Guinness Global Energy

Investment Commentary – June 2024

RISK

This is a marketing communication. Please refer to the prospectuses, KIDs and KIIDs for the Funds, which contain detailed information on their characteristics and objectives, before making any final investment decisions.

The Funds are equity funds. Investors should be willing and able to assume the risks of equity investing. The value of an investment and the income from it can fall as well as rise as a result of market and currency movement, and you may not get back the amount originally invested. Further details on the risk factors are included in the Funds' documentation, available on our website.

Past performance does not predict future returns.

ABOUT THE STRATEGY

Launch	31.12.1998
Index	MSCI World Energy
Sector	IA Commodity/Natural Resources
Managers	Will Riley Jonathan Waghorn Tim Guinness
EU Domiciled	Guinness Global Energy Fund
UK Domiciled	WS Guinness Global Energy Fund

INVESTMENT POLICY

The Guinness Global Energy Funds invest in listed equities of companies engaged in the exploration, production and distribution of oil, gas and other energy sources. We believe that over the next twenty years the combined effects of population growth, developing world industrialisation and diminishing fossil fuel supplies will force energy prices higher and generate growing profits for energy companies. The Funds are actively managed and use the MSCI World Energy Index as a comparator benchmark only.

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COMMENTARY

OIL

Prices slightly weaker, OPEC+ target a stable market

Brent and WTI spot oil prices were slightly weaker in May on the de-escalation of tensions in the Middle East. WTI closed at $77/bl and Brent at $82/bl. OPEC+ met at the start of June and concluded a quick meeting with a commitment to maintaining a steady market based on the extension of existing quotas but also the aspiration to add spare capacity back into the market in 2025.

NATURAL GAS

US gas prices rebound from lows

US natural gas prices recovered from their lows, closing May at $2.59/mcf as, on a weather-adjusted basis, the market appeared to be undersupplied by 1 billion cubic feet (bcf)/day. Nonetheless, natural gas inventories remain at the top of the historic range. Asian and European gas prices (using UK national balancing point) strengthened further in May.

EQUITIES

Energy underperforms the broad market in May

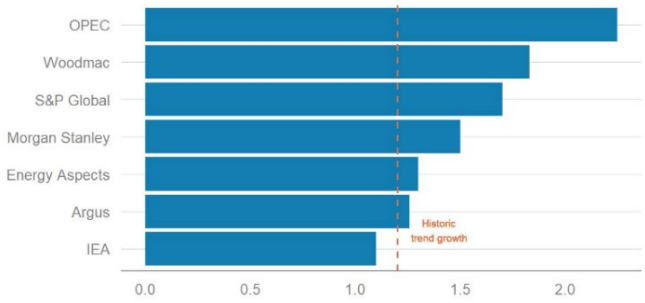
The MSCI World Energy Index (net return) increased by 0.3% in May, underperforming the MSCI World Index (net return) which rose by 4.5% (all in USD). Year-to-date, the MSCI World Energy Index is up by 10.4% versus the MSCI World Index up by 9.5%.

CHART OF THE MONTH

Oil demand growth expectations still strong for 2024

In May the International Energy Agency (IEA) kept its 2024 oil demand forecasts the same, implying growth of around 1.1m b/day for the year. Many other agencies and forecasters continue to suggest upside to these numbers, with OPEC being most optimistic, suggesting oil demand growth of 2.2m b/day in 2024.

2024 global oil demand forecasts (mb/day)

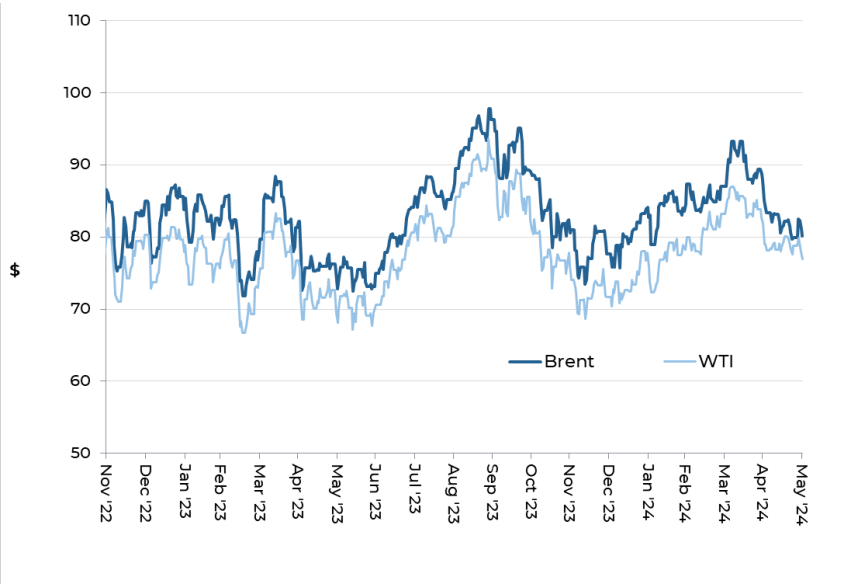


Source: Morgan Stanley, May 2024

MAY IN REVIEW

i) Oil market

Oil price (WTI and Brent $/barrel): November 2022 to May 2024



Source: Bloomberg; Guinness Global Investors

The West Texas Intermediate (WTI) oil price began May at $79/bl and traded rangebound before closing the month at $77/bl. WTI has averaged just under $79/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 $83/bl and staying rangebound before closing at $82/bl. Brent has averaged just under $84/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 closed over the month, ending May at $4.6/bl. The Brent-WTI spread has averaged just under $6.0/bl so far in 2024 after averaging $5.0/bl in 2023.

Factors which strengthened WTI and Brent oil prices in May:

- **Generally robust oil demand outlook**

The IEA monthly report is seen as the gold standard for oil supply and demand data. In its May report, the IEA reduced 2024 oil demand growth by 0.1m b/day to 1.1m b/day as a result of the 2023 baseline demand being increased by 0.1m b/day. While reporting a decline during the month, we note that the IEA has steadily increased its 2024 oil demand growth estimate from the 0.9m b/day at the start of the year. For comparison, we note that a number of agencies are forecasting much higher demand growth; Energy Aspects (1.3m d/day), Argus (1.3m b/day), Morgan Stanley (1.5m b/day), S&P Global (1.7m b/day), Wood Mackenzie (1.8m b/day) and the OPEC secretariat (2.2m b/day).

Factors which were neutral to the oil price in May:

The OPEC+ meeting was held on 2 June, with speculation leading into the event being a factor in the development of oil prices. The outcome of the meeting was broadly in line with expectation (see Managers' Comments below for more details), with quotas being rolled over and keeping the near-term global oil market undersupplied by 0.5m b/day (IEA estimate for 2024). While the stated aspiration to return as much as 2.2m b/day of spare capacity to the oil market in 2025 would be negative for oil prices, we noted that OPEC+ continue to desire a reasonable oil price and to "*achieve and sustain a stable oil market and to provide long-term guidance and transparency for the market*".

Factors which weakened WTI and Brent oil prices in May:

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

May saw a de-escalation of Middle East tensions which helped to take a few dollars of political premium out of the oil price, but tensions in the region still remain high. Latest data suggests that Iran is producing around 3.2m 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.

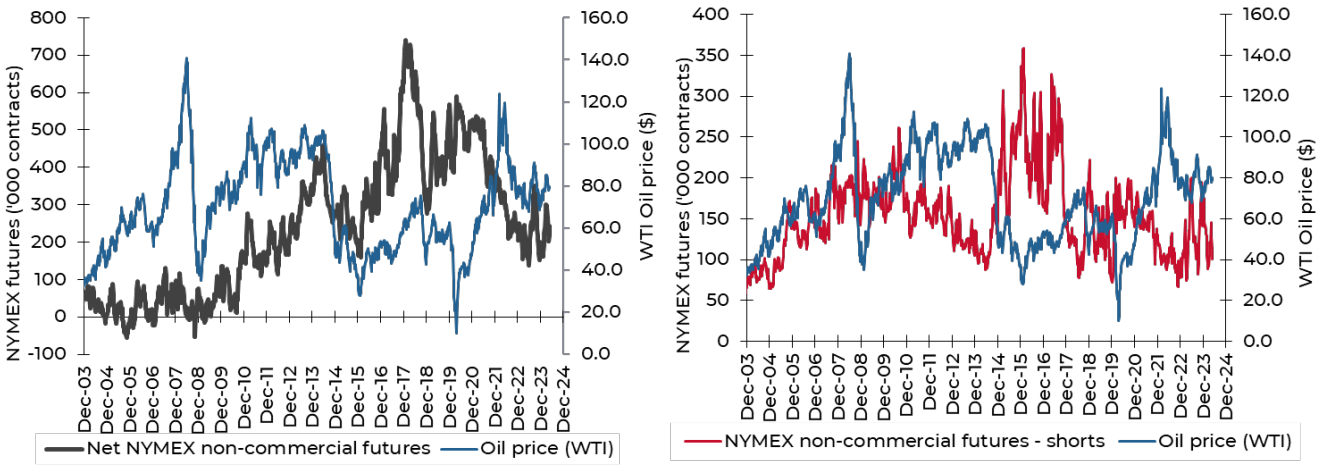
- **Weaker Chinese macro**

Although China is likely to remain the biggest driver of global oil consumption growth in 2024, weaker manufacturing data and consumer expenditure data bring into question the scale of demand growth. Chinese oil demand is currently forecast to grow by 0.5m b/day in 2024 to 17.0m b/day.

Speculative and investment flows

The New York Mercantile Exchange (NYMEX) net non-commercial crude oil futures open position was 244,000, contracts long at the end of May versus 265,000 contracts long at the end of April. 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 decreased to 100,000 contracts at the end of May versus 117,000 at the end of the previous month.

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

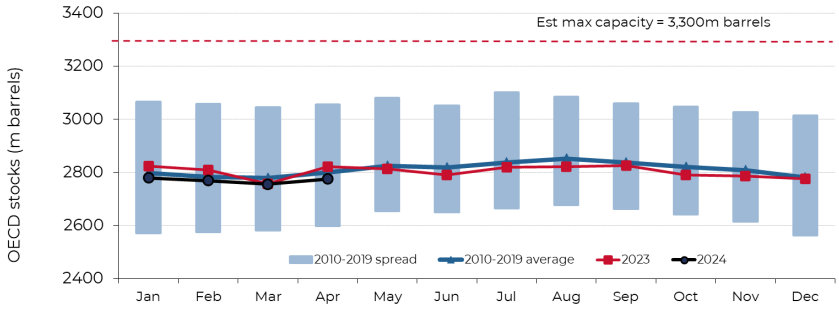


Source: Bloomberg LP/NYMEX/ICE (2024)

OECD stocks

OECD total product and crude inventories at the end of April (latest data point) were estimated by the IEA to be 2,776m barrels, up by 20m barrels versus the level reported for the previous month. The rise in April compares to a 10-year (pre-COVID) average increase of 20m barrels, implying that the OECD market was broadly 0.5m b/day oversupplied, in line with long-run seasonal averages. 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 and crude inventories, monthly, 2010 to April 2024



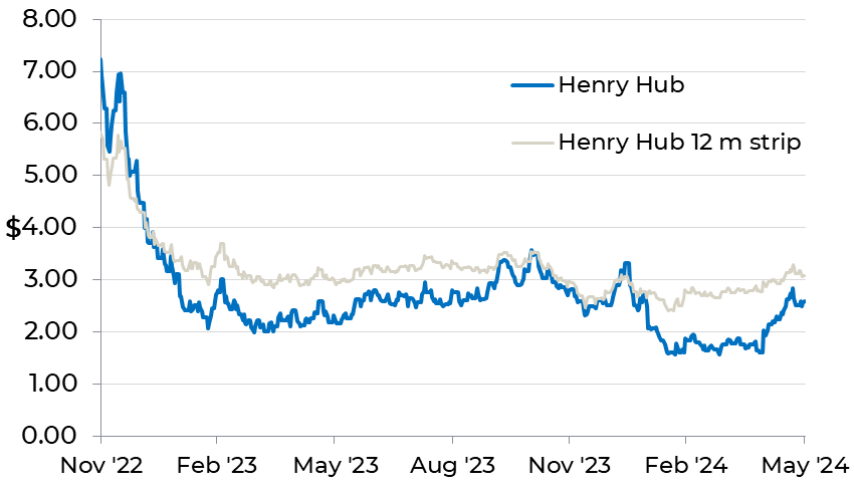
Source: IEA Oil Market Reports (May 2024 and older)

ii) Natural gas market

The US natural gas price (Henry Hub front month) opened May at $1.93/mcf (1,000 cubic feet) and traded steadily higher during the month to close at $2.59/mcf. The spot gas price has averaged $2.10/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 $2.90/mcf and trading up to $3.10/mcf. The strip price has averaged $2.82/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): November 2022 to May 2024



Source: Bloomberg LP

Factors which strengthened the US gas price in May 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 150 rigs at the end of May 2024. This has slowed gas production growth, though 'associated gas' production (a byproduct of shale oil) has continued to grow this year from the Permian basin.

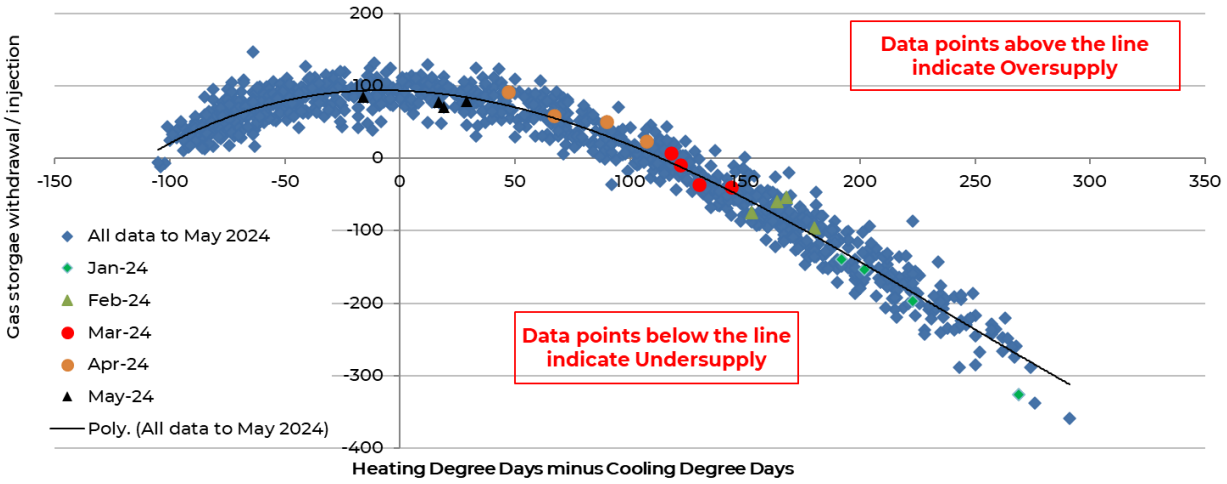
- **Gas E&P companies react to lower prices**

In full year 2023 and Q1 2024 results, many gas-oriented exploration and production (E&P) companies have announced slight reductions in activity and production in response to low natural gas prices. Chesapeake has made the most significant announcements so far, indicating that it would reduce the number of wells that it brings into production by 70% vs 2023 levels, thereby reducing 2024 net production by around 1 Bcf/day.

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

Adjusting for the impact of weather, the US gas market was, on average, around 1 Bcf per day undersupplied during May.

Weather-adjusted US natural gas inventory injections and withdrawals



Source: Bloomberg LP; Guinness Global Investors, June 2024

Factors which weakened the US gas price in May included:

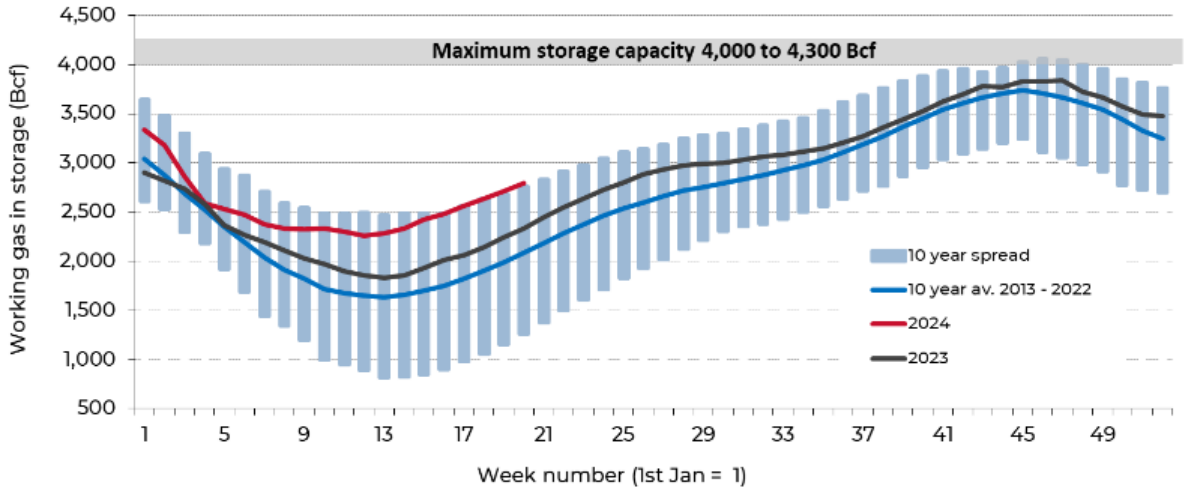
- **Rising onshore production**

Despite the fall in the gas drilling rig count since 2022, US onshore gas production rose by nearly 6.0 Bcf/day in 2023 to 113.4 Bcf/day and is expected to grow to nearly 115 Bcf/day in 2024. Production year to date in 2024 (latest data point being March 2024) was around 2.5 Bcf/day higher than the same period in 2023, meaning that the overall rise in supply has outpaced demand growth over this period.

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

US natural gas inventories have been running higher than seasonal norms, driven by a warmer-than-expected winter and early spring that has brought lower-than-expected heating demand. Inventories levels have moved to the top of the 5-year average, ending May at just over 2.8 trillion cubic feet (around 0.7 Tcf above the 10-year average).

Deviation from 10yr US gas storage norm



Source: Bloomberg; EIA (May 2024)

MANAGERS' COMMENTS

This month, we assess the announcement from the recent OPEC+ meeting and consider how the current slowdown in US onshore oil production growth could allow OPEC+ to add spare capacity back to the market whilst maintaining reasonable oil price levels.

The OPEC+ meeting on June 2 concluded with an announcement of their ambition to maintain a steady market by extending existing production quotas. The group also declared an aspiration to add withheld production into the market during 2025. The announcement stated the intention to "*achieve and sustain a stable oil market, and to provide long-term guidance and transparency for the market*" and to achieve this with an "*approach of being precautious, proactive, and pre-emptive*".

The outcome is broadly in line with consensus expectations and reflects, in our opinion, a desire from the group to maintain the price of oil at an affordable level for the world economy; a price that generates a fiscal surplus for the Saudi economy whilst avoiding excessive supply growth from the non-OPEC world. We have stated for many months now that we think this current 'sweet spot' in today's oil market is somewhere in the $80-100/bl range.

To understand the specifics of the announcement, we need to understand current OPEC+ production policy. Prior to the meeting there were two key components to the official OPEC+ cuts. These were i) the official OPEC+ production targets and ii) a series of additional *voluntary* cuts (initially announced at 1.65m b/day in April 2023 and extended to 2.2m b/day in November 2023) shared between Algeria, Iraq, Kuwait, Saudi, UAE, Kazakhstan, Oman and Russia. At the June 2 meeting, the group decided to extend the official production targets and the first set of voluntary cuts (1.65m b/day) to the end of September 2025. The group also announced plans to reduce the total size of the *voluntary* cuts (2.2m b/day) linearly between September 2024 and September 2025 and allow an extra 0.3m b/day of production capacity increase for the United Arab Emirates. In our view, these actions imply the following:

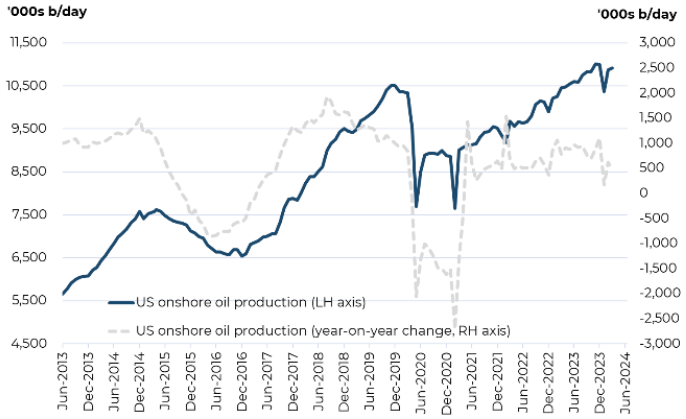
- OPEC+ continues its rational guardianship of the oil market, and the swift conclusion and clear agreement from the meeting indicate the OPEC+ is maintaining its cohesion;
- Near-term, the global oil market will remain undersupplied by 0.5m b/day (IEA estimate for 2024) and this will be supportive of crude oil prices at or above their current levels; and
- The outlook for 2025 will depend on how supply evolves outside OPEC. While OPEC+ would like to return 2.2m b/day to the market by September 2025, we see it as unlikely given their desire to maintain reasonable or acceptable oil prices. The set up for 2025 is in fact very similar to that faced by OPEC+ in mid-2023, looking ahead to 2024 supply/demand. We would expect the group to manage the situation in a similar manner, rolling over production targets to maintain a balanced market with acceptable oil prices while being able to add barrels to the market if required.

The significance of US onshore oil production

OPEC+ will ultimately have to react to the overall level of global oil demand growth and the rate of new supply from a range of non-OPEC+ countries including Canada, Brazil, Guyana and the United States. For much of the last decade, it has been growth in the US onshore shale industry that has kept global oil markets well supplied, forcing OPEC and other allies to hold some of their production back to achieve a stable market. Looking ahead, we do not see the US onshore playing such a significant role.

US onshore production is currently (March 2024) at 10.9m b/day, up just under 0.5m b/day year-on-year with the pace of production growth slowing recently. Capital discipline appears to be the main driver of lower activity levels, with around 65% of compensation incentives for E&P management teams now being driven by profitability, cash flow and operational metrics (such as cost reduction) versus only 44% in 2014. By contrast, growth in reserves and production now represent only 6% of incentives versus 26% back in 2014. The effect of this capital discipline is that drilling rig and fracking activity is lower than would have otherwise been expected relative to the current oil price level. Effectively, a higher oil price is now necessary to justify higher activity levels in the US onshore system.

US onshore oil production 2013-2022 (m b/day)

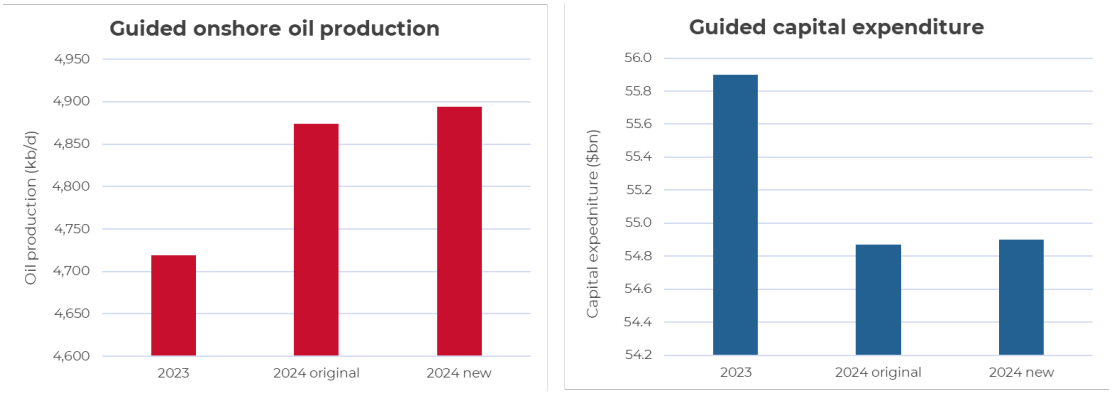


Source: EIA; Bloomberg; Guinness Global Investors, June 2024

Analysis of recent data from Rystad Energy, the Drilling Productivity Report from the Energy Information Administration (EIA) and DNB implies that this trend of capital discipline and muted production growth seems likely to continue.

- According to **Rystad Energy**, US shale oil focused companies increased their oil production guidance for 2024 by 0.4 points (to annual growth of 3.7%) in their 1Q 2024 results announcements. While this group of companies does not reflect the entire US onshore industry, it is interesting to note that this rate of growth would imply a representative production growth of 0.35m b/day for the entire US oil industry, which is roughly on par with expectation. The increased growth appears to be coming from improved efficiencies and cost deflationary dynamics, since capital expenditure plans have not particularly changed.

US shale oil producers' production and capex guidance for 2024

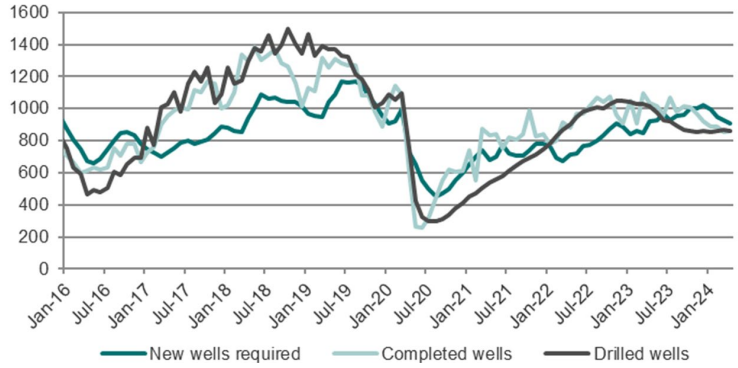


Source: Rystad Energy, 2024

- The most recent **Drilling Productivity Report** from the EIA, which forecasts near-term oil and gas production from the key US unconventional basins, broadly agrees. The report indicates that April, May and June 2024 production will be 9.82m b/day, 9.84m b/day and 9.85m b/day respectively, close to flat on the last reported data for March (9.82m b/day). The data shows a 3-month moving average growth rate of only 9k b/day, implying an annual run rate of only 0.1m b/day.

- Lastly, according to **DNB**, around 900 new onshore wells are required every month to keep US onshore oil production flat. Most recent data shows that the industry drilled and completed 858 wells in April (up 1 well versus March but down 176 wells versus April 2023) implying that the system should start to see some decline in production levels. Offsetting this is the ongoing efficiency improvement trend of increasing well productivity, similar to the effect seen in company guidance discussed earlier. This factor can be quite volatile but the longer-term trend implies a further improvement of around 5%, and this would be sufficient to keep the overall US onshore system at a flat production level if the completed well count stays at current levels.

New US shale oil wells required to maintain flat production



Source: DNB, May 2024

In conclusion, at the start of 2024, we forecasted a muted growth outlook in 2024 for US shale oil, with growth of around 0.4m b/day versus 2023 as the bulk of the industry focused on free cashflow yields, deleveraging, increasing returns to shareholders and consolidation. Recent data implies that this expectation is unlikely to be exceeded, meaning that growth in 2024 will be significantly lower than that seen in 2023 (c.0.8m b/day) and significantly less than the annual average from 2017-19. Ultimately, US supply will continue to be watched very closely by OPEC. If shale oil grows at a manageable level – a level that does not cause non-OPEC supply to exceed (normalised) global oil demand growth – then OPEC will feel they retain control of the market and will find themselves better placed to start returning spare capacity to the market while maintaining an acceptable level of oil prices.

PERFORMANCE

The main index of oil and gas equities, the MSCI World Energy Index (net return), increased by 0.3% in May, while the MSCI World Index (net return) fell by 4.5% in USD.

Within the portfolio, May's strongest performers included Equinor, Diversified Energy Company, PetroChina, Helix Energy Solutions and Suncor while the weakest performers included Deltic Energy, Conoco, EOG Resources, Devon Energy and BP.

Past performance does not predict future returns.

Guinness Global Energy Fund
Performance (in USD) as at 31.05.2024

Cumulative returns	YTD	1 year	3 years ann.	5 years ann.	Launch of strategy* ann. (31.12.98)
Guinness Global Energy Fund	12.8%	30.1%	19.1%	8.5%	8.6%
MSCI World Energy NR Index	10.4%	25.5%	21.7%	10.9%	6.6%

Calendar year returns	2023	2022	2021	2020	2019	2018	2017
Guinness Global Energy Fund	2.6%	32.4%	44.5%	-34.7%	9.8%	-19.7%	-1.3%
MSCI World Energy NR Index	2.5%	46.0%	40.1%	-31.5%	11.4%	-15.8%	5.0%
	2016	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**
Guinness Global Energy Fund	27.9%	-27.6%	-19.1%	24.4%	3.0%	-13.7%	15.3%
MSCI World Energy NR Index	26.6%	-22.8%	-11.6%	18.1%	1.9%	0.2%	11.9%
	2009	**2008***	**2007***	**2006***	**2005***	**2004***	**2003***
Guinness Global Energy Fund	61.8%	-48.2%	37.9%	10.0%	62.3%	41.0%	32.3%
MSCI World Energy NR Index	26.2%	-38.1%	29.8%	17.9%	28.7%	28.1%	25.9%
	2002*	**2001***	**2000***	**1999***			
Guinness Global Energy Fund	6.7%	-4.1%	39.6%	22.5%			
MSCI World Energy NR Index	-6.4%	-7.2%	6.0%	22.0%			

Source: FE fundinfo, Guinness Global Investors and Bloomberg, bid to bid, gross income reinvested, in US dollars

Calculation by Guinness Global Investors. *Simulated past performance prior to 31.03.2008, launch date of Guinness Global Energy Fund. The Guinness Global Energy investment team has been running global energy funds in accordance with the same methodology continuously since December 1998. These returns are calculated using a composite of the Investec GSF Global Energy Fund class A to 29.2.08 (managed by the Guinness team until this date); the Guinness Atkinson Global Energy Fund (sister US mutual fund) from 1.3.08 to 31.3.08 (launch date of this Fund), the Guinness Global Energy Fund class A (1.49% OCF) from launch to 02.09.08, and class Y (0.99% OCF) thereafter. Returns for share classes with a different OCF will vary accordingly.

Investors should note that fees and expenses are charged to the capital of the Fund. This reduces the return on your investment by an amount equivalent to the Ongoing Charges Figure (OCF). The fund performance shown has been reduced by the current OCF of 0.99% per annum. Returns for share classes with different OCFs will vary accordingly. Performance returns do not reflect any initial charge; any such charge will also reduce the return.

Past performance does not predict future returns.

WS Guinness Global Energy Fund
Performance (in GBP) as at 31.05.2024

Cumulative returns	YTD	1 year	3 years ann.	5 years ann.		
WS Guinness Global Energy Fund	11.5%	23.1%	23.6%	9.0%		
MSCI World Energy NR Index	10.6%	22.1%	26.2%	10.7%		

Calendar year returns		2023	2022	2021	2020	2019
WS Guinness Global Energy Fund		-3.2%	49.9%	45.7%	-35.7%	12.6%
MSCI World Energy NR Index		-3.3%	64.4%	41.4%	-33.6%	7.2%
	2018	2017	2016	2015	2013	2012
WS Guinness Global Energy Fund	-6.3%	-7.2%	65.2%	-29.6%	-26.6%	-4.7%
MSCI World Energy NR Index	-10.6%	-4.1%	51.0%	-18.3%	-6.1%	15.9%

Source: FE fundinfo, bid to bid, gross income reinvested, in GBP

Investors should note that fees and expenses are charged to the capital of the Fund. This reduces the return on your investment by an amount equivalent to the Ongoing Charges Figure (OCF). The fund performance shown has been reduced by the current OCF of 0.96% per annum. Returns for share classes with different OCFs will vary accordingly. Performance returns do not reflect any initial charge; any such charge will also reduce the return. Fund launched 21.04.2011.

PORTFOLIO

Buys/Sells

In May there were no buys or sells of full positions, but the portfolio was actively rebalanced.

Sector Breakdown

The following table shows the asset allocation of the Guinness Global Energy Fund at **May 31 2024**.

Asset allocation as %NAV	Current	*Change*	Last year end	Previous year ends							
	May-24		Dec-23	Dec-22	Dec-21	Dec-20	Dec-19	Dec-18	Dec-17	Dec-16	Dec-15	Dec-14
Oil & Gas	**97.1%**	***-1.8%***	**98.9%**	**97.4%**	**96.9%**	**94.8%**	**98.3%**	**96.7%**	**98.4%**	**96.7%**	**95.1%**	**93.7%**
Integrated	57.3%	*2.6%*	54.7%	54.7%	57.7%	56.3%	51.1%	46.4%	42.9%	46.4%	41.5%	37.3%
Exploration & Production	19.3%	*-3.9%*	23.2%	23.1%	23.7%	22.2%	29.6%	35.8%	36.9%	35.8%	36.5%	36.2%
Drilling	0.0%	*0.0%*	0.0%	0.0%	0.0%	0.0%	0.1%	2.2%	1.9%	2.2%	1.5%	3.3%
Equipment & Services	9.3%	*-0.6%*	10.0%	9.0%	4.0%	4.6%	9.6%	8.6%	9.5%	8.6%	11.4%	13.4%
Storage & Transportation	5.3%	*0.3%*	5.0%	4.8%	4.3%	4.4%	4.0%	0.0%	3.5%	0.0%	0.0%	0.0%
Refining & Marketing	5.8%	*-0.2%*	6.0%	5.8%	7.2%	7.3%	3.8%	3.7%	3.7%	3.7%	4.2%	3.5%
Solar	0.0%	*-0.2%*	0.2%	0.7%	1.0%	1.8%	0.7%	0.9%	1.4%	0.9%	4.7%	3.7%
Coal & Consumable Fuels	0.0%	*0.0%*	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Construction & Engineering	0.0%	*0.0%*	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	2.9%	*2.1%*	0.9%	1.9%	2.1%	3.3%	1.1%	2.4%	0.2%	2.4%	0.2%	2.6%

Source: Guinness Global Investors. Basis: Global Industry Classification Standard (GICS)

The Fund at end of May 2024 was on a price to earnings (PE) ratio for 2024/2025 of 9.9x/9.5x versus the MSCI World Index at 19.3x/17.3x as set out in the following table:

As at 31 May 2024	PE		
	2023	2024E	2025E
Guinness Global Energy Fund	10.1x	9.9x	9.5x
MSCI World Index	18.8x	19.3x	17.3x
Fund Premium/(Discount)	*-46%*	*-49%*	*-45%*

Source: Bloomberg; Guinness Global Investors

Portfolio holdings

Our integrated and similar stock exposure (c.58%) is comprised of a mix of mid-cap, mid/large-cap and large-cap stocks. Our five large-caps are Chevron, BP, ExxonMobil, Shell and TotalEnergies. Mid/large and mid-caps are ENI, Equinor, GALP, Repsol and OMV. At May 31 2024 the median PE ratio of this group was 8.3x 2024 earnings. We also have three Canadian integrated holdings, Suncor, Cenovus and Imperial Oil. All three companies have significant exposure to oil sands in addition to downstream assets.

Our exploration and production holdings (c.19%) give us exposure most directly to rising oil and natural gas prices. We include in this category non-integrated oil sands companies, as this is the GICS approach. The stock here with oil sands exposure is Canadian Natural Resources. The pure E&P stocks have a bias towards the US (EOG, Diamondback and Devon), with one other name (ConocoPhillips) having a mix of US and international production. One of the key metrics behind a number of the E&P stocks held is low enterprise value / proven reserves.

We have exposure to two emerging market stocks, Petrochina and Sinopec, which in total represent around 3.8% of the portfolio.

The portfolio contains two midstream holdings, Enbridge and Kinder Morgan, two of North America's largest pipeline companies. With the growth of hydrocarbon demand expected in the US and Canada over the next five years, we believe both companies are well placed to execute their pipeline expansion plans.

We have reasonable exposure to oil service stocks, which comprise over 9% of the portfolio. The stocks we own provide exposure to both North American and international oil and natural gas development.

Our independent refining exposure is currently in the US in Valero, the largest of the US refiners. Valero has a reasonably large presence on the US Gulf Coast and is benefitting from a recovery in refining margins.

Portfolio at April 30 2024 (for compliance reasons disclosed one month in arrears)

Guinness Global Energy Fund (30 April 2024)			P/E			EV/EBITDA			Price/Book		
Stock	**ISIN**	**% of NAV**	**2023**	**2024E**	**2025E**	**2023**	**2024E**	**2025E**	**2023**	**2024E**	**2025E**
Integrated Oil & Gas											
Exxon Mobil Corp	US30231G1022	5.5%	12.4x	12.6x	12.0x	6.9x	6.2x	5.8x	2.3x	2.1x	2.0x
Chevron Corp	US1667641005	4.5%	12.8x	12.4x	11.1x	6.4x	6.0x	5.3x	1.9x	1.8x	1.8x
Shell PLC	GB00BP6MXD84	5.3%	8.9x	9.1x	8.8x	4.3x	4.2x	4.3x	1.3x	1.2x	1.1x
Total SA	FR0000120271	5.1%	7.6x	8.1x	8.0x	4.0x	4.4x	4.5x	1.5x	1.4x	1.3x
BP PLC	GB0007980591	4.6%	9.3x	8.0x	7.4x	3.9x	3.6x	3.7x	1.6x	1.4x	1.3x
Equinor ASA	NO0010096985	2.7%	6.7x	8.0x	7.7x	1.4x	1.7x	1.7x	1.6x	1.7x	1.5x
ENI SpA	IT0003132476	3.1%	6.1x	6.9x	7.0x	3.3x	3.6x	3.6x	0.9x	0.9x	0.8x
Repsol SA	ES0173516115	3.3%	4.7x	4.8x	5.2x	3.6x	3.0x	3.2x	0.7x	0.6x	0.6x
Galp Energia SGPS SA	PTGAL0AM0009	4.6%	13.4x	16.7x	16.9x	5.3x	5.9x	5.9x	3.4x	3.3x	3.1x
OMV AG	AT0000743059	2.7%	7.1x	6.7x	6.9x	3.1x	3.4x	3.4x	0.9x	0.8x	0.8x
		41.4%									
Integrated / Oil & Gas E&P - Canada											
Suncor Energy Inc	CA8672241079	3.8%	11.5x	9.3x	9.3x	5.6x	4.9x	4.9x	1.5x	1.5x	1.4x
Canadian Natural Resources Ltd	CA1363851017	3.9%	13.6x	13.3x	11.2x	7.2x	7.0x	6.3x	2.7x	2.8x	2.6x
Cenovus Energy Inc	CA15135U1093	3.5%	11.1x	10.4x	9.8x	5.5x	5.1x	4.8x	1.8x	1.7x	1.6x
Imperial Oil Ltd	CA4530384086	3.9%	11.1x	9.8x	9.9x	6.4x	6.1x	6.5x	2.2x	2.1x	1.9x
		15.1%									
Integrated Oil & Gas - Emerging market											
PetroChina Co Ltd	CNE1000003W8	2.4%	6.6x	7.3x	7.1x	4.0x	4.3x	4.3x	0.8x	0.8x	0.8x
		2.4%									
Oil & Gas E&P											
ConocoPhillips	US20825C1045	4.7%	14.3x	14.1x	13.0x	6.8x	6.0x	5.8x	3.0x	2.9x	2.6x
EOG Resources Inc	US26875P1012	3.4%	13.0x	11.1x	10.8x	6.7x	5.8x	5.7x	2.7x	2.4x	2.2x
Diamondback Energy Co	US25278X1090	4.4%	11.1x	10.6x	9.8x	6.9x	6.2x	3.8x	2.2x	1.8x	1.7x
Pioneer Natural Resources Co	US7237871071	3.9%	13.0x	12.4x	11.6x	7.2x	6.8x	6.4x	2.7x	2.5x	2.2x
Devon Energy Corp	US25179M1036	2.8%	9.0x	9.8x	9.2x	5.1x	5.2x	5.1x	2.7x	2.4x	2.1x
		19.2%									
International E&Ps											
Pharos Energy PLC	GB00B572ZV91	0.1%	n.m.	3.1x	2.3x	n.m.	1.5x	1.3x	0.5x	n.m.	n.m.
		0.1%									
Midstream											
Kinder Morgan Inc	US49456B1017	2.1%	17.2x	15.1x	14.5x	11.2x	9.1x	8.9x	1.3x	1.3x	1.3x
Enbridge Inc	CA29250N1050	2.4%	17.0x	15.9x	14.8x	13.7x	10.9x	10.1x	1.8x	1.8x	1.8x
		4.5%									
Equipment & Services											
Schlumberger Ltd	AN8068571086	2.8%	15.6x	13.5x	11.4x	8.3x	8.5x	7.3x	3.4x	2.9x	2.6x
Halliburton Co	US4062161017	3.1%	12.4x	11.1x	9.5x	7.4x	7.4x	6.7x	3.5x	3.0x	2.5x
Baker Hughes a GE Co	US05722G1004	1.8%	19.2x	15.5x	12.8x	9.0x	8.3x	7.3x	2.1x	2.0x	1.8x
Helix Energy Solutions Group Inc	US42330P1075	0.9%	31.1x	22.7x	12.8x	5.9x	6.7x	5.4x	1.1x	1.1x	1.0x
		8.7%									
Oil & Gas Refining & Marketing											
China Petroleum & Chemical Corp	CNE1000002Q2	1.5%	8.8x	7.7x	7.5x	5.8x	5.6x	5.4x	0.6x	0.6x	0.6x
Valero Energy Corp	US91913Y1001	4.5%	6.4x	9.2x	11.0x	4.1x	5.7x	6.7x	2.0x	1.9x	1.8x
		6.0%									
Research Portfolio											
Deltic Energy PLC	GB00BNTY2N01	0.08%	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	0.1x	n.m.	n.m.
EnQuest PLC	GB00B635TG28	0.3%	17.0x	1.6x	1.6x	1.6x	1.4x	1.4x	0.9x	0.7x	0.5x
Reabold Resources PLC	GB00B95L0551	0.0%	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
Sunpower Corp	US8676524064	0.1%	n.m.	n.m.	n.m.	n.m.	n.m.	9.2x	1.2x	1.7x	1.6x
Maxeon Solar Technologies Ltd	SGXZ25336314	0.0%	n.m.	n.m.	n.m.	29.6x	n.m.	3.1x	1.8x	n.m.	n.m.
Diversified Energy Company	GB00BQHP5P93	0.2%	n.m.	5.3x	10.0x	5.9x	4.2x	4.4x	1.1x	1.0x	0.8x
		0.7%									
Cash	**Cash**	**1.9%**									

The Fund's portfolio may change significantly over a short period of time; no recommendation is made for the purchase or sale of any particular stock.

OUTLOOK

i) Oil market

The table below illustrates the difference between the growth in world oil demand and non-OPEC supply since 2015:

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E IEA
World Demand	**95.3**	**96.4**	**98.2**	**99.5**	**100.7**	**91.8**	**97.5**	**99.7**	**102.0**	**103.2**
Non-OPEC supply (inc NGLs)	62.1	61.5	62.5	65.0	67.0	64.4	64.9	66.8	69.2	70.2
OPEC NGLs	5.2	5.3	5.4	5.5	5.3	5.2	5.3	5.4	5.5	5.6
Non-OPEC supply plus OPEC NGLs	**67.3**	**66.8**	**67.9**	**70.5**	**72.3**	**69.6**	**70.2**	**72.2**	**74.7**	**75.8**
Call on OPEC (crude oil)	**28.0**	**29.6**	**30.3**	**29.0**	**28.4**	**22.2**	**27.3**	**27.5**	**27.3**	**27.4**
Congo supply adjustment	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Gabon supply adjustment	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Eq Guinea supply adjustment	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Call on OPEC-9 (crude oil)	**27.4**	**29.0**	**29.7**	**28.4**	**27.8**	**21.6**	**26.7**	**26.9**	**26.7**	**26.8**

Source: Bloomberg; IEA; Guinness Global Investors, May 2024

Global oil demand in 2019 was 13m b/day higher than the pre-financial crisis (2007) peak. The demand picture for 2020, down by around 9m b/day, was heavily clouded by the impact of the COVID-19 virus and efforts to mitigate its spread. Demand rebounded between 2021 and 2023 by over 10m b/day, leaving overall consumption in 2023 over 1m b/day higher than the 2019 peak.

OPEC

The last few years have proved testing for OPEC. They have tried to keep prices strong enough that OPEC economies are not running excessive deficits, whilst not pushing the price too high and over-stimulating non-OPEC supply.

The effect of $100+/bl oil, enjoyed for most of the 2011-2014 period, emerged in 2014 in the form of an acceleration in US shale oil production and an acceleration in the number of large non-OPEC (ex US onshore) projects reaching production. OPEC met in late 2014 and responded to rising non-OPEC supply with a significant change in strategy to one that prioritised market share over price. Post the November 2014 meeting, OPEC not only maintained their quota but also raised production significantly, up by 2.5m b/day over the subsequent 18 months. This contributed to an oversupplied market in 2015 and 2016.

In late 2016, faced with sharply lower oil prices, OPEC stepped back from their market share stance, announcing plans for the first production cut since 2008. The announcement included a cut in production from Russia (a non-OPEC country), creating for the first time the concept of an OPEC+ group. Late in 2023, Angola announced its intention to leave OPEC.

OPEC-9 oil production to May 2024

('000 b/day)	31-Dec-19	30-Apr-24	31-May-24	Current vs Dec 2019	Current vs last month
Saudi	9,730	9,040	**9,030**	-700	-10
Iran	2,080	3,220	**3,200**	1,120	-20
Iraq	4,610	4,220	**4,240**	-370	20
UAE	3,040	3,120	**3,130**	90	10
Kuwait	2,710	2,430	**2,460**	-250	30
Nigeria	1,820	1,420	**1,460**	-360	40
Venezuela	730	840	**860**	130	20
Libya	1,110	1,190	**1,160**	50	-30
Algeria	1,010	910	**900**	-110	-10
OPEC-9	**26,840**	**26,390**	**26,440**	**-400**	**50**

Source: Bloomberg; Guinness Global Investors

The 2017-19 period continued to be volatile for OPEC, with further production cuts necessary to balance ongoing non-OPEC supply growth.

The challenge for OPEC+ then ballooned in 2020 with the onset of COVID around the world. Initially, OPEC and their non-OPEC partners failed to reach agreement around their response to demand from the spread of the virus, precipitating a fall-out between participants and a short-lived price war. In light of extreme oil market oversupply, OPEC and non-OPEC partners reconvened in April 2020 and confirmed a deal to cut their production by nearly 10m b/day.

In July 2021, with demand largely recovered after COVID, the OPEC+ group agreed to taper their quota cuts at 0.4m b/day each month until September 2022. The actions of OPEC through the pandemic gave us confidence that OPEC was looking to do 'what it takes' to keep the market in balance, despite extreme challenges. Since the end of 2022, OPEC have adjusted their production to match closely the prevailing call on the group.

OPEC-9 apparent production vs call on OPEC 2000 – 2024

Source: IEA Oil Market Report (May 2024 and prior); Guinness estimates

OPEC's actions in recent years have generally demonstrated a commitment to delivering a reasonable oil price to satisfy their own economies but also to incentivise investment in long-term projects. Saudi's actions at the head of OPEC have been designed to achieve an oil price that to some extent closes their fiscal deficit (c.$95/bl is needed to close the gap fully), whilst not spiking the oil price too high and over-stimulating non-OPEC supply.

In the shorter term, the COVID-19 and Russia/Ukraine crises have created particularly challenging conditions, adding to oil price volatility. Longer-term, we believe that Saudi seek a 'good' oil price, one that satisfies their fiscal needs. Overall, we reiterate two important criteria for Saudi:

1. Saudi is interested in the average price of oil that they get; they have a longer investment horizon than most other market participants.

2. Saudi wants to maintain a balance between global oil supply and demand to maintain a price that is acceptable to both producers and consumers.

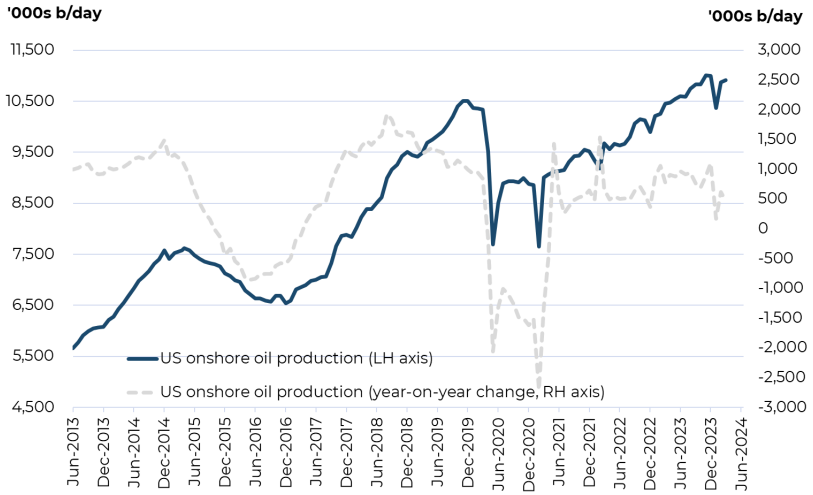
Nothing in the market in recent years has changed our view that OPEC can put a floor under the price – as they did in 2020, 2018, 2016, 2008, 2006, 2001 and 1998.

Supply looking forward

The non-OPEC world has, since the 2008 financial crisis, grown its production more meaningfully than in the period before 2008. The growth was 0.9% p.a. from 2001-2008, increasing to 1.6% p.a. from 2009-2023.

Growth in the non-OPEC region since the start of the last decade has been dominated by the development of shale oil and oil sands in North America (up around 8m b/day between since 2010), implying that the rest of the non-OPEC region has barely grown over this period, despite the sustained high oil price until mid-2014.

US onshore oil production



Source: EIA; Guinness Global Investors, June 2024

The growth in US shale oil production, especially the Permian Basin, raises the question of how much more there is to come and at what price. Our assessment is that US shale oil is capital-intensive but some growth is viable, on average, at around $70 oil prices. In particular, there appears to be ample inventory in the Permian Basin to allow growth into the mid-2020s. The rate of development is heavily dependent on the cashflow available to producing companies, which tends to be recycled immediately into new wells, and the underlying cost of services to drill and fracture the wells. Since 2019, we have seen increased shareholder pressure applied to US E&P companies to improve their capital discipline and to cut their reinvestment rates.

The collapse in oil prices at the start of 2020 to a level well below $50/bl changed the landscape, with US E&P companies reducing capital spending further as they attempted to live within their cashflows. Shale oil production dropped by nearly 3m b/day in 2020 (peak to trough) and took nearly three years to recover to the previous peak of late 2019.

Non-OPEC supply growth outside the US has been sustained in recent years, despite lower oil prices, with projects that were sanctioned before 2014 (when oil was $100/bl+) continuing to come onstream. However, with a lack of major project additions post 2020, new supply growth has proved to be on the slow side.

Future demand

The IEA estimate that 2024 oil demand will rise by around 1.2m b/day to 103.2m b/day, around 2.5m b/day ahead of the 2019 pre-COVID peak.

Post the COVID demand recovery and assuming typical economic growth, we expect the world to settle back into annual oil demand growth of plus or minus 1m b/day, led by increased use in the non-OECD region. China has been, and continues to be, the most important component of this growth, although signs are emerging that India will also grow rapidly.

The trajectory of global oil demand over the next few years will be a function of global GDP, the pace of the 'consumerisation' of developing economies, the development of alternative fuels, and price. At $80/bl, the world oil bill as a percentage of GDP is around 2.8%, and this will still be a stimulant of further demand growth. If oil prices were in a higher range (say around $110/bl, representing 3.8% of GDP), we would probably return to the pattern established over the past five years, with a flatter picture in the OECD more than offset by growth in the non-OECD area. Flatter OECD demand reflects improving oil efficiency over time, dampened by economic, population and vehicle growth. Within the non-OECD, population growth and rising oil use per capita will both play a significant part.

We keep a close eye on developments in the 'new energy' vehicle fleet (electric vehicles; hybrids etc). Sales of electric vehicles (pure electric and plug-in hybrid electrics) globally were around 14m in 2023, up from 10m in 2022 and 6m in 2021. We expect to see strong EV sales growth again in 2024, up to over 16m, around 20% of total global sales. Even applying an aggressive growth rate to EV sales, we see EVs comprising only around 3-4% of the global car fleet by the end of 2024. Looking further ahead, we expect the penetration of EVs to accelerate, causing global gasoline demand to peak at some point in the middle of the 2020s. However, owing to the weight of oil demand that comes from sources other than passenger vehicles (around 75%), which we expect to continue growing linked to GDP, we expect total oil demand not to peak until around 2030.

Conclusions about oil

The table below summarises our view by showing our oil price forecasts for WTI and Brent in 2024 versus recent history.

Average WTI & Brent yearly prices, and changes

Oil price																		*Est*
12 month MAV	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WTI	72	100	62	80	95	94	98	93	49	43	51	65	57	39	68	94	78	79
Brent	73	99	63	80	111	112	109	99	54	45	55	72	64	43	71	99	83	83
Brent/WTI (12m MAV)	**73**	**99**	**62**	**80**	**103**	**103**	**103**	**96**	**51**	**44**	**53**	**68**	**61**	**41**	**70**	**97**	**80**	**81**
Brent/WTI y-on-y change	-3%	37%	-37%	28%	29%	0%	0%	-7%	-47%	-13%	19%	29%	-11%	-32%	68%	39%	-17%	1%
Brent/WTI (5yr MAV)	59	72	75	78	83	89	90	97	91	80	70	63	55	53	58	67	70	74

Source: Guinness Global Investors estimates, Bloomberg, January 2024

We believe that Saudi's long-term objective remains to maintain a 'good' oil price, something north of $80/bl. The world oil bill at around $80/bl represents 2.8% of 2024 global GDP, well under the average of the 1970 – 2021 period (3.4%).

ii) Natural gas market

US gas demand

On the demand side for the US, industrial gas demand and power generation gas demand (each about 25-35% of total US gas demand) are key. Commercial and residential demand, which make up a further quarter, have been fairly constant on average over the last decade – although yearly fluctuations due to the severity of winter weather can be marked.

US natural gas demand

Bcf/day	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023E	2024E
US natural gas demand:													
Residential/commercial	19.2	22.4	23.4	21.4	20.5	20.9	23.4	23.5	21.5	21.5	23.3	21.8	22.6
Power generation	24.9	22.3	22.3	26.5	27.3	25.3	29.0	30.9	31.7	30.9	33.1	34.0	31.8
Industrial	19.7	20.3	20.9	20.6	21.1	21.6	23.0	23.1	22.3	22.5	23.0	23.1	23.7
Pipeline exports (Mexico)	1.8	1.9	1.9	2.7	3.8	4.0	4.6	5.1	5.4	5.9	5.7	6.0	6.5
LNG exports	-	-	-	0.1	1.0	2.6	2.8	4.8	6.4	9.7	11.8	13.0	13.7
Pipeline/plant/other	6.1	6.7	6.3	6.5	6.4	6.5	7.0	7.8	7.7	7.8	8.8	9.0	9.1
Total demand	**71.7**	**73.6**	**74.8**	**77.8**	**80.1**	**80.9**	**89.8**	**95.2**	**95.0**	**98.3**	**105.7**	**106.9**	**107.4**
Demand growth	**3.1**	**1.9**	**1.2**	**3.0**	**2.3**	**0.8**	**8.9**	**5.4**	**- 0.2**	**3.3**	**7.4**	**1.2**	**0.5**

Source: EIA; GS; Guinness estimates, April 2024

Industrial demand (of which around 35% comes from petrochemicals) trends up and down depending on the strength of the economy and the differential between US and international gas prices. Electricity gas demand (i.e. power generation) is affected by weather, in particular by warm summers, which drive demand for air conditioning, but the underlying trend depends on GDP growth and the proportion of incremental new power generation each year that goes to natural gas versus the alternatives of coal, nuclear and renewables. Gas has been taking market share in this sector: in 2022 38% of electricity generation was powered by gas, up from 22% in 2007. The big loser here is coal, which has consistently given up market share.

Total gas demand in 2023 (including Mexican and LNG exports) was around 106.9 Bcf/day, up by 1.2 Bcf/day versus 2022 and 7 Bcf/day (7%) higher than the 5-year average. The biggest contributors to the growth in demand in 2023 were LNG exports and power generation.

We expect a more muted US demand growth picture in 2024 of 0.5 Bcf/day versus average growth of nearly 4 Bcf/day between 2021 and 2023. Growth is expected to be driven by higher LNG exports and a strong US economy lifting residential, commercial and industrial demand, offset by declining power generation demand (-2.2 Bcf/day). Beyond 2024, we expect to see a material increase in US LNG export capacity as higher international gas prices incentivise new LNG export investment. Proposed projects imply capacity growth of around 6-7 Bcf/day by the end of 2025 and a further 5-6 Bcf/day in 2026-2028, bringing total export capacity to around 25 Bcf/day by 2028.

US gas supply

Overall, whilst gas demand in the US has been strong over the past five years, it has been overshadowed by a rise in onshore supply, holding the gas price lower.

The supply side fundamentals for natural gas in the US are driven by three main moving parts: onshore and offshore domestic production, pipeline imports of gas from Canada, and LNG imports. Of these, onshore supply is the biggest component, making up over 90% of total supply.

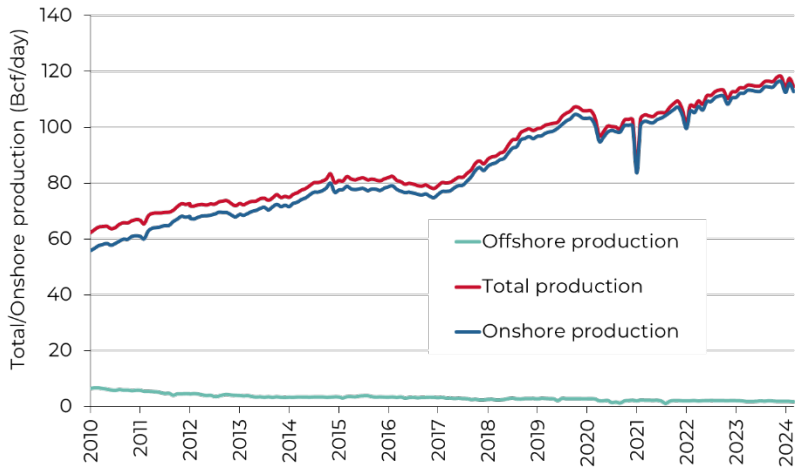
US natural gas supply

Bcf/day	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023E	2024E
US natural gas supply:													
US (onshore & offshore)	65.7	66.3	70.9	74.2	73.4	73.6	84.3	91.4	91.1	91.8	97.3	100.9	101.7
Net imports (Canada)	5.4	5.0	4.9	4.9	5.5	5.8	5.4	4.7	4.4	5.1	5.6	5.2	5.2
LNG imports & other	0.8	0.6	0.5	0.5	0.4	0.3	0.1	0.1	-	-	0.1	-	-
Total supply	**71.9**	**71.9**	**76.3**	**79.6**	**79.3**	**79.7**	**89.8**	**96.2**	**95.5**	**96.9**	**103.0**	**106.1**	**106.9**
Supply growth	2.4	-	4.4	3.3	- 0.3	0.4	10.1	6.4	- 0.7	1.4	6.1	3.1	0.8
(Supply)/demand balance	- 0.2	1.7	- 1.5	- 1.8	0.8	1.2	-	- 1.0	- 0.5	1.4	2.7	0.8	0.5

Source: EIA; GS; Guinness estimates, May 2024

Since 2010, the weaker gas price in the US reflects growing onshore US production driven by rising shale gas and associated gas production (a by-product of growing onshore US oil production). Interestingly, the overall rise in onshore production has come despite a collapse in the number of rigs drilling for gas, which has dropped from a 1,606 peak in September 2008 to a trough of 68 in July 2020, before recovering to around 110 at the end of April 2024. However, offsetting the fall, the average productivity per rig has risen dramatically as producers focus their attention on the most prolific shale basins, whilst associated gas from oil production has grown handsomely.

US natural gross gas production 2010 – 2024 (Lower 48 States)



Source: EIA 914 data (june 2024 data)

The outlook for gas production in the US depends on three key factors: the rise of associated gas (gas produced from wells classified as oil wells); expansion of the newer shale basins, principally the Marcellus/Utica, and the decline profile of legacy gas fields.

Associated gas production is expected to rise again in 2024 albeit at a slower pace (+0.8 Bcf/day) than in 2022 (+5.5 Bcf/day) and 2023 (+3.6 Bcf/day). Lower supply growth is expected from onshore properties as weaker natural gas prices have brought a lower rig count (down 30% to 110 rigs at end April 2024) and lower investment. A 10% reduction in rig count in the Permian also has a knock-on effect of reducing associated gas supply in 2024 while Haynesville production in 2024 will be down versus 2023.

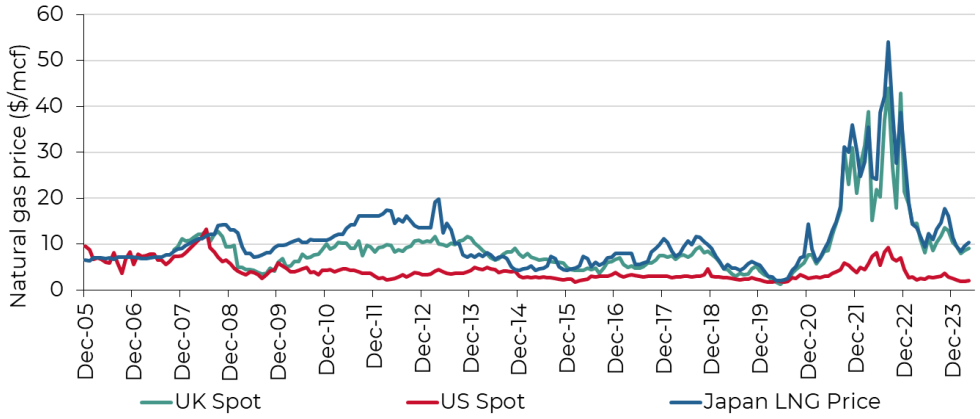
Outlook for US LNG exports – global gas arbitrage

We expect the LNG market is going to be quite finely balanced over the next couple of years. In the event of moderate Chinese LNG demand and "normal" European winters, LNG supply and demand appear to be roughly in balance and global

LNG prices appear to be fairly priced at around $12/mcf. However, stronger Asian demand (including South Korea and Japan as well as China) or a colder than expected European winter could easily see LNG in tight supply and cause international gas prices spike, although it is unlikely that they revert to the $40-$50 levels seen in winter 2022/2023.

Looking further ahead, we see international gas prices settling in a $10-12/mcf range. This price range should be sufficient to incentivise new US LNG supply to come online from 2025. It would also allow Europe to displace permanently almost all its Russian gas imports. An international gas price in the $10-12/mcf is well down on the highs seen in 2022, but would leave the market at a c.50% higher price point than that seen in the few years prior to COVID and the Russian invasion of Ukraine.

International gas prices to May 2024

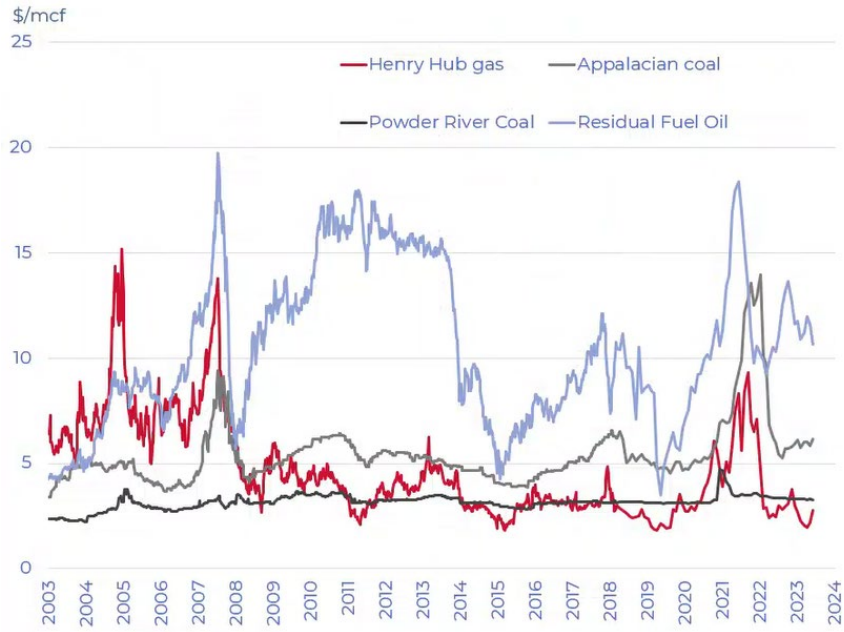


Source: Bloomberg; Guinness Global Investors (June 2024)

Relationship with oil and coal

The following chart of the front month US natural gas price against heating oil (No 2), residual fuel oil (No 6) and coal (Sandy Barge adjusted for transport and environmental costs) seeks to illustrate how coal and residual fuel oil switching provide a floor and heating oil a ceiling to the natural gas price. When the gas price has traded below the coal price support level (2012 and 2016), resulting coal-to-gas switching for power generation was significant.

Natural gas versus substitutes (fuel oil and coal) - Henry Hub vs residual fuel oil, heating oil, Sandy Barge (adjusted) and Powder River coal (adjusted)



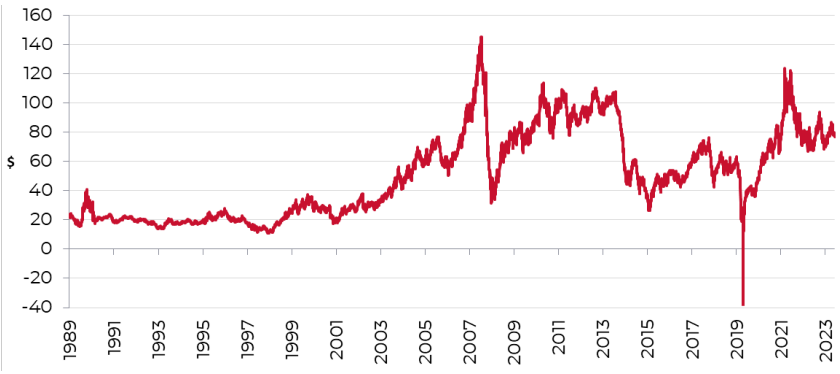
Source: Bloomberg; Guinness Global Investors (May 2024)

Conclusions about US natural gas

The US natural gas price since 2010 has mainly fluctuated between $2 and $4/mcf. The extremes of this range have tended to coincide with warm and cold winters, and any sustained recovery over $3.50/mcf has generally been muted by strength in gas supply. With inflationary pressures, we estimate that new onshore supply has an incentive price of around $3.50/mcf. Assuming normal weather in 2024, we expect a Henry Hub price at around this level.

APPENDIX: Oil and gas markets historical context

Oil price (WTI $) since 1989



Source: Bloomberg, June 2024

For the oil market, the period since the Iraq/Kuwait war (1990/91) can be divided into four distinct periods:

1) **1990-1998:** broadly characterized by decline. The oil price steadily weakened 1991 – 1993, rallied between 1994 – 1996, and then sold off sharply, to test 20-year lows in late 1998. This latter decline was partly induced by a sharp contraction in demand growth from Asia, associated with the Asian crisis, partly by a rapid recovery in Iraq exports after the UN Oil for food deal, and partly by a perceived lack of discipline at OPEC in coping with these developments.

2) **1998-2014:** a much stronger price and upward trend. There was a very strong rally between 1999 and 2000 as OPEC implemented 4m b/day of production cuts. It was followed by a period of weakness caused by the rollback of these cuts, coinciding with the world economic slowdown, which reduced demand growth and a recovery in Russian exports from depressed levels in the mid 90's that increased supply. OPEC responded rapidly to this during 2001 and reintroduced production cuts that stabilized the market relatively quickly by the end of 2001.

   Then, in late 2002 early 2003, war in Iraq and a general strike in Venezuela caused the price to spike upward. This was quickly followed by a sharp sell-off due to the swift capture of Iraq's Southern oil fields by Allied Forces and expectation that they would win easily. Then higher prices were generated when the anticipated recovery in Iraq production was slow to materialise. This was in mid to end 2003 followed by a much more normal phase with positive factors (China demand; Venezuelan production difficulties; strong world economy) balanced against negative ones (Iraq back to 2.5 m b/day; 2Q seasonal demand weakness) with stock levels and speculative activity needing to be monitored closely. OPEC's management skills appeared likely to be the critical determinant in this environment.

   By mid-2004 the market had become unsettled by the deteriorating security situation in Iraq and Saudi Arabia and increasingly impressed by the regular upgrades in IEA forecasts of near record world oil demand growth in 2004 caused by a triple demand shock from strong demand simultaneously from China; the developed world (esp. USA) and Asia ex China. Higher production by OPEC has been one response and there was for a period some worry that this, if not curbed, together with demand and supply responses to higher prices, would cause an oil price sell off. Offsetting this has been an opposite worry that non-OPEC production could be within a decade of peaking; a growing view that OPEC would defend $50 oil vigorously; upwards pressure on inventory levels from a move from JIT (just in time) to JIC (just in case); and pressure on futures markets from commodity fund investors.

   Continued expectations of a supply crunch by the end of the decade, coupled with increased speculative activity in oil markets, contributed to the oil price surging past $90 in the final months of 2007 and as high as $147 by the middle of

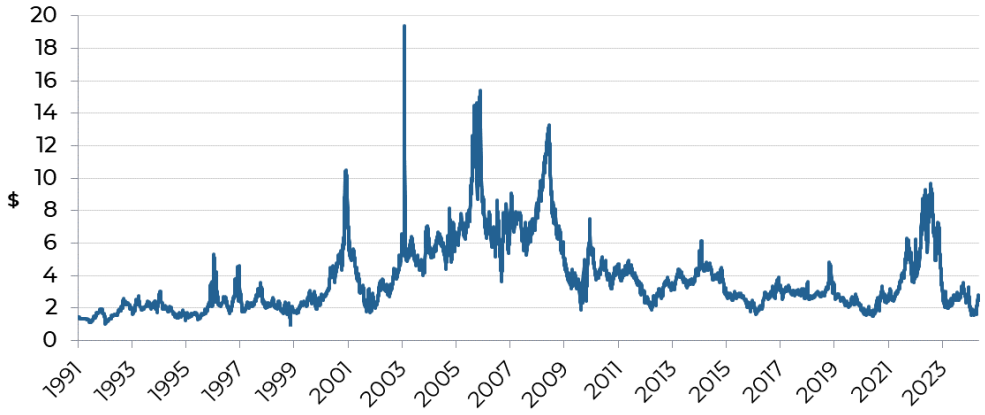
2008. This spike was brought to an abrupt end by the collapse of Lehman Brothers and the financial crisis and recession that followed, all of which contributed to the oil price falling back by early 2009 to just above $30. OPEC responded decisively and reduced output, helping the price to recover in 2009 and stabilise in the $70-95 range where it remained for two years.

Prices during 2011-2014 moved higher, averaging around $100, though WTI generally traded lower than Brent oil benchmarks due to US domestic oversupply affecting WTI. During this period, US unconventional oil supply grew strongly, but was offset by the pressures of rising non-OECD demand and supply tensions in the Middle East/North Africa.

3) **2014-2020:** a further downcycle in oil. Ten years of high prices leading up to 2014 catalysed a wall of new non-OPEC supply, sufficient that OPEC saw no choice but to stop supporting price and re-set the investment cycle. Oil prices found a bottom in 2016 (as a result of OPEC and non-OPEC partners cutting production again), but its recovery was capped by the volume of new supply still coming into the market from projects sanctioned pre the 2014 price crash. Average prices were pinned 2017-19 in the $50-70/bl range, with prices at the top end of this rang stimulating oversupply from US shale. The alliance between OPEC and non-OPEC partners fell apart briefly in March 2020 and, coupled with an unprecedented collapse in demand owing to the COVID-19 crisis, oil prices dropped back below $30/bl, before recovering to around $50/bl by the end of 2020 thanks to renewed OPEC+ action.

4) **2021 onwards:** Underinvestment in new oil capacity in the 2015-2020 period catalysed the start of a new cycle in 2021, pushing prices above $75/bl.

North American gas price since 1991 (Henry Hub $/Mcf)



Source: Bloomberg, June 2024

With regard to the US natural gas market, the price traded between $1.50 and $3/Mcf for the period 1991 - 1999. The 2000s were a more volatile period for the gas price, with several spikes over $8/mcf, but each lasting less than 12 months. On each occasion, the price spike induced a spurt of drilling which brought the price back down. Excepting these spikes, from 2004 to 2008, the price generally traded in the $5-8 range. Since 2008, the price has averaged below $4 as progress achieved in 2007-8 in developing shale plays boosted supply while the 2008-09 recession cut demand. Demand has been recovering since 2009 but this has been outpaced by continued growth in onshore production, driven by the prolific Marcellus/Utica field and associated gas as a by-product of shale oil production.

North American gas prices are important to many E&P companies. In the short term, they do not necessarily move in line with the oil price, as the gas market is essentially a local one. (In theory 6 Mcf of gas is equivalent to 1 barrel of oil so $60 per barrel equals $10/Mcf gas). It remains a regional market more than a global market, though the development of the LNG industry is creating a greater linkage.

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GUINNESS GLOBAL ENERGY FUND

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