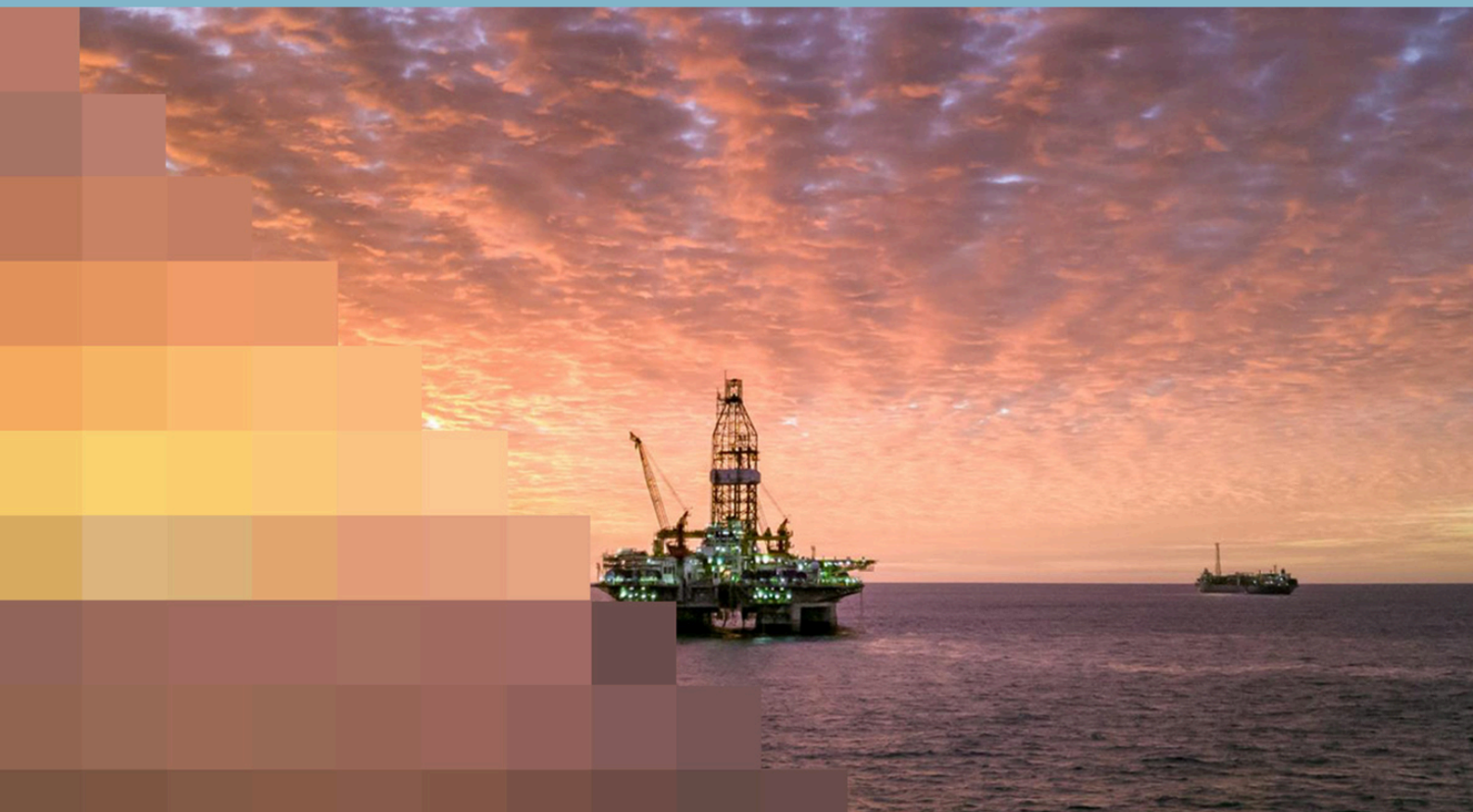


Santos' growth strategy: will it deliver for shareholders?



1. Executive summary

Commencing with the Final Investment Decision for the Barossa project in late March 2021, Santos Ltd (Santos) departed from a low cost operating model (2016-2020) and pivoted to a growth phase, increasing capex by 142% (2021-2023). This period of growth has coincided with chronic share price underperformance relative to oil and gas peers - a source of frustration for shareholders and management alike.

We're looking at every avenue to unlock shareholder value, we're very frustrated at our share price... it's stalled, and we need to unstick it.

Santos CEO, Kevin Gallagher, 2023 Investor Briefing Day.

This report examines if production growth is the optimum strategy for Santos' investors, and if not, whether there is an alternate pathway to "unlock" shareholder value.

To assess this, ACCR undertook an asset-level, risk-adjusted financial analysis of Santos' unsanctioned growth portfolio.¹ We selected for analysis all projects with a publicly stated target Final Investment Decision (FID) date, which includes the Narrabri gas, Papua LNG and Dorado oil projects.² We found these projects appear to generate modest value accretion for shareholders, face a host of challenges, and are sensitive to cost overruns.

Examining an alternative strategy to production growth, we found share buybacks appear to offer higher value than delivering the selected unsanctioned projects, with lower risk and fewer emissions - therefore better aligning with shareholder interests.

To test whether these projects are Paris-aligned, we undertook a global industry, least-cost evaluation of their alignment with the IEA's NZE pathway. We found that none of the three are Paris-aligned, nor are they cost-competitive compared to other unapproved oil and gas projects.

While still operating a low-cost model in 2018, Santos' CEO warned; "Our industry has got a habit of blowing themselves up when they go into growth mode."³ The strong conclusion from our analysis is that Santos' current capex-heavy production growth strategy, in an industry that is in long-term structural decline, is not the optimal strategy to maximise shareholder returns.

¹ Using Rystad raw data and ACCR analysis. Methodology, data and assumptions are in Appendix A.

² In order to avoid comment on potential issues in *ACCR v Santos Ltd* (NSD858/2021), we have limited the scope of the report to those unsanctioned projects where Santos has announced target FID dates by 2025. Project descriptions are in Appendix C.

³ Santos CEO Kevin Gallagher, 2018 Investor Briefing Day.

Santos' growth strategy: will it deliver for shareholders?

March 2024

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2. Key findings

- **Santos' current capex heavy, production growth strategy is not the optimal strategy to maximise shareholder returns.**
 - **The portfolio of oil and gas projects Santos is targeting for Final Investment Decision (FID) within the next two years appears to generate minimal value for shareholders.**
 - **A capital return strategy, i.e. share buybacks, offers higher value than delivering the portfolio of unsanctioned projects, with lower risk and fewer emissions.**
 - The total net present value (NPV) of the unsanctioned portfolio is a modest \$803 million, equivalent to just 5% of Santos' market capitalisation; forecast capex is over \$6 billion. We estimate reallocating capital from these unsanctioned projects to share buybacks would generate an additional \$730 million value. We estimate there's an additional \$1.7 billion upside available from ceasing fossil fuel developments because it would reduce costs and risk for the business.
 - **The three projects up for imminent FID all face a range of risks, and the portfolio as a whole is sensitive to the kind of cost overruns typically seen in Australia's LNG sector.**
 - Assuming a 20% capex overrun - with average exceedance of Australia's LNG sector at 35% - a further \$541 million of NPV would be eroded from the portfolio.
 - **Based on a global industry, least-cost evaluation of alignment with the IEA's NZE pathway, none of the projects are Paris-aligned or low-cost.**
 - **Analysis of 30 years of Santos' shareholder returns shows production growth does not seem to have a positive correlation with shareholder returns.**
 - **Shareholder returns have been significantly stronger when Santos is operating under a low-cost operating model.**
 - In the low-cost operating phase (2016-2021), shareholder returns outperformed the MSCI World Energy Sector Index by 162%.
 - In the current growth phase (2021-2023), capex more than doubled and returns lagged the MSCI World Energy Sector Index by 69%.
 - **In 2023 Santos' dividend and share buyback yield was 7.4%, well below the 11% average of a group of nine Australian and global peers.**
 - **Santos uses a higher medium term oil price assumption than any of the nine companies in this peer group - risking making unsanctioned projects appear more attractive.**
-

3. Santos' unsanctioned project portfolio

Total Net Present Value (NPV)

Santos' unsanctioned (FID targeted) project portfolio appears to generate modest incremental value.⁴

The aggregate NPV of Santos' unsanctioned projects is \$0.8bn, equivalent to just 5% of market capitalisation⁵, despite an estimated capex cost of over \$6bn.

These projects are forecast to emit 136 MtCO₂e of greenhouse gases, equivalent to 38% of the operating portfolio.

Table 1: Unsanctioned projects with FID date announced

Unsanctioned Project	Location	Capex (\$m)	Discount Rate ⁶	Project NPV (\$m)	Lifetime Emissions (MtCO ₂ e)
Narrabri	Australia	\$1,348	12.4%	\$215	33
Papua LNG	PNG	\$2,073	15.2%	-\$74	40
Dorado	Australia	\$2,711	10%	\$662	62
Total		\$6,132		\$803	136

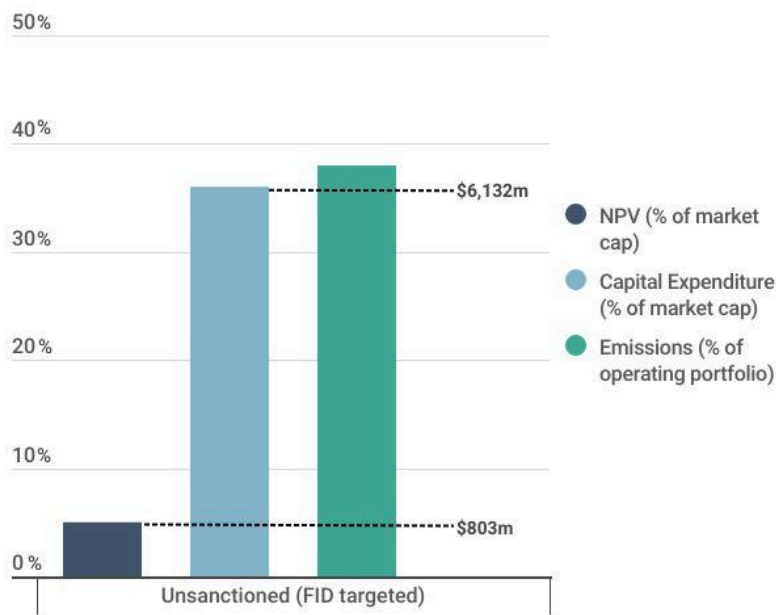
Source: Rystad data, ACCR analysis

⁴ For methodology, see Appendix A.

⁵ Santos' market capitalisation is \$16,871 million as of 31 December 2023.

⁶ ACCR estimates. Calculations of the discount rate for each project is included in Appendix B.

Chart 1: NPV and capex of Santos' unsanctioned projects with FID date announced



Source: Rystad data, ACCR analysis

Papua LNG project

Papua LNG is targeting first production in 2028, which is when the International Energy Agency (IEA), amongst others⁷, is forecasting the LNG market enters a sustained period of oversupply. According to the IEA:

- there is already more LNG capacity operating or under construction than will be needed until 2040 under every IEA scenario, as shown in Chart 2
- around two-thirds of under construction projects are at risk of not recovering their capital investment under the Announced Pledges Scenario (APS).⁸

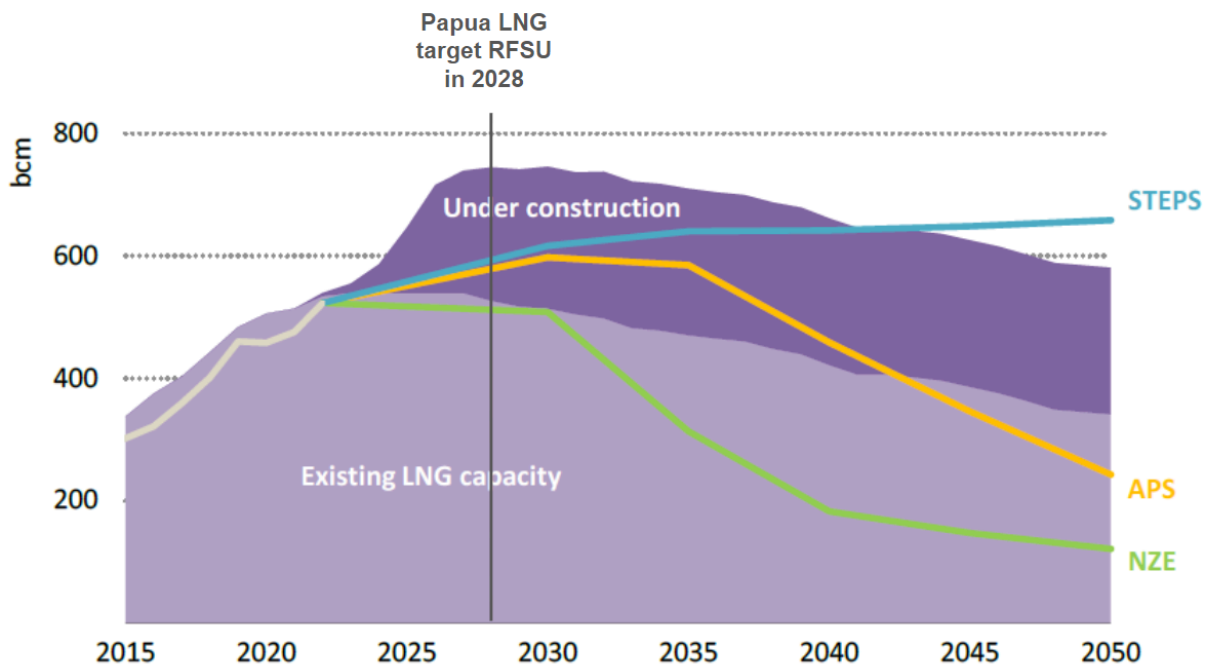
This LNG supply glut will see export utilisation rates drop to 59% under the Net Zero Emissions (NZE) scenario and 70% under an APS scenario - both lower than the 78% utilisation rate in 2020 that saw LNG spot prices drop below \$2/MMbtu.⁹ This means the project is particularly exposed to the risk of an oversupplied market, which could significantly impact future LNG prices and therefore the returns of the project.

⁷ IEEFA, [Papua LNG Project – Financiers taking the risk](#), May 2023.

⁸ IEA, [World Energy Outlook 2023](#), p140.

⁹ S&P, [S&P Global Commodity Insights](#), 2020.

Chart 2: Existing and under-construction LNG liquefaction capacity and LNG trade by scenario, and Papua LNG target ready for start up (RFSU) date



Source: IEA, [The Oil and Gas Industry in Net Zero Transitions](#), p45. ACCR analysis

The project also faces a range of risks beyond market pricing:

Physical climate risks:

- The project is located in Papua New Guinea’s (PNG) Gulf Province, where climate change has already heavily impacted coastal areas.¹⁰

Financing:

- Debt finance. Some global banks (e.g. BNP Paribas¹¹, Crédit Agricole¹²) are increasingly reluctant to fund the project, which may increase the cost of funding.¹³ 50 global civil-society organisations are campaigning to prevent finance to this project.¹⁴
- Partner finance. Kumul Petroleum Holdings Limited (Kumul), PNG’s national petroleum and energy company, was unable to pay the full \$0.5bn to increase its interest in nearby project PNG LNG,¹⁵ so may struggle to fund the \$2.5bn capex required to construct Papua LNG.

¹⁰ Piku Biodiversity Network, [Climate Change Impacts in the Kikori River Delta](#), Nov 2020.

¹¹ BNP Paribas, [BNP Paribas details and strengthens its energy transition ambitions](#), May 2023.

¹² France 24, [Financement des énergies fossiles : et si le vent tournait en faveur de la transition écologique ?](#), Feb 2024.

¹³ We have not included this risk in the project’s WACC for this analysis.

¹⁴ Reuters, [Environmental groups ask lenders to avoid LNG project in Papua New Guinea](#), Dec 2023.

¹⁵ Santos, [Partial Completion of Sale of 2.6% of PNG LNG to Kumul](#), Feb 2024.

FID prioritisation:

- Papua LNG has the highest break-even price of the five LNG projects that the operator TotalEnergies discussed in its latest Investor Briefing, suggesting it may not be a project the joint venture prioritises in the coming years.¹⁶

Other risks:

- Ecological risks. The area has rich biodiversity¹⁷ which could be impacted by industrial development, including 48 new-to-science and 15 undescribed species.¹⁸
- Human rights risks. TotalEnergies references Free and Prior Informed Consent (FPIC) in various documents,¹⁹ but no public information materials have come to light to show if communities have been explained their FPIC rights.
- Land tenure. A long-running dispute over land tenure and royalties resulted in armed conflict at the related PNG LNG project.^{20 21} Land tenure issues have also arisen for Papua LNG, with PNG's former Energy Minister warning in January 2024 of a heightened risk of conflict "both in and out of court".²²

Narrabri gas project

Since it told investors in 2014 the project could reach "first gas by 2018",²³ Santos has so far delayed FID by at least six years. Licensing and secondary environmental approvals are still required before the Narrabri gas project and the Hunter Gas Pipeline, upon which it depends, can reach FID.

Further signals the project faces significant challenges include:

- landholder protests along pipeline routes, resulting in energy infrastructure business APA Group (APA) withdrawing its proposal for a gas pipeline in December 2022, with Santos taking full transport risk by buying the Hunter Gas Pipeline company²⁴
- in March 2024, Gomerioi Traditional Owners won a Native Title appeal in the Federal Court against the project, with the project now to be sent back to the Native Title Tribunal to consider public interest in relation to climate change, which will likely cause further delays²⁵

¹⁶ TotalEnergies, [Strategy and Outlook](#), Sep 2023, p27.

¹⁷ Convention on Biological Diversity, [Papua New Guinea Biodiversity Facts](#).

¹⁸ Total E&P PNG Limited, [Papua LNG Project Upstream EIS](#), p7–91.

¹⁹ Total E&P PNG Limited, [Papua LNG Project Upstream EIS](#), p6–1.

²⁰ Mongabay, [Tensions mount at PNG gas project](#), July 2018.

²¹ ANU, [Methods in the madness: the 'landowner problem' in the PNG LNG project](#), Feb 2019.

²² The Australian, [PNG LNG project at risk: energy minister](#), Jan 2024.

²³ [Santos 2014 Investor Seminar](#), Nov 2014.

²⁴ AFR, [APA Group scraps NSW gas pipeline plan for Narrabri](#), Dec 2022.

²⁵ The Australian, [Blow for Santos' Narrabri gas project](#), Mar 2024.

- in January 2022, Energy Australia handed back its 20% share of Narrabri to Santos for a nominal sum.²⁶

Dorado oil project

Dorado was targeted for FID in 2022, but at the 2022 Full Year Results Presentation, Santos announced it was:

- making FID for Pikka
- undertaking “further Bedout appraisal and optimisation” for Dorado.²⁷

Project partner Carnarvon criticised the delay of FID,²⁸ and Santos does not appear to have made material progress since then.

Sensitivity analysis

Santos’ unsanctioned project portfolio appears to be sensitive to cost overruns.

Australia’s LNG sector has historically exceeded the capex guidance provided at FID by an average of 35%.²⁹ For Santos’ unsanctioned projects we assumed for downside risk sensitivity a 20% capex cost overrun, which reflects long term industry trends.³⁰ We found this would erode \$541 million of NPV from the portfolio.

Charts 3, 4 and 5 below model each unsanctioned project’s sensitivity to a 20% capex overrun and a 20% increase/decrease in the oil price. We found all of the project valuations are materially sensitive to a cost overrun.

Because of the specific regulatory challenges that Narrabri faces, we have included a project specific risk of 3% in its discount rate. For comparison, this is the same project specific risk that KPMG assumed applied to Woodside’s Browse project.³¹ For transparency, we tested a sensitivity of 0% and 6% project risk.

²⁶ AFR, [Runway cleared for Santos to Narrabri gas](#), Jan 2022.

²⁷ Santos, [2022 Full Year Results Presentation](#), Feb 2023, p29.

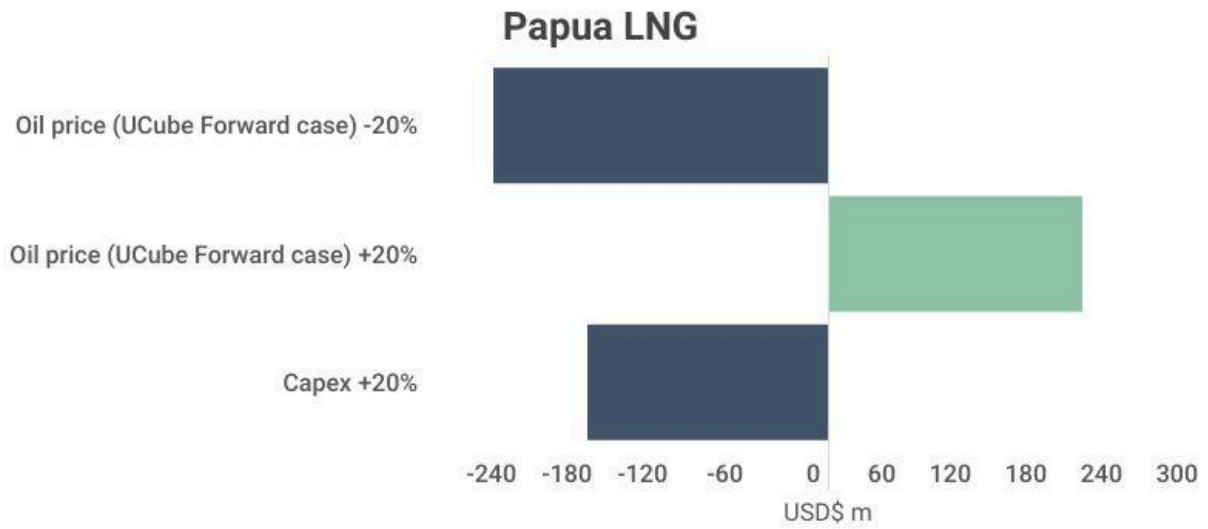
²⁸ Carnarvon, [Annual Report 2023](#), p2.

²⁹ ACCR, [Australia’s LNG growth wave: did it wash for shareholders](#), Nov 2023. Previous research by Merrow found that oil and gas projects were 25% over budget.

³⁰ Merrow, [Oil and Gas Industry Megaprojects: Our Recent Track Record](#), April 2012.

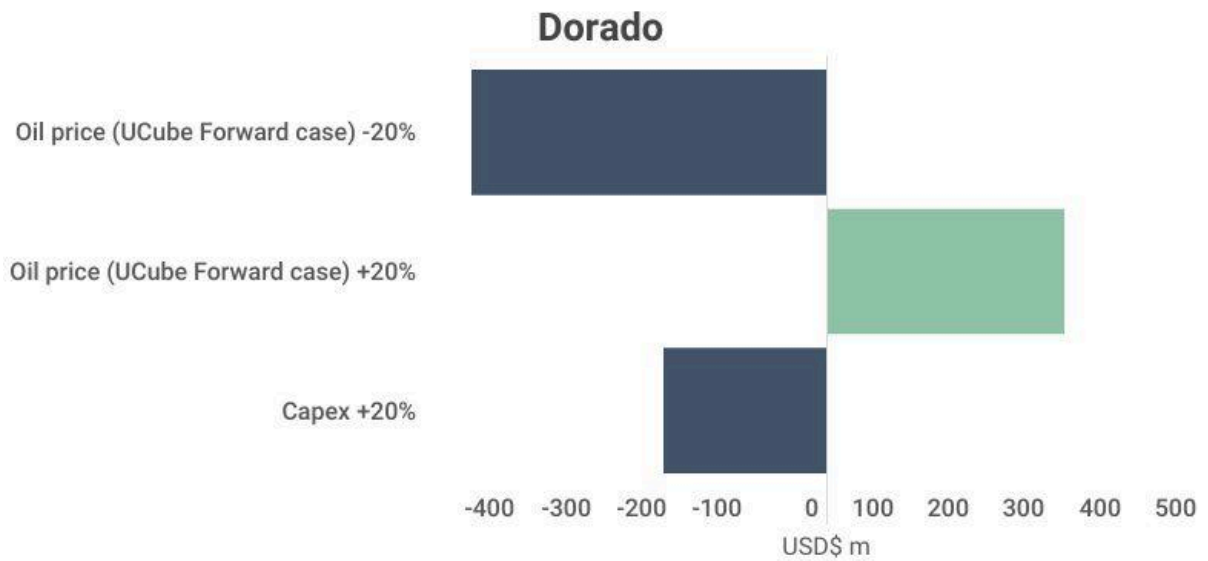
³¹ KPMG, [Independent Expert Report and Financial Services Guide](#), p247.

Chart 3: Papua LNG project NPV sensitivity analysis



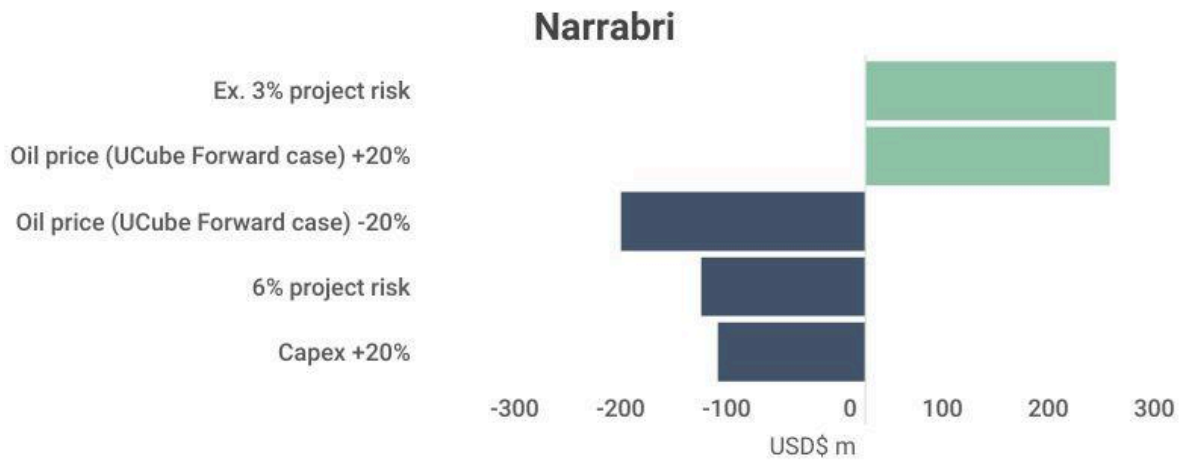
Source: Rystad data, ACCR analysis

Chart 4: Dorado project NPV sensitivity analysis



Source: Rystad data, ACCR analysis

Chart 5: Narrabri project NPV sensitivity analysis



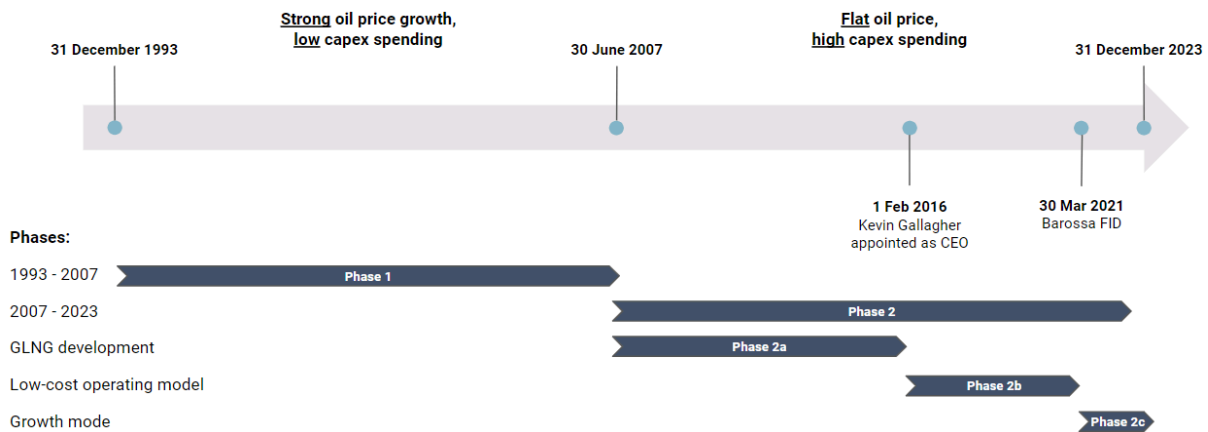
Source: Rystad data, ACCR analysis

4. Shareholder returns

Shareholder returns have varied significantly across Santos’ phases of growth.

ACCR has assessed Santos’ Total Shareholder Return (TSR) performance for the phases defined in Chart 6 below.

Chart 6: Timeline of Santos growth phases



Source: ACCR

Phase 1 v. Phase 2

In phase 1 (1993-2007) Santos performed strongly, with a TSR of 21% p.a. It performed poorly in phase 2 (2007-2023), with a TSR of 0% p.a.

Santos has historically not delivered strong shareholder returns in a flat oil price environment and has underperformed during periods of high capex spend. This suggests production growth does not make a significant positive contribution to Santos shareholder returns.

With the IEA predicting that oil demand and real prices will peak before 2030 in every scenario,³² the current capex-heavy production growth strategy does not appear to be the optimal strategy to maximise future shareholder returns.

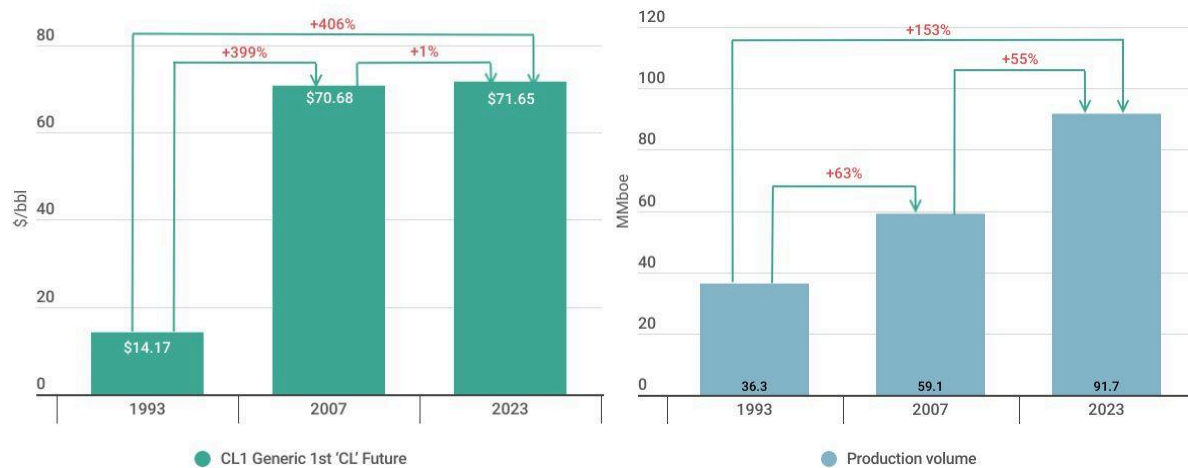
³² IEA, [World Energy Outlook 2023](#), p29.

Table 2: Santos' TSR performance in Phase 1 and Phase 2

	Phase 1 1993-2007	Phase 2 2007-2023
WTI oil price growth (%)	399%	1%
Capex (\$m average per year) ³³	402	1,756
Production growth (%)	63%	55%
TSR (USD, % p.a.)	21%	0%

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

Chart 7: Percentage growth of oil price (LHS) and Santos' production volume (RHS)



Source: Bloomberg Finance L.P.; Used with permission of Bloomberg Finance L.P. (LHS), Santos Annual Reports (RHS)

Phase 2a: Poor project execution impacts TSR

Between June 2007 and February 2016 (phase 2a), Santos's TSR underperformed both the ASX200 and the MSCI World Energy Sector Index.

Despite an initially strong performance, overall TSR suffered due to poor execution of the \$6.3 billion Gladstone LNG project which:

- was 1 year late and \$1.5 billion over budget
- eroded \$1.5 billion of shareholder value.³⁴

³³ Bloomberg Finance L.P.; Used with permission of Bloomberg Finance L.P.

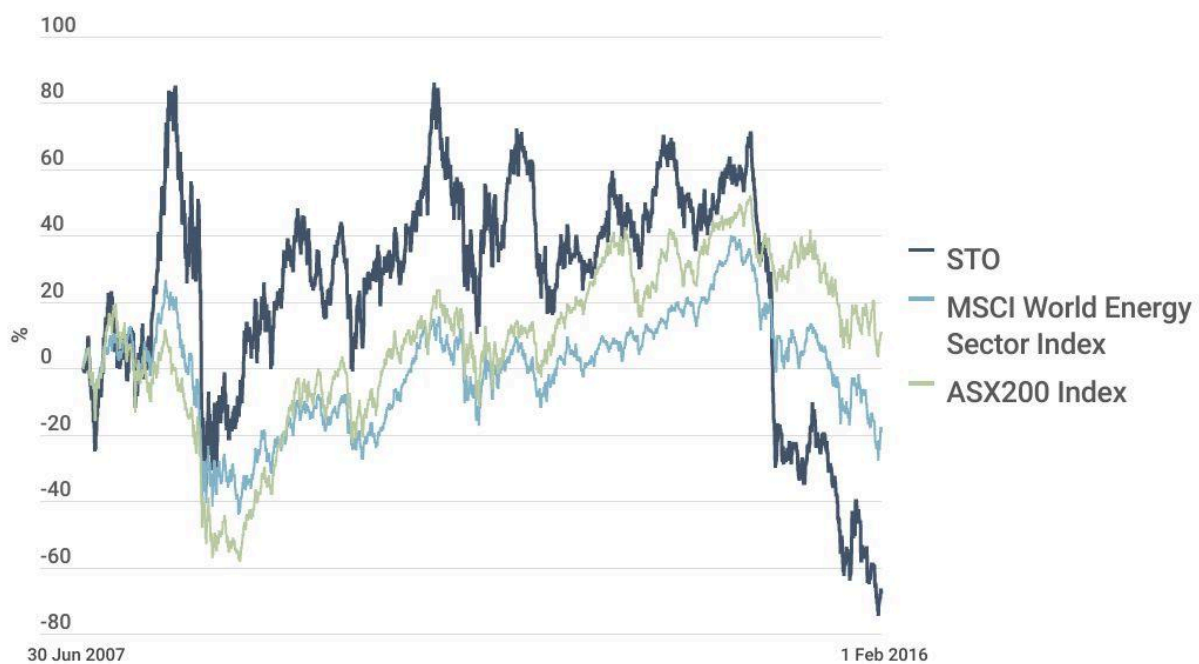
³⁴ ACCR, [Australia's LNG growth wave: did it wash for shareholders](#), Nov 2023, p7.

Table 3: Phase 2a - Santos' performance against energy sector and ASX200 (US\$)

30 Jun 2007 - 1 Feb 2016	Price Change	TSR
Santos	-77%	-68%
MSCI World Energy Sector Index	-38%	-19%
ASX200 Index	-33%	11%

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

Chart 8: Phase 2a Total Shareholder Return (30 June 2007 - 1 February 2016)



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

Phase 2b: Santos moves to a low-cost operating model

On 1 February 2016, Kevin Gallagher was appointed CEO of Santos and transformed Santos into a low-cost operating business. Over this period, Santos' TSR outperformed the ASX200 by 89%.

Our industry has got a habit of blowing themselves up when they go into growth mode. But we've spent so much effort putting in place a disciplined operating model to ensure we do not drop the ball on our operations.

Kevin Gallagher, Santos CEO, 2018³⁵

³⁵ Santos 2018 Investor Day.

Capital expenditure:

- Average annual capex over Phase 2b (2016-2020) was reduced by ~70% relative to Phase 2a (2007-2015).³⁶

Shareholder returns:

- Santos' TSR was 178%, outperforming the ASX200 by 89% and the MSCI World Energy Sector Index by 162%.

This creation of significant shareholder value is attributable to:

- the low-cost operating model
- an increasing oil price.

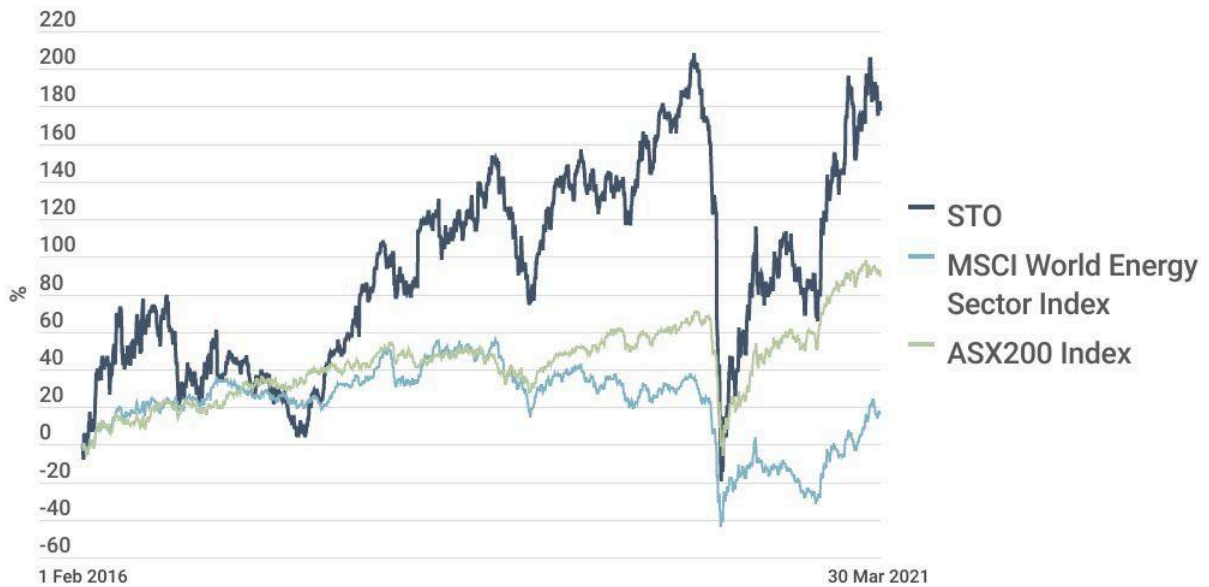
Table 4: Phase 2b - Santos' performance against energy sector and ASX200 (US\$)

1 Feb 2016 - 30 Mar 2021	Price Change	TSR
Santos	151%	178%
MSCI World Energy Sector Index	-8%	16%
ASX200 Index	43%	89%

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

³⁶Phase 2a capex was 2.3bn pa; Phase 2b capex was \$0.7bn pa. Bloomberg Finance L.P.; Used with permission of Bloomberg Finance L.P.

Chart 9: Phase 2b Total Shareholder Return (1 February 2016 - 30 March 2021)



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

Phase 2c: Santos goes into “growth mode”

In March 2021, Santos kicked off a growth wave with the FID on the Barossa project. Over this period of growth (2021-2023), capex more than doubled and Santos lagged the MSCI World Energy Sector index by 69%.

Shareholder returns:

- Santos’ TSR was 7% - lagging the ASX200 by 11% and the MSCI World Energy Sector index by 69%.
- Santos’ TSR was by far the lowest amongst industry peers - 51% lower than the second worst performer in the peer group, Woodside Energy Group.

Capital expenditure:

- Average annual capex in 2021-2023 more than doubled relative to the 2016-2020 period.³⁷

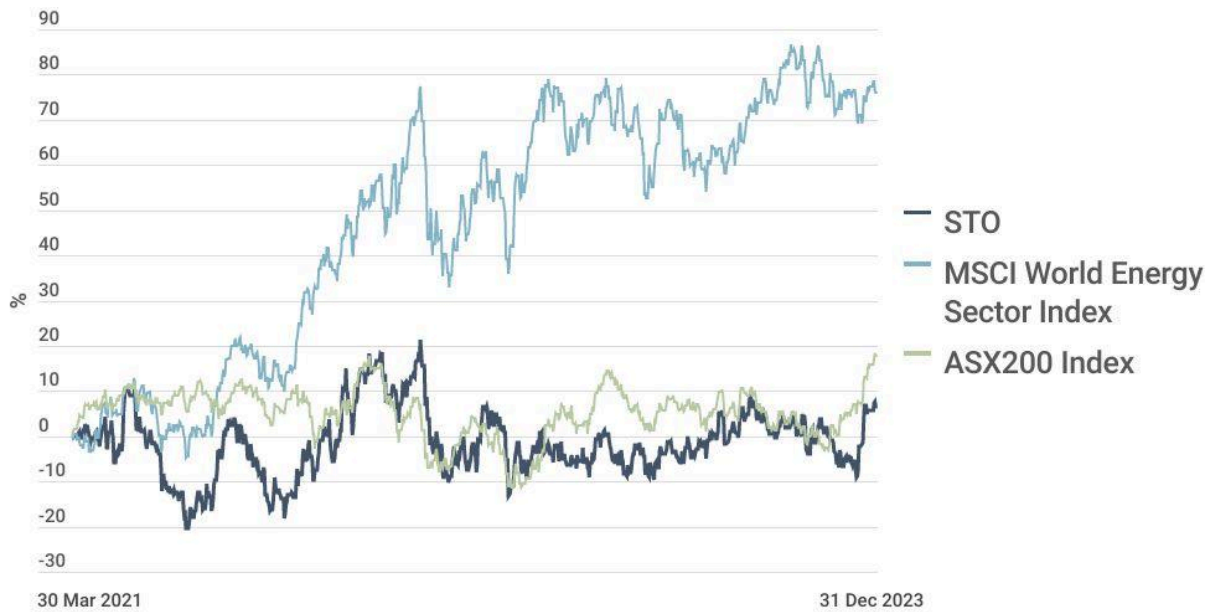
³⁷ \$1.7bn v \$0.7bn. Bloomberg Finance L.P.; Used with permission of Bloomberg Finance L.P.

Table 5: Phase 2c - Santos' performance against energy sector and ASX200 (US\$)

30 Mar 2021 - 31 Dec 2023	Price Change	TSR
Santos	-4%	7%
MSCI World Energy Sector Index	56%	76%
ASX200 Index	1%	18%

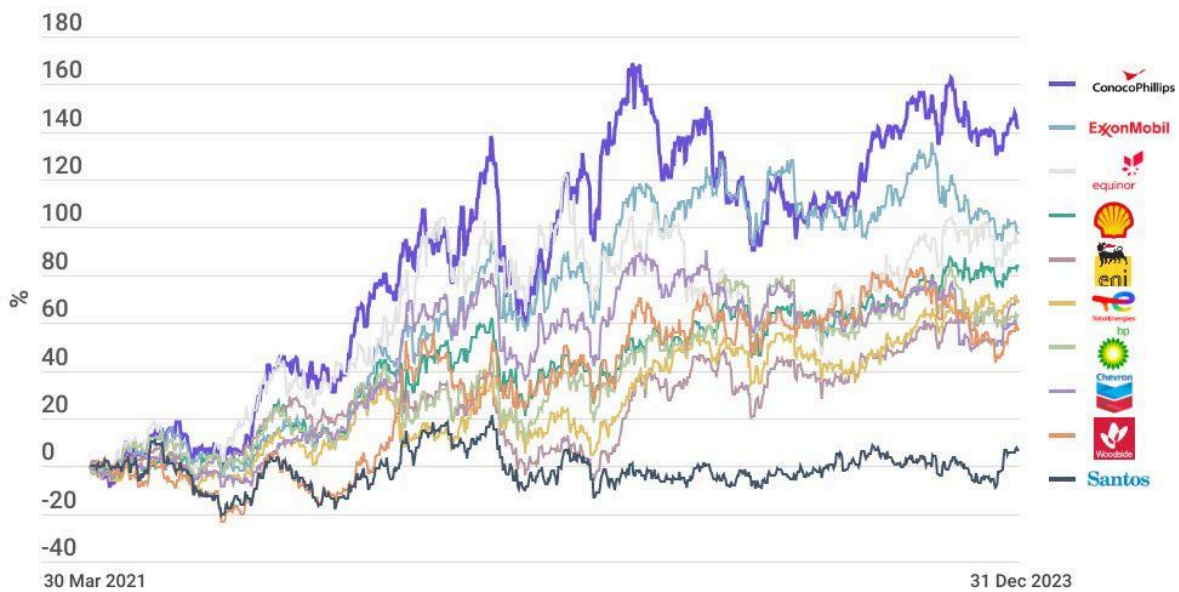
Source: Bloomberg Finance L.P.; Used with permission of Bloomberg Finance L.P.

Chart 10: Phase 2c Total Shareholder Return (30 March 2021 - 31 December 2023)



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

Chart 11: Phase 2c TSR: Santos v peers (30 March 2021 - 31 December 2023)



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

Remuneration under “growth mode”

In April 2021, the Santos board implemented a A\$6 million Growth Projects Incentive for the CEO to:

- remain employed until December 2025
- meet milestones relating to:
 - Major growth projects
 - Barossa
 - Dorado and/or Pikka³⁸
 - backfill resources.
 - various emission reduction projects.³⁹

At the time, analysts raised concerns about the misalignment between the remuneration settings and shareholder returns.

- A proxy advisor from Institutional Shareholder Services (ISS) was reportedly critical of incentives “to deliver on future projects that have yet to deliver earnings and value for shareholders”, meaning Gallagher “could still get his bonus if the board subjectively

³⁸ Pikka was added to the Growth Projects Incentive in 2022.

³⁹ Santos, [2022 Annual Report](#), p56.

determines performance hurdles have been achieved, even if they don't generate shareholder value".⁴⁰

- The Australian Shareholder Association also expressed concerns regarding the absence of "a hurdle set to ensure shareholders had a good outcome".⁴¹
- ISS called for a vote against the remuneration report because "it is based on achieving strategic objectives which are typically regarded as being part of the 'day job' for a CEO".⁴²
- At Santos' 2022 AGM, the company had a "first strike" on remuneration.⁴³

Santos' remuneration structure should be better aligned with shareholder interests. (For ACCR recommendations on this realignment, see Appendix D)

Is continuing "growth mode" going to create value for shareholders?

Our conclusion is that Santos' current capex-heavy, production growth strategy is not the optimal strategy to maximise shareholder returns.

When assessing if the company's continued growth trajectory will create value for shareholders, we also considered Santos':

- 2023 dividend and share buyback yield
- bullish oil price assumption

It's also noteworthy that Santos, unlike many peers, does not disclose a hurdle rate for new investments.

Santos' 2023 yield

Santos' 2023 dividend and share buyback yield was 7.4%. It is below the peer group average of 11%, with the company lagging the market trend to increase capital returns to shareholders.

In recent years, the oil and gas industry is:

- increasing dividends and share buybacks
- reducing cash spending on oil and gas capital expenditure.

Santos' 2023 yield incorporates the increased year end dividend. The higher dividends of \$852 million, however, coincided with an increase in net debt of \$814 million, which indicates the dividend increase has been assisted by increased gearing levels.

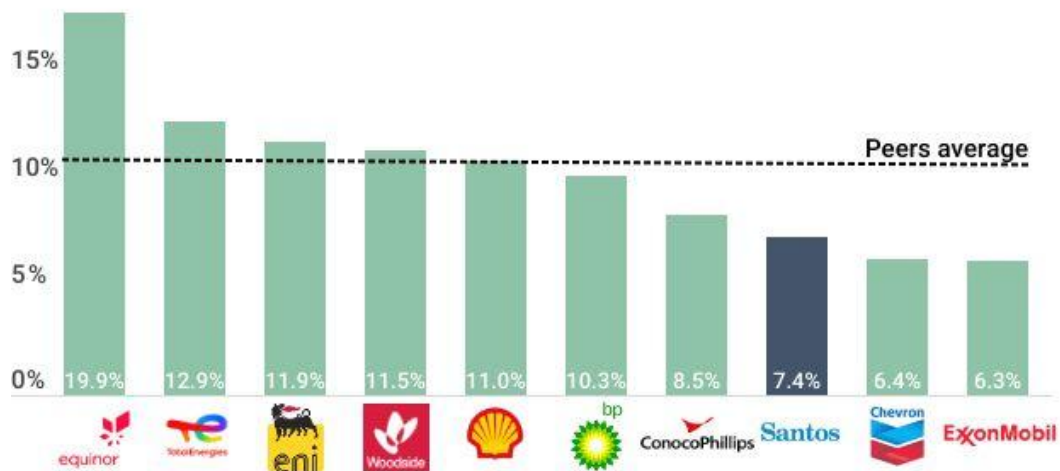
⁴⁰ AFR, [\\$6m golden handcuffs take Santos CEO off Woodside field](#), Apr 2021.

⁴¹ CapitalIQ, Santos 2021 AGM transcript, p20.

⁴² The Australian, [Proxy adviser ISS slams Santos over CEO Kevin Gallagher's pay](#), Apr 2022.

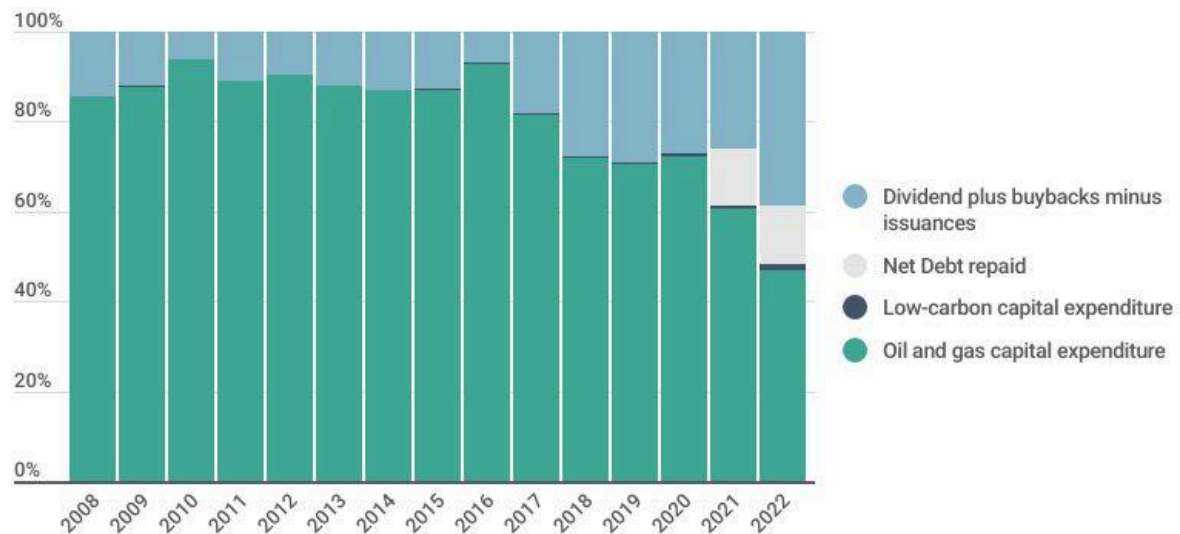
⁴³ Santos, [Results of 2022 AGM](#), May 2022.

Chart 12: 2023 dividend and share buyback yield⁴⁴



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

Chart 13: O&G companies distributions trend



Source: IEA, [World Energy Investment 2023](#), p11.

⁴⁴The dividend and share buyback yield is the sum of 2023 dividend yield (Bloomberg 12 month dividend yield as of 21 February 2024 for peers and Santos' 2023 declared dividend of US\$0.262 divided by the Santos' share price of US\$4.8) and share count yield from 31 December 2022 to 31 December 2023. Santos announced the total declared dividends for FY23 and released the FY23 full year results on 21 February 2024.

Medium-term Brent oil price assumption

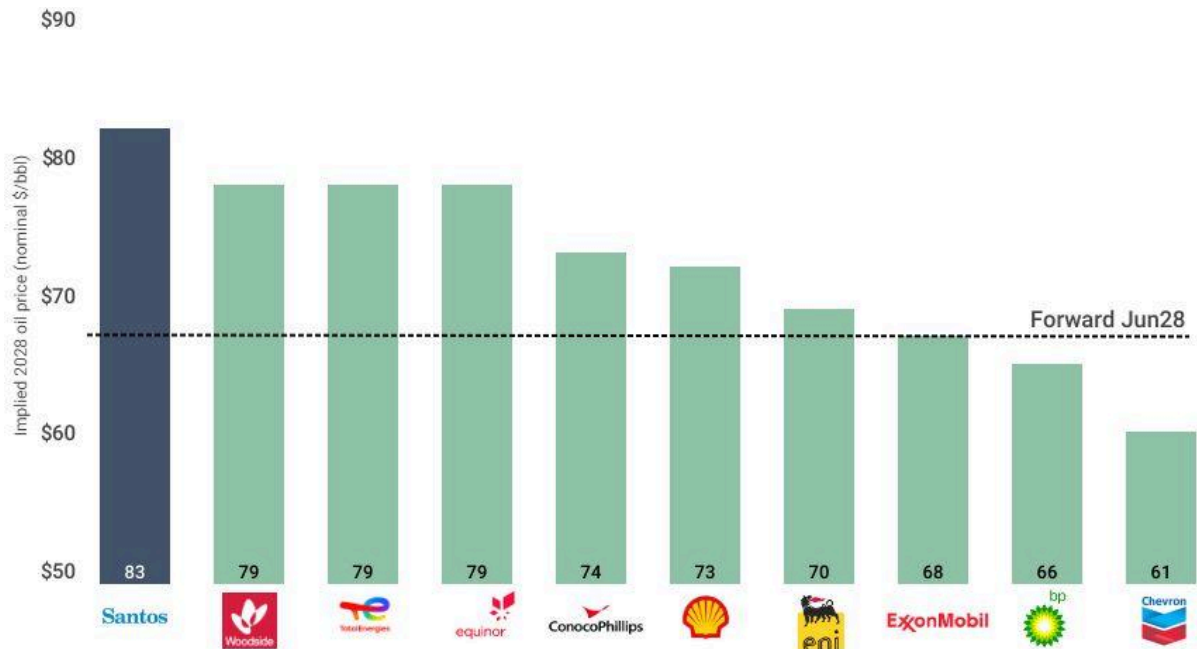
Santos' oil price assumption is higher than the market and peers.

Santos' implied 2028 Brent oil price of \$83/bbl⁴⁵ is:

- the highest amongst a group of peers
- ~22% higher than the June 2028 forward Brent price.⁴⁶

At the 2023 Investor Briefing Day, Santos increased its oil price assumption from \$65⁴⁷ (2022 real) to \$75/bbl⁴⁸ (2023 real). There was no material change in the Brent forward price and we are unclear why this material change was made. It will, however, make Santos' projects appear more attractive, including potentially making some uneconomic projects appear viable.

Chart 14: Medium term 2028 implied oil price assumption⁴⁹



Source: Company disclosures to December 2023 and Bloomberg (Generic 1st 'CO' Future, June 2028 future contracts as of 31 December 2023)

⁴⁵ Santos' disclosed \$75 (RT23) escalated at 2% p.a. inflation.

⁴⁶ Bloomberg, Generic 1st 'CO' Future, June 2028 future contracts as of 31 December 2023.

⁴⁷ Santos, [2022 Investor Briefing Day Presentation](#), Nov 2022, p10.

⁴⁸ Santos, [2023 Investor Briefing Day Presentation](#), Nov 2023, p72.

⁴⁹ Current as of 31 December 2023, with other companies based on ACCR, [Woodside's growth portfolio: what's in it for shareholders?](#), Aug 2023, p23.

5. A capital return strategy

Share buybacks appear to offer higher value than delivering the unsanctioned projects, with lower risk and fewer emissions. We estimate that redirecting capital from the unsanctioned projects to share buybacks would generate \$730 million more value than executing the projects. Switching from a fossil fuel expansion to a capital return strategy could generate an additional \$1.7 billion in upside.

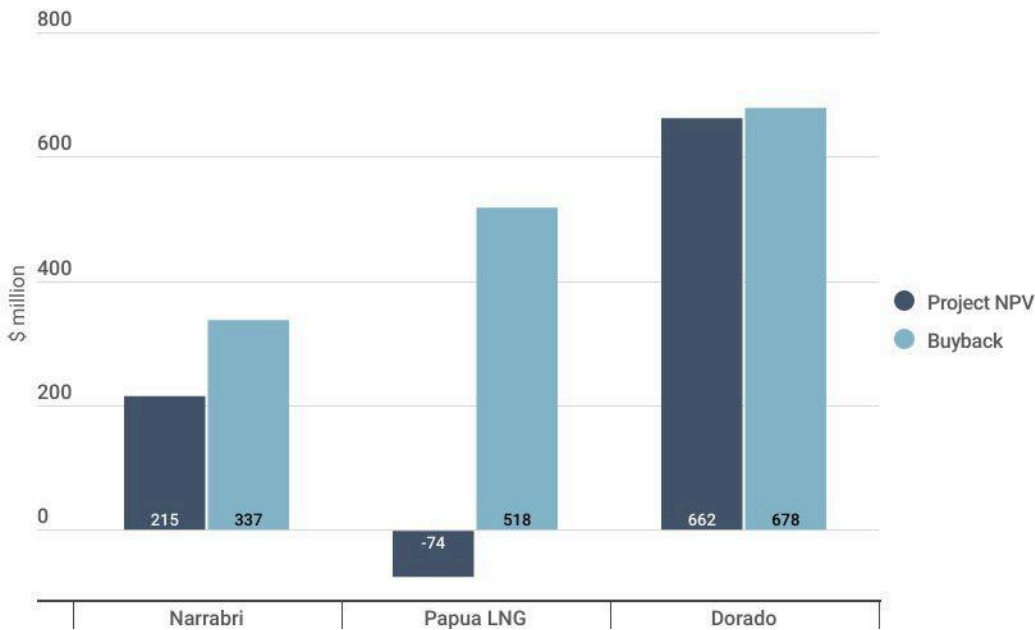
Value of delivering projects relative to share buybacks

We estimate that redirecting capex from the portfolio of unsanctioned projects to share buybacks would generate \$730 million more value than delivering the projects (4% of market capitalisation).

We assume Santos shares trade at a 20% discount to underlying value, which is consistent with the 12 month consensus target price as of 31 December 2023.⁵⁰

At an individual project level, share buybacks offer the most upside for Papua LNG, but all three projects appear to offer less value than a buyback. If these projects suffer from typical levels of cost overrun or delays, buybacks will become even more attractive.

Chart 15: Value of delivering projects relative to share buybacks



Source: Rystad data and ACCR estimates

⁵⁰ Bloomberg. The 12 month consensus target price was 17% above Santos' share price as of 31 December 2023.

Additional value for ceasing fossil fuel expansion

As well as the direct opportunity to return capex to shareholders rather than deliver Santos' current unsanctioned portfolio, we estimate an additional \$1.7 billion of valuation upside from switching from a fossil fuel expansion strategy to a capital return strategy. The additional value comes from:

1. **Avoided exploration costs (\$1bn).** Ceasing new developments avoids exploration costs. We have included nominal annual costs associated with exploration in fields that did not make a discovery (the average from 2000 to 2023) using data from Rystad Energy. This has been capitalised using a P/E (price to earnings) ratio of 10 and a 30% corporate tax rate. Including all exploration would roughly double the estimated benefits of ceasing exploration.
2. **Reduce the weighted average cost of capital (WACC) (\$0.5bn).** Ceasing fossil fuel expansion results in less volatile free cash flow and avoids entire categories of risk, such as greenfields project execution risk. We have modelled this by assuming a gearing increase from Santos' current 20% target, to 25%, which will reduce the WACC for Australian and US projects by 0.3%, or 0.6% for PNG projects. We have applied this lower discount rate to all operating and sanctioned projects using Rystad Energy's Upstream Economic Model.
3. **Lower staff costs (\$0.2bn).** Ceasing these activities allows for a much leaner and simpler organisation, with fewer staff and associated overheads. We have estimated a 5% reduction in staff and contractor headcount, \$200,000 annual salary (including overheads), a one year redundancy payout, a P/E ratio of 10 and a 30% corporate tax rate. A 5% reduction may be conservative since Australian oil and gas companies have previously made greater reductions⁵¹ without reducing workload.

Pivoting from a growth strategy to a capital return strategy therefore:

- allows capital from fossil fuel expansion to be reallocated to share buybacks
- offers an estimated \$1.7 billion of value accretion, from having a simpler, lower cost and lower risk business model
- eliminates:
 - project execution risk
 - costs associated with projects that do not make FID.⁵²
- avoids emissions, including 136 MtCO₂e of GHG emissions from unsanctioned projects.⁵³

⁵¹ SMH, [Jobs go as Woodside chases cost savings while LNG prices boom](#), Mar 2022.

⁵² For example, the \$130 million spent exploring Winchester in 2013.

⁵³ 339 MtCO₂e at 100% project share.

6. Climate alignment of Santos' projects

In aggregate, the three unsanctioned projects analysed in this research are forecast to emit 136 MtCO₂e of greenhouse gases. When we compare these projects against the requirements of the NZE scenario, all are significantly misaligned with the Paris Agreement and not cost competitive compared to other unapproved oil and gas projects.

ACCR's NZE alignment methodology

To test whether fossil fuel 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.

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 21st 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, recent geopolitical events, along with providing comprehensive sectoral and geographic data.⁵⁴
- 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 500GtCO₂ remaining carbon budget, which was current in 2020, as opposed to 210GtCO₂ which is current as of the start of 2024.⁵⁵

For a full description of our methodology see Appendix E.

Dorado's significant misalignment with the Paris Agreement

Our analysis shows that on a global industry, least-cost evaluation the Dorado oil project is:

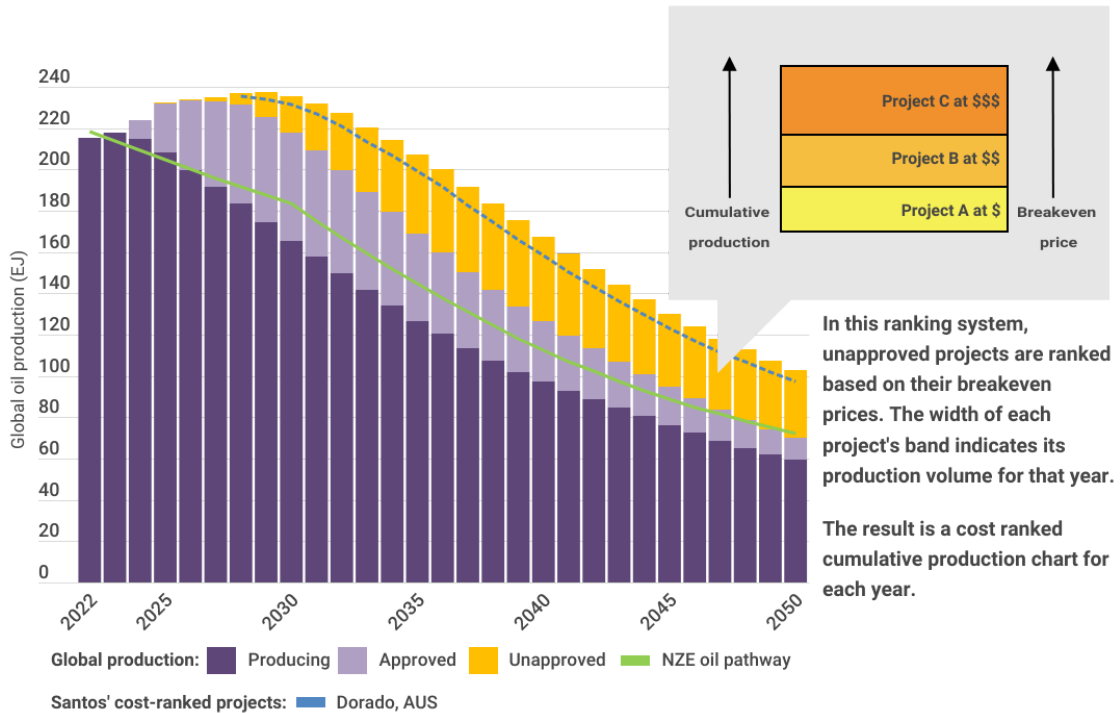
- not consistent with the IEA's NZE pathway
- more expensive than 77% of all other unapproved oil projects
- still producing oil beyond 2050, creating long-term fossil fuel dependence and delaying the energy transition.

⁵⁴ 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

⁵⁵ For limiting global warming to 1.5°C with a 50% likelihood. 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>, and subtracting 40Gt CO₂ for the year 2023 based on Friedlingstein et al., *Global Carbon budget 2023* (2023), <https://doi.org/10.1038/s41558-023-01848-5>

Chart 16 below visualises this misalignment. The position of the blue dotted line relative to the rest of the yellow bar, shows how Dorado compares, on a cost basis, to other unapproved oil projects.

Chart 16: Dorado is not Paris-aligned, and sits on the 77th cost percentile of unapproved global oil projects



Source: Rystad data, IEA, ACCR analysis

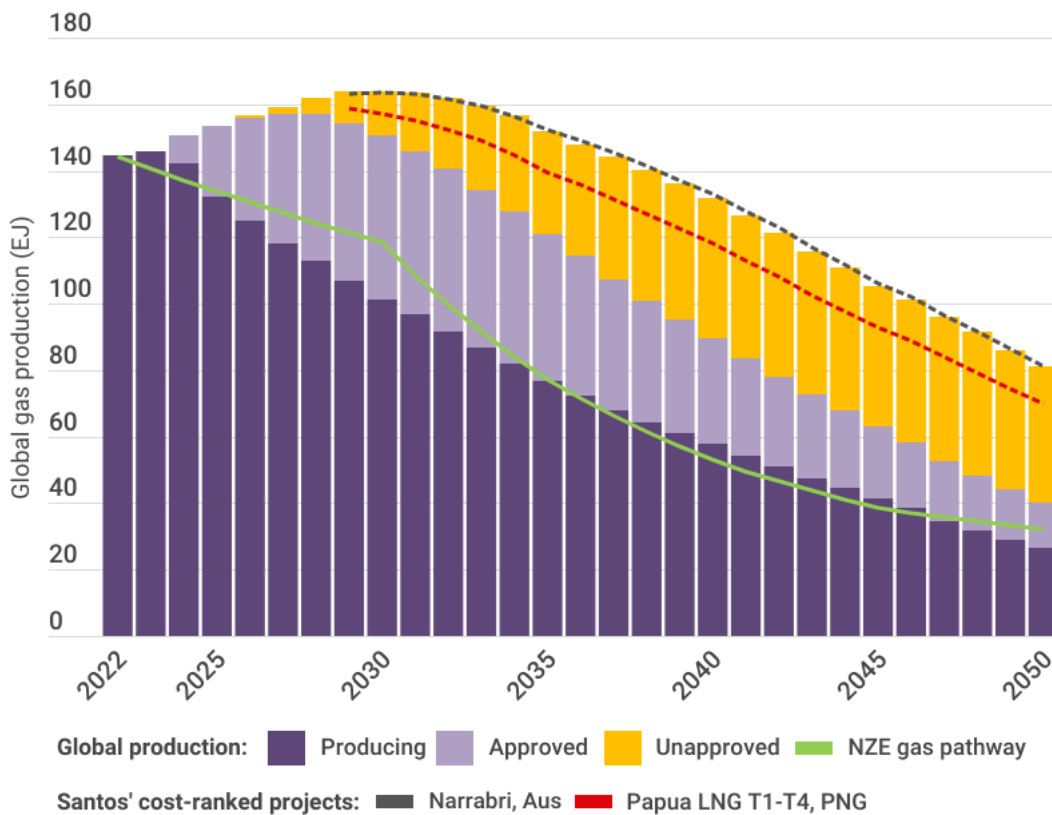
Narrabri and Papua LNG’s significant misalignment with the Paris Agreement

Similar to the above oil analysis, we find that on a global industry, least-cost evaluation, Narrabri and Papua LNG are:

- not consistent with the IEA’s NZE pathway
- more expensive than 98% and 58% respectively of all other unapproved gas projects
- still producing gas beyond 2050, creating long-term fossil fuel dependence and delaying the energy transition.

Chart 17 below visualises this misalignment. The position of the grey dotted line relative to the rest of the yellow bar, shows how Narrabri compares, on a cost basis, to other unapproved gas projects. Similarly the red dotted line shows how Papua LNG compares to unapproved gas projects on a cost basis.

Chart 17: Narrabri and Papua LNG are not Paris-aligned, and sit on the 98th and 58th cost percentile of unapproved global gas projects respectively



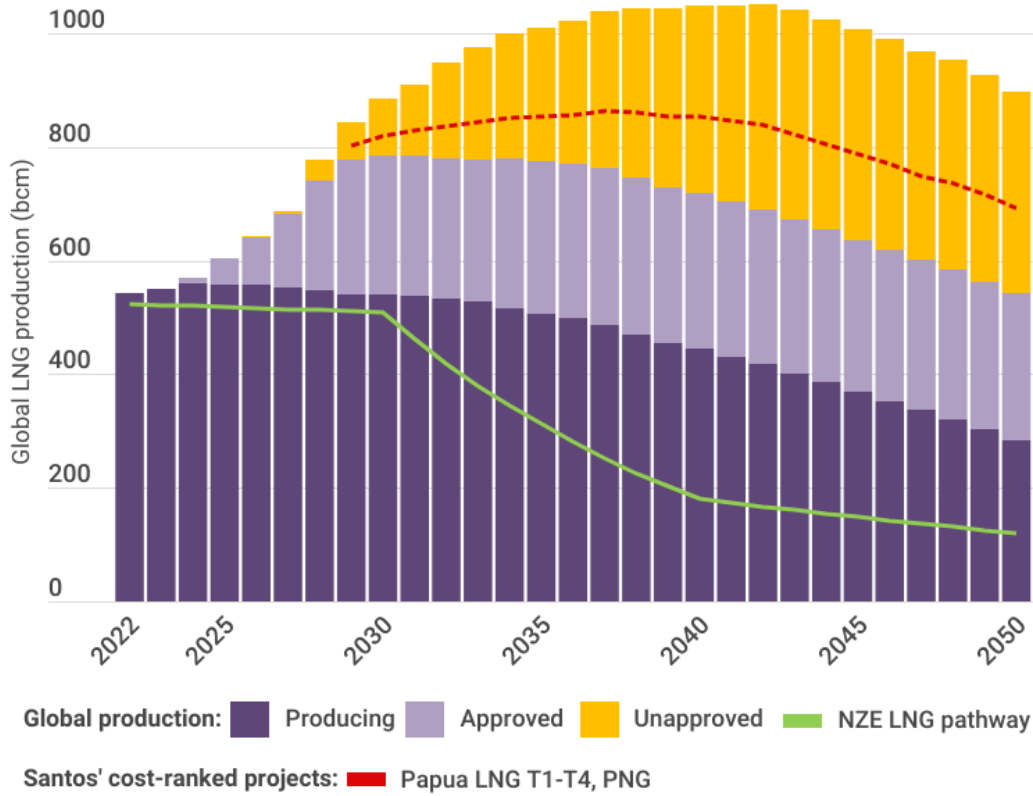
Source: Rystad data & IEA data, ACCR analysis

Chart 18 shows what the IEA is calling an LNG supply ‘glut’.⁵⁶ LNG demand under the NZE can be met by already operating projects, with even projects under construction not needed in this scenario. The IEA estimates that 70% of under construction projects will fail to recover their cost of capital under the NZE scenario, or 40% under their Announced Pledges Scenario (APS).⁵⁷

⁵⁶ IEA, [Oil and gas in net zero transitions](#), Dec 2023, p47.

⁵⁷ IEA, [Oil and gas in net zero transitions](#), Dec 2023, p47.

Chart 18: Given the expected LNG glut, there is no room for already approved projects in the NZE scenario



Source: Rystad data & IEA data, ACCR analysis

7. Appendices

Appendix A: Methodology, data and assumptions

Currencies are in USD unless otherwise stated.

Calculations reflect Santos' current share of each asset, except for Section 4, which uses historic/reported data.

NPVs use a 2024 base year, so do not represent NPV at FID.

Oil prices reflect the Brent forward curve (UCube Forward case; \$54/bbl real long term). Gas prices are based on Rystad Energy's relationship between gas and Brent prices.

Most production, cash flow and break even price data has been sourced from Rystad Energy's UCube on 11 January 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.

Discount rates are project specific Weighted Average Cost of Capitals (WACCs). Inputs and assumptions are included in Appendix B.

Emissions include scope 1 and 3, assume all production is combusted and that there is no reservoir venting. Scope 2 emissions, and scope 3 emissions other than 'use of sold product' are not assessed.

The share buyback calculations assume that Santos shares trade at a 20% discount to the underlying value, based on the perspective of an active owner of Santos shares.

Appendix B: Weighted Average Cost of Capital (WACC)

Project WACCs in our analysis are 10% adjusted for country risk and project specific risks.

Table 5: WACCs of unsanctioned projects

Projects	Narrabri	Papua LNG	Dorado
Country	AU	PNG	AU
Base WACC	10%	10%	10%
Project specific risks ⁵⁸	3%	-	-
Country risk premium ⁵⁹	-	6.5%	-
Proportion of debt in the capital mix ⁶⁰	20%	20%	20%
Proportion of equity in the capital mix	80%	80%	80%
Adjusted WACC	12.4%	15.2%	10.0%

Source: ACCR

⁵⁸ This is ACCR's judgement based on 6% was assigned to Browse in the [Woodside/BHP Independent Expert Report](#).

⁵⁹ Spread of 10 Year Papua New Guinea Government bond yield and 10 Year US Government bond yield.

⁶⁰ Mid-point of Santos' 15%-25% gearing target.

Appendix C: Background of unsanctioned projects with FID date announced

Table 6: Background of unsanctioned projects

Project	Location	Product type	FID ⁶¹	RFSU ⁶²	Lifecycle Production (MMboe)	Santos' share	Project partners
Narrabri	Australia	Gas	2025	2028	106	100% ⁶⁵	nil
Papua LNG	Papua New Guinea	Gas	2024	2028	125	17.7%	TotalEnergies ⁶⁴ (31.1%); ExxonMobil (28.3%); Kumul Petroleum Holdings Limited (22.5%); Other partner(s) (0.4%)
Dorado	Australia	Crude Oil	2024	2028	144	80% ⁶⁵	Carnarvon Energy (10%) CPC (Taiwan) (10%)

Source: Rystad data and company disclosures

⁶¹ Santos announced target FID dates.

⁶² Rystad.

⁶³ Operator.

⁶⁴ Operator.

⁶⁵ Operator.

Appendix D: Recommendations for remuneration

Table 7: Recommendations on CEO remuneration incentives

CEO incentive component	ACCR recommendation	Reasoning
STI	Remove production and fossil fuel growth metrics	Fossil fuel production is not necessarily in investor interests and, in ACCR's view, the scorecard is overweight on fossil fuel production (25%) and expansion (7.5%) relative to financial indicators (5% on unit cost; 5% capex ⁶⁶).
LTI	Introduce absolute TSR metric	This incentivises management to deliver positive TSR for shareholders regardless of the performance of the market and peer group.
CEO Growth Incentive	Cancel incentive	Capital expenditure since this incentive was introduced appears to have eroded shareholder wealth.

⁶⁶ There is also a 10% gearing component, but we view gearing as a board decision rather than a management target.

Appendix E: 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 non-approved 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 21st 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, recent geopolitical events, along with providing comprehensive sectoral and geographic data.⁶⁷
- 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 500GtCO₂ remaining carbon budget, which was current in 2020, as opposed to 210GtCO₂ which is current as of the start of 2024.⁶⁸

Our method:

- 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.

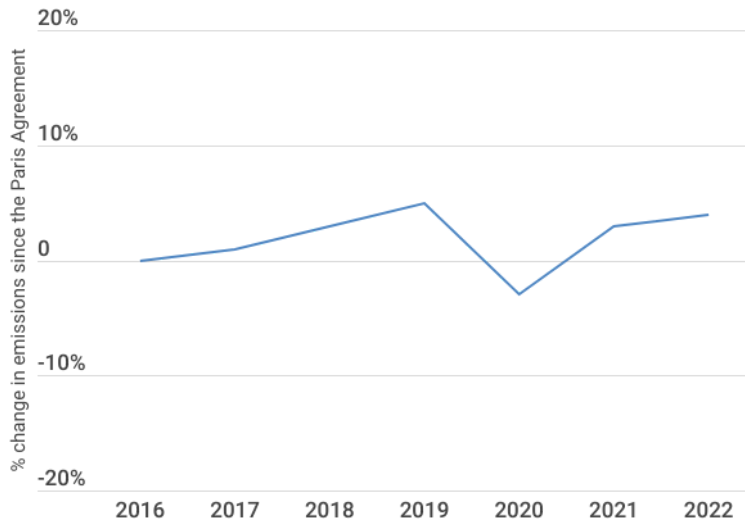
⁶⁷ The IEA bases its scenario temperature outcomes on outputs from MAGICC 7.5.3 (a reduced complexity climate model). See [World Energy Outlook 2023](#), p.158

⁶⁸ 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 CO₂ for the year 2023 based on Friedlingstein et al., 2023

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.

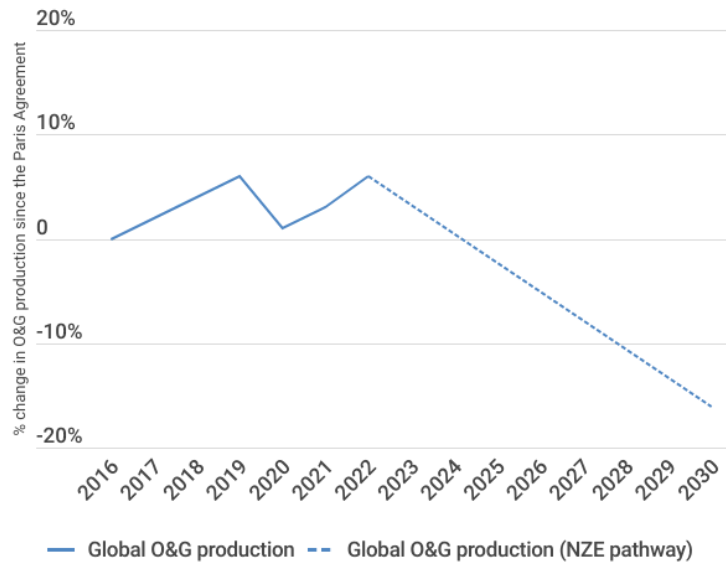
Chart 19: Global emissions from oil and gas since 2016



Source: WEO extended datasets (2021, 2022, 2023)

As Chart 20 shows, the production trajectory will have to change dramatically if the world is to follow the IEA's NZE scenario, its Paris-aligned scenario.

Chart 20: Oil and gas production trajectory required for alignment with the IEA's NZE scenario



Source: WEO extended datasets (2021, 2022, 2023)

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:

- using 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.⁶⁹
- 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
- 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.

⁶⁹ GHG Protocol, [Corporate Standard](#), 2015, p35.

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 that we need for a 1.5°C scenario are already operating or have taken FID. So any set of financial assumptions that conclude new oil and gas is needed, is unlikely to be Paris-aligned.

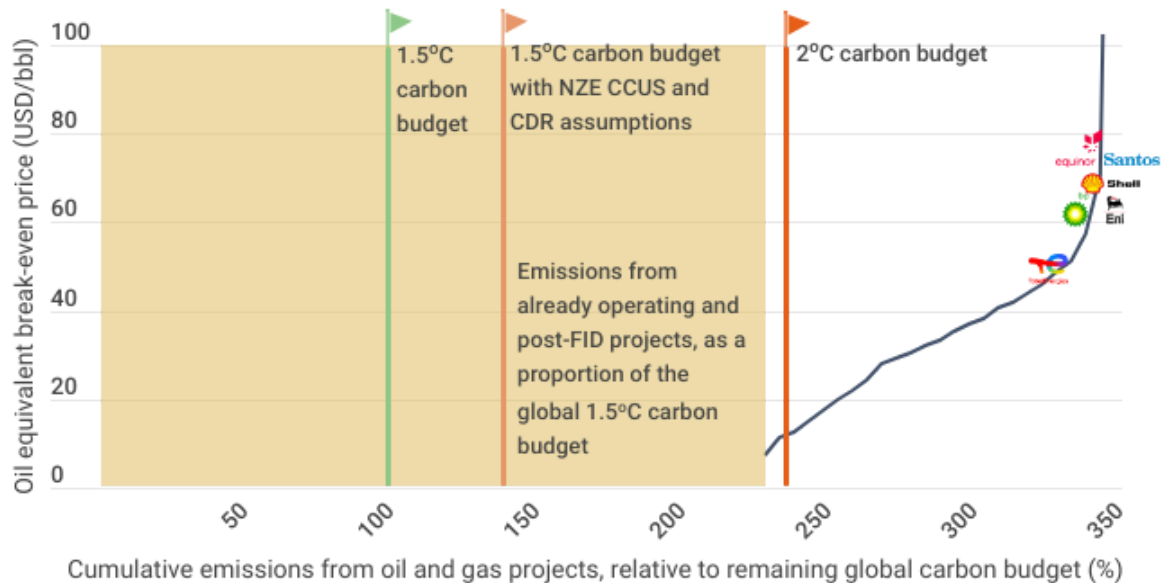
The remaining carbon budget (from 2024) for a 1.5°C outcome is 210 GtCO₂,⁷⁰ whilst operating and post-FID oil and gas projects are forecast to result in 482 GtCO₂e. Chart 21 shows that operating and post-FID projects consume 230% of the global 1.5°C carbon budget, and close to all of the 2°C budget. Pre-FID oil and gas projects could generate additional emissions, pushing us well beyond 2°C of climate change. Including other emission sources such as coal and cement manufacturing, would mean the budget is exceeded by even more.

Even with the levels of CCS deployment included in the NZE, developed oil and gas projects still consume the entire global 1.5°C carbon budget.⁷¹

⁷⁰ 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 CO₂ for the year 2023 based on Friedlingstein et al., *Global Carbon Budget (2023)*. <https://doi.org/10.5194/essd-15-5301-2023>, leaving ~210Gt CO₂ (for 2024 onwards) to limit global warming to 1.5°C with a 50% likelihood.

⁷¹ noting that additional carbon removal is needed after 2050 to achieve a 1.5°C temperature outcome in 2100

Chart 21: 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. 2023,⁷² company disclosures. 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.

Assumptions in our methodology

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 breakeven 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.

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 2030s⁷³
- in the NZE scenario, no new long-lead time gas projects are required⁷⁴

⁷² 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>

⁷³ IEA, *The Oil and Gas Industry in Net Zero Transitions*, Dec 2023, p35.

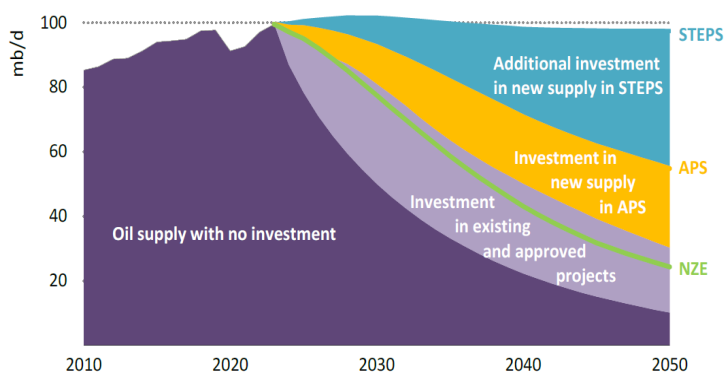
⁷⁴ IEA, *The Oil and Gas Industry in Net Zero Transitions*, Dec 2023, p38.

- in the NZE scenario, a glut of LNG and pipeline capacity forms in the mid-2020s⁷⁵
- in the NZE scenario, LNG projects currently under construction are not necessary.⁷⁶

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:

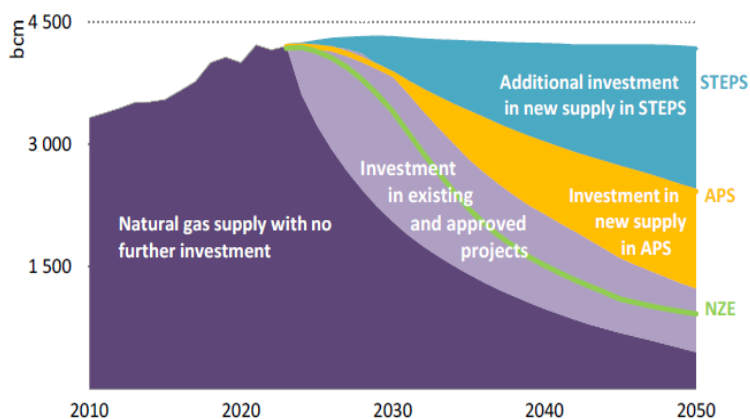
- the IEA shows supply with no further investment, whilst ACCR allows for sustaining capex
- the IEA displays LNG capacity, whilst ACCR shows LNG production.

Figure 1.11 from the Oil and gas in net zero transitions report: Oil supply by scenario, 2010-2050



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

Figure 1.13 from the Oil and gas in net zero transitions report: Natural gas supply by scenario, 2010-2050

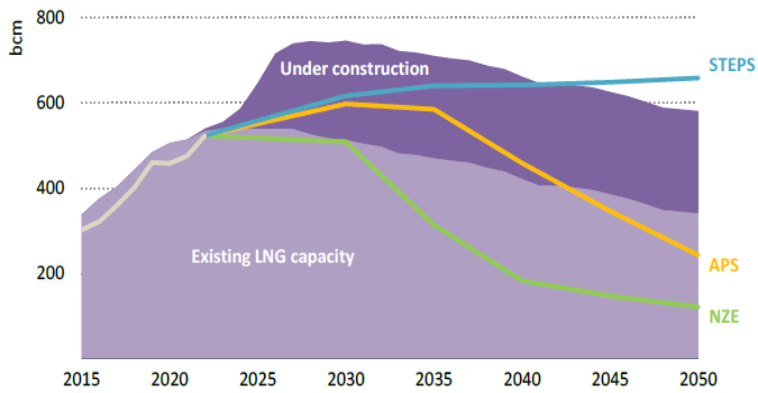


⁷⁵ IEA, [The Oil and Gas Industry in Net Zero Transitions](#), Dec 2023, p47.

⁷⁶ IEA, [The Oil and Gas Industry in Net Zero Transitions](#), Dec 2023, p45.

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

Figure 1.18 from the Oil and gas in net zero transitions report: Existing and under-construction LNG liquefaction capacity and LNG trade by scenario



Source: IEA, [The Oil and Gas Industry in Net Zero Transitions, 2023](#), Fig 1.18, p45

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