for the future](#), 2020, p33

- doesn't always have operational control, and so has limited influence over the implementation of best practices and emissions reduction strategies
- continues to take on market risk in emerging economies, facing heightened challenges like delays and cost overruns. This was highlighted recently by delays to a \$42 billion LNG project in Tanzania, which are jeopardising its timely completion amidst declining global demand for fossil fuels.<sup>39</sup>

Recent market commentary suggests Equinor's share price has suffered from concerns around reducing FCF. FCF can be increased by reducing investment cash flows. Considering our analysis of Equinor's historic returns from international projects, and the relatively high cost of its unapproved international portfolio, Equinor may be able to increase free cash flow in the short term without sacrificing long term value.

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<sup>39</sup> Bloomberg, [Tanzania LNG Slows as State Delays on Signing Agreement With Equinor, Shell](#), Feb 2024

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## 7. Equinor's Net Carbon Intensity ambitions

While Equinor's international projects are not NZE-aligned, it is important to acknowledge the company is making positive steps to transition its business, such as managing its Norwegian scope 1 emissions well and being an early leader in offshore wind. However, despite some positive climate momentum:

- its Net Carbon Intensity (NCI) ambitions fall short of the Paris Agreement's goals (as per the NZE)
- we forecast that its strategy will leave it short of meeting its NCI ambitions, even if it achieves the upper end of its renewable and CCS ambitions.

Our analysis of Equinor's NCI ambitions is in Appendix D.

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## 8. Appendices

### Appendix A: Extract of the 2023 AGM minutes

At the 2023 AGM, the Norwegian Ministry of Trade, Industry and Fisheries provided this statement, which was read to the meeting by the Chair:<sup>40</sup>

*The state expects cf. Meld. St. 6 (2022–2023) - Greener and more active state ownership (white paper on the State's direct ownership of companies) that*

*i) The company identifies and manages risks and opportunities relating to climate and integrates these into the company's strategies.*

*ii) The company sets targets and implements measures to reduce greenhouse gas emissions in both the short and long term in line with the Paris Agreement, and reports on goal attainment. The targets shall be science-based when available.*

*iii) The company reports on direct and indirect greenhouse gas emissions and climate risk, and uses recognized standards for reporting greenhouse gas emissions and climate risk. These expectations, which were presented in the white paper in October 2022 and discussed in the Storting in February 2023, are communicated to Equinor's board of directors and are followed up in the ownership dialogue the state has with the company. The state expects the board and administration to work actively with the state's expectations and to assess whether and how they should be taken into account in the company's energy transition plan and related reporting. The state voted in favor of Equinor's energy transition plan at the general meeting in 2022, i.a. based on the company being clear that the long-term value creation supports the goals of the Paris Agreement, cf. the state's statement at the annual meeting last year. It is the board's responsibility to manage the company, including setting the company's strategy, cf. the division of roles between the owner, board of directors and the general manager set out in company law, and on generally recognized principles and standards for corporate governance. The state does not consider it appropriate to adopt expectations for the company at the general meeting, but follows them up in the dialogue with the company.*

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<sup>40</sup> Equinor, [Minutes of the 2023 Annual General Meeting of Equinor ASA](#), p2



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## Appendix B: Methodology and data sources

Most production, cash flow and break-even price data has been sourced from Rystad Energy's UCube on 12 February 2024. Rystad Energy has only delivered asset-level data and the model used to calculate the sensitivities. Rystad Energy is not responsible for any conclusions drawn from the data, and ACCR retains responsibility for any subsequent analysis, including assumptions used or errors made.

To ensure comparability across the report, Rystad production data has typically been used even when Equinor has disclosed equivalent data. This is not expected to alter any conclusions.

Acquisition costs are from S&P, Capital IQ. Transactions over \$100 million have been reconciled to Equinor's disclosures, resulting in minor changes that do not affect the report's conclusions.

Scope 3 emissions have been calculated by assuming all production is combusted. We have used Equinor's energy content (5.7GJ/boe).<sup>41</sup> The emission factor for liquids is 69.9 kgCO<sub>2</sub>e/GJ, and for gas it is 51.53 kgCO<sub>2</sub>e/GJ.<sup>42</sup>

Asset NPVs have been calculated by discounting the Free Cash Flow from each assets' FID year until end of life, back to its approval year. Project (which Rystad defines as a group of assets) and country NPVs are the sum of relevant asset NPVs, with no adjustment made for the cost of capital or inflation.

Discount rates are country specific. Country specific tax rates are based on Rystad's tax models, with simplifying assumptions applied where multiple tax regimes operate within a country. Country specific risk premia have been estimated using these sources, in order of availability:

1. Bloomberg, where available
2. estimated as the difference between the country's 10 year government bond and the US 10 year government bond
3. assumed to be zero (applies to Argentina, Azerbaijan, Iraq, Libya and Venezuela).

Capex is expressed in nominal terms.

Currencies are expressed in USD.

The 'Norwegian Continental Shelf' or 'domestic' refers to Equinor's operations in Norway. 'International' refers to any projects outside of Norway.

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<sup>41</sup> Equinor, [Net-GHG emissions and net carbon intensity methodology](#), 2 November 2020

<sup>42</sup> Australian Government Department of Climate Change, Energy, the Environment and Water, [Australian National Greenhouse Accounts Factors 2023](#), pp 16, 20

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## Appendix C: ACCR's NZE alignment methodology

ACCR's method assesses project alignment with the Paris Agreement by examining individual unapproved projects in the context of all producing, approved and unapproved projects in the global oil and gas industry.

It starts with a Paris-aligned scenario (represented by the NZE scenario) and then assesses which new projects can most cost-effectively meet any residual supply requirements.

Our view is that the NZE pathway is the best available tool for assessment of Paris alignment, because:

- It aims to limit global warming to 1.5°C in 2100 and provides enough certainty that warming stays well below 2°C throughout the 21<sup>st</sup> century
- The temperature outcome in 2100 is determined by a climate model that takes into account all of the IEA's assumptions, including those relating to energy security, recent technology developments and recent geopolitical events, along with providing comprehensive sectoral and geographic data<sup>45</sup>
- It is updated annually and takes into account the emissions output of recent years
- The IPCC scenarios from the Sixth Assessment Report, referred to by many oil and gas companies, work with a 500GtCO<sub>2</sub> remaining carbon budget, which was current in 2020, as opposed to 210GtCO<sub>2</sub>, which is current as of the start of 2024.<sup>44</sup>

At a high level, our methodology involves:

1. assuming all operating and under-development projects operate until end of life
2. ranking all unapproved projects by break-even price
3. assessing each unapproved project to see if it is 'required' to meet demand levels under the NZE scenario, after accounting for operating and under-construction facilities.

The benefits of this method include that it:

- removes the opportunity for companies to use a range of self-selected voluntary decarbonisation targets to claim Paris alignment
- provides investors with valuable insight into financial assumptions, and therefore investment decisions, which are not Paris-aligned.

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<sup>45</sup> The IEA bases its scenario temperature outcomes on outputs from MAGICC 7.5.3 (a reduced complexity climate model). See [World Energy Outlook 2023](#), p.158

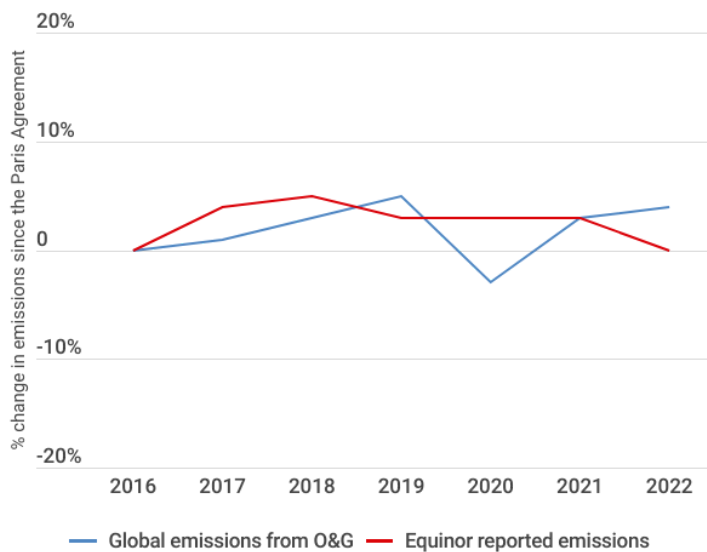
<sup>44</sup> Lamboll, R.D., Nicholls, Z.R.J., Smith, C.J. et al. Assessing the size and uncertainty of remaining carbon budgets. *Nat. Clim. Chang.* 13, 1360–1367 (2023). <https://doi.org/10.1038/s41558-023-01848-5> subtracting 40Gt CO<sub>2</sub> for the year 2023 based on Friedlingstein et al., 2023

*Why this methodology?*

**Global oil and gas emissions are higher than when the Paris Agreement was signed**

Despite many oil and gas companies claiming to be supportive of the Paris Agreement, and a temporary decrease in emissions due to the global pandemic, global oil and gas emissions are 5% higher than when the Paris Agreement came into effect in 2016. Equinor’s oil and gas emissions<sup>45</sup> have also remained stable since 2016.

**Chart 12: Global and Equinor’s emissions from oil and gas since 2016**



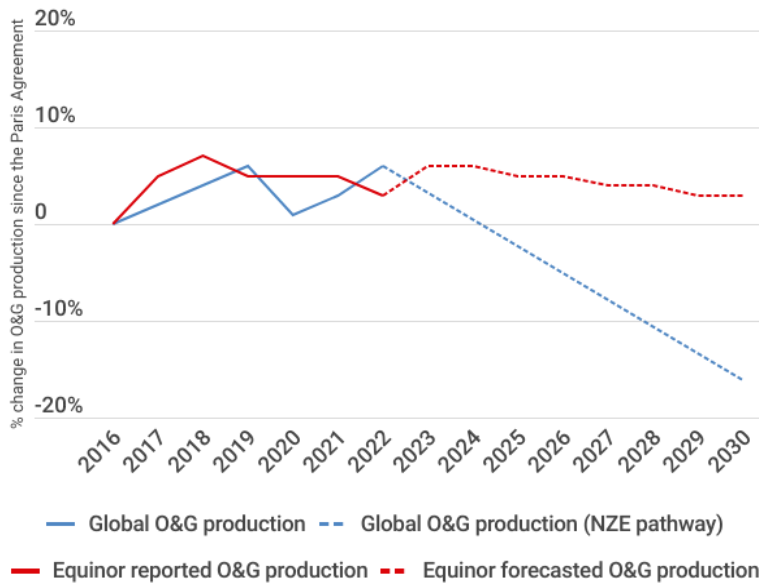
Source: WEO extended datasets (2021, 2022, 2023), Equinor 2022 Integrated Report

As Chart 13 shows, Equinor's production trajectory will have to change dramatically if the world is to follow the IEA's NZE scenario, its Paris-aligned scenario. However, the company expects its oil and gas production to remain stable to 2035, contrary to the NZE scenario.<sup>46</sup>

<sup>45</sup> Scope 1, 2 and 3

<sup>46</sup> Equinor, [Equinor fourth quarter and full year 2023 results](#)

**Chart 13: Equinor's projection of stable oil and gas production through 2035 contrasts with the necessary shifts for IEA's Net Zero Emissions scenario alignment**



Source: WEO extended datasets (2021, 2022, 2023), Equinor 2022 Integrated Report,<sup>47</sup> Q4 2022 Equinor ASA Earnings Call,<sup>48</sup> ACCR modelling

### Company climate targets are subject to gaming

Many oil and gas companies claim to support the Paris Agreement and some even claim to have decarbonisation strategies that are Paris-aligned, whilst maintaining or even increasing oil and gas production. They have used a number of techniques to justify these claims:

- intensity targets that allow absolute emissions to increase as long as they are ‘diluted’ with other products
- adopting reduction targets with a slower decline than the NZE scenario
- selectively choosing operated or equity metrics
- treating divested emissions as reductions, which is not in keeping with climate science and global carbon accounting protocols<sup>49</sup>
- selecting base years with higher-than-normal emissions to exaggerate the impact of any reductions
- excluding scope 3 emissions
- using emission trajectories for commodities that are not applicable to their portfolio

<sup>47</sup> Equinor’s reported production from 2016-2022 (p87)

<sup>48</sup> “In 2023, we estimate a 3% production increase. By the end of the decade, we expect the production to be on par with today” - Anders Opedal, President & CEO at Equinor ASA, [Q4 2022 Equinor ASA Earnings Call](#), p4

<sup>49</sup> GHG Protocol, [Corporate Standard](#), 2015, p35.

- selecting target years with lower-than-normal emissions data
- claiming that some emissions do not need to be considered because they displace other emissions.

Targets that are crafted to overstate a company's progress are not an effective way to assess Paris alignment.

## **Financial assumptions that are not Paris-aligned will justify investment that is not Paris-aligned**

Companies' assumptions about the future market will determine what they invest in. If a company assumes oil demand (and hence price) will remain higher than is consistent with the goals of the Paris Agreement, it will be motivated to develop new oil projects that are inconsistent with the Paris Agreement's goals.

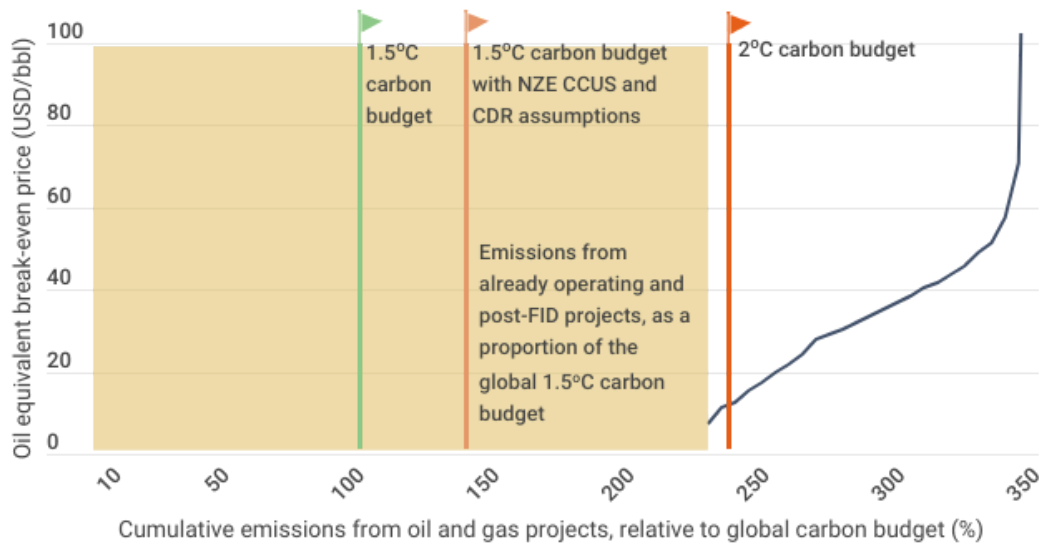
A range of research, including the IEA's NZE scenario, is now concluding that all of the oil and gas projects needed in a 1.5°C scenario are already operating or have taken FID. Any set of financial assumptions that conclude new oil and gas is needed is unlikely to be Paris-aligned.

The remaining carbon budget (from 2024) for a 1.5°C outcome is 210 GtCO<sub>2</sub>,<sup>50</sup> whilst operating and post-FID oil and gas projects are forecast to result in 482 GtCO<sub>2</sub>e. Chart 14 shows that operating and post-FID projects consume 230% of the global 1.5°C carbon budget, and close to all of the 2°C budget. Pre-FID oil and gas projects could generate additional emissions, pushing us well beyond 2°C of warming.

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<sup>50</sup> Lamboll, R.D., Nicholls, Z.R.J., Smith, C.J. et al. Assessing the size and uncertainty of remaining carbon budgets. *Nat. Clim. Chang.* 13, 1360–1367 (2023). <https://doi.org/10.1038/s41558-023-01848-5> subtracting 40Gt CO<sub>2</sub> for the year 2023 based on Friedlingstein et al., Global Carbon Budget (2023). <https://doi.org/10.5194/essd-15-5301-2023>, leaving ~210Gt CO<sub>2</sub> (for 2024 onwards) to limit global warming to 1.5°C with a 50% likelihood.

**Chart 14: Proportion of the 1.5°C and 2°C remaining carbon budget consumed by operating, post-FID and pre-FID oil and gas projects**



Source: Rystad Energy, IEA extended datasets, Lamboll et al. 2023,<sup>51</sup>. The remaining carbon budget used here limits global warming in 2100 to 1.5°C with a 50% likelihood, and to 2°C with a 90% likelihood. IEA NZE CCUS and CDR assumptions account for carbon removals up to 2050 only, with additional removals required after 2050.

*Alignment between the IEA and our results*

By developing this least-cost model at the asset level, we can provide project context and broadly reconcile with the IEA's statements that:

- no new [oil] projects are approved for development in the NZE scenario, and higher-cost projects are also closed [shut-in] from the 2030s<sup>52</sup>
- in the NZE scenario, no new long-lead time gas projects are required<sup>53</sup>
- in the NZE scenario, a glut of LNG and pipeline capacity forms in the mid-2020s<sup>54</sup>
- in the NZE scenario, LNG projects currently under construction are not necessary.<sup>55</sup>

ACCR's NZE scenario analysis matches closely with the IEA's supply charts (Fig 1.11, 1.13 and 1.18 in the 2023 Oil and Gas Industry in Net Zero Transitions report), but has the following subtle differences:

<sup>51</sup> Lamboll, R.D., Nicholls, Z.R.J., Smith, C.J. et al. Assessing the size and uncertainty of remaining carbon budgets. Nat. Clim. Chang. 13, 1360–1367 (2023). <https://doi.org/10.1038/s41558-023-01848-5>

<sup>52</sup> IEA, [The Oil and Gas Industry in Net Zero Transitions](#), 2023, p35

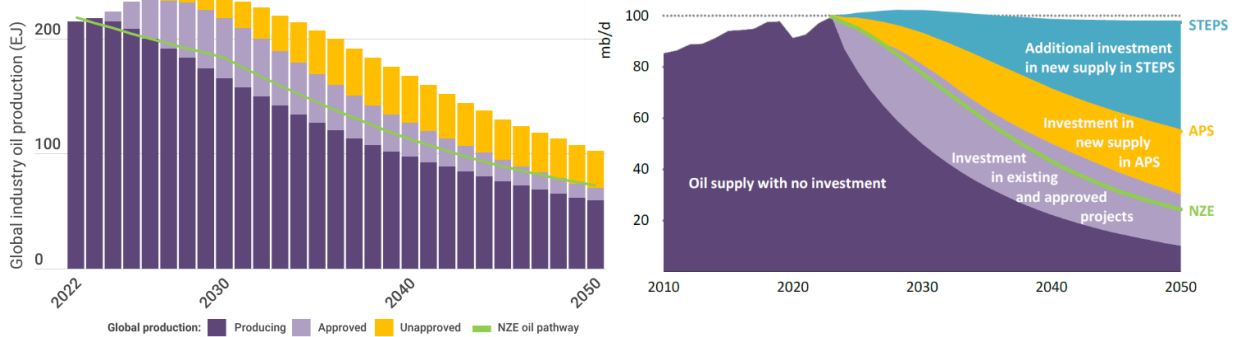
<sup>53</sup> IEA, [The Oil and Gas Industry in Net Zero Transitions](#), 2023, p38

<sup>54</sup> IEA, [The Oil and Gas Industry in Net Zero Transitions](#), 2023, p47

<sup>55</sup> IEA, [The Oil and Gas Industry in Net Zero Transitions](#), 2023, p45

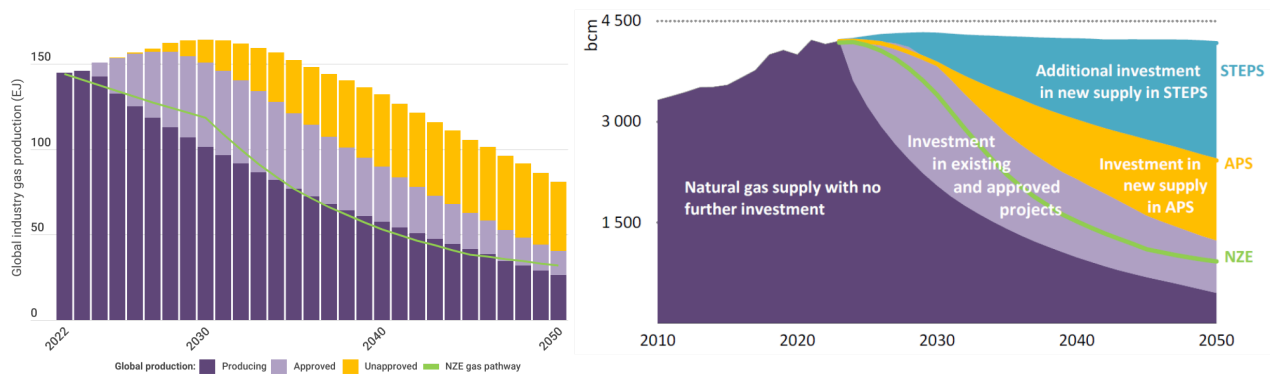
- the IEA shows supply with no further investment, whilst ACCR allows for sustaining capex
- the IEA displays LNG capacity, whilst ACCR shows LNG production.

**Chart 15: Left - ACCR oil supply chart, Right - IEA oil supply chart**



Source: IEA, [The Oil and Gas Industry in Net Zero Transitions](#), 2023, Fig 1.11, p35

**Chart 16: Left - ACCR gas supply chart, Right - IEA gas supply chart**



Source: IEA, [The Oil and Gas Industry in Net Zero Transitions](#), 2023, Fig 1.13, p38

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## Appendix D: Assessing Equinor's climate strategy

Equinor's climate strategy has many strong points, several areas that could be improved and some issues of concern.

Strong points:

- scope 3 emissions are included in a core climate target<sup>56</sup>
- the strong preference for absolute reductions, rather than offsets, to meet the operated scope 1 and 2 target<sup>57</sup>
- Equinor has had more CCS success than any other company<sup>58</sup> and has been an early leader in the offshore wind sector<sup>59</sup>
- Equinor's operated Norwegian facilities are global leaders in minimising scope 1 and 2 emissions
- Equinor's renewable, hydrogen and CCS project hoppers are commensurate with its ambitions. Its projects commissioned in 2023 are generating 12-16% nominal, leveraged returns<sup>60</sup>
- the CCS portfolio includes projects targeting hard-to-abate industrial sectors, rather than being exclusively part of the fossil fuel value chain.<sup>61</sup>

Areas for improvement:

- the hydrogen and low-carbon capex ambitions include hydrogen and ammonia derived from fossil fuels<sup>62</sup>
- gross capex is used for the low-carbon investment ambition,<sup>63</sup> which may materially reduce net low-carbon capex, considering recent sell downs of wind projects
- limited progress to date against the CCS, hydrogen and renewables ambitions, although we note that Dogger Bank recently supplied first power<sup>64</sup>
- the mix of baseline years, operated and equity accounting, and non-disclosed baseline values hinders transparency
- third-party CCS is included as a reduction in the NCI when it does not actually reduce Equinor's scope 3 emissions

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<sup>56</sup> Equinor, [2024 Capital Markets Update](#), p66

<sup>57</sup> Equinor, [2022 Energy transition plan](#), p13

<sup>58</sup> IEEFA, [Norway's Sleipner and Snøhvit CCS: Industry models or cautionary tales?](#), p5

<sup>59</sup> Wind Power Monthly, [Top 5 offshore developers](#)

<sup>60</sup> Equinor, [2024 Capital Markets Update](#), p10

<sup>61</sup> For example, [Northern lights](#)

<sup>62</sup> For example, Equinor, [H2GE Rostock together with VNG](#)

<sup>63</sup> Equinor, [2024 Capital Markets Update](#), p66

<sup>64</sup> Dogger Bank Wind Farm, [World's largest offshore wind farm produces power for the first time](#)



- fossil fuel sales that are not produced by Equinor result in ~150 MtCO<sub>2</sub>e of scope 3 emissions that are not disclosed as emissions or covered by a climate target.<sup>65</sup>

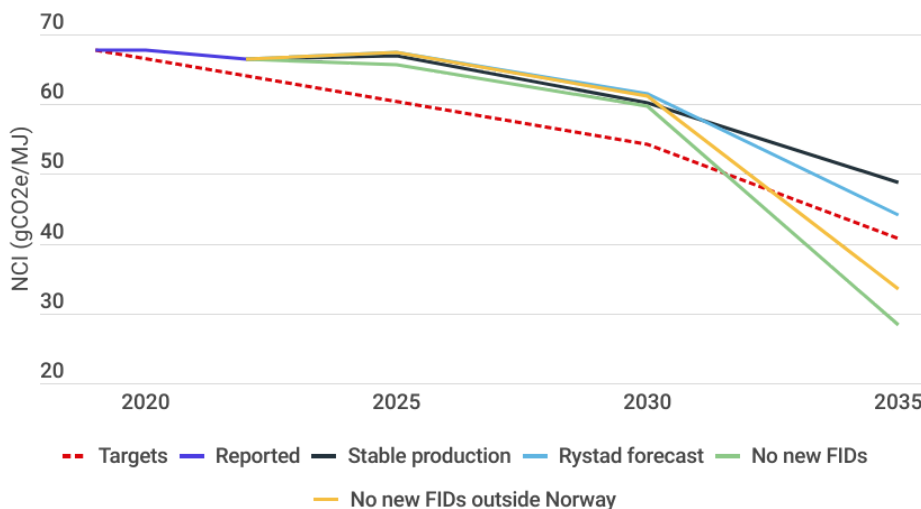
Issues of concern:

- Equinor's Energy Transition Plan involves no plan to reduce oil and gas production<sup>66</sup> or investment.<sup>67</sup> It would be better described as an Energy 'Diversification' Plan
- the NCI, renewable, CCS and hydrogen ambitions are insufficient for Equinor to make a proportionate contribution to a 1.5°C scenario<sup>68</sup>
- Equinor is not properly accounting for divesting assets and emissions to other companies.<sup>69</sup> This is inconsistent with the GHG Protocol Corporate Accounting Standard and does not mitigate climate change.

*Equinor is unlikely to meet its NCI ambitions, which are not Paris-aligned anyway*

Our model estimates that Equinor's current strategy will see absolute emissions increase beyond when its NCI starts to decrease after 2025.

**Chart 17: Equinor cannot meet its NCI ambitions if it keeps stable production until 2035, even it achieves the upper range of CCS and renewables ambitions**



<sup>65</sup> Derived from Equinor, [2022 Integrated Annual Report](#), p4

<sup>66</sup> Equinor, [Equinor fourth quarter and full year 2023 results](#)

<sup>67</sup> Equinor, [2022 Energy Transition Plan](#), p21

<sup>68</sup> Equinor, [2022 Energy transition plan](#), p12

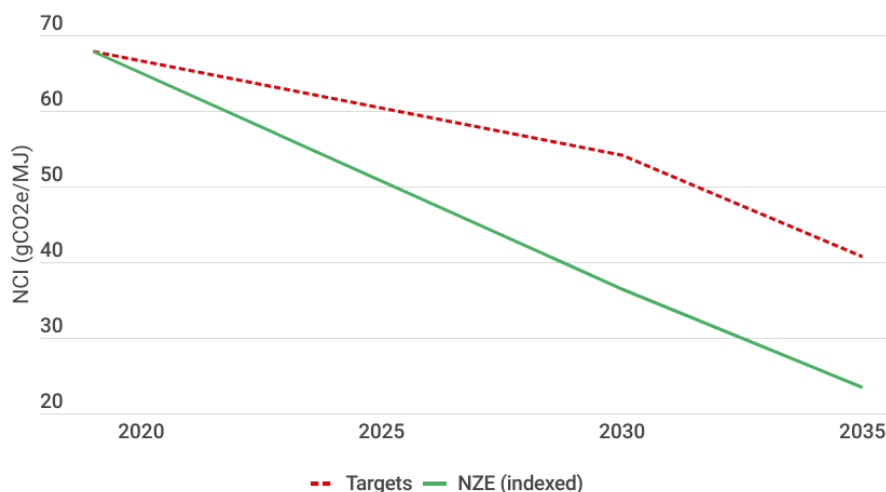
<sup>69</sup> [Equinor Sustainability Data Hub](#), Climate data on scope 1 emissions changes due to 'changes in portfolio', accessed 21 January 2024

Source: Rystad Energy, Company disclosures, ACCR modelling

We have modelled Equinor’s NCI,<sup>70</sup> assuming that Equinor meets the upper range of its renewables and CCS ambitions<sup>71</sup> (Chart 17). Even under this generous assumption, we find that Equinor’s ambition to retain a “stable contribution from oil and gas to 2035”<sup>72</sup> (black line - 'stable production') put its NCI ambitions out of reach.

We have also tested scenarios where Equinor ceases new international oil and gas investments (yellow line - 'No new FIDs outside Norway'), and ceases all oil and gas investments (green line - 'No new FIDs'). Equinor will not meet its 2030 NCI target under any of these scenarios. However, if Equinor ceases international (or all) oil and gas investments, it can beat its 2035 target. Equinor’s NCI, based on Rystad’s forecast (light blue line - 'Rystad forecast'), also falls short of both NCI ambitions.

**Chart 18: Equinor’s NCI ambitions are not in line with the Paris Agreement**



Source: IEA extended datasets, Company disclosures, ACCR modelling

Even though Equinor’s strategy is inconsistent with its NCI ambitions, these ambitions still fall well short of the IEA’s NZE scenario trajectory (as stated by Equinor<sup>75</sup>) (Chart 18).

<sup>70</sup> To build this model using public information we have calibrated some factors using Equinor’s disclosed data for 2021 and 2022 and assumed that they remain constant. We do not expect that this invalidates our conclusions.

<sup>71</sup> In the absence of more specific plans or ambitions, we have not modelled hydrogen production, but expect that hydrogen will push Equinor further above its NCI ambitions. This is because hydrogen production is not 100% thermodynamically efficient, so any hydrogen produced from renewable energy will not change scope 3 emissions, but will reduce the energy provided to customers. Similar logic applies if using CCS to sequester some of the emissions from fossil based hydrogen.

<sup>72</sup> Equinor, [Equinor fourth quarter and full year 2023 results](#)

<sup>75</sup> Equinor, [2022 Energy transition plan](#), p12

Aligning Equinor's 2035 portfolio with the NZE scenario's NCI would require additional measures, even beyond ceasing all new fossil fuel developments and meeting the upper end of all of its renewable and CCS ambitions. By our calculations, this would require an additional 10 MtCO<sub>2</sub> of CCS, or 13 GW of renewables. An increase of this magnitude does not seem implausible, considering that Equinor recently increased its CCS target by 15-20 MtCO<sub>2</sub> p.a.

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