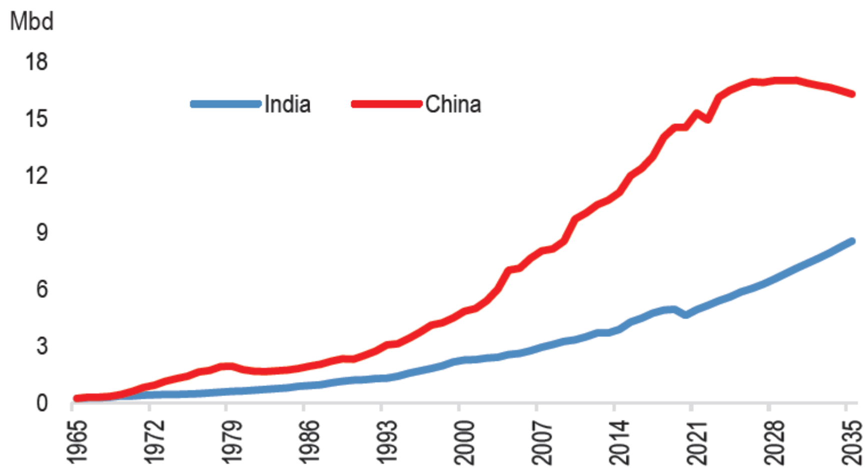
CHART OF THE MONTH
Long term oil demand outlook for China and India

In its recent long-term commodity trends report, JP Morgan presented oil demand outlooks for China and India, which together represent over 35% of the world's population. Chinese oil demand peaks around 2030 while India's grows throughout the forecast period (to 2035).

India & China Oil Demand



Source: JP Morgan. Data as of October 2024.

OIL
Spot prices broadly flat in October

Brent and WTI spot oil prices ended up $1/bl ($/barrel) in October with WTI closing the month at $69/bl and Brent at $73/bl. The IEA expect global oil demand growth of nearly 0.9m b/day in 2024, with weaker demand growth in China. Tensions between Iran and Israel dictated daily price movements with OPEC+ "continually assessing market conditions". OPEC decided at the end of the month to support price and delay adding 0.2m b/day back into the market from December.

NATURAL GAS
US gas price lower despite undersupplied market

US natural gas prices fell, closing October just over $2.7/mcf (one thousand cubic feet) (vs $2.9/mcf last month). On a weather-adjusted basis, the market appeared to be undersupplied in October by c. 2 bcf(billion cubic feet)/day. Inventories ended the US injection season at 3.8 Tcf (trillion cubic feet), around 0.2 Tcf ahead of average levels.

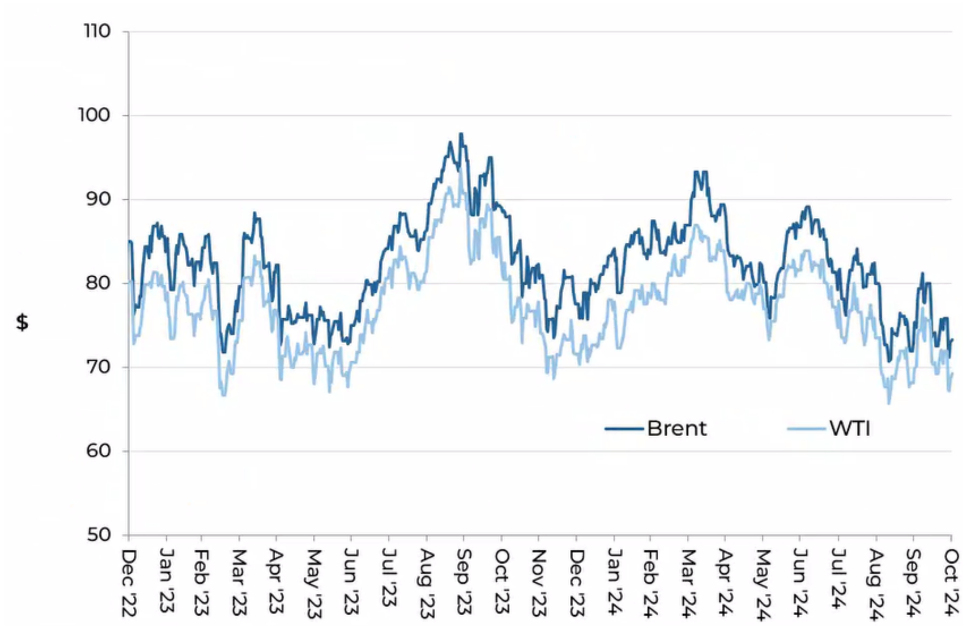
EQUITIES
Energy outperforms the broad market in October

The MSCI World Energy Index (net return) rose by 0.17% in October, beating the MSCI World Index (net return) which fell by -1.98%. Year-to-date, MSCI World Energy is up by 5.86% vs the MSCI World Index up 16.50%.

October in Review

OIL MARKET

Oil price (WTI and Brent $/barrel)
December 2022 to October 2024



Source: Bloomberg, Guinness Atkinson Funds. Data as of October 2024.

The West Texas Intermediate (WTI) oil price began October at $68/bl, and traded in a $68/bl to $77/bl range through the month, ultimately ending up at $69/bl at the end of October. WTI has averaged around $77/bl so far this year, having averaged $78/bl in 2023 and $95/bl in 2022. Brent oil traded in a similar shape, opening at $72/bl and trading in a $71/bl to $81/bl range, before closing at $73/bl. Brent has averaged $81/bl so far in 2024, having averaged $83/bl in 2023 and $100/bl in 2022. The gap between the WTI and Brent benchmark oil prices narrowed over the month, ending October at $4/bl. The Brent-WTI spread has averaged $5/bl so far in 2024 after averaging a similar amount in 2023.

Factors which were neutral or strengthened WTI and Brent oil prices in October:

- **Middle East conflict / Iranian sanction fears rising**

  Since late July, there has been an escalation of Middle East tensions. On July 31st, it was reported that Hamas political leader Ismael Haniyeh was killed during a visit to Iran, raising the risk of Iranian reprisal. And on September 27th, Israel announced the death via airstrike of Hassan Nasrallah, leader of the Iran-backed militant group Hezbollah. At the start of October, Iran launched around 200 ballistic missiles at targets in Israel and then, in retaliation, Israel attacked Iranian military sites on October 25th. Tensions remain high and the scale of the responses from either side remain unclear.

  Latest data suggests that Iran is producing around 3.3m b/day of oil, up significantly from 12 months ago. Any disruption to Iranian oil exports would clearly have a tightening effect on the world market. Despite these issues, we believe there was close to no geopolitical premium in the Brent oil price at the end of October ($73/bl).

- **OPEC hinting at returning, and then delaying the return of, barrels to the market in December**

  At the end of September, key members of OPEC+ hinted that they were ready to increase their supply by 0.2m b/day in December, initially swapping barrels in for pledged cuts from other OPEC+ countries that had been overproducing versus quotas. Weaker oil prices in the second half of October led OPEC+ to suggest that new supply additions would continue to be delayed. Ultimately, at the end of month, OPEC delayed its plan to increase supply by one month and this serves as a clear indication that OPEC+ is not comfortable with oil prices in low-$70s/bl range.

Factors which weakened WTI and Brent oil prices in October:

- **Weaker Chinese demand data**

  Chinese demand data for September suggests continued weakness in overall oil consumption. The main culprit here has been lower-than-expected diesel demand (-4% year-on-year YTD), reflecting a slowdown in industrial and construction activities). Chinese oil demand is currently forecast by the IEA to grow by 0.2m b/day in 2024 to 16.7m b/day, representing only 20% of global demand growth both this year and next year, compared to almost 70% in 2023.

- **Weaker Indian demand data**

  In September, India's total oil demand posted negative year-on-year growth for the second time this year as an intense monsoon season depressed road fuel demand. Annual demand growth in jet fuel remained strong in September at 10% year-on-year, as rebounding tourism figures, new airline routes, affordable flights and new airports are boosting demand.

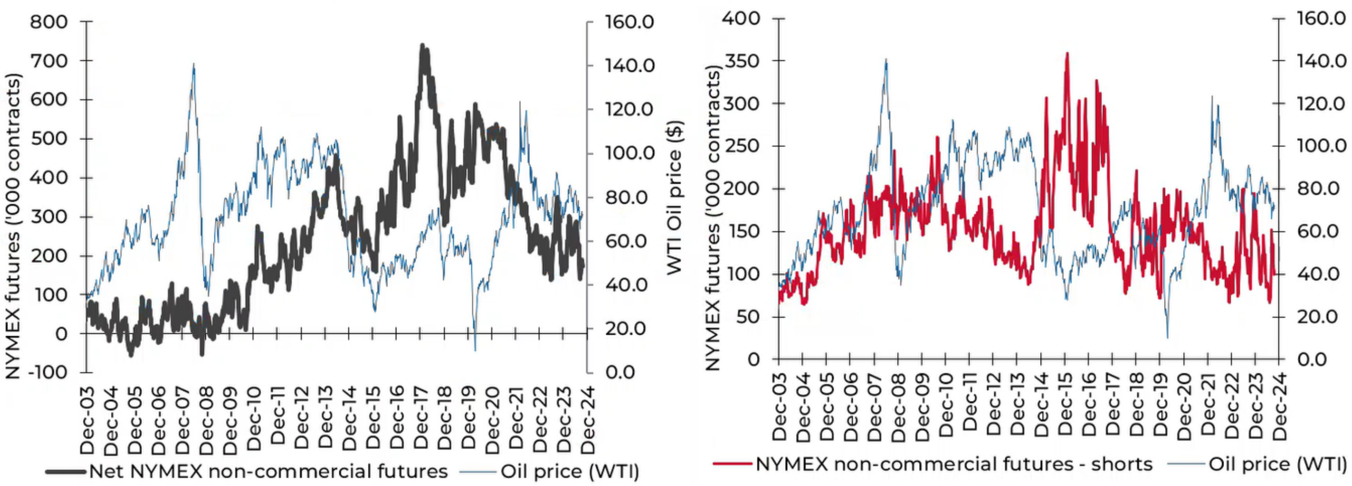
- **Solid non-OPEC supply growth**

  Non-OPEC supply growth for 2024 is forecast by the International Energy Agency (IEA) to be around 1.0m b/day. While this figure has been revised lower since the start of the year, it still implies that the “call on OPEC” to balance the market has shrunk versus 2023. Data from the IEA showed a large increase in US oil production in August, up 0.2m b/day versus July, to reach 13.4m b/day. The key driver of the growth was the Permian basin.

Speculative and investment flows

The New York Mercantile Exchange (NYMEX) net non-commercial crude oil futures open position was 174,000 contracts long at the end of October versus 159,000 contracts long at the end of September. The net position peaked in February 2018 at 739,000 contracts long. Typically, there is a positive correlation between the movement in net position and movement in the oil price. The gross short position fell to 103,000 contracts at the end of October versus 133,000 at the end of the previous month.

NYMEX Non-commercial net and short futures contracts:
WTI January 2004 – October 2024

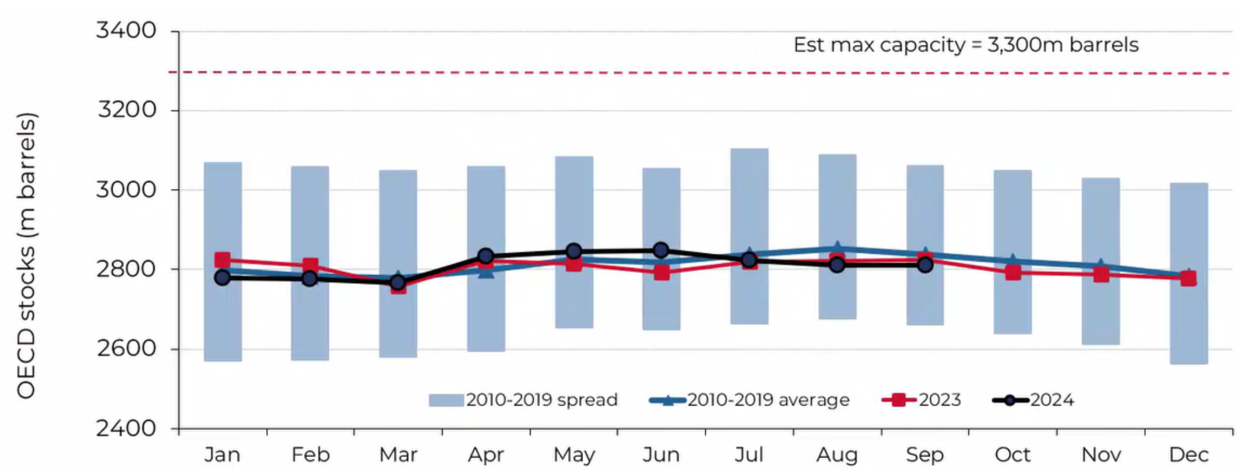


Source: Bloomberg LP/NYMEX/ICE (2024)

OECD Stocks

OECD (Organization for Economic Co-operation and Development) total product and crude inventories at the end of September (latest data point) were estimated by the IEA to be 2,810m barrels, down by 1m barrels versus the level reported for the previous month. The fall in September compares to a 10-year average (pre-COVID) fall of 14m barrels, implying that the OECD market was looser than normal. The significant oversupply situation in 2020 pushed OECD inventory levels close to maximum capacity in August 2020 (c.3.3bn barrels), with subsequent tightening taking inventories below normal levels.

OECD Total Product & Crude Inventories
Monthly, 2010 to September 2024



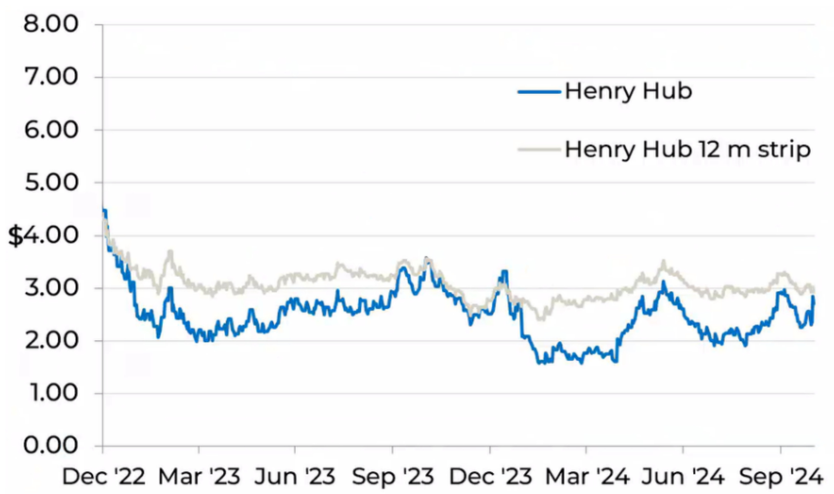
Source: IEA Oil Market Reports (October 2024 and older)

NATURAL GAS MARKET

The US natural gas price (Henry Hub front month) opened October at $2.92/Mcf (1,000 cubic feet) and traded steadily lower over the month to reach $2.13/Mcf before rallying to close at $2.71/Mcf. The spot gas price has averaged $2.26/Mcf so far in 2024, having averaged $2.67/Mcf in 2023 and $6.52/Mcf in 2022.

The 12-month gas strip price (a simple average of settlement prices for the next 12 months' futures prices) traded in a similar pattern, opening at $3.26/Mcf and closing the month at $2.93/Mcf. The strip price has averaged $2.93/Mcf so far in 2024, having averaged $3.19 in 2023 and $5.90 in 2022.

Henry Hub gas spot price and 12m strip ($/Mcf)
December 2022 to October 2024



Source: Bloomberg LP. Data as of October 2024.

Factors which strengthened the US gas price in October included:

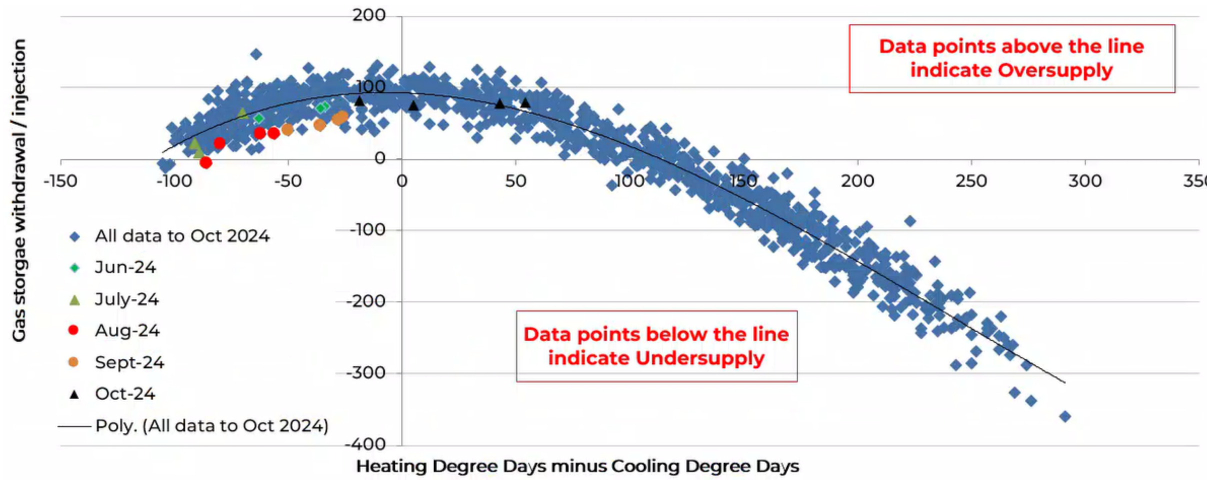
- **Falling rig count**

  The number of rigs drilling for natural gas in the US has fallen from 160 rigs in the middle of 2022 to a low of 94 rigs in mid-September, before increasing to 101 rigs at the end of October 2024. This has slowed gas production growth, though "associated gas" production (a by-product of shale oil) has continued to grow this year from the Permian basin.

- **Market undersupplied (ex-weather effects)**

  Adjusting for the impact of weather, the US gas market was, on average, around 2 Bcf (billion cubic feet) per day undersupplied during October. While this is less than the undersupply for September, it is still a material level of undersupply, as illustrated in the chart below.

Weather-adjusted US natural gas inventory injections and withdrawals



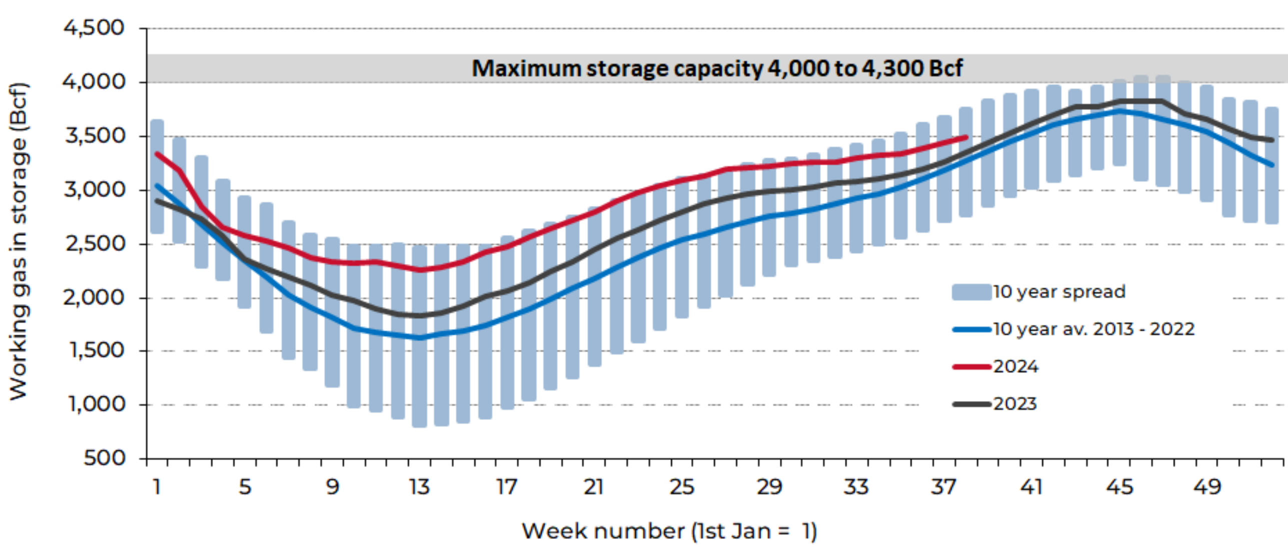
Source: Bloomberg LP, Guinness Atkinson Funds. Data as of November 2024.

Factors which weakened the US gas price in October included:

- **Natural gas in inventories towards the top of the historic range**

  US natural gas inventories have been running higher than seasonal norms throughout 2024, driven by a warmer-than-expected winter and early spring that has brought lower-than-expected heating demand. Inventories levels moved to the top of the 10-year range but tightened in the third quarter ending October, and the 2024 natural gas injection season, at around 3.86 trillion cubic feet (around 0.2 Tcf above the 10-year average).

Deviation from 10yr US gas storage norm



Source: Bloomberg LP, EIA. Data as of November 2024.

Manager's Comments

Free cash flow remains king. This month, we reflect on TotalEnergies' latest targets and see their approach as emblematic of the approach of many global integrated oil companies, especially the Europeans. With net debt levels under control and capital discipline firmly in place, a focus on free cash generation will persist and could potentially allow the Guinness Atkinson Global Energy Fund to deliver a competitive free cash flow yield in 2024, at $80/bl oil.

A consistent theme in our Global Energy portfolio is the high level of free cash flow being generated by companies across most sectors invested in. This is especially true within our European integrated holdings, where we think the potential for superior returns to shareholders stands out even compared to other oil & gas subsectors. It was interesting, therefore, to see the plans laid out at TotalEnergies' capital markets day in early October, as an example of the value we see in our portfolio.

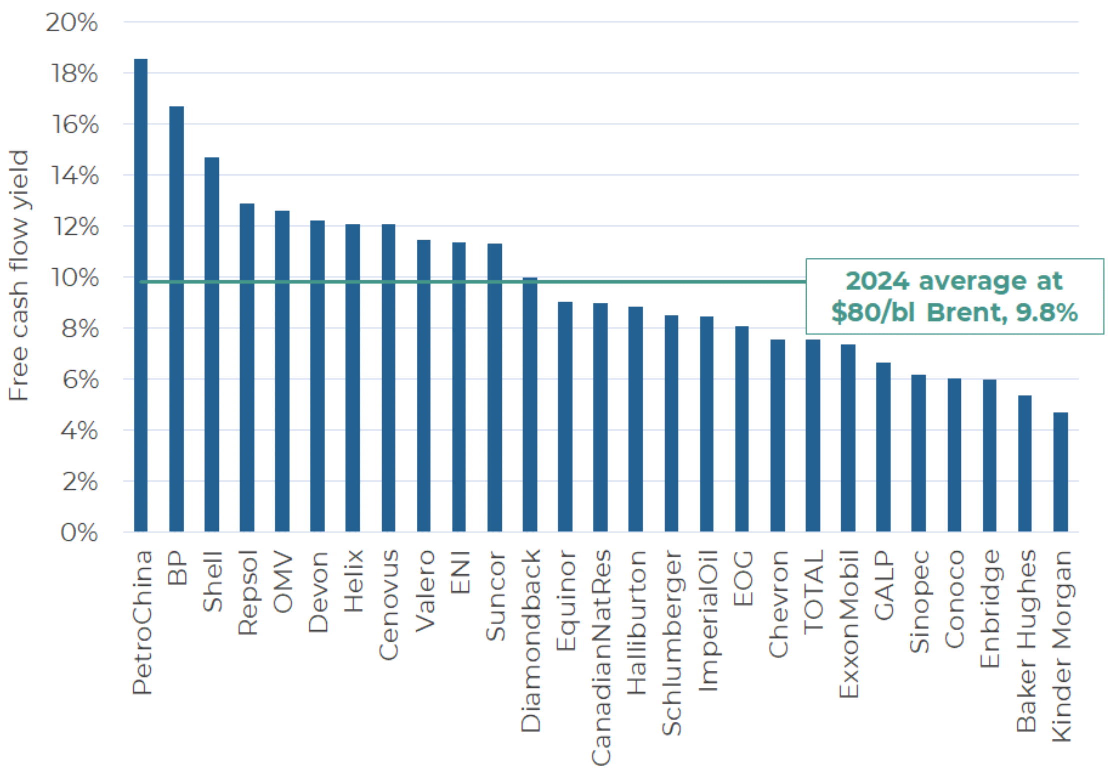
TotalEnergies maintained its strong free cash flow outlook and extended the forecast period a further two years, from 2028 to 2030. Based on its targets, assuming Brent at $80/bl, TotalEnergies should generate free cash flow (after capex) in excess of $110bn cumulatively to 2030, representing over 70% of its market capitalization. Critical to this is the expectation that net capital expenditure is unchanged versus the previous plan at $16-18bn per annum, with around $5bn per annum being allocated to low-carbon energy activities. Despite unchanged capex, TotalEnergies sees a more optimistic growth outlook with plans to grow hydrocarbon production by c.3% per year to 2030 (up from prior 2-3% between 2023-28 previously) with global energy production (oil, gas, electricity, bioenergy) up by 4% per year through 2030.

In common with most of its integrated peers, TotalEnergies has already cleaned up its balance sheet, allowing greater focus on shareholder distributions via dividends and buybacks. Dividend cover for TotalEnergies is over two times and dividends are likely to rise over the next couple of years, with 5% targeted for 2025. In addition, share buybacks of $2bn for 4Q24 (implying US$8 bn for 2024E) and $2bn for each quarter in 2025E under reasonable market conditions (which management described as Brent prices being higher than $65/bl) are targeted. A long-term distribution payout ratio of over 40% of cash flow beyond 2024 has been confirmed.

TotalEnergies' core oil & gas business is underpinned by projects in Brazil, US Gulf of Mexico, Suriname, Mexico, Mozambique and Qatar. But the company also sees meaningful growth in its integrated power division, which combines gas and renewable power generation, with storage and trading. Power sales are likely to be split between the regulated and merchant markets. Confidence has grown in the stability of returns from this part of the business, with a 12% return on capital employed (ROCE) now expected and for the business to be net cash positive by 2028. TotalEnergies expects to generate over 100 TWh of electricity from its Integrated Power division by 2030, which should represent nearly 20% of the company's energy production.

We see TotalEnergies' plans as emblematic of the European integrated sector: companies that generate outsized free cashflow today, while achieving a pragmatic balance of legacy oil & gas production and investment into an increasingly electrified global economy. The chart shows free cashflow yields generated by the main holdings in our portfolio and we note the higher free cash flow of the European companies.

2024 Free cash flow yield of main holdings in the Guinness Atkinson Global Energy Fund



Source: Guinness Atkinson Funds. Data as of October 2024.

Continued importance of free cashflow in the sector

The trend towards free cash generation is more than just a theme among the European integrated oil companies. On a broader basis, the capital allocation framework for oil & gas companies structurally changed in 2020, shifting emphasis from production growth to free cash flow and shareholder returns.

Nowhere was this more apparent than among the US onshore shale companies. Capital discipline is now the main driver of strategic, financial and operating planning, with around 65% of compensation incentives for exploration and production (E&P) management teams now being driven by profitability, cash flow and operational metrics (such as cost reduction) versus only 44% in 2014. In contrast, growth in reserves and production now represent only 6% of incentives versus 26% back in 2014.

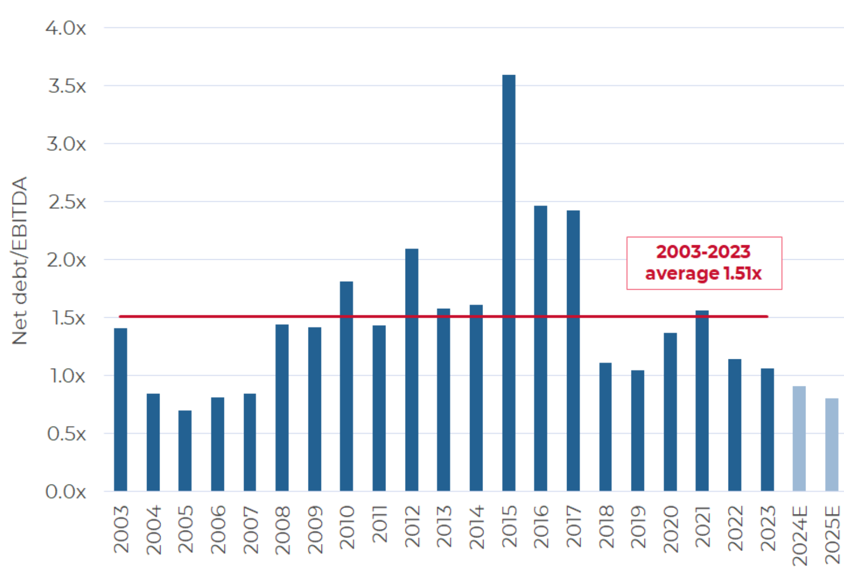
US shale E&P management incentive changes (2014-2022)

Criteria	2022	2014
Profitability and cash flow	39.0%	22.0%
Operational metrics (eg cost reduction)	26.0%	22.0%
Safety and ESG	22.0%	11.0%
Reserve and production growth	6.0%	26.0%
Strategic actions	4.0%	15.0%
Shareholder returns	3.0%	0.0%
Other	0.0%	4.0%
Total	100.0%	100.0%

Source: Guinness Atkinson Funds, DNB. Data as of October 2024.

This transition has helped the industry to shrink its outstanding debt and turn towards higher shareholder distributions. The main holdings in the Guinness Atkinson Global Energy Fund now have average net debt/EBITDA at around 0.9x in 2024 and 0.8x in 2025, assuming $80/bl oil in both years. This is lower than the 1.5x average of the last 20 years, reflecting management focus on maintaining healthier balance sheets. In 2025, it would take a reduction in EBITDA of nearly 50% to see net debt/EBITDA levels to get back to the 20-year average and a reduction of 75% to get back to the peak net debt/EBITDA levels seen in 2015.

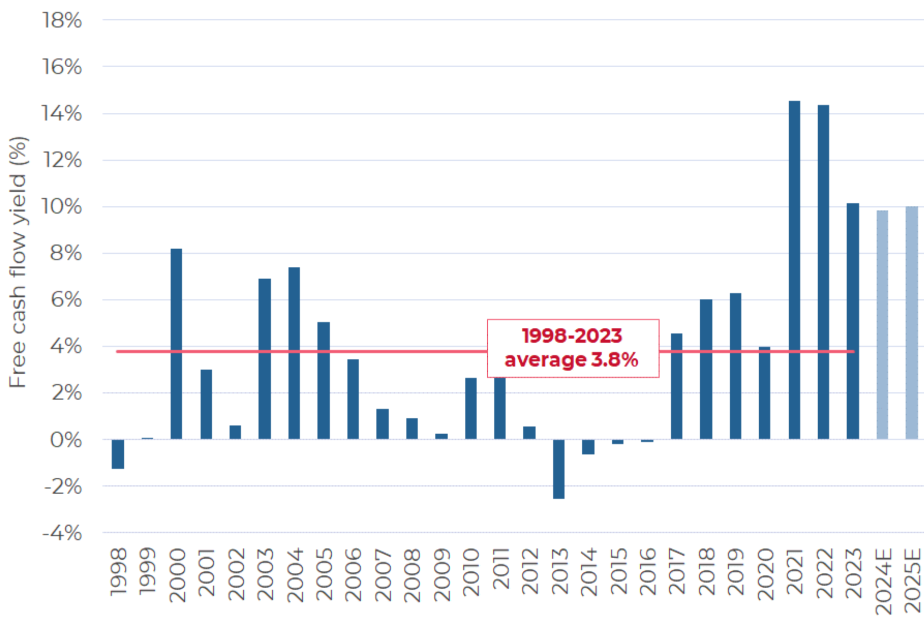
Net debt/EBITDA for current Guinness Atkinson Global Energy Fund holdings



Source: Guinness Atkinson Funds. Data as of October 2024.

The continued focus on returns over growth will help to deliver similar levels of free cashflows this year as seen in 2023, driven by the tailwinds of efficiency improvements and service cost deflation. Free cash flow yields are likely to stay around this level in 2025 and would still exceed 8% in 2025 if Brent oil prices averaged only $70/bl.

FCF yield for current Guinness Atkinson Global Energy Fund holdings



Source: Guinness Atkinson Funds. Data as of October 2024.

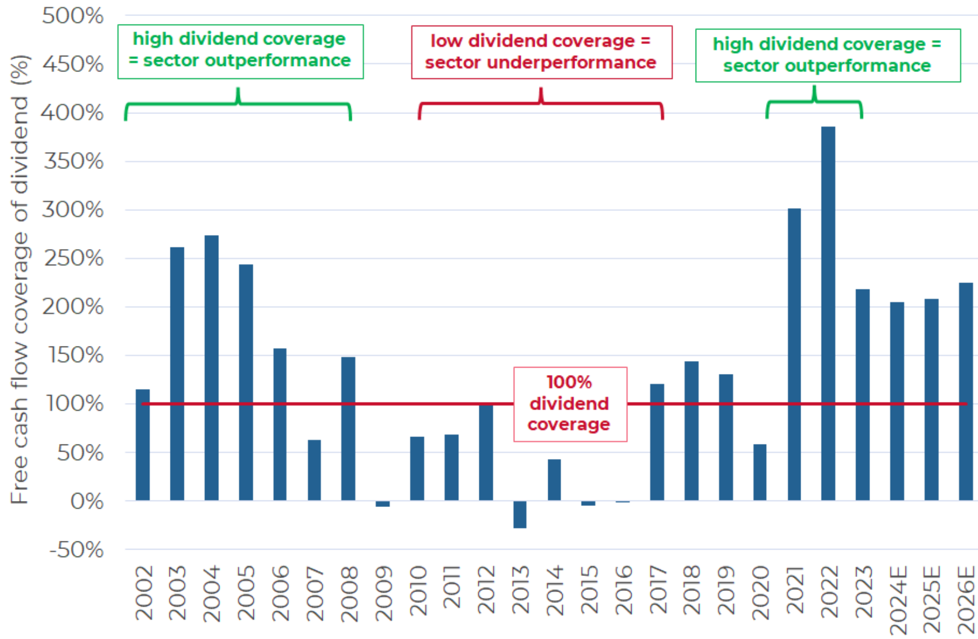
What are the risks to this being delivered?

Our companies are generally planning pragmatic use of these free cash flows. We note that free cash flows are always at risk from company-specific issues such as greater reinvestment levels, higher operating costs, higher inflation or M&A and also from external factors such as oil and natural gas prices. Current signs are that free cash flow will be defended, and TotalEnergies reiterated that point by not increasing its net capital expenditure plans.

We believe dividend cover will remain elevated

For integrated oil & gas companies, one of the consequences of high free cashflow is strong dividend cover. We note a continued preference from the companies in general to grow their dividends at acceptable rates and rely on share buybacks and special dividends to return cash to shareholders in a variable manner, rather than ramp dividend payout ratios to levels that are not sustainable with lower oil prices. Generally, we observe that periods of high dividend coverage in the energy sector coincide with outperformance versus broader equities. We saw this play out for much of the early to mid 2000s, when dividend coverage of 150%+ provided companies with the latitude to raise dividends consistently. By contrast, much of the relative bear market for energy equities post the Financial Crisis (i.e. the 2010s) coincided with dividend coverage at or below 100%, meaning dividends were only just covered or being paid for via the balance sheet. Since 2021, we have returned to a period of high dividend coverage, and assuming at least $80/bl Brent oil from 2024 onwards, we see coverage remaining at 200% or better. In these circumstances, we see good scope for continued dividend increases.

US & European integrateds: free cashflow coverage of dividends (%)



Source: Guinness Atkinson Funds. Data as of October 2024.

Performance

as of 10/31/2024	YTD	1 Year	3 Years	5 Years	10 Years
GAGEX	2.53%	1.60%	11.29%	7.69%	-0.64%
MSCI World Energy Index NR	5.86%	6.18%	15.28%	10.17%	2.83%

All returns after 1 year annualized.

Inception 06.30.2004 Expense ratio* 1.47% (net); 2.13% (gross)

Performance data quoted represents past performance; past performance does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance of the Fund may be lower or higher than the performance quoted. Performance data current to the most recent month end may be obtained by visiting www.gafunds.com or calling 800-915-6566.

* The Advisor has contractually agreed to reduce its fees and/or pay Fund expenses (excluding Acquired Fund Fees and Expenses, interest, taxes, dividends on short positions and extraordinary expenses) in order to limit the Fund's Total Annual Operating Expenses to 1.45% through June 30, 2027. To the extent that the Advisor absorbs expenses to satisfy this cap, it may recoup a portion or all

of such amounts absorbed at any time within three fiscal years after the fiscal year in which such amounts were waived or absorbed, subject to the expense cap in place at the time recoupment is sought, which cannot exceed the expense cap at the time of the waiver. The expense limitation agreement may be terminated by the Board of the Fund at any time without penalty upon 60 days' notice.

Top 10 Fund Holdings as of 10/31/2024:

1.	Shell PLC	5.65%
2.	Chevron Corp	5.58%
3.	Exxon Mobil Corp	5.53%
4.	TotalEnergies SE	5.30%
5.	ConocoPhillips	4.75%
6.	BP PLC	4.14%
7.	Suncor Energy Inc	4.08%
8.	Imperial Oil Ltd	4.05%
9.	Valero Energy Corp	3.92%
10.	Canadian Natural Resources Ltd	3.76%

MSCI World Energy Index is designed to capture the large and mid cap segments across 23 Developed Markets countries. All securities in the index are classified in the Energy sector as per the Global Industry Classification Standard.

MSCI World Index captures large and mid cap representation across 23 Developed Markets countries. With 1,546 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

Brent Crude is the price benchmark used for the light oil market in Europe, Africa, and the Middle East, originating from oil fields in the North Sea between the Shetland Islands and Norway.

West Texas Intermediate (WTI) is the price benchmark for the US light oil market and is sourced from US oil fields.

Long futures position in oil is when a trader buys an oil futures contract in the belief that the price of oil will increase.

Short futures position in oil is when a trader sells an oils future contract in the belief that the price of oil will decrease before the contract expires.

Organization for Economic Cooperation and Development (OECD) is an intergovernmental organization with 38 member countries meant to stimulate economic progress and world trade.

OPEC+, or the Organization of the Petroleum Exporting Countries Plus, is a loosely affiliated entity consisting of 12 OPEC members and 10 of the world's major non-OPEC oil-exporting nations.

Permian Basin is a large oil and gas-producing area in the United States that spans parts of West Texas and southeastern New Mexico.

New York Mercantile Exchange (NYMEX) is the world's largest physical commodity futures exchange.

Henry Hub is a natural gas pipeline located in Erath, Louisiana, that serves as the official delivery location for futures contracts on the New York Mercantile Exchange (NYMEX).

Free cash flow represents the cash that a company generates after accounting for cash outflows to support its operations and maintain its capital assets.

Capital Expenditure (CapEx) are payments that are made for goods or services that are recorded or capitalized on a company's balance sheet rather than expensed on the income statement.

Return on Capital Employed (ROCE) is a financial ratio that measures a company's profitability in terms of all of its capital.

Net Debt/EBITDA is a debt ratio that shows how many years it would take for a company to pay back its debt if net debt and EBITDA are held constant.

Fund holdings and/or sector allocations are subject to change at any time and are not recommendations to buy or sell any security.

One cannot invest directly in an index. Dividends are not guaranteed and dividend payments, if any, may fluctuate.

Earnings Growth is not a measure of future performance.

Opinions expressed are subject to change, are not guaranteed and should not be considered investment advice.

The Guinness Atkinson Global Energy Fund's investment objectives, risks, charges and expenses must be considered carefully before investing. The statutory and summary prospectuses contain this and other important information and can be obtained by calling 800- 915-6565 or visiting www.gafunds.com. Read and consider it carefully before investing.

The Fund invests in foreign securities which will involve greater volatility and political, economic and currency risks and difference in accounting methods. The risks are greater for investments in emerging markets. The Fund also invests in smaller and mid-cap companies, which will involve additional risks such as limited liquidity and greater volatility than larger companies. The Fund's focus on the energy sector to the exclusion of other sectors exposes the Fund to greater market risk and potential monetary losses than if the Fund's assets were diversified among various sectors.

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