Guinness Global Energy

Investment Commentary – December 2023

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.

CONTENTS

COMMENTARY

OIL

Brent/WTI fell as political premium fades

Brent and WTI spot oil prices were down $5/bl and $8/bl over November as concerns faded around Iranian supply being curtailed by the Israel/Hamas conflict. Brent and WTI closed the month at $81/bl and $76/bl, a little below average prices year to date. Five-year forward prices were down by $2/bl, with Brent closing November at $68/bl and WTI at $63/bl.

NATURAL GAS

Asian/European prices lower as storage remains high

Asian and European gas prices (using UK national balancing point) ended November around $2/mcf and $1/mcf higher at $16.2/mcf and $12.9/mcf respectively, whilst the US spot price (Henry Hub) fell from $3.6/mcf to $2.8/mcf. Gas in storage in Europe remains at high levels, whilst the Tamar field (offshore Israel) has resumed production. Warm weather in the US pushed the Henry Hub gas price lower.

EQUITIES

Energy underperforms the broad market in November

The MSCI World Energy Index (net return) rose by 0.3% in November, underperforming the MSCI World Index (net return) which rose by 9.4% over the month (all in USD).

CHART OF THE MONTH

Road transport activity in China recovered

Chinese transport data suggests that congestion levels remain elevated and are up sharply year-on-year as the country normalised post-COVID. This is a key factor behind growth in Chinese oil demand in 2023, expected to be up 1.7m b/day (70% of world demand growth).

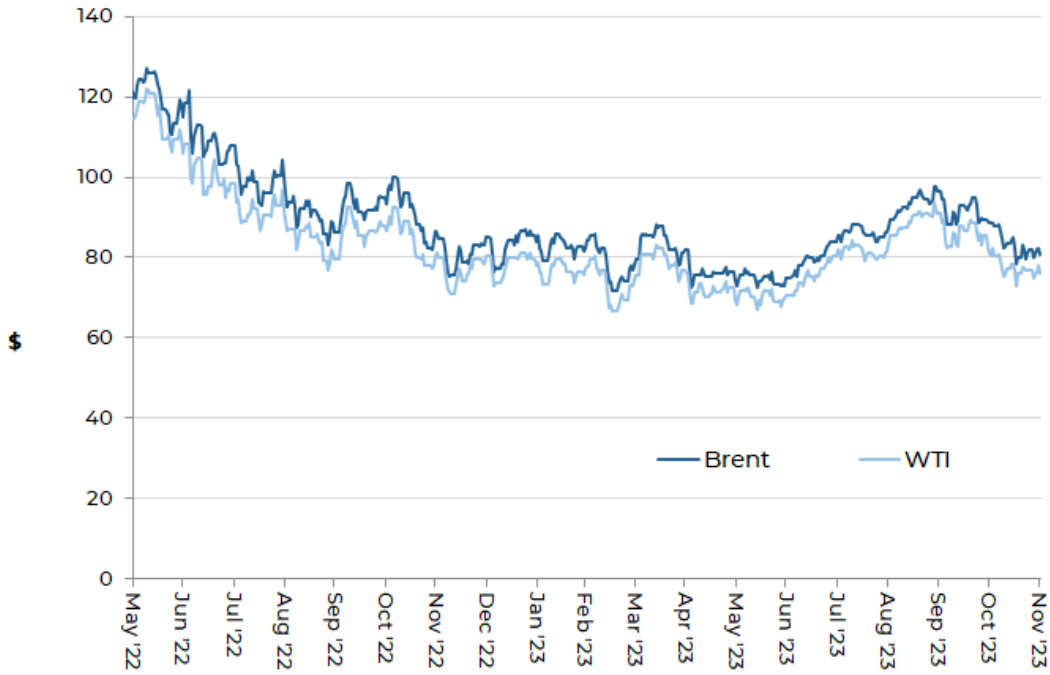
China road congestion index

Indexed to 100 at January 2021. Source: DNB, December

NOVEMBER IN REVIEW

i) Oil market

Oil price (WTI and Brent $/barrel): May 2022 to November 2023



Source: Bloomberg; Guinness Global Investors

The West Texas Intermediate (WTI) oil price began November at $81/bl then traded gradually lower over the month before closing at $76/bl. WTI has averaged $78/bl so far this year, having averaged $95/bl in 2022 and $68/bl in 2021.

Brent oil traded in a similar shape, opening at $89/bl and trading between $79/bl and $89/bl before closing at $81/bl. Brent has averaged $83/bl so far in 2023, having averaged $100/bl in 2022 and $70/bl in 2021. The gap between the WTI and Brent benchmark oil prices narrowed over the month, ending November at $4.6/bl. The Brent-WTI spread has averaged $4.9/bl so far in 2023.

Factors which strengthened WTI and Brent oil prices in November:

- **Continued evidence of non-OECD demand strength**

The IEA nudged their 2023 global demand growth estimate higher in November to 2.4m b/day, taking overall demand in 2023 on average to 102m b/day. This is up from the IEA's original forecast of 1.7m b/day made at the end of last year. Non-OECD countries account for 95% of expected growth this year, with China making up 75% of gains thanks to post-COVID recoveries in transport and petrochemicals. Chinese oil demand rose to a record high in September of 17.1m b/day.

- **Saudi Arabia maintaining voluntary production cut, backed by Russia**

In early September, Saudi and Russia announced that they would continue the voluntary production cuts (entered into in July), to the end of the year. In November, we saw those cuts maintained, despite higher oil prices. Lower Saudi and Russian production during the third and fourth quarters, at a time when oil demand growth has been robust, has kept the market undersupplied.

Factors which weakened WTI and Brent oil prices in November:

- **Israel/Hamas conflict - political premium receding**

The October 7th attacks in Israel by Hamas brought into question the stability of oil and gas production across the region. Oil and gas prices rose in the immediate aftermath of the Hamas attacks, with oil rising into the $90s/bl, in particular on concerns that Iran would become more involved in the conflict. Whilst the crisis in Gaza is ongoing, the lack of escalation from or towards Iran so far has calmed the oil market somewhat, and removed any political premium that had built up in the price.

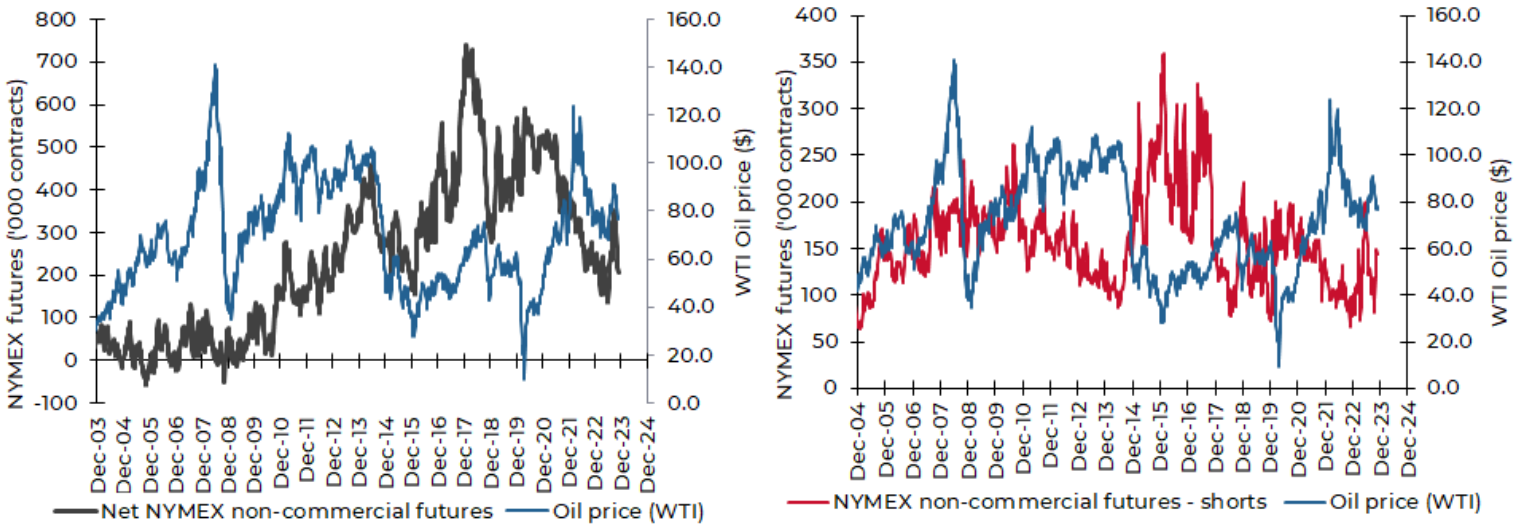
- **Resilience in US shale supply**

Latest supply data from the Energy Information Administration (EIA) shows US onshore oil supply reached a new high in September, averaging 10.8m b/day, and surpassing the pre-COVID peak in November 2019 of 10.6m b/day. That said, the US crude rotary rig count has fallen by 120 rigs since its recent peak of 627 in December 2022 and is currently running more than 20% below pre-pandemic levels. US shale oil supply growth has been running at 0.75m-0.9m b/day year-on-year, but we expect this growth rate to drop sharply as the fall in rig count kicks in (typically there is a 6-9 month lag between change in rig count and production). The current level of drilling in the US shale industry implies little growth over the next 12 months.

Speculative and investment flows

The New York Mercantile Exchange (NYMEX) net non-commercial crude oil futures open position was 207,000 contracts long at the end of November versus 262,000 contracts long at the end of October. 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 increased to 143,000 contracts at the end of November versus 122,000 at the end of the previous month.

NYMEX Non-commercial net and short futures contracts: WTI January 2004 – November 2023

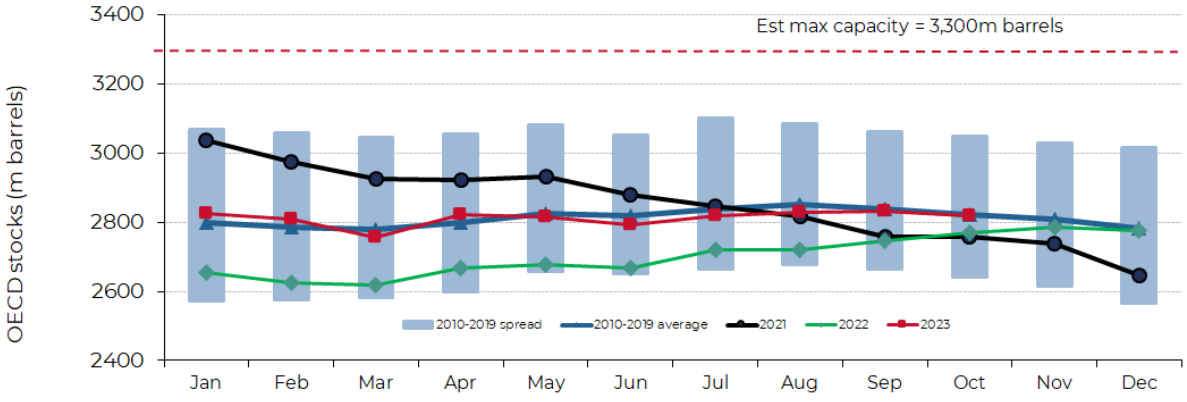


Source: Bloomberg LP/NYMEX/ICE (2023)

OECD stocks

OECD total product and crude inventories at the end of September (latest data point) were estimated by the IEA to be 2,818m barrels, down 13m barrels versus the level reported for the previous month. The decline in September compares to a 10-year average decrease of 17m barrels, implying that the OECD market was approximately balanced. 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. Despite remaining flat for the first half of 2022, inventories began to build again from June onwards, leading to levels currently sitting close to the 10-year average.

OECD total product and crude inventories, monthly, 2010 to 2023



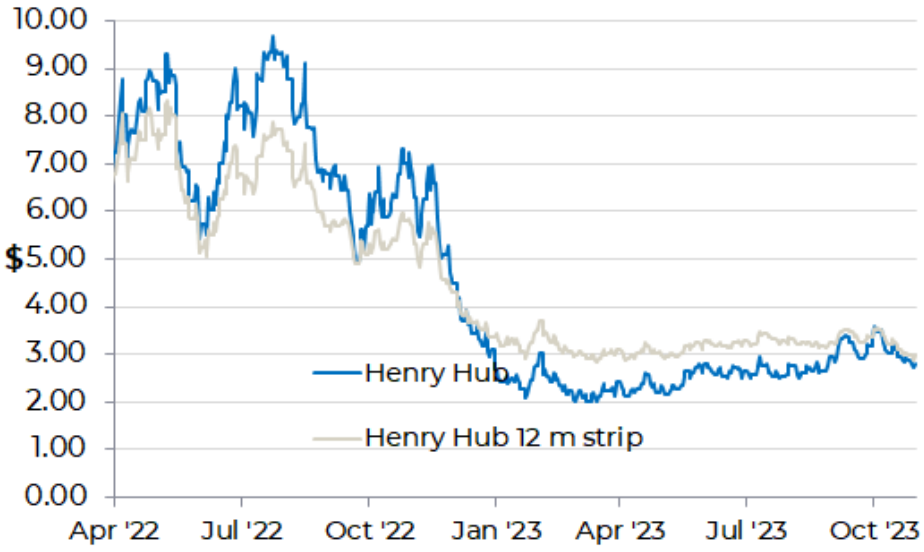
Source: IEA Oil Market Reports (November 2023 and older)

ii) Natural gas market

The US natural gas price (Henry Hub front month) opened November at $3.58/mcf (1,000 cubic feet) and traded steadily lower of the month to a low on November $2.71/mcf, before rallying to close at $2.80/mcf. The spot gas price has averaged $2.68/mcf so far in 2023, having averaged $6.52/mcf in 2022 and $3.71/mcf in 2021.

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 $3.24/mcf, trading between $3.20 and $3.50 throughout the month, before spiking higher at the end of the month to close at $3.55/mcf. The strip price has averaged $3.24/mcf so far in 2023, having averaged $5.90 in 2022 and $3.52 in 2021.

Henry Hub gas spot price and 12m strip ($/Mcf): April 2022 to November 2023



Source: Bloomberg LP

Factors which strengthened the US gas price in November included:

- **Falling rig count**

The number of rigs drilling for natural gas in the US has fallen from 161 at the start of the year to 116 rigs at the end of November. This has increased confidence in the market that the US will not suffer too much oversupply, despite production rising this year in most key basins (Marcellus; Haynesville; Permian).

Factors which weakened the US gas price in November included:

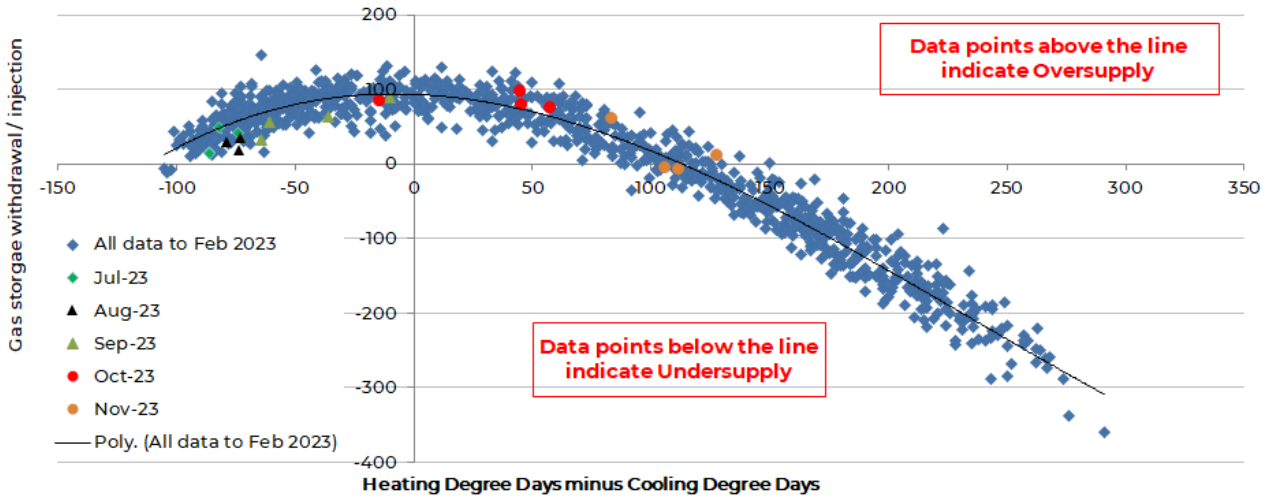
- **Rising onshore production**

Despite the fall in the gas drilling rig count this year, onshore production has risen over the last 12 months by just over 4 Bcf/day, to 114.3 Bcf/day. Production growth in recent months has slowed, but the overall rise in supply has outpaced demand growth over this period.

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

The injection season continued in the US gas market during November. Adjusting for the impact of weather, the inventory builds implied that the US gas market was, on average, around 1 Bcf/day oversupplied.

Weather-adjusted US natural gas inventory injections and withdrawals

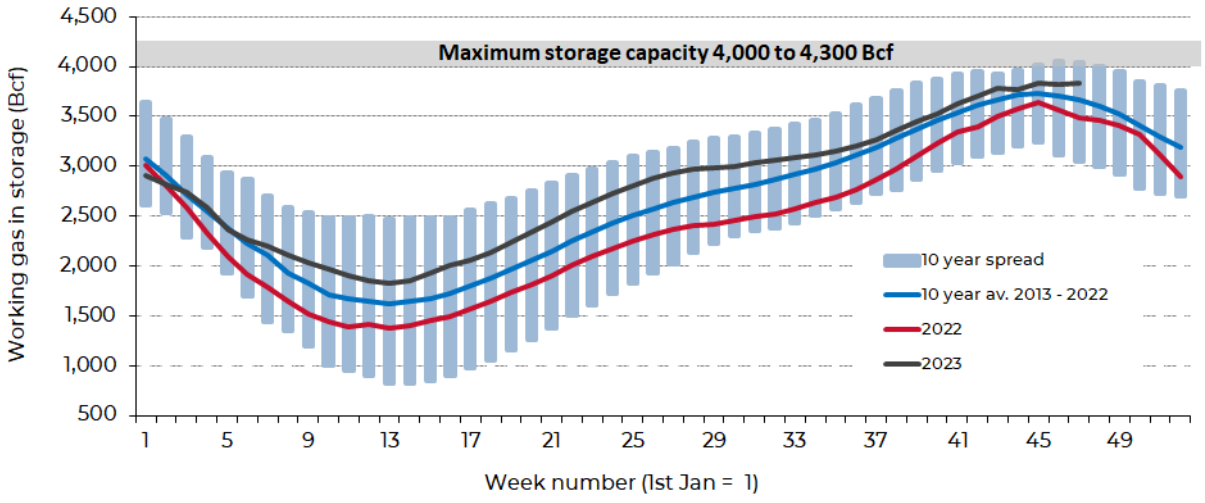


Source: Bloomberg LP; Guinness Global Investors, to 30 November 2023

Natural gas in inventories in the US

US natural gas inventories have been running higher than seasonal norms, driven by a mild 2022/23 winter and warm 2023 spring that brought lower-than-expected heating demand. Inventories levels moved towards the 5-year average during summer/autumn 2023, ending November at around 3.8Tcf (c.0.2Tcf above the 10 year average).

Deviation from 10yr US gas storage norm



Source: Bloomberg; EIA (December 2023)

MANAGERS' COMMENTS

OPEC+ announce broader base to production quota cuts

We have stated for much of this year that we think the current 'sweet spot' for Saudi in today's oil market is $80-100/bl. This is an affordable price range for the world economy, generates fiscal surplus for the Saudi economy, and avoids excessive supply growth from the non-OPEC world. On November 30th, further cuts were announced by OPEC+ members in an effort to maintain this oil price range. Here, we explore the rationale behind OPEC+'s actions, the potential involvement of Brazil in the group, and conclude with comment on energy equity valuations.

What has been announced?

On November 30, OPEC+ members announced a production quota cut of 2.2m b/day for the first quarter of 2024. The quota cut includes the following commitments from individual states:

- Saudi Arabia: -1.0m b/day
- Iraq: -0.2m b/day
- UAE: -0.2m b/day
- Kuwait: -0.1m b/day
- Kazakhstan -0.1m b/day
- Russia -0.5m b/day (0.3m b/day of oil exports and 0.2m b/day of refined product exports)

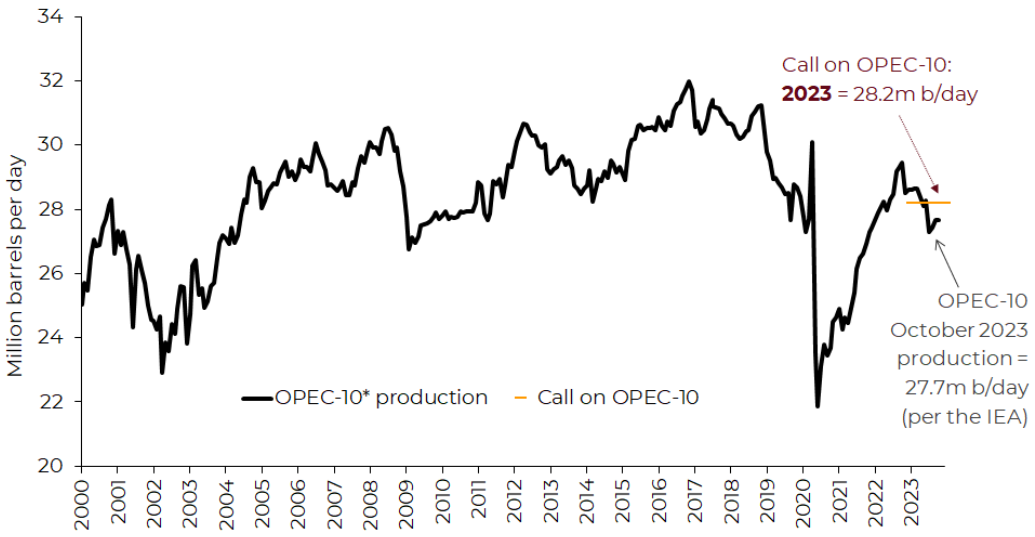
The meeting also confirmed new production quota baselines for Angola, Congo and Nigeria, reflecting lower oil investment and lower production in those countries in recent years.

Little commentary was provided by the OPEC Secretariat to explain the cuts, beyond the perpetual aim of "supporting the stability and balance of the oil markets". After the meeting, Saudi energy minister Prince Abdulaziz bin Salman clarified that the cuts may continue beyond the first quarter of next year, depending on oil balances at the time.

Working through the underlying quota mathematics, we see this as an actual production decline of around 0.4-0.5m b/day, since it already includes the bilateral cuts implemented by Saudi and Russia this summer, plus adjustments to some quotas where underlying production is already underperforming.

This latest move from OPEC+ comes at a time when core OPEC production (27.7m b/day) looks to be around 0.5m b/day below the average 'call on OPEC' for 2023 (28.2m b/day), implying an undersupplied market. And it also comes at the end of a year that has seen global oil demand forecasts revised materially higher, from +1.7m b/day to +2.4m b/day.

OPEC-10 apparent production vs call on OPEC 2000 – 2023



Source: IEA Oil Market Report (Dec 2023 and prior); Guinness estimates.
** 'OPEC-10: Algeria, Angola, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi, U.A.E., Venezuela.*

How to explain the apparent disconnect, then, between rising demand forecasts and deeper OPEC+ cuts? The answer appears to lie with stronger production from certain OPEC+ members operating under sanctions, plus some non-OPEC suppliers. At the start of the year, Russian oil supply was expected to fall by 0.8m b/day in 2023 as G7 sanctions in relation to the invasion of Ukraine started to bite. The reality has been quite different, with most Russian oil being diverted to Eastern consumers, albeit under a price cap. Production from Iran has also been strong, reported for November to be running at around 3.3m b/day, up from 2.6m b/day in January. In addition, we've seen US production coming in this year around 0.3m b/day higher than originally expected, thanks to well productivity in the Permian edging higher.

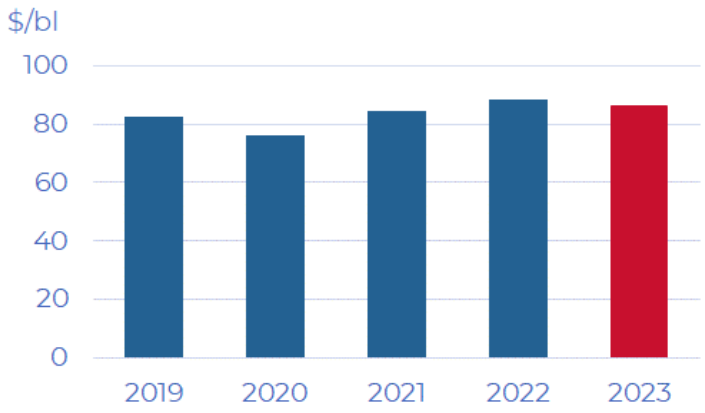
Looking ahead to 2024, OPEC+'s actions imply a fairly balanced market in the first half of the year, then undersupply in the second half, leading to a significant inventory draw. This will position the OPEC+ group to add supply back into the market, should they choose.

From Saudi's perspective, the additional cuts being spread around various OPEC+ members confirm reasonable group cohesion. The meeting also saw Brazil joining the OPEC+ alliance, albeit with no production targets announced for 2024. We see this as an interesting development which highlights the potential for the OPEC+ membership to expand further (e.g. to Guyana; Namibia). Brazil is currently the sixth largest oil producer in the world (behind the US, Russia, Saudi, Canada and China), supplying 3.1m b/day, up from 2.7m b/day in 2018. The country is one of the few non-OPEC areas that has better prospects for growth, as Petrobras continue to ramp up production in the Santos Basin, offsetting declines in the more mature Campos Basin.

Ultimately, the equation which drives OPEC+'s actions here is one of revenue maximisation. The calculation is that the percentage drop in sold oil volumes across the group is likely to result in a greater percentage increase in oil prices, thereby driving higher overall revenues in the short term and extending OPEC's reserve life.

For Saudi specifically, their actions at the head of the group have been designed to achieve an oil price that avoids fiscal deficit (Saudi's fiscal breakeven oil price is currently c.$86/bl), whilst not spiking the oil price too high and over-stimulating non-OPEC supply.

Saudi estimated breakeven oil price* ($/bl)



*Sources: IMF; Guinness Global Investors. *'Breakeven oil price' is defined as the oil price needed by Saudi to balance its fiscal budget. Dec 2023*

By comparison, at the end of November, we estimate that the valuation of our portfolio of energy equities reflected a long-term Brent/WTI oil price of around $65/bl. If the market were to price in a long-term oil price of $70/bl, it would imply around 20% upside while there would be around 50% upside at a long-term oil price of $80/bl.

PERFORMANCE

The main index of oil and gas equities, the MSCI World Energy Index (net return), increased by 0.3% in November, while the MSCI World Index (net return) rose by 9.4% in USD.

Within the portfolio, November's strongest performers included Enbridge, Kinder Morgan, Petrochina, Repsol and Suncor while the weakest performers included Cenovus, Schlumberger, Halliburton, Helix and EOG.

Past performance does not predict future returns.

Guinness Global Energy Fund
Performance (in USD) as at 30.11.2023

Cumulative returns	YTD	1 year	3 years ann.	5 years ann.	Launch of strategy* ann. (31.12.98)
Guinness Global Energy Fund	2.7%	-0.1%	27.4%	4.5%	8.3%
MSCI World Energy NR Index	2.6%	-1.0%	29.6%	7.7%	6.3%

Calendar year returns	2022	2021	2020	2019	2018	2017	2016
Guinness Global Energy Fund	32.4%	44.5%	-34.7%	9.8%	-19.7%	-1.3%	27.9%
MSCI World Energy NR Index	46.0%	40.1%	-31.5%	11.4%	-15.8%	5.0%	26.6%
	2015	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**
Guinness Global Energy Fund	-27.6%	-19.1%	24.4%	3.0%	-13.7%	15.3%	61.8%
MSCI World Energy NR Index	-22.8%	-11.6%	18.1%	1.9%	0.2%	11.9%	26.2%
	2008*	**2007***	**2006***	**2005***	**2004***	**2003***	**2002***
Guinness Global Energy Fund	-48.2%	37.9%	10.0%	62.3%	41.0%	32.3%	6.7%
MSCI World Energy NR Index	-38.1%	29.8%	17.9%	28.7%	28.1%	25.9%	-6.4%
	2001*	**2000***	**1999***				
Guinness Global Energy Fund	-4.1%	39.6%	22.5%				
MSCI World Energy NR Index	-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 31.3.08, 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 30.11.2023

Cumulative returns	YTD	1 year	3 years ann.	5 years ann.	
WS Guinness Global Energy Fund	-2.4%	-6.0%	29.7%	4.6%	
MSCI World Energy NR Index	-2.5%	-6.8%	31.9%	7.9%	

Calendar year returns	2022	2021	2020	2019	2018
WS Guinness Global Energy Fund	49.9%	45.7%	-35.7%	12.6%	-6.3%
MSCI World Energy NR Index	64.4%	41.4%	-33.6%	7.2%	-10.6%
	2017	**2016**	**2015**	**2013**	**2012**
WS Guinness Global Energy Fund	-7.2%	65.2%	-29.6%	-26.6%	-4.7%
MSCI World Energy NR Index	-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 November there were no buys or sells of full positions.

Sector Breakdown

The following table shows the asset allocation of the Guinness Global Energy Fund at **November 30 2023**.

Asset allocation as %NAV	Current	*Change*	Last year end	Last year end	Previous year ends				
	Nov-23		Dec-22	Dec-21	Dec-20	Dec-19	Dec-18	Dec-17	Dec-16
Oil & Gas	**97.8%**	***0.4%***	**97.4%**	**96.9%**	**94.8%**	**98.3%**	**96.7%**	**98.4%**	**96.7%**
Integrated	54.6%	*-0.1%*	54.7%	57.7%	56.3%	51.1%	46.4%	42.9%	46.4%
Exploration & Production	22.9%	*-0.2%*	23.1%	23.7%	22.2%	29.6%	35.8%	36.9%	35.8%
Drilling	0.0%	*0.0%*	0.0%	0.0%	0.0%	0.1%	2.2%	1.9%	2.2%
Equipment & Services	9.7%	*0.7%*	9.0%	4.0%	4.6%	9.6%	8.6%	9.5%	8.6%
Storage & Transportation	4.8%	*0.0%*	4.8%	4.3%	4.4%	4.0%	0.0%	3.5%	0.0%
Refining & Marketing	5.8%	*0.0%*	5.8%	7.2%	7.3%	3.8%	3.7%	3.7%	3.7%
Solar	0.2%	*-0.6%*	0.7%	1.0%	1.8%	0.7%	0.9%	1.4%	0.9%
Coal & Consumable Fuels	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%
Cash	2.0%	*0.1%*	1.9%	2.1%	3.3%	1.1%	2.4%	0.2%	2.4%

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

The Fund at end of November 2023 was on a price to earnings ratio (P/E) for 2023/2024 of 8.5x/8.1x versus the MSCI World Index at 18.0x/16.9x as set out in the following table:

As at 30 November 2023	P/E		
	2022	2023E	2024E
Guinness Global Energy Fund	6.6x	8.5x	8.1x
MSCI World Index	16.0x	18.0x	16.9x
Fund Premium/(Discount)	*-59%*	*-53%*	*-52%*

Source: Bloomberg; Guinness Global Investors

Portfolio holdings

Our integrated and similar stock exposure (c.55%) 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 November 30 2023 the median P/E ratio of this group was 7.5x 2023 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.23%) 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, Pioneer 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 3.2% 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 around 10% 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 October 31 2023 (for compliance reasons disclosed one month in arrears)

Guinness Global Energy Fund (31 October 2023)			P/E			EV/EBITDA			Price/Book			Dividend Yield		
Stock	**ISIN**	**% of NAV**	**2022**	**2023E**	**2024E**	**2022**	**2023E**	**2024E**	**2022**	**2023E**	**2024E**	**2022**	**2023E**	**2024E**
Integrated Oil & Gas														
Exxon Mobil Corp	US30231G1022	5.3%	7.5x	11.2x	11.0x	4.9x	6.0x	5.8x	2.1x	2.1x	1.9x	3.4%	3.5%	3.6%
Chevron Corp	US1667641005	4.2%	7.6x	10.6x	10.1x	4.8x	5.5x	5.1x	1.7x	1.7x	1.6x	3.9%	4.1%	4.4%
Shell PLC	GB00BP6MXDE	5.7%	5.8x	7.7x	7.1x	3.1x	3.7x	3.7x	1.1x	1.1x	1.0x	3.2%	4.0%	4.3%
Total SA	FR0000120271	5.7%	4.3x	6.6x	6.7x	3.0x	3.5x	3.7x	1.4x	1.4x	1.2x	4.4%	4.7%	5.0%
BP PLC	GB0007980591	4.8%	5.8x	6.9x	6.4x	4.9x	3.2x	3.3x	1.4x	1.4x	1.3x	3.9%	4.6%	4.9%
Equinor ASA	NO0010096985	3.6%	4.1x	8.5x	8.1x	1.0x	1.9x	1.9x	2.0x	2.1x	2.0x	2.7%	10.6%	7.9%
ENI SpA	IT0003132476	3.4%	3.9x	6.1x	6.4x	2.7x	3.1x	3.2x	0.9x	0.9x	0.8x	5.7%	6.1%	6.2%
Repsol SA	ES0173516115	3.4%	3.3x	3.9x	4.8x	3.1x	2.5x	2.7x	0.7x	0.7x	0.6x	5.0%	5.2%	5.6%
Galp Energia SGPS SA	PTGAL0AM000	3.5%	14.2x	11.7x	11.1x	3.7x	3.9x	4.1x	2.6x	2.7x	2.4x	3.6%	3.8%	3.8%
OMV AG	AT0000743059	2.7%	3.9x	4.8x	5.2x	1.8x	2.8x	2.8x	0.8x	0.7x	0.7x	12.2%	9.6%	9.3%
		42.1%												
Integrated / Oil & Gas E&P - Canada														
Suncor Energy Inc	CA8672241079	3.5%	5.3x	8.3x	7.2x	2.9x	4.2x	3.9x	1.4x	1.4x	1.2x	4.5%	4.7%	5.0%
Canadian Natural Resources Ltd	CA1363851017	3.6%	8.8x	11.5x	10.0x	4.5x	6.0x	5.5x	2.4x	2.3x	2.2x	5.6%	4.1%	4.4%
Cenovus Energy Inc	CA15135U1093	3.5%	7.7x	10.6x	8.2x	3.8x	4.8x	4.2x	1.8x	1.7x	1.5x	0.4%	2.0%	2.3%
Imperial Oil Ltd	CA4530384086	3.4%	6.7x	9.4x	8.1x	3.8x	5.4x	5.0x	n/a	1.9x	1.7x	2.0%	2.4%	2.6%
		13.9%												
Integrated Oil & Gas - Emerging market														
PetroChina Co Ltd	CNE1000003W8	1.8%	3.7x	5.4x	5.5x	3.1x	3.5x	3.4x	0.6x	0.6x	0.6x	9.6%	8.9%	8.7%
		1.8%												
Oil & Gas E&P														
ConocoPhillips	US20825C1045	4.7%	8.8x	13.3x	11.6x	4.5x	6.0x	5.6x	3.0x	2.9x	2.7x	4.2%	1.7%	2.3%
EOG Resources Inc	US26875P1012	3.6%	5.5x	10.8x	9.6x	5.1x	5.6x	5.0x	2.8x	2.6x	2.2x	7.0%	3.9%	5.0%
Diamondback Energy Co	US25278X1090	3.8%	6.6x	8.8x	7.6x	5.0x	5.6x	5.4x	1.8x	1.7x	1.5x	7.1%	3.7%	3.3%
Pioneer Natural Resources Co	US7237871071	3.8%	7.8x	11.2x	9.9x	4.8x	6.1x	5.7x	2.5x	2.4x	2.2x	10.6%	2.0%	2.9%
Devon Energy Corp	US25179M1036	2.8%	5.6x	7.9x	7.0x	3.2x	4.5x	4.2x	2.7x	2.5x	2.2x	11.1%	4.2%	4.8%
		18.7%												
International E&Ps														
Pharos Energy PLC	GB00B572ZV91	0.3%	8.7x	22.8x	4.0x	0.8x	1.3x	1.2x	0.4x	n/a	n/a	3.7%	2.9%	2.6%
		0.3%												
Midstream														
Kinder Morgan Inc	US49456B1017	2.0%	14.2x	14.6x	13.6x	10.9x	8.9x	8.6x	1.2x	1.2x	1.2x	6.9%	7.0%	7.2%
Enbridge Inc	CA29250N1050	2.3%	n/a	15.5x	16.0x	19.2x	12.1x	11.8x	n/a	1.6x	1.6x	n/a	8.0%	8.2%
		4.3%												
Equipment & Services														
Schlumberger Ltd	AN8068571086	3.5%	25.5x	18.8x	15.4x	11.7x	10.9x	9.4x	4.1x	3.9x	3.4x	1.3%	1.7%	1.9%
Halliburton Co	US4062161017	3.5%	21.2x	12.9x	11.3x	10.2x	7.9x	7.2x	3.8x	3.7x	3.0x	1.2%	1.6%	1.7%
Baker Hughes a GE Co	US05722G1004	2.0%	41.5x	21.5x	16.8x	15.2x	10.2x	8.6x	2.3x	2.2x	2.1x	2.1%	2.3%	2.3%
Helix Energy Solutions Group Inc	US42330P1075	0.9%	n/a	30.2x	14.3x	9.2x	5.3x	4.6x	1.0x	1.0x	0.9x	n/a	n/a	n/a
		10.0%												
Oil & Gas Refining & Marketing														
China Petroleum & Chemical Corp	CNE1000002Q2	1.4%	7.8x	6.2x	5.7x	4.0x	4.0x	3.7x	0.6x	0.6x	0.5x	10.3%	10.8%	11.0%
Valero Energy Corp	US91913Y1001	4.3%	4.3x	5.1x	8.7x	2.7x	3.4x	5.1x	1.7x	1.7x	1.5x	3.1%	3.2%	3.3%
		5.7%												
Research Portfolio														
Deltic Energy PLC	GB00BNTY2N0	0.2%	n/a	n/a	n/a	n/a	n/a	n/a	0.8x	n/a	n/a	n/a	n/a	n/a
EnQuest PLC	GB00B635TG28	0.4%	n/a	4.3x	1.2x	1.2x	1.1x	1.0x	0.8x	0.8x	0.5x	n/a	1.5%	3.6%
Reabold Resources PLC	GB00B95L0551	0.0%	n/a	n/a	n/a	16.9x	n/a	n/a	0.2x	n/a	n/a	n/a	n/a	n/a
Sunpower Corp	US8676524064	0.1%	14.6x	n/a	n/a	13.7x	n/a	10.6x	1.7x	1.8x	2.0x	n/a	n/a	n/a
Maxeon Solar Technologies Ltd	SGXZ25336314	0.0%	n/a	n/a	n/a	n/a	6.9x	4.1x	1.1x	1.6x	2.0x	n/a	n/a	n/a
Diversified Energy Company	GB00BYX7JT74	0.3%	n/a	2.2x	8.0x	n/a	4.2x	5.2x	1.4x	2.1x	n/a	20.9%	22.2%	22.2%
		1.1%												
Cash	Cash	2.1%												
		100.0%	**6.6x**	**8.6x**	**8.3x**	**3.7x**	**4.3x**	**4.3x**	**1.6x**	**1.5x**	**1.4x**	**4.5%**	**4.3%**	**4.4%**

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 IEA	2023E IEA	2024E IEA
World Demand	***95.3***	***96.4***	***98.2***	***99.5***	***100.7***	***91.8***	***97.6***	***99.6***	***102.0***	***102.9***
Non-OPEC supply (inc NGLs)	*60.3*	*59.8*	*60.8*	*63.5*	*65.6*	*63.1*	*63.8*	*65.6*	*67.7*	*68.9*
OPEC NGLs	*5.2*	*5.3*	*5.4*	*5.5*	*5.3*	*5.3*	*5.3*	*5.4*	*5.5*	*5.6*
Non-OPEC supply plus OPEC NGLs	**65.5**	**65.1**	**66.2**	**69.0**	**70.9**	**68.4**	**69.1**	**71.0**	**73.2**	**74.5**
Call on OPEC (crude oil)	**29.8**	**31.3**	**32.0**	**30.5**	**29.8**	**23.4**	**28.5**	**28.6**	**28.8**	**28.4**
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-10 (crude oil)	**29.2**	**30.7**	**31.4**	**29.9**	**29.2**	**22.8**	**27.9**	**28.0**	**28.2**	**27.8**

Source: Bloomberg; IEA; Guinness Global Investors, November 2023

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 recovered in 2021 and 2022 by around 6m and 2m b/day respectively, leaving overall consumption in 2022 still around 1m b/day below 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.

OPEC-10 oil production to October 2023

('000 b/day)	31-Dec-19	30-Sep-23	31-Oct-23	Current vs Dec 2019	Current vs last month
Saudi	9,730	9,000	**9,010**	-720	10
Iran	2,080	3,110	**3,080**	1,000	-30
Iraq	4,610	4,300	**4,260**	-350	-40
UAE	3,040	3,150	**3,150**	110	0
Kuwait	2,710	2,580	**2,560**	-150	-20
Nigeria	1,820	1,430	**1,490**	-330	60
Venezuela	730	770	**800**	70	30
Angola	1,390	1,110	**1,130**	-260	20
Libya	1,110	1,110	**1,090**	-20	-20
Algeria	1,010	960	**960**	-50	0
OPEC-10	**28,230**	**27,520**	**27,530**	**-700**	**10**

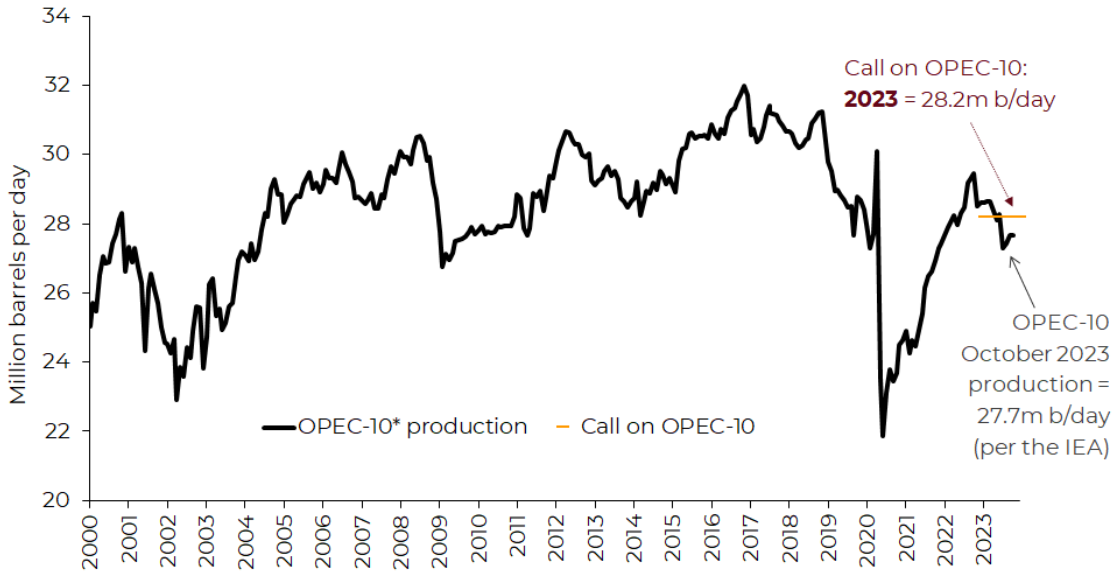
Source: Bloomberg; Guinness Global Investors. OPEC-10: Algeria, Angola, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi, U.A.E., Venezuela.

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.

OPEC-10 apparent production vs call on OPEC 2000 – 2023



Source: IEA Oil Market Report (Nov 2023 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.$80/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.

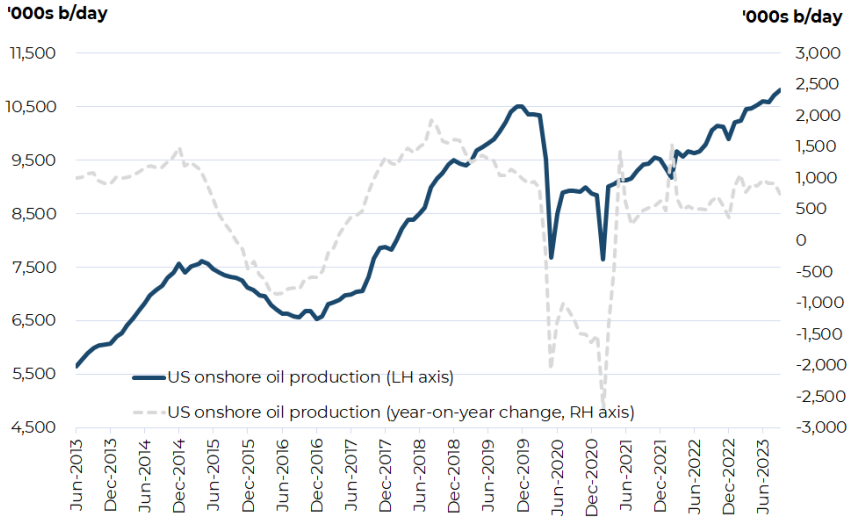
Nothing in the market in recent years has changed our view that OPEC can put a floor under the price – as they did in 2020, 2018, 2016, 2008, 2006, 2001 and 1998.

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 2008-2022.

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, December 2023

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 has taken 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 is only strong enough to offset the decline profiles of existing production, causing overall supply to stagnate.

Future demand

The IEA estimate that 2023 oil demand will rise by around 2.4m b/day to 102.0m b/day, around 1.3m b/day ahead of the 2019 pre-COVID peak. The global spread of the COVID virus initiated major restrictions on the movement of people which have now been reversed, but slower economic growth and the switch to passenger electric vehicles (EVs) is curtailing demand growth in certain sectors.

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 $75/bl, the world oil bill as a percentage of GDP is around 3%, and this will still be a stimulant of further demand growth. If oil prices were in a higher range (say around $100/bl, representing 4% 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 10m in 2022, up from 6.1m in 2021 and 3.1m in 2020. We expect to see strong EV sales growth again in 2023, up to around 14m, or 18% of total global sales. Even applying an aggressive growth rate to EV sales, we see EVs comprising only around 3% of the global car fleet by the end of 2023. 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 2023 versus recent history.

Average WTI & Brent yearly prices, and changes

Oil price (inflation adjusted)																	*Est*
12 month MAV	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
WTI	82	104	68	84	99	94	98	93	49	45	51	65	57	40	68	95	79
Brent	82	103	67	84	115	112	108	99	52	45	54	72	60	42	70	100	83
Brent/WTI (12m MAV)	**82**	**104**	**68**	**84**	**107**	**103**	**103**	**96**	**51**	**45**	**53**	**68**	**59**	**41**	**69**	**98**	**81**
Brent/WTI y-on-y change	9%	26%	-35%	24%	27%	-4%	0%	-7%	-47%	-11%	17%	30%	-14%	-30%	68%	41%	-17%
Brent/WTI (5yr MAV)	61	75	79	82	89	93	93	99	92	80	69	63	55	53	58	67	69

Source: Guinness Global Investors estimates, Bloomberg, December 2023

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 3.2% of 2023 global GDP, 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 coldness 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, December 2023

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 2022 (including Mexican and LNG exports) was around 105.7 Bcf/day, up by 7.4 Bcf/day versus 2021 and 13 Bcf/day (15%) higher than the 5-year average. The biggest contributors to the growth in demand in 2022 were power generation and residential/commercial. LNG exports were also a large contributor but were hampered by operational issues at some key export facilities.

We expect US demand in 2023, assuming prices average around $3/mcf, to be up by around 1.2 Bcf/day. Looking further ahead to 2025, we believe that gas will take a good share of incremental power generation growth in the US and continue to take market share from coal. Our working assumption is for gas-fired power generation to grow 0.8-1.2 Bcf/day per year, although this will be affected by actual gas prices. Beyond the mid-2020s, we expect power generation from gas to face stronger competition from renewables.

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.

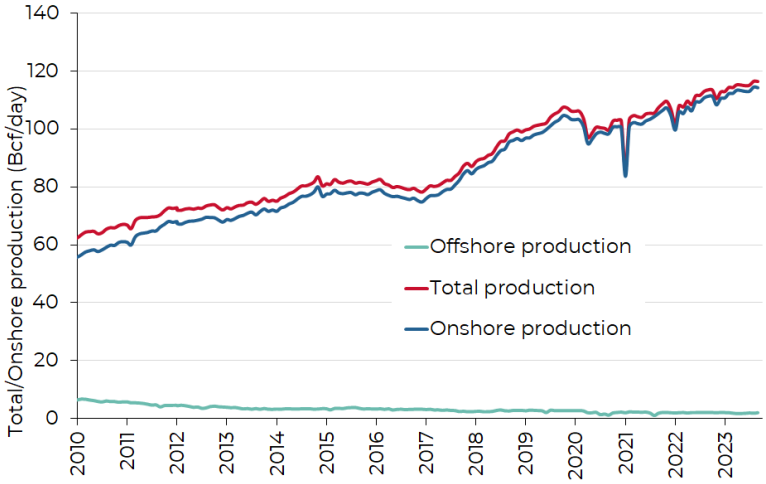
US natural gas supply

Bcf/day	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023E	2023E
US natural gas supply:													
US (onshore & offshore)	65.7	66.3	70.9	74.2	73.4	73.6	[illegible].3	[illegible]	91	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, December 2023

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 116 at the end of November 2023. 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 – 2023 (Lower 48 States)



Source: EIA 914 data (December 2023 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.

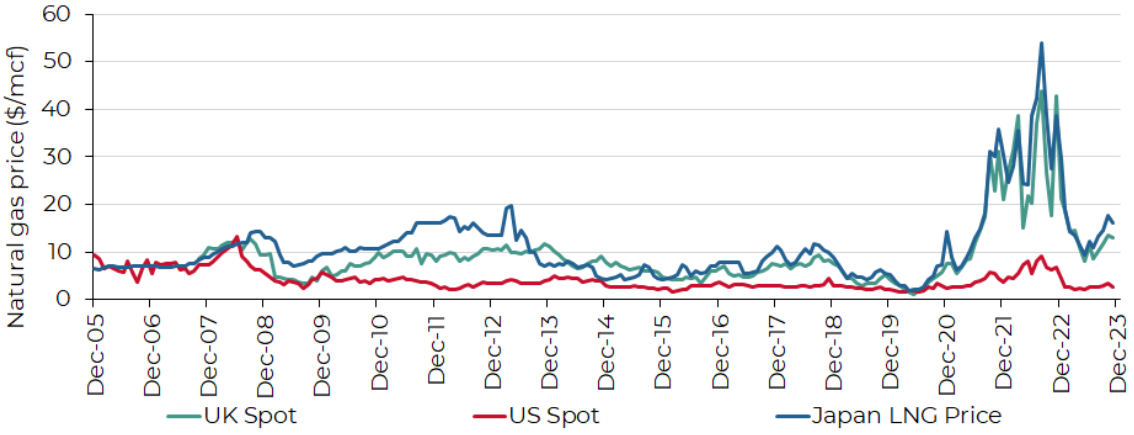
Associated gas production rebounded in 2022 and will rise again in 2023 as shale oil continues to grow. Generally, we expect to see rates of around 2-3 Bcf/day of associated gas per 1m b/day of oil production growth. The Marcellus/Utica region, which includes the largest producing gas field in the US and the surrounding region, reached production of around 29 Bcf/day in 2022. Moderate growth is likely in 2023.

Overall, if the price averages in the $3-4/mcf range, we expect a rise in average onshore gas supply in 2023, up by around 3 Bcf/day versus 2022.

Outlook for US LNG exports – global gas arbitrage

The prospects for US LNG exports depend on the differentials to European and Asian gas prices, and whether the economic incentive exists to carry out the trade. The UK national balancing point (NBP) gas price – which serves as a proxy to the European traded gas price – has moved to a significant premium to the US gas price (c.$13/mcf versus c.$2-3/mcf). Asian spot LNG prices have also been extraordinarily strong, averaging over $34/mcf in 2022 and over $16/mcf on a spot basis at the end of November 2023. There have been many factors at play, in particular the strong post-COVID demand recovery, and a shortage of Russian imports into Europe. The implied economics for US LNG exports into Europe and Asia are attractive assuming international prices are at least $5/mcf higher than Henry Hub.

International gas prices to September 2023

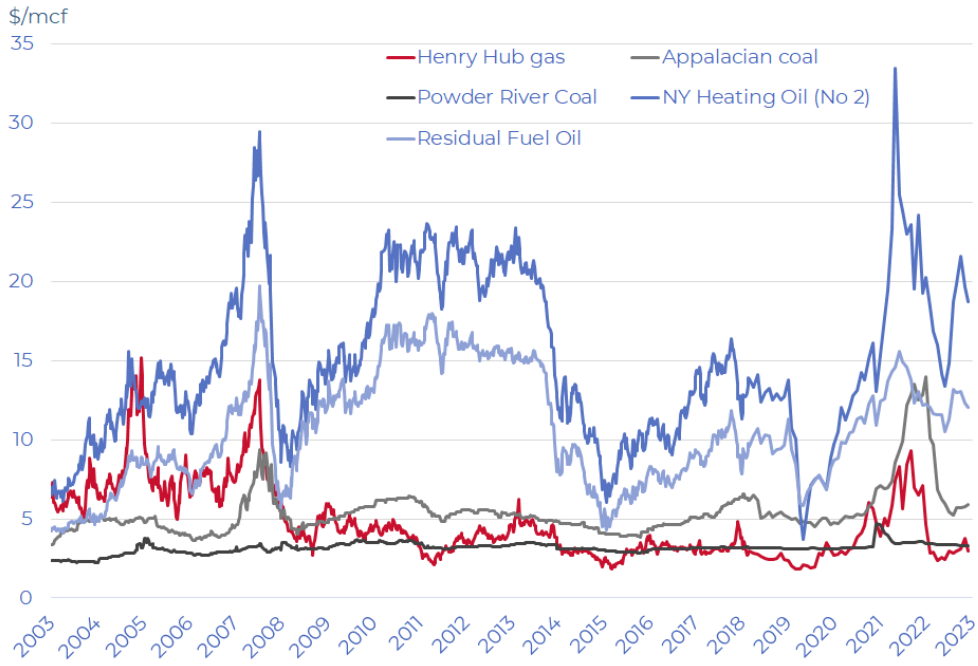


Source: Bloomberg; Guinness Global Investors (December 2023)

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)



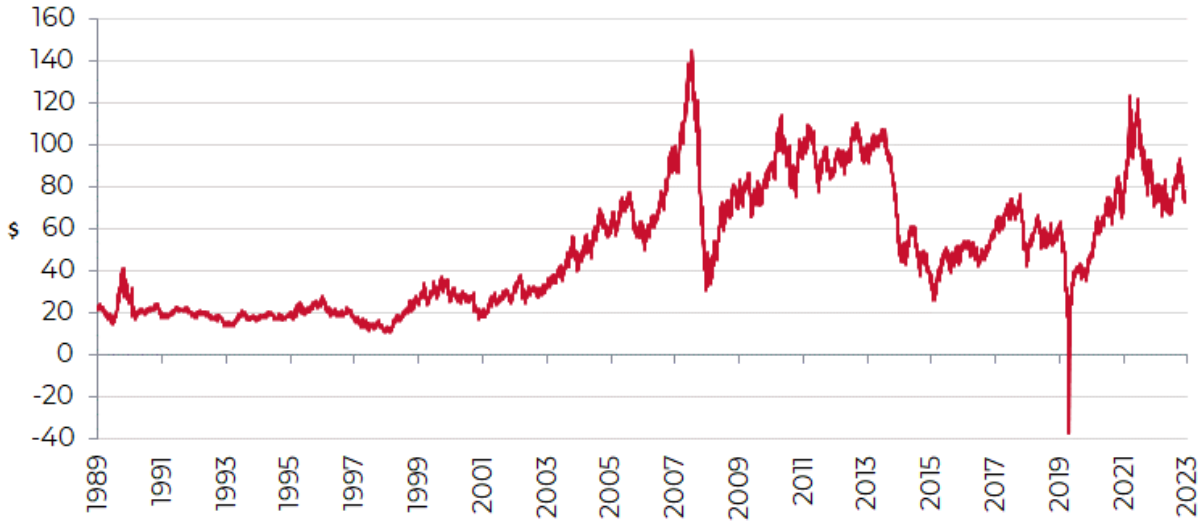
Source: Bloomberg; Guinness Global Investors (December 2023)

Conclusions about US natural gas

The US natural gas price was held back in the 2010s by continued strength in gas supply, particularly from the Marcellus/Utica and from gas produced as a by-product of shale oil. Natural gas prices averaged $6.52/mcf in 2022, up from $3.71/mcf in 2021, and we suspect that the (full cycle) marginal cost of supply is now around $3.50-4/mcf. More controlled growth in associated gas supply over the next couple of years should allow gas prices to stay closer to the full cycle cost level.

APPENDIX: Oil and gas markets historical context

Oil price (WTI $) since 1989



Source: Bloomberg, December 2023

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

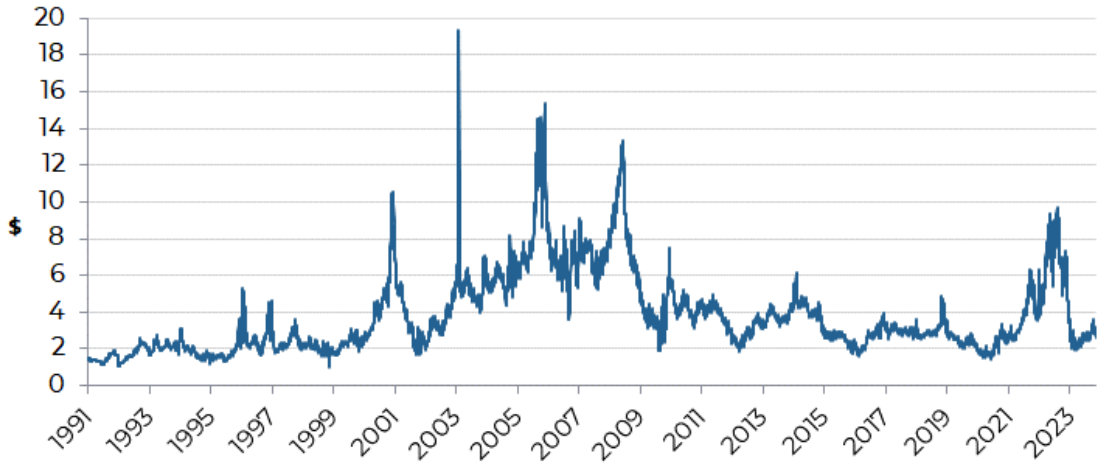
recession that followed, all of which contributed to the oil price falling back by early 2009 to just above $30. OPEC responded decisively and reduced output, helping the price to recover in 2009 and stabilise in the $70-95 range where it remained for two years.

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, December 2023

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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