

CARLYLE'S UPSTREAM INVESTMENTS & THE ENERGY TRANSITION

The private equity firm has invested in companies unlikely to be economically viable in a low-carbon world



PRIVATE EQUITY
CLIMATE RISKS

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This report is part of a wider consortium project, Private Equity Climate Risks, on private equity's role in the climate crisis. It was written by analysts at the Carbon Tracker Initiative, with editing and research support provided by the Private Equity Stakeholder Project and Global Energy Monitor.

About Carbon Tracker

The Carbon Tracker Initiative is a team of financial specialists making climate risk real in today's capital markets. Our research to date on unburnable carbon and stranded assets has started a new debate on how to align the financial system in the transition to a low carbon economy.

About the Private Equity Stakeholder Project

The Private Equity Stakeholder Project is a nonprofit organisation with a mission to engage, empower, and connect stakeholders affected by private equity with investors and other key decision makers to ensure the risks associated with private equity investments are mitigated.

About Global Energy Monitor

Global Energy Monitor (GEM) develops and shares open-source information on energy projects in support of the worldwide movement for clean energy. Current projects include the Global Gas Infrastructure Tracker, Asia Gas Tracker, Europe Gas Tracker, Inside Gas Newsletter, Global Gas Plant Tracker, Global Registry of Fossil Fuels, Global Coal Plant Tracker, Global Solar Power Tracker, Global Wind Power Tracker, Latin America Energy Portal, and GEM.wiki.

KEY FINDINGS

- **Carlyle's portfolio has been relatively more exposed to transition risk than almost all of the oil majors.** A significant portion of the capex that Carlyle's portfolio companies have earmarked for future projects is only compatible with a slower transition, and higher temperature (2.5°C) scenario.
- **Carlyle subsidiary NGP Energy Capital's transition risk profile is not much better, with less than 30% of its portfolio companies' potential project options falling within a low-carbon, 1.65°C world.**
- **None of Carlyle nor NGP's investments have been fully aligned with the Paris Agreement.** This should be particularly concerning for investors who are concerned about the climate alignment of their own investments.
- **Almost all Carlyle and NGP portfolio companies analysed would see oil and gas production volumes fall if they were to become aligned with the Net Zero Emissions (1.5°C) scenario.** But company capex plans betray companies' intentions to continue expanding production despite the IEA's call for 'no new projects' for 1.5°C.
- **Carlyle's 'net zero' target for its portfolio companies is not aligned with the goals of the Paris Agreement** as it does not cover Scope 3 emissions and excludes its minority investments.
- **Investors should push Carlyle and NGP for stronger transition planning supported by Paris-aligned climate targets.** These should be accompanied by disclosures of the emissions embedded within their portfolios, as well as the emissions intensity of their operations.

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INTRODUCTION

The Carlyle Group ('Carlyle') is one of the world's largest alternative asset managers with \$369 billion in assets under management,¹ with a multi-billion energy portfolio dominated by conventional fossil fuels.²

As world governments and financial institutions reflect on the outcomes of the COP27 climate change conference, UN Secretary General António Guterres is urging financial institutions to "overhaul their business approaches" as the worsening impacts of a warming climate accelerate.³

The private equity industry has faced criticism that it is dragging its feet on committing to climate action,⁴ a problem complicated by the lack of transparency in the industry about its "massive fossil fuel holdings and the damage they're causing to the environment."⁵ Private equity firms are exempted from most financial disclosure regulations, and like its peers, Carlyle does not provide comprehensive disclosures of its investments. However, researchers have synthesized public filings, media, and Pitchbook data to compile the energy holdings of Carlyle and several of its private equity peers.⁶

Carlyle's energy investments include power plants, oil and gas pipelines, and upstream drilling and fracking operations. In its 2021 annual report, Carlyle said its carbon-based investments represented 8 percent

of its total assets under management, which would be equivalent to around \$24 billion.⁷ Carlyle has also invested in around 14 renewable energy companies, but they only make up around a quarter of the energy portfolio while conventional fossil fuel companies represent 76 percent.⁸

Despite making a Net Zero announcement this year,⁹ Carlyle has reported that it intends to continue investing in fossil fuels,¹⁰ even as global authorities urge a rapid transition to green energy. Moreover, in a report Carlyle published this year on financial risk from greenhouse gas emissions, it omitted its largest oil and gas investment in subsidiary NGP, as reported by the AP, which found that "Carlyle's own filings show NGP is probably its most carbon-producing investment."¹¹ This is an omission that should concern investors and the public because NGP is Carlyle's primary platform for oil and gas investments. And Carlyle's recent 2022 third-quarter earnings report indicates that nearly 55 percent of the firm's profit for the first nine months of the year came from NGP.¹²

This report analyses Carlyle's upstream oil and gas investments, including NGP's portfolio, and examines the financial viability of the companies in low-carbon scenarios necessitated by the transition away from fossil fuels.

The energy transition impacts fossil fuel investors

Investors employ private equity firms to manage their capital in such a way as to generate long-term value. Carlyle and its subsidiary NGP are no different,¹³ they are expected to deliver a return on the funds they control. However, for investors who are concerned about the impact of climate change on the investment landscape, Carlyle and NGP's investment practices should set alarm bells ringing: an examination of their transaction histories reveals that they have continued to buy, sell, and fund the development of upstream oil and gas assets.

There are two linked but distinct dynamics at play here. Firstly, Carbon Tracker has warned for years of assets becoming stranded as society attempts to mitigate catastrophic climate change.¹⁴ The energy transition has begun, and the shifting requirements of the global energy system has instigated a fall in demand for fossil fuels, which will only accelerate in the medium term.¹⁵ Consequently, capital expenditures¹⁶ ('capex') spent on expanding fossil production is at risk of being wasted. Secondly, climate alignment is fast becoming an important metric for investors who are conscious of the limits of the Paris Agreement. For those investors concerned with the trajectory of climate change, it is imperative that they are assured that their financing will not increase global warming beyond the 1.5°C threshold.

We have analysed 46 oil and gas exploration and production (upstream) transactions of which The Carlyle Group and NGP have been a part over the last decade.¹⁷ We estimate the amount of capex associated with each deal which is a) at risk of becoming stranded in different low-carbon scenarios and b) could be considered not aligned with the goals of the Paris Agreement. Given their carbon intensive transaction history, we urge investors to think critically as to whether Carlyle and NGP are in step with their own investment principles when deciding where to place their capital.

Demand for oil and gas will shrink as the world moves away from fossil fuels...

In 2021, the International Energy Agency (IEA) announced that if we are to limit warming to 1.5°C, no new oil and gas fields are needed.¹⁸ This should imply drastic consequences for the fossil fuel industry as it

is the clearest sign yet that the world must pivot away from hydrocarbons, and fast. The energy transition is already afoot - one need only look at the growing demand for electric vehicles (EVs) and the increasing prevalence of renewables in the electric grid to see that the days of oil and gas are numbered.¹⁹ While the current spike in oil prices may give a boost to fossil companies in the short term, in the medium term it will likely serve as an accelerant to the clean energy transition as governments turn to renewables as a source of energy security²⁰ and consumers flock to cheaper-to-run EVs.²¹

... and fossil fuel companies and their backers are exposed

Companies who continue to expand into more oil and gas projects are exposing themselves to lower-than-expected internal rates of returns (IRRs) should prices fall. This exposure is of course then translated to their financial backers. As awareness of these transition risks has started to permeate the investment landscape, capital market investors (who may also be guided by ESG concerns) have started to shift their public market portfolios away from oil and gas assets. Private equity investors are increasingly stepping in to fill those funding gaps.²²

The typical private equity business model is to hold assets for 5 years or more,²³ compared to public market investors who may choose to buy and sell investment securities quickly. This puts private equity investors at a far greater exposure to the transition risk embedded in fossil fuels since they cannot offload exposure quickly as valuations fall.²⁴ These risks should be especially relevant to institutional investors, who are some of private equity's biggest funders. Institutional capital tends to be deployed over a long time horizon, and its strategic direction is usually fixed: it is much more difficult for large pension funds to jump ship from an industry or asset class with short notice, as their investment mandates are relatively static. Funds are often tied to pensions or other pooled investments, the returns from which are of critical importance to the livelihoods of their ultimate beneficiaries. As such, institutional investors should be particularly cognisant of the risks we outline below when deciding whether to grant fossil investors like Carlyle or NGP control of their capital.

Dataset & Methodology: Estimating Stranded Asset Risk

Through our *Two Degrees of Separation* series, Carbon Tracker has developed a methodology for assessing the potential economic viability of oil and gas projects in a low-carbon future. We use Rystad Energy's data on individual project economics to estimate whether assets might fall inside or outside certain low-carbon demand scenarios and to assess assets' alignment with a given scenario. Given the inexorable link between fossil fuel consumption, carbon emissions and global temperature, such scenarios can also be viewed as a "fast transition" to a low-carbon world; equally the degree of alignment (or lack thereof) can be viewed in terms of the risk a company's plans are exposed to under a low-carbon/fast transition scenario.

Carbon Tracker has historically used the IEA's Sustainable Development Scenario (SDS) as our low-carbon demand scenario. In the 2022 World Energy Outlook,²⁵ the IEA shifted focus from SDS to the Announced Pledges Scenario (APS). APS (1.7°C) is a less ambitious scenario, with higher forecasts for future oil demand and a higher temperature outcome than SDS (1.65°C) and a greater reliance on negative emissions technologies (NETS) to rein in temperature overshoots. Depending on net negative emissions to reverse warming is a risky strategy which raises difficult questions, e.g.: who will fund the development and deployment of such technologies; whether it is possible to roll NETS out economically at such scale; and whether tipping-points in the climatic system will even allow the effects of overshooting to be reversed.

We use both SDS and APS in our analysis below. SDS can be considered more aligned with the 'well-below 2°C' prescription of the Paris Agreement; it also leaves the door open to achieving 1.5°C were negative emissions technologies deployed later in the century, which would be harder to achieve under APS. Our



business-as-usual (BAU) proxy is the IEA's Stated Policies Scenario (STEPS) which is consistent with 2.5°C global warming.²⁶ A company with a higher percentage of new projects that are incompatible with APS and – to a greater extent – SDS is relatively more exposed to transition risk, with a higher chance of assets potentially becoming stranded. To quantify the degree of company alignment, we compare the future capex associated with its planned projects that are compatible, or not, with a given scenario.

We analyse upstream oil and gas companies, or specific upstream assets, that were transacted in 45 deals at least partially financed by Carlyle or NGP between 2010 and 2021, per the private markets database Pitchbook. These transactions were verified by reviewing publicly available resources such as press releases, news stories, and various regulatory filings. The deals include any Carlyle or NGP upstream asset acquisitions, joint ventures, leveraged-buyouts (LBOs) and development capital injections. Neither Pitchbook nor the PE firms provide complete data on the firms' ownership interest in portfolio companies, so we analyse each company on a full ownership basis. We estimate the value of the transition risk that has been embedded in the firms' portfolios over the past decade. We also note that we analyse only the upstream assets held by the portfolio companies as of March 2021. These assets may not be exactly those which were held by the portfolio companies at the time of their being part of the Carlyle or NGP portfolio, but because Carlyle and NGP do not disclose this information, our analysis provides an estimate based on information that is publicly available.

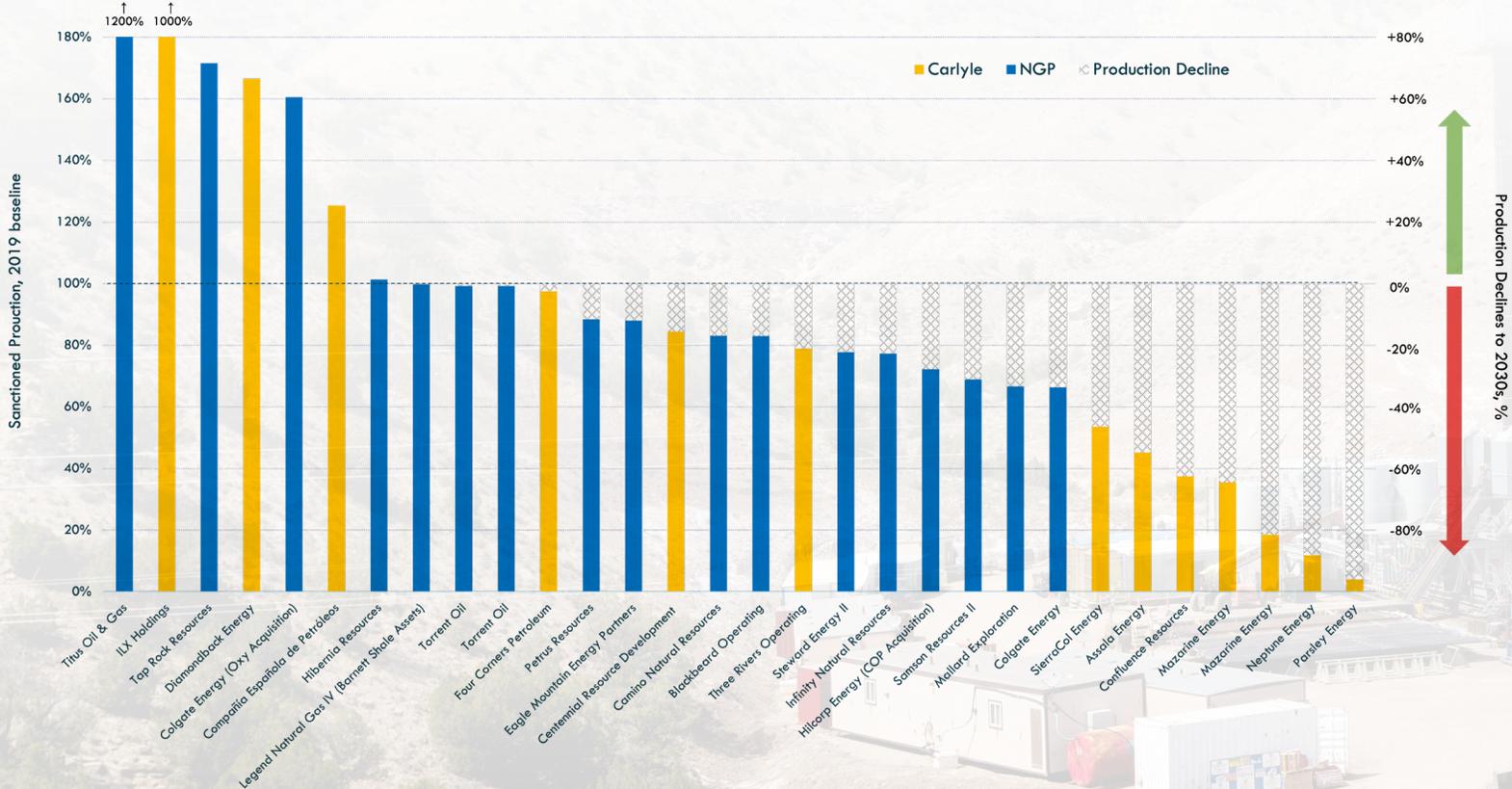
ANALYSIS & RESULTS

Despite the IEA's call for no new projects, portfolio companies are planning on expansion

Regardless of the IEA's announcement that no new projects are needed in a 1.5°C warming scenario, we find that private equity-backed upstream companies' capex allocation is overwhelmingly tilted towards new projects: over \$132 billion of capex is earmarked for future unsanctioned projects.²⁷ For almost all companies transacted, adhering to the no new projects pronouncement will mean a rapid decline in production volumes, as existing

projects wind down and are not replaced. Figure 1 shows the production volumes from projects sanctioned by 30 Carlyle- and NGP-backed companies as of 2019. Should no new projects be developed, (i.e. if the companies adhere to the IEA's call), the grey coloured bars show the decline in average aggregate production volumes each company would experience by the 2030s (as a % of 2019 volumes). Those companies that experience production growth (Titus Oil & Gas, ILX Holdings, Tap Rock, Diamondback, Colgate (Occidental acquisition) and Compañía Española de Petróleos

FIGURE 1
IMPLICATION OF IEA NZE (NO NEW PROJECT SANCTIONS): PRODUCTION DECLINES TO 2030S BY COMPANY



Source: IEA, Rystad Energy, Pitchbook, Carbon Tracker Analysis

Notes: 2019 Base case volumes from Rystad Energy. 2030s = 2030 – 2049 average. There were six deals for which Rystad records no production in 2019, and so were omitted from the chart. ILX Holdings, Titus, and Tap Rock, Diamondback, Colgate (Occidental acquisition) and Compañía Española de Petróleos orp have already sanctioned projects of such scale that their aggregate production volumes will rise by the 2030s, even if they do not develop any new fields.

(CEPSA) do so because they have already sanctioned projects of sufficient scale that their aggregate production volumes will continue to increase, even if they pursue no new projects.

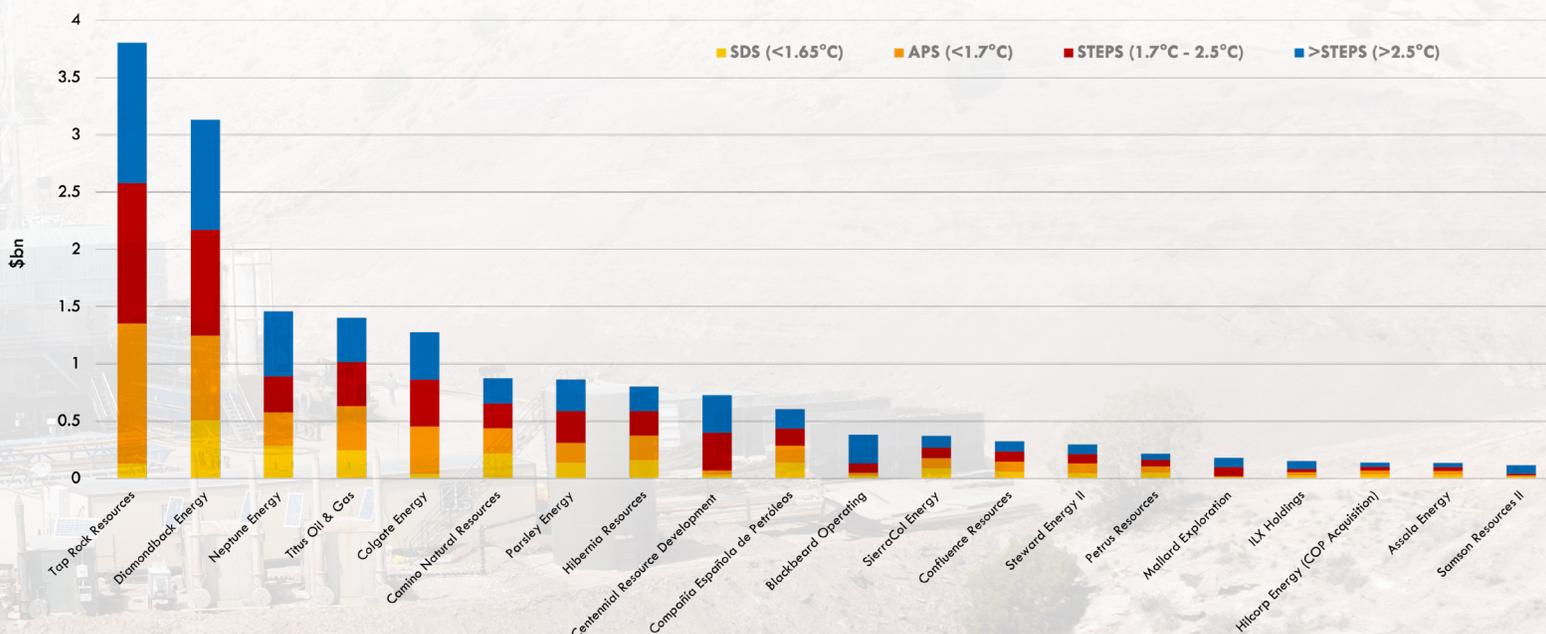
For the other companies, not sanctioning any more projects means that their production will decline over the next decade or so. For example, Neptune’s output from already-producing assets is estimated to fall by about 90%. This figure, however, is simply illustrative of what 1.5°C alignment would mean for these companies. And their capex plans betray their intentions to ignore the IEA’s announcement and continue to expand fossil output.

Across Carlyle/NGP’s upstream companies, there is a large portion of potential future capex which falls outside the limits of a low demand world – Figure 2 shows how much of each company’s future capex (for both sanctioned and unsanctioned projects) falls within different scenarios. The portions of capex in red (inside STEPS, or within the 2.5°C warming scenarios) and navy (outside STEPS, or greater than

2.5°C warming scenario) require a higher breakeven price for investors to recoup their investment. The danger in the recent high oil price environment is that companies will have been tempted to sanction more projects in the hopes of sustained elevated oil prices, only to find that their returns falter once prices fall in the medium term. For example, in Tap Rock Resource’s case, the majority of its capex is earmarked for projects which may only be economically viable in a high carbon demand scenario (STEPS/2.5°C). Only about one third falls within the limits of the low demand scenarios (SDS/1.65°C and APS/1.7°C).

Of the 46 upstream deals we analysed, we found that 13 portfolio companies have unsanctioned projects that are not needed in a low-demand world: Figure 3 shows the alignment of a company’s potential projects to low-carbon (SDS/1.65°C; APS/1.7°C) and business-as-usual (STEPS/2.7°C) scenarios. We estimate the percent of capex that companies have earmarked for as-yet-unsanctioned projects which may be commercially viable under

FIGURE 2
SANCTIONED AND UNSANCTIONED CAPEX WITHIN EACH SCENARIO, PER COMPANY (\$M)



Sources: IEA, Rystad Energy, Pitchbook, Carbon Tracker Analysis

Notes: Includes top 20 companies analysed, by total combined unsanctioned and sanctioned capex

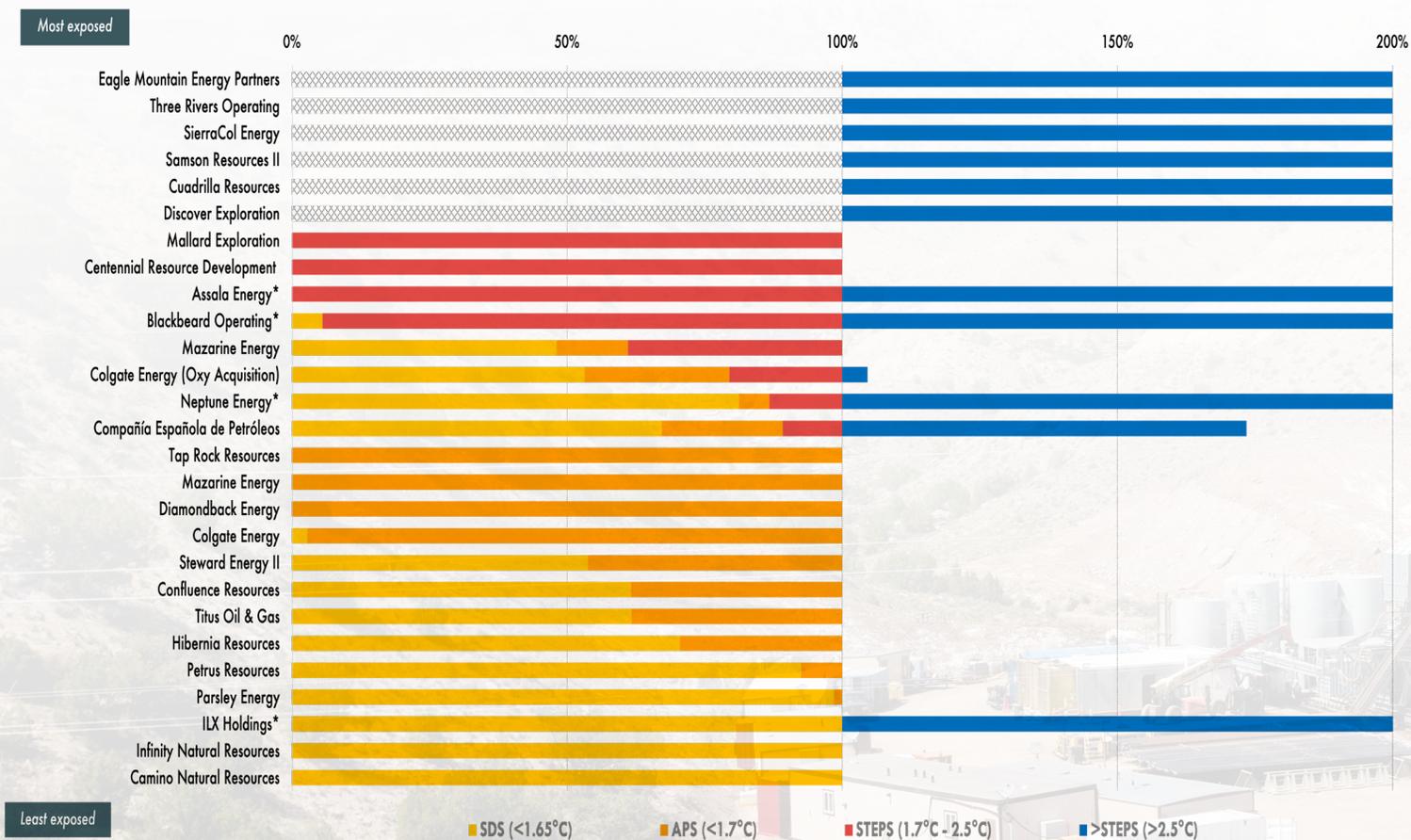
different scenarios: between them, Carlyle and NGP backed companies have \$127 billion worth of planned capex which may not be viable in the lowest-carbon world.

While several companies appear aligned with APS/1.7°C we note that projects in this band are particularly sensitive to oil price volatility and slight changes in demand. As such, investors should be weary of such projects being sanctioned, as any acceleration of the energy transition could see them quickly become uneconomic. Furthermore, \$48 billion worth of company capex may be economically viable only in a world with high fossil demand. We would question the transition planning

of Carlyle and NGP to think that these are prudent investments in the face of falling fossil demand, as these assets are at the greatest risk of becoming stranded. In devoting so much investment to high-demand scenarios, it appears that the companies – and their funders – are banking on climate failure.

Indeed, 9 of 27 (33%) transactions listed in Figure 3 dealt with no assets that would remain economic in our lowest demand scenario. Several companies have a large amount of project options that fall outside even STEPS (those with the large navy bars), the six most exposed companies having only projects that fall outside STEPS. Taking a company specific example, we estimated that just 6% of the capex which Blackbeard

FIGURE 3
2022-2030 UNSANCTIONED CAPEX BY SCENARIO (% OF STEPS UNSANCTIONED CAPEX) – SELECTED PORTFOLIO COMPANIES



Sources: IEA, Rystad Energy, Pitchbook, CTI analysis.

Notes: The yellow and orange bars represent the percent of capex earmarked for new projects which could be commercially viable in our low carbon scenarios (as a percent of capex the company would spend in a low-carbon case). The red bars are the percent of capex which may be economically viable in a STEPS/2.5°C world. The navy bars are the projects which have such a high breakeven price that they are unlikely to be commercially viable even if the world is to go beyond 2.7°C (as a percent of business-as-usual capex). Companies denoted with a * indicate that the value of the navy bars is >100%

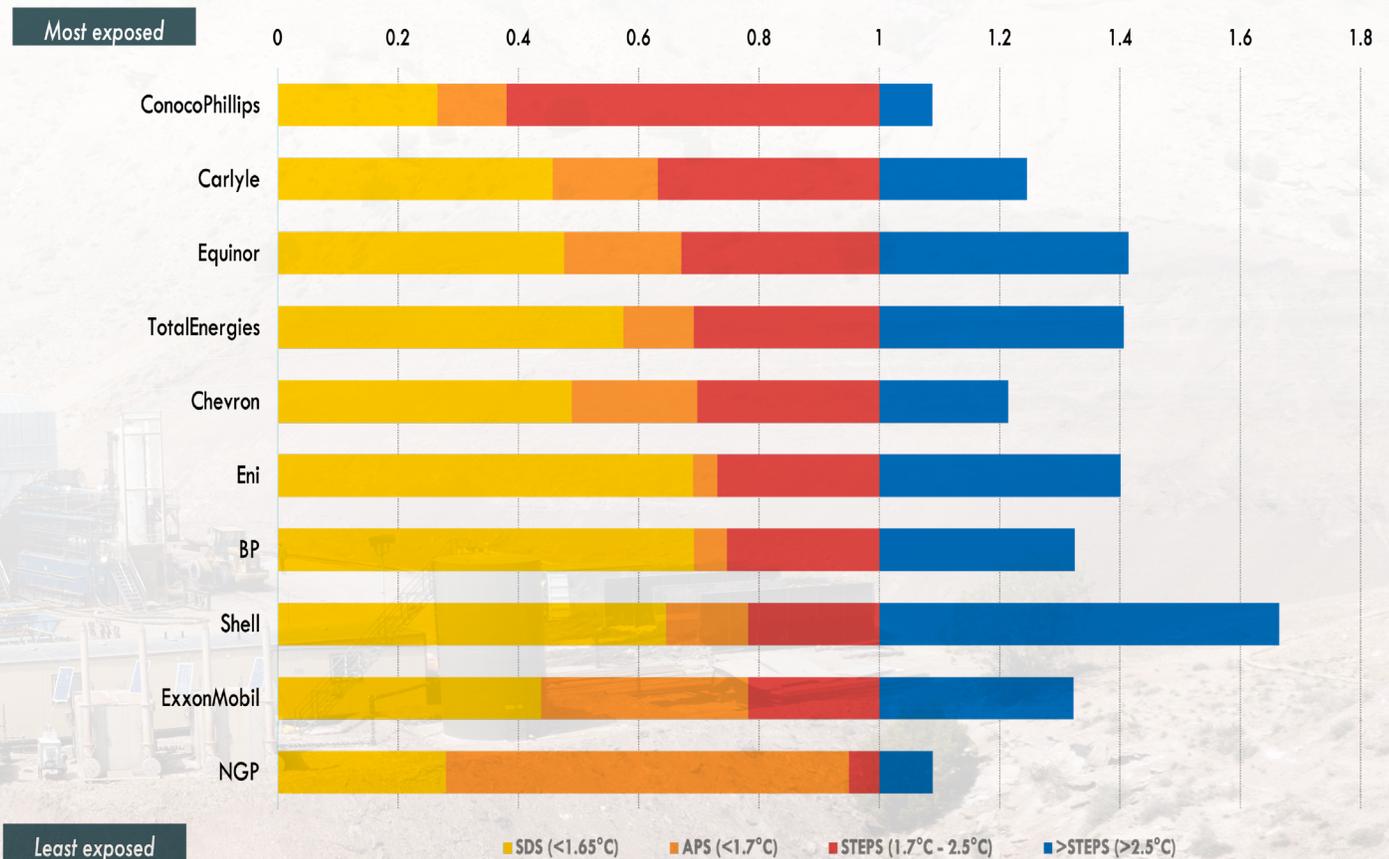
Operating would spend in a STEPS scenario would be viable in our lowest demand (SDS/<1.65°C) scenario. Conversely, 267% of its capex spend (vs BAU) is for projects beyond even a STEPS world. For investors in private equity firms who are funding these projects, it is imperative to ensure that companies demonstrate how any sanctioned assets are compatible with a low-demand world and not just short-term price dynamics.

Carlyle has dealt in riskier companies than NGP

It would appear as though Carlyle has had a higher tolerance for (or a higher propensity to neglect) transition risk in its transactions over the past decade, compared to even some of the world's largest oil producers. The major oil companies like ConocoPhillips, Chevron and Exxon have not embraced the energy transition, and have devoted only a small share of their

capital expenditures toward renewable energy.²⁸ In Figure 4, we show unsanctioned capex aggregated for companies transacted by Carlyle and NGP, as well as that of the oil majors. Carlyle emerges as the second least resilient in the sample, with 30% of its capital allocated to new projects that are economically viable in a high-carbon world. Strikingly, this ranks it even worse than almost all of the majors. Carlyle's portfolio has also included significant project options that fall beyond the limits of a 2.5°C scenario, which carry substantial stranded asset risk. While NGP features higher in the ranking, we stress that the large proportion of projects that fall within APS/1.7°C are vulnerable to even small oil demand fluctuations. Furthermore, NGP are the worst performers when measured against our lowest demand scenario, SDS.

FIGURE 4
2021-2030 UNSANCTIONED CAPEX BY SCENARIO (% OF STEPS UNSANCTIONED CAPEX) – CARLYLE & NGP VS MAJORS



Sources: Rystad Energy, Pitchbook, CTI analysis.

Future capex plans are also indicative of climate alignment

Examining capex at risk can be illustrative for investors for measuring potential stranded assets, but it can also be used as a benchmark for gauging whether investments are aligned with the objectives of the Paris agreement. 1.5°C global warming is fast becoming a benchmark for climate alignment and, as we have discussed, there is no room for new fossil projects if the world is to limit warming to that level. As such, having any future capex devoted to new oil and gas assets means that a company (and therefore its investors) cannot be considered 1.5°C aligned.

Another way to measure Paris-alignment is to look at a company's climate targets, which we appraise with our 'Hallmarks of Paris Compliance'.²⁹ NGP has yet to publish any such goals, but Carlyle recently announced its intention to be net zero by 2050 "across investments". The announcement stated that 75% of Carlyle's majority-owned portfolio companies³⁰ scopes 1 and 2 emissions will be "covered by Paris-aligned climate goals" by 2025 and after 2025, all new majority-owned portfolio companies will set Paris aligned climate goals within 2 years of ownership.

Carlyle's climate targets are far from Paris-aligned

Despite the relatively limited information Carlyle has disclosed about its targets, we know that they fail to meet at least two of our Hallmarks of Paris Compliance. Firstly, the targets omit scope 3 emissions, which is particularly problematic for oil and gas companies as 85% of emissions associated with their production are the result of the end use of their products, and so fall under the category of scope 3.³¹ Secondly, emissions targets do not cover the full suite of revenue-generating assets, as they exclude those held on an equity-stake basis – Carlyle will only address emissions in companies it majority owns. Moreover, Carlyle has not committed to public disclosures of its emissions. And, as we have just discussed, a Paris aligned oil and gas company means one which pledges to engage in limited or no new project sanctions. In an interview with the *Financial Times* in May 2022, Carlyle's then chief executive Kewsong Lee highlighted investment in

liquefied natural gas export facilities and pipelines as particular areas of opportunity for the firm. "Lots of shifts are happening around the world and it's going to unleash a lot of investment opportunities globally for decades to come," Lee told the *Financial Times*.³²

Beyond concerns about CO₂ emissions, we would also draw attention to methane. Private equity firms are arguably subject to less acute public and regulatory scrutiny than listed oil and gas companies. As such, there is a risk that fossil assets under their control are run at lower operational standards than they would be otherwise. This is particularly pertinent for methane emissions: methane has global warming potential of up to 80x that of CO₂ over a 20-year period,³³ and leakages are common at wells that are poorly managed or maintained; the potential climate impact of poor methane management practices are huge. Furthermore, the Biden administration introduced a methane emissions tax as part of the Inflation Reduction Act, to come into force in 2024.³⁴ For portfolio companies with poor methane management practices, this tax could incur significant financial charges, though it may encourage better operational standards.

Ignoring climate considerations means companies – and private equity firms – are putting their social licence to operate at risk

Over the past few years there has been mounting societal pressure on fossil fuel companies and their investors due to their role in the climate crisis. Activists have been scrutinising company practices for years, and investors are starting to wake up to these issues too. Investors in private equity are not a homogenous block: public pension funds represent the interests of millions of public sector workers, who may have concerns about whether their capital is being used to further the climate crisis; endowment funds and high net worth individuals may not wish for their wealth to be used in such a way either. Geopolitical tensions rising from the Russian invasion of Ukraine are fuelling the conversation on the world's energy sources – in the medium term, it is likely to turn the tables even more in favour of renewable energy sources as the public questions the ethics and security concerns around fossil revenues.

INVESTOR IMPLICATIONS



Institutional investors are facing challenging markets with global inflation and declining stocks and bonds, conditions that have eaten away at returns for public pensions.³⁵ Meanwhile, the private equity industry has seen increased allocations as investors seek higher yields.³⁶ At the same time, investors are confronted with the risks to their portfolios from the warming planet and transition risks. Private equity firms with large exposures to energy assets that appear incompatible with the Paris agreement and a 1.5°C pathway face a choice of how to proceed. Carlyle's public messages have been mixed, with a Net Zero 2050 pledge and a ESG data convergence initiative³⁷ signalling steps toward climate accountability. On the other hand, Carlyle has not been transparent about its full emissions

and its capital has been deployed into an investment portfolio with extensive upstream investments are predicated upon production expansion.

Without their investors, firms like Carlyle and NGP would starve of funding. As such, investors have a crucial role to play in driving change in private equity's behaviour: it is imperative for Carlyle and NGP to get serious about their fossil fuel habits and investors should push for stronger transition planning, portfolio carbon intensity disclosures, and more transparency around climate targets.

Disclaimer

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