Guinness Global Energy

Investment Commentary – February 2025

RISK

This is a marketing communication. Please refer to the prospectus, supplement and KID/KIID 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

Spot prices rally but close broadly flat in January

Brent and WTI spot oil prices rallied during the month as the US introduced new sanctions against oil infrastructure related to Russia, China and Iran. Brent reached $82/bl mid-month but a ceasefire announcement between Israel and Hamas brought prices lower, closing at $72.5/bl. At the end of the month, OPEC met and reiterated existing plans to return withheld oil to the market from the end of 1Q25.

NATURAL GAS

International gas prices move higher

International gas prices continued to rise in January, with the UK National Balancing Point price up by $1.4/mcf to $16.7/mcf and Japanese liquefied natural gas up $0.2/mcf to $14.4/mcf. Cold weather, low wind speeds and robust European and Asian demand combined to push prices higher. Inventories in the US have been drawn down towards 10-year average levels.

EQUITIES

Energy underperforms the broad market in January

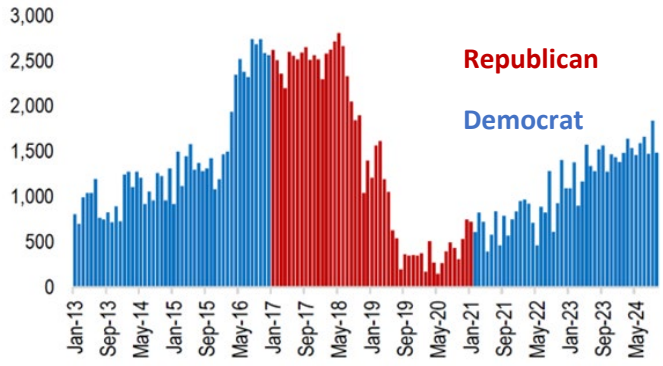
The MSCI World Energy Index (net return) rose by 2.6% (USD) in January, lagging the MSCI World Index (net return) which rose by 3.5%.

CHART OF THE MONTH

Trump returns to 'maximum pressure' against Iran

Early in February, Donald Trump signed an executive order requiring the US Treasury Secretary to impose "maximum economic pressure" on Iran. The move is a return to the approach he took during his last presidency, which caused Iranian exports to fall by around 2m b/day.

Iranian oil exports (monthly, kb/d)

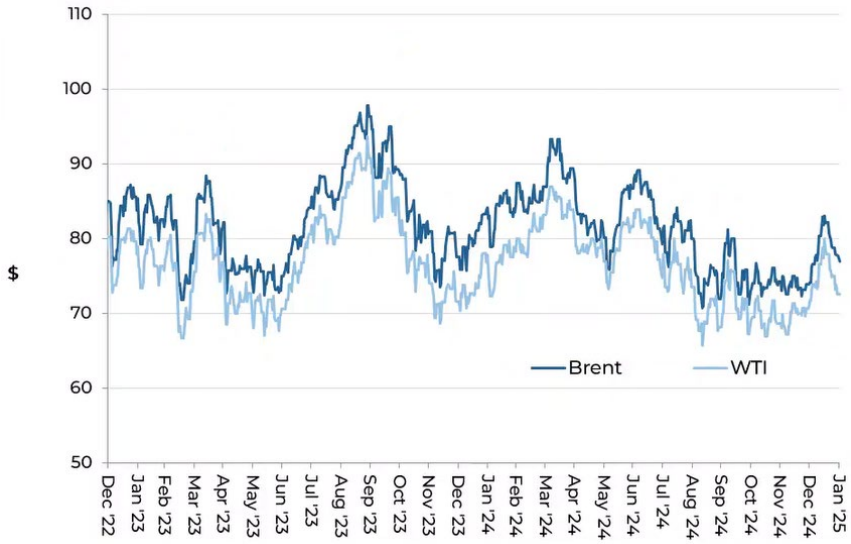


Source: JP Morgan, Kepler, January 2025

JANUARY IN REVIEW

i) Oil market

Oil price (WTI and Brent $/barrel): December 2022 to January 2025



Source: Bloomberg; Guinness Global Investors

The West Texas Intermediate (WTI) oil price began January at $72/bl and strengthened mid-month to reach $80/bl before trading weaker and settling at the end of the month at $72.5/bl. WTI has averaged just under $75/bl so far this year, having averaged $76/bl in 2024 and $78/bl in 2023. Brent oil traded in a similar shape, opening at nearly $75/bl and peaking at $82/bl, before closing at nearly $77/bl. Brent has averaged $78/bl so far in 2025, having averaged $80/bl in 2024 and $83/bl in 2023. The gap between the WTI and Brent benchmark oil prices continued to close over the month, ending January at $4.25/bl. The Brent-WTI spread averaged $5/bl in 2024 after averaging a similar amount in 2023.

Factors which strengthened WTI and Brent oil prices in January:

- **Broad US sanctions on Russian tankers**

The US placed new sanctions on Russian oil producers Gazprom Neft and Surgutneftegas (representing 2m b/day of production and 1m b/day of exports), a Chinese port operator and also over 180 vessels, of which 157 were crude oil or oil product tankers. In 2024, these vessels carried around 1.7mb/d of oil, more than 85% delivered to China and India. Over 95% of this oil originated from Russia, although these tankers also carried small amount of Iranian oil. These changes will impact imports of Iranian, Russian and Venezuelan commodities but we expect buyers to find new ways to circumvent the sanctions over time.

- **Signs of tighter oil supply/demand balance in 2025**

Looking into 2025, the IEA estimate demand growth of 1.1m b/day (based on GDP growth of 3.2%) with the non-OECD up by 1.2m b/day and the OECD down by 0.1m b/day, ahead of the 0.8m b/day growth seen in 2024. Oil demand in 2025 of 103.9m b/day will be around 3.2m b/day above its previous peak in 2019 but, unlike previous years, China is not expected to be the key driver of demand growth. At only 0.2m b/day, China's demand growth is in line with that expected from India, Other Asia and the Middle East. In its January Oil Market Report, the IEA upped global demand by 0.1m b/day and reduced 2025 non-OPEC oil supply by 0.1m b/day. 2024 oil demand was increased by a similar amount although this appeared to be mostly weather-related.

Factors which weakened WTI and Brent oil prices in January:

- **Ceasefire between Israel and Hamas**

A ceasefire agreement between Israel and Hamas was reached on 17 January 2025, came into effect on 19 January, and appeared to hold. This has eased tensions in the region somewhat, and associated fears around the disruption of oil supply.

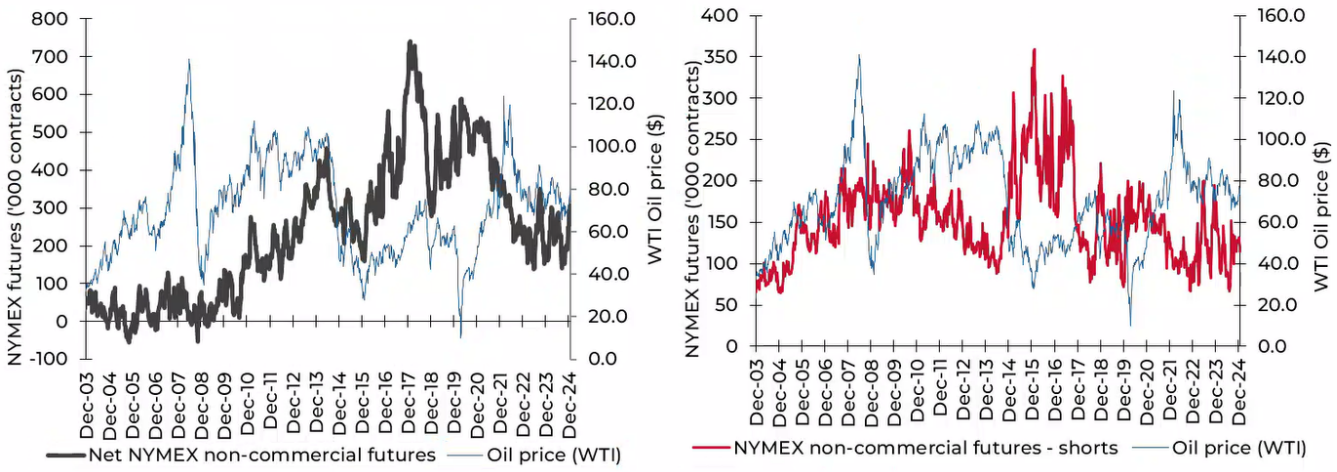
- **Weaker Chinese demand data**

Chinese demand data has been running weaker for a number of months and Chinese oil demand is currently forecast by the IEA to have been 0.2m b/day in 2024. The timing and size of the peak in Chinese oil demand remains a critical issue for the oil market in the coming years. Late in 2024, the Chinese government brought forward its expectation of peak oil demand to 17.9m b/day in 2025, around 1.1m b/day higher than the current IEA estimate for the year. We note that the Chinese forecast has not been particularly accurate in recent years but it does show that demand growth will slow and ultimately achieve a peak.

Speculative and investment flows

The New York Mercantile Exchange (NYMEX) net non-commercial crude oil futures open position was 264,000 contracts long at the end of January versus 254,000 contracts long at the end of December. The net position peaked in February 2018 at 739,000 contracts long. Typically, there is a positive correlation between the movement in net position and movement in the oil price. The gross short position fell to 115,000 contracts at the end of January versus 126,000 at the end of the previous month.

NYMEX Non-commercial net and short futures contracts: WTI January 2004 – January 2025

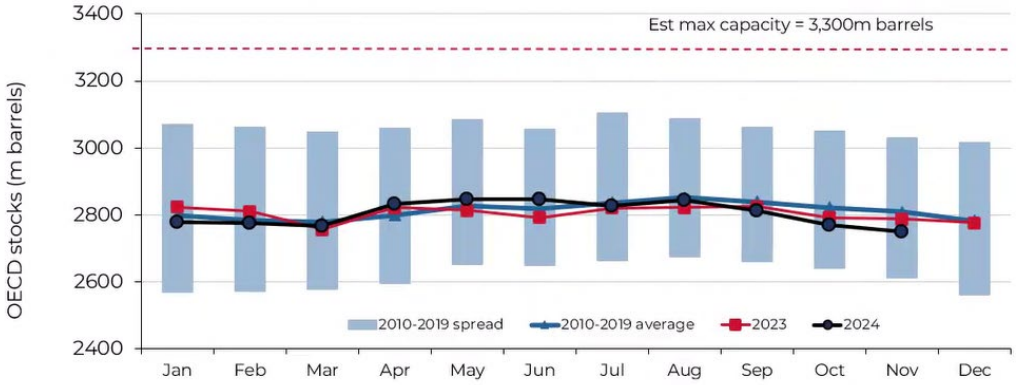


Source: Bloomberg LP/NYMEX/ICE (2025)

OECD stocks

OECD total product and crude inventories at the end of November (latest data point) were estimated by the IEA to be 2,749m barrels, down by 20m barrels versus the level reported for the previous month. The fall in November compares to a 10-year average (pre COVID) fall of 12m barrels, implying that the OECD market was tighter than normal. The significant oversupply situation in 2020 pushed OECD inventory levels close to maximum capacity in August 2020 (c.3.3bn barrels), with subsequent tightening taking inventories below normal levels.

OECD total product and crude inventories, monthly, 2010 to November 2024



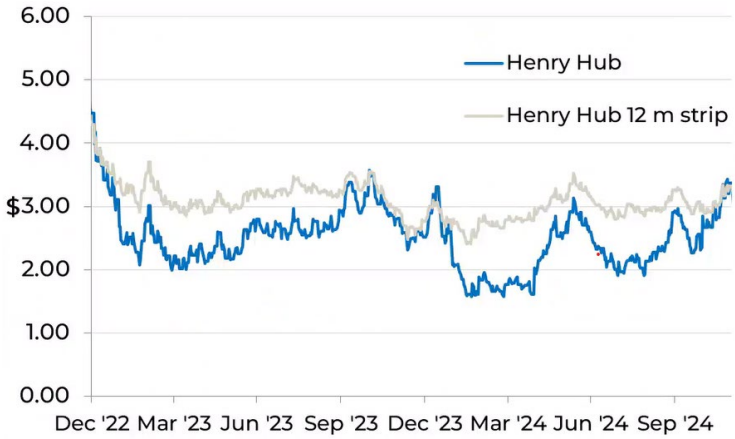
Source: IEA Oil Market Reports (January 2025 and older)

ii) Natural gas market

The US natural gas price (Henry Hub front month) opened January at $3.60/Mcf (1,000 cubic feet) and traded steadily higher over the month to reach $4.30/Mcf mid month, before slipping to close lower at $3.04/Mcf. The spot gas price has averaged $3.72/Mcf so far in 2025, having averaged $2.41/Mcf in 2024 and $2.67/Mcf in 2023.

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 $3.65/Mcf but closing stronger, at $3.80/Mcf. The strip price has averaged $3.76/Mcf so far in 2025, having averaged $2.98 in 2024 and $3.19 in 2023.

Henry Hub gas spot price and 12m strip ($/Mcf): December 2022 to January 2025



Source: Bloomberg LP

Factors which strengthened the US gas price in January included:

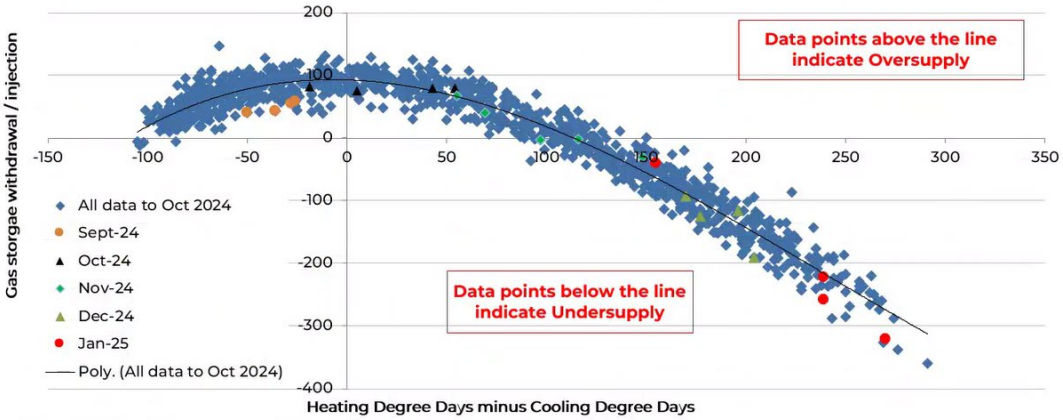
- **Falling rig count**

The number of rigs drilling for natural gas in the US has fallen from 160 in the middle of 2022 to a low of 94 in mid-September 2024. It has since averaged around 100 rigs, although dropped to only 98 rigs at the end of January 2025. This has slowed gas production growth, though 'associated gas' production (a byproduct of shale oil) has continued to grow from the Permian basin.

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

Adjusting for the impact of weather, the US gas market was, on average, around 1.5 Bcf (billion cubic feet) per day undersupplied during January. This is similar to the undersupply for December, as illustrated in the chart below.

Weather-adjusted US natural gas inventory injections and withdrawals

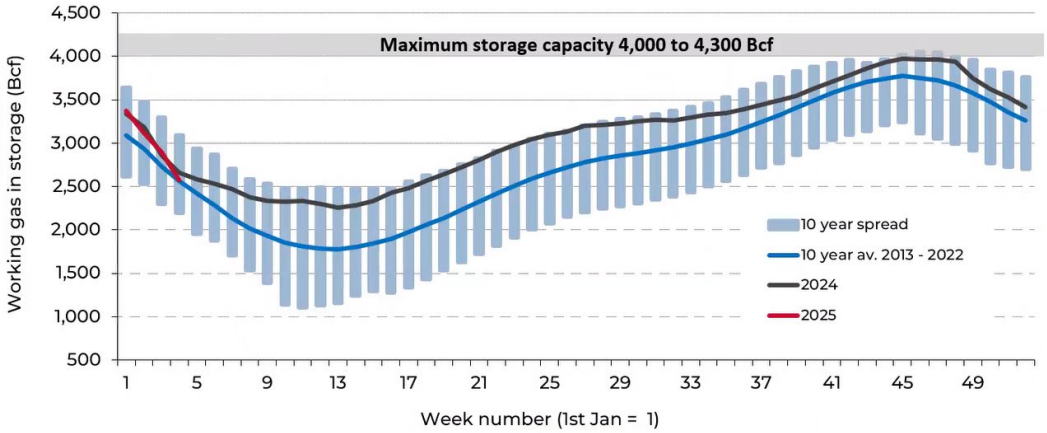


Source: Bloomberg LP; Guinness Global Investors, Jan 2025

- **Natural gas in inventories falling back to the ten-year average**

US natural gas inventories ran higher than seasonal norms throughout 2024, driven by a warmer-than-expected 2023/24 winter and early spring that brought lower-than-expected heating demand. Inventory levels moved to the top of the 10-year range but tightened in 4Q 2024 and further in 1Q 2025 as very cold weather arrived. At the end of January 2025, US natural gas inventories stood at 2.571 Tcf, in line with the 10-year average.

Deviation from 10yr US gas storage norm



Source: Bloomberg; Energy Information Administration (EIA), Jan 2025

Factors which weakened the US gas price in January included:

- **Expectations of warmer weather**

The temperature outlook for the United States improved for February. Above-average temperatures were forecast across the southern and eastern parts of the nation, as well as in northern and western Alaska. This follows a very cold January, during which temperatures averaged below normal from coast to coast with periodic intrusions of Arctic air bringing particularly cold weather to the central and eastern states.

MANAGERS' COMMENTS

One month into his presidency, Donald Trump is already having an impact on global energy markets. This month, we review the executive orders that he announced on his first day in office and the potential impact of tariffs on energy imports from Canada and Mexico that were threatened at the end of January.

Executive orders relating to energy

Many of the executive orders from 20th January, the first day of President Trump's new term, relate to the energy sector. We provide a summary here of some of the key ones relating to the outlook for the upstream oil and gas industry:

- **Declaring a national energy emergency**
  This order calls for using emergency powers to facilitate the leasing, siting, production, transportation, refining and generation of energy. In essence, Trump is seeking the authority to i) reduce environmental restrictions on existing energy infrastructure and ii) ease permitting for new transmission and pipeline infrastructure in order to expedite the completion of infrastructure and natural resource projects.

- **Arctic oil & gas exploration and production**
  This order repeals Biden's efforts to block oil drilling in the Arctic and along large portions of the American coast. Trump also repealed a 2023 memo that barred oil drilling in some 16 million acres (6.5 million hectares) of the Arctic.

- **Refilling of the Strategic Petroleum Reserve**
  This order states that Trump plans to fully refill the US Strategic Petroleum Reserve (SPR). The SPR has been drawn down to multi-decade lows in response to high oil prices post the start of the Russia-Ukraine conflict in 2022. Storage levels currently sit at 394 MMbbls (million barrels) vs a peak of 727 MMbbls in 2010. Refilling the SPR to peak levels at a cost of $70/bl would cost the United States government around $23bn.

- **Resuming the permitting of new LNG export schemes**
  This order calls for the resumption of liquefied natural gas (LNG) export permit applications from new LNG projects supplying Asia and Europe, effectively reversing a pause Biden put in place in early 2024 to study the environmental and economic effects of the export schemes. The US is the world's largest exporter of LNG and, as part of his orders, Trump also called for the development of LNG in Alaska.

Other orders associated with the longer-term outlook for the oil and gas industry included the **withdrawal from the Paris Agreement** and the **revocation of Biden's 2021 electric vehicle (EV) targets.** The withdrawal from Paris was much expected and was indeed a repeat of the withdrawal made in his first term. Trump has previously called climate change a hoax, and says the accord puts the United States at a competitive disadvantage to geopolitical rivals like China. Trump said "*I'm immediately withdrawing from the unfair, one-sided Paris climate accord rip-off*," and "*The United States will not sabotage its own industries while China pollutes with impunity*." The revocation of EV targets was also widely expected and was accompanied by a halting of unspent government funds for vehicle charging stations and the removal of a waiver which allows certain states (California and 11 others) to adopt zero-emission vehicle rules by 2035. Trump also said his administration would consider ending EV tax credits.

Trump's proposed tariffs relating to energy

At the end of January, Trump threatened a series of tariffs on key trading partners, thereby delivering on a key election campaign promise. Of specific relevance to the energy industry, there were 10% tariffs on Canadian and 25% tariffs on Mexican energy imports, effective from 4 February 2025, although these tariffs were later delayed by one month. The size and the nature of the tariffs was broader than many had anticipated and their duration remained unclear as they are related to the delivery of tighter border restrictions with both Canada and Mexico.

In terms of quantum, the US imports around 4 million barrels per day of Canadian oil (representing around 60% of total US crude oil imports) and around 70% of this oil is processed in refineries in the US Midwest. Mexican oil imports are less

significant, with around 0.45 million barrels per day of Mexican oil being imported mainly for refineries concentrated around the Gulf Coast.

Over 90% of this imported crude oil is heavy in nature (with an API gravity in the 20-25 degree range) and, if implemented, the tariffs will likely cause wider differentials between different US crude oil grades. Heavy oil is typically not easy to replace and, since the north American oil logistics system is very highly integrated, it is likely that the extra burden of around $5-6/bl of tariff would be suffered across the value chain and shared across producers, midstream companies, refiners and consumers. At this stage, we do not expect any supply shocks.

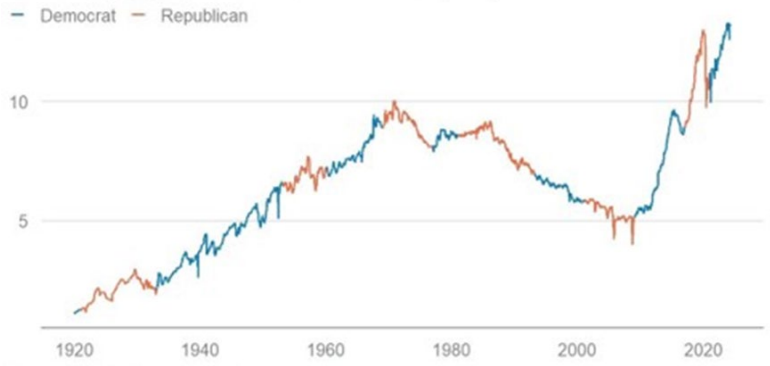
At the final moment, the Canadian and Mexican governments promised to improved border controls and the tariffs were delayed by a month. However, an extra 10% tariff against Chinese imports did proceed as planned and the Chinese government retaliated with 15% tariffs on the import of US coal and liquefied natural gas plus a 10% tariff on US oil imports. We note that Chinese imports of US energy are quite small, being around 0.23m b/day of crude oil (around 2% of total US oil exports) and around 4mtpa of LNG (around 6% of total US LNG exports).

The likely impact of Trump's executive orders and tariffs

In summary, it is clear from his executive orders that Trump is seeking to rapidly develop the potentially abundant and cheap energy resources of the United States, with the aim of achieving complete energy independence and energy security. Easing the development of oil and gas resources could provide high quality upstream employment and would facilitate growing manufacturing industries that would create further jobs and support economic growth. These aims are quite clearly being prioritised over environmental concerns and his proposed tariffs indicate that he is willing to tolerate potentially greater inflation in order to rebalance the trading position of the United States.

Although his inauguration speech included a reference to "*drill baby, drill*", Trump's executive orders did not directly reference the phrase. While looser US oil field regulations and greater federal lands will help investment at the margin, we do not believe that it will derail the industry's focus on free cashflow over growth. Historically, the politics of the US President have not impacted US oil production levels and we do not expect that trend to change.

US onshore oil production 1920-2024 (m b/day)



Source: Morgan Stanley, 2024

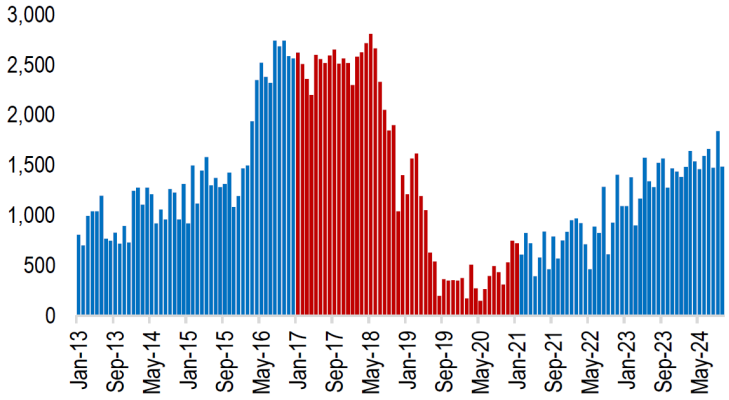
In contrast, we believe that Trump could have more of an impact on international oil markets in 2025 than he can have on his own domestic oil market. His actions in 2025 could materially impact supply, most likely negatively, from **Russia, Venezuela** and **Iran** and potentially allow OPEC+ some room to return some of their withheld volumes back to the market:

Regards Venezuela, Trump said in recent days that his administration would likely stop buying oil from Venezuela and was looking "*very strongly*" at the South American country. Shortly after his inauguration, Trump said that "*Venezuela was a great country 20 years ago, and now it's a mess*," and that "*We don't have to buy their oil. We have plenty of oil for ourselves*".

Regards Iran and Russia, Trump was relatively quiet in his first few days. In his campaigning Trump was very clear in his hawkish stance towards Iran and his pick for national security advisor, Mike Waltz, promised “maximum pressure” on Iran. We note that during Trump’s presidency, Iranian exports fell by around 2m b/day in less than two years as a result of his harder line on sanctions. Consistent with his campaigning, early in February, Trump signed an executive order requiring the US Treasury secretary to impose "maximum economic pressure" on Iran.

Iranian oil exports (monthly, kb/day)

Red denotes Trump presidency; blue denotes Obama and then Biden



Source: JP Morgan, Kepler, January 2025

In conclusion, while the quantum and rapid delivery of his executive orders was impressive, overall we find these **announcements are consistent with his election campaign and there are not many positive or negative surprises** that would affect our view of the oil supply demand outlook for 2025.

PERFORMANCE

The main index of oil and gas equities, the MSCI World Energy Index (net return), increased by 2.6% in January, while the MSCI World Index (net return) rose by 3.5% in USD.

Within the portfolio, January's strongest performers included Baker Hughes, Valero, Imperial Oil, TotalEnergies and Shell while the weakest performers included Helix, Halliburton, Cenovus, Sinopec and Diversified Energy Company.

Past performance does not predict future returns.

Guinness Global Energy Fund
Performance (in USD) as at 31.01.2025

Cumulative returns	YTD	1 year	3 years ann.	5 years ann.	Launch of strategy* ann. (31.12.98)
Guinness Global Energy Fund	2.9%	3.1%	6.9%	7.9%	7.9%
MSCI World Energy NR Index	2.6%	6.5%	11.0%	10.8%	6.2%

Calendar year returns	2024	2023	2022	2021	2020	2019	2018
Guinness Global Energy Fund	-1.3%	2.6%	32.4%	44.5%	-34.7%	9.8%	-19.7%
MSCI World Energy NR Index	2.7%	2.5%	46.0%	40.1%	-31.5%	11.4%	-15.8%
	2017	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**
Guinness Global Energy Fund	-1.3%	27.9%	-27.6%	-19.1%	24.4%	3.0%	-13.7%
MSCI World Energy NR Index	5.0%	26.6%	-22.8%	-11.6%	18.1%	1.9%	0.2%
	2010	**2009**	**2008***	**2007***	**2006***	**2005***	**2004***
Guinness Global Energy Fund	15.3%	61.8%	-48.2%	37.9%	10.0%	62.3%	41.0%
MSCI World Energy NR Index	11.9%	26.2%	-38.1%	29.8%	17.9%	28.7%	28.1%
	2003*	**2002***	**2001***	**2000***	**1999***		
Guinness Global Energy Fund	32.3%	6.7%	-4.1%	39.6%	22.5%		
MSCI World Energy NR Index	25.9%	-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 31.01.2025

Cumulative returns	YTD	1 year	3 years ann.	5 years ann.
WS Guinness Global Energy Fund	6.4%	5.6%	10.7%	9.8%
MSCI World Energy NR Index	3.4%	9.1%	13.8%	12.1%

Calendar year returns	2024	2023	2022	2021	2020	2019	2018
WS Guinness Global Energy Fund	-0.8%	-3.2%	49.9%	45.7%	-35.7%	12.6%	-6.3%
MSCI World Energy NR Index	4.5%	-3.3%	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 December and January, 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 **December 31 2024**.

Asset allocation as %NAV	Current	*Change*	Last year end	Previous year ends							
	Dec-24		Dec-23	Dec-22	Dec-21	Dec-20	Dec-19	Dec-18	Dec-17	Dec-16	Dec-15	Dec-14
Oil & Gas	**97.8%**	***-1.1%***	**98.9%**	**97.4%**	**96.9%**	**94.8%**	**98.3%**	**96.7%**	**98.4%**	**96.7%**	**95.1%**	**93.7%**
Integrated	55.1%	*0.4%*	54.7%	54.7%	57.7%	56.3%	51.1%	46.4%	42.9%	46.4%	41.5%	37.3%
Exploration & Production	19.3%	*-4.0%*	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	9.8%	*-0.2%*	10.0%	9.0%	4.0%	4.6%	9.6%	8.6%	9.5%	8.6%	11.4%	13.4%
Storage & Transportation	8.0%	*3.0%*	5.0%	4.8%	4.3%	4.4%	4.0%	0.0%	3.5%	0.0%	0.0%	0.0%
Refining & Marketing	5.6%	*-0.4%*	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	2.2%	*1.4%*	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 January 2025 was on a price to earnings (PE) ratio for 2024/2025 of 10.3x/10.2x versus the MSCI World Index at 21.6x/19.6x as set out in the following table:

As at 31 January 2025	PE		
	2024	2025E	2026E
Guinness Global Energy Fund	10.3x	10.2x	9.3x
MSCI World Index	21.6x	19.6x	17.7x
Fund Premium/(Discount)	*-52%*	*-48%*	*-48%*

Source: Bloomberg; Guinness Global Investors

Portfolio holdings

Our integrated and similar stock exposure (c.52%) 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 December 31 2024 the median P/E ratio of this group was 8.4x 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 4% 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 nearly 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 December 31 2024 (for compliance reasons disclosed one month in arrears)

Guinness Global Energy Fund (31 December 2024)				P/E			EV/EBITDA			Price/Book		
Stock	**ISIN**	**% of NAV**	**% of NAV**	**2024**	**2025E**	**2026E**	**2024**	**2025E**	**2026E**	**2024**	**2025E**	**2026E**
Integrated Oil & Gas												
Exxon Mobil Corp	US30231G1022	5.4%	5.6%	13.4x	13.3x	11.6x	6.8x	6.5x	5.9x	1.7x	1.7x	1.7x
Chevron Corp	US1667641005	5.8%	5.5%	13.8x	12.7x	10.9x	6.3x	6.0x	5.1x	1.7x	1.7x	1.6x
Shell PLC	GB00BP6MXD84	5.6%	5.6%	7.6x	8.4x	7.8x	3.5x	3.8x	3.8x	1.1x	1.0x	0.9x
Total SA	FR0000120271	5.0%	5.3%	7.1x	7.0x	6.7x	4.0x	4.0x	3.9x	1.1x	1.0x	0.9x
BP PLC	GB0007980591	4.7%	5.0%	8.1x	7.9x	6.7x	3.5x	3.5x	3.4x	1.2x	1.1x	1.1x
Equinor ASA	NO0010096985	3.4%	3.5%	7.1x	7.3x	7.3x	1.6x	1.6x	1.7x	1.5x	1.4x	1.3x
ENI SpA	IT0003132476	3.3%	3.3%	7.5x	7.3x	6.6x	3.5x	3.7x	3.6x	0.8x	0.8x	0.7x
Repsol SA	ES0173516115	3.1%	3.5%	4.4x	5.0x	4.5x	3.3x	3.4x	3.3x	0.5x	0.5x	0.4x
Galp Energia SGPS SA	PTGAL0AM0009	3.4%	3.8%	11.5x	14.0x	12.3x	4.8x	5.3x	4.8x	2.6x	2.5x	2.3x
OMV AG	AT0000743059	2.7%	2.6%	6.0x	6.2x	5.9x	3.6x	3.8x	3.8x	0.7x	0.7x	0.7x
		42.2%	**43.6%**									
Integrated / Oil & Gas E&P - Canada												
Suncor Energy Inc	CA8672241079	4.1%	3.8%	9.6x	11.1x	9.8x	4.6x	5.2x	4.8x	1.4x	1.4x	1.3x
Canadian Natural Resources Ltd	CA1363851017	3.6%	3.7%	12.9x	12.1x	11.1x	6.4x	5.8x	5.5x	2.3x	2.2x	2.1x
Cenovus Energy Inc	CA15135U1093	3.0%	3.4%	10.6x	10.1x	8.2x	4.6x	4.5x	4.1x	1.3x	1.3x	1.2x
Imperial Oil Ltd	CA4530384086	3.5%	3.9%	10.1x	10.9x	10.2x	6.0x	6.7x	6.3x	2.0x	1.9x	1.8x
		14.2%	**14.8%**									
Integrated Oil & Gas - Emerging market												
PetroChina Co Ltd	CNE1000003W8	2.3%	2.6%	6.3x	6.3x	6.2x	3.8x	3.8x	3.7x	0.7x	0.6x	0.6x
		2.3%	**2.6%**									
Oil & Gas E&P												
ConocoPhillips	US20825C1045	4.7%	4.8%	12.7x	12.5x	10.9x	5.6x	5.1x	4.8x	2.0x	2.0x	1.9x
EOG Resources Inc	US26875P1012	3.9%	3.5%	10.6x	11.1x	10.2x	5.2x	5.4x	5.1x	2.3x	2.2x	2.0x
Diamondback Energy Co	US25278X1090	3.6%	3.9%	10.2x	11.1x	10.4x	8.3x	6.0x	5.8x	0.9x	1.2x	1.1x
Devon Energy Corp	US25179M1036	2.5%	3.2%	7.0x	7.4x	6.5x	4.0x	3.9x	3.7x	1.4x	1.3x	1.2x
		14.7%	**15.3%**									
International E&Ps												
Pharos Energy PLC	GB00B572ZV91	0.2%	0.1%	n.m.	n.m.	n.m.	1.2x	1.3x	1.3x	0.4x	0.3x	0.3x
		0.2%	**0.1%**									
Midstream												
Kinder Morgan Inc	US49456B1017	4.3%	2.7%	23.0x	21.5x	20.5x	11.8x	11.4x	11.0x	2.0x	2.0x	1.9x
Enbridge Inc	CA29250N1050	3.7%	2.7%	21.6x	19.8x	18.9x	13.3x	12.3x	11.9x	2.2x	2.2x	2.2x
		8.0%	**5.5%**									
Equipment & Services												
Schlumberger Ltd	AN8068571086	3.1%	3.4%	11.4x	10.8x	9.7x	7.0x	6.7x	6.2x	2.4x	2.2x	2.0x
Halliburton Co	US4062161017	2.9%	3.1%	9.1x	8.9x	8.0x	6.1x	6.0x	5.7x	2.3x	2.0x	1.7x
Baker Hughes a GE Co	US05722G1004	2.9%	2.1%	17.7x	16.0x	13.8x	9.7x	8.9x	8.1x	2.5x	2.3x	2.1x
Helix Energy Solutions Group Inc	US42330P1075	0.9%	1.1%	24.3x	11.1x	9.9x	6.0x	4.8x	4.5x	0.9x	0.8x	0.8x
		9.8%	**9.7%**									
Oil & Gas Refining & Marketing												
China Petroleum & Chemical Corp	CNE1000002Q2	1.7%	1.6%	8.6x	8.0x	7.4x	5.8x	5.5x	5.3x	0.6x	0.6x	0.6x
Valero Energy Corp	US91913Y1001	3.9%	4.4%	14.8x	14.2x	10.5x	7.3x	7.1x	6.0x	1.5x	1.5x	1.5x
		5.6%	**6.1%**									
Research Portfolio												
EnQuest PLC	GB00B635TG28	0.3%	0.2%	3.1x	2.9x	3.7x	1.4x	1.5x	1.7x	0.6x	0.5x	0.5x
Diversified Energy Company	GB00BQHP5P93	0.4%	0.2%	12.2x	13.2x	6.8x	5.6x	5.6x	5.8x	1.5x	1.3x	1.1x
Deltic Energy PLC	GB00BNTY2N01	0.0%	0.0%	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
Reabold Resources PLC	GB00B95L0551	0.0%	0.0%	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
		0.8%	n/a									
			n/a									
Cash	**Cash**	**2.2%**	**0.5%**									

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	2024	2025E IEA
World Demand	***95.3***	***96.4***	***98.2***	***99.5***	***100.7***	***91.8***	***97.4***	***99.9***	***102.0***	***102.8***	***104.0***
Non-OPEC supply (inc NGLs)	*62.1*	*61.5*	*62.5*	*65.0*	*67.0*	*64.4*	*65.0*	*66.9*	*69.3*	*70.2*	*71.8*
OPEC NGLs	*5.2*	*5.3*	*5.4*	*5.5*	*5.3*	*5.2*	*5.3*	*5.4*	*5.5*	*5.6*	*5.7*
Non-OPEC supply plus OPEC NGLs	**67.3**	**66.8**	**67.9**	**70.5**	**72.3**	**69.6**	**70.3**	**72.3**	**74.8**	**75.8**	**77.5**
Call on OPEC (crude oil)	**28.0**	**29.6**	**30.3**	**29.0**	**28.4**	**22.2**	**27.1**	**27.6**	**27.2**	**27.0**	**26.5**
Congo supply adjustment	0.3	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	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	0.1
Call on OPEC-9 (crude oil)	**27.4**	**29.0**	**29.7**	**28.4**	**27.8**	**21.6**	**26.5**	**27.0**	**26.6**	**26.4**	**25.9**

Source: Bloomberg; IEA; Guinness Global Investors, Jan 2025

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.

OPEC-9 oil production to December 2024

('000 b/day)	31-Dec-19	30-Nov-24	31-Dec-24	Current vs Dec 2019	Current vs last month
Saudi	9,730	8,950	**8,950**	-780	0
Iran	2,080	3,360	**3,320**	1,240	-40
Iraq	4,610	4,120	**4,120**	-490	0
UAE	3,040	3,300	**3,200**	160	-100
Kuwait	2,710	2,470	**2,430**	-280	-40
Nigeria	1,820	1,470	**1,510**	-310	40
Venezuela	730	880	**850**	120	-30
Libya	1,110	1,190	**1,230**	120	40
Algeria	1,010	890	**900**	-110	10
OPEC-9	**26,840**	**26,630**	**26,510**	**-330**	**-120**

Source: Bloomberg; Guinness Global Investors, 31.12.2024

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 – 2025

Source: IEA Oil Market Report (Jan 2025 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.

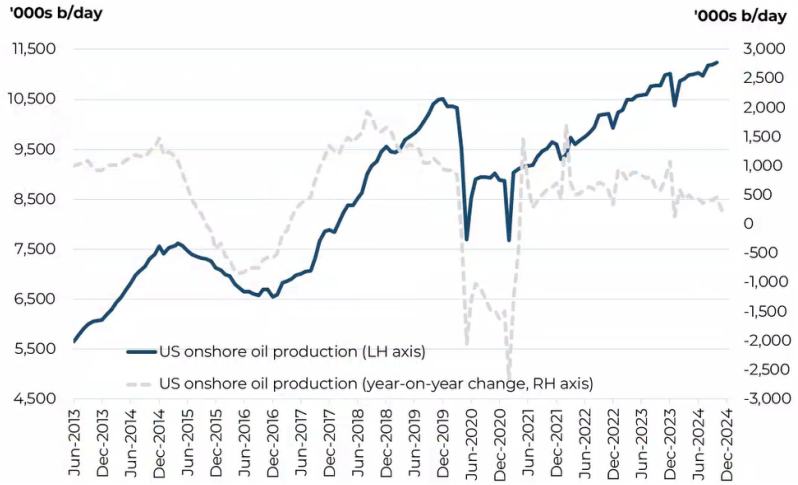
Nothing in the market in recent years has changed our view that OPEC can put a floor under the price – as they did in 2020, 2018, 2016, 2008, 2006, 2001 and 1998.

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, Dec 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, by a handful major project additions, notably in Guyana and Brazil. Net growth remains sluggish, however, as much of the new oil has been required to offset natural declines in more mature basins.

Future demand

The IEA estimate that 2025 oil demand will rise by around 1.2m b/day to 104.0m b/day, around 3.3m b/day ahead of the 2019 pre-COVID peak. Post the COVID demand recovery, the world is settling 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, a key – although no longer major - part of this growth and 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 2.7%, and this will still be a stimulant of further demand growth. If oil prices were in a higher range (say around $115/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 17m in 2024, up from 14m in 2023. We expect to see strong EV sales growth again in 2025, up to around 20m, exceeding 20% of total global sales. Even applying an aggressive growth rate to EV sales, we see EVs comprising only around 5-6% of the global car fleet by the end of 2025. 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	2025
WTI	72	100	62	80	95	94	98	93	49	43	51	65	57	39	68	94	78	76	77
Brent	73	99	63	80	111	112	109	99	54	45	55	72	64	43	71	99	83	81	81
Brent/WTI (12m MAV)	**73**	**99**	**62**	**80**	**103**	**103**	**103**	**96**	**51**	**44**	**53**	**68**	**61**	**41**	**70**	**97**	**80**	**78**	**79**
Brent/WTI y-on-y change	-3%	37%	-37%	28%	29%	0%	0%	-7%	-47%	-13%	19%	29%	-11%	-32%	68%	39%	-17%	-2%	1%
Brent/WTI (5yr MAV)	59	72	75	78	83	89	90	97	91	80	70	63	55	53	58	67	70	73	81

Source: Guinness Global Investors estimates, Bloomberg, Jan 2025

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 2.7% of 2024 global GDP, well under the thirty year average level of around 3%.

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	2023	2024E	2025E
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	23.2	21.3	20.7	21.7
Power generation	24.9	22.3	22.3	26.5	27.3	25.3	29.0	30.9	31.7	30.9	33.1	35.4	36.3	37.0
Industrial	19.7	20.3	20.9	20.6	21.1	21.6	23.0	23.1	22.3	22.5	23.2	23.4	23.1	23.0
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	6.1	6.2	6.4
LNG exports	-	-	-	0.1	1.0	2.6	2.8	4.8	6.4	9.7	12.0	11.9	12.2	14.4
Pipeline/plant/other	6.1	6.7	6.3	6.5	6.4	6.5	7.0	7.8	7.7	7.8	7.4	8.9	8.8	9.1
Total demand	**71.7**	**73.6**	**74.8**	**77.8**	**80.1**	**80.9**	**89.8**	**95.2**	**95.0**	**98.3**	**104.6**	**107.0**	**107.3**	**111.6**
Demand growth	3.1	1.9	1.2	3.0	2.3	0.8	8.9	5.4	- 0.2	3.3	6.3	2.4	0.3	4.3

Source: EIA; GS; Guinness estimates, Jan 2025

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 2024 (including Mexican and LNG exports) was around 107.3 Bcf/day, up by 0.3 Bcf/day versus 2023 and 12 Bcf/day higher than the pre-COVID level in 2019. The biggest contributors to the growth in demand in 2024 were LNG exports and power generation.

We expect US demand growth in 2025 of 4.3 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 greater power generation demand. Beyond 2025, 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 3 Bcf/day by the end of 2025 and a further 5-6 Bcf/day in 2026-2028, bringing total export capacity to over 20 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.

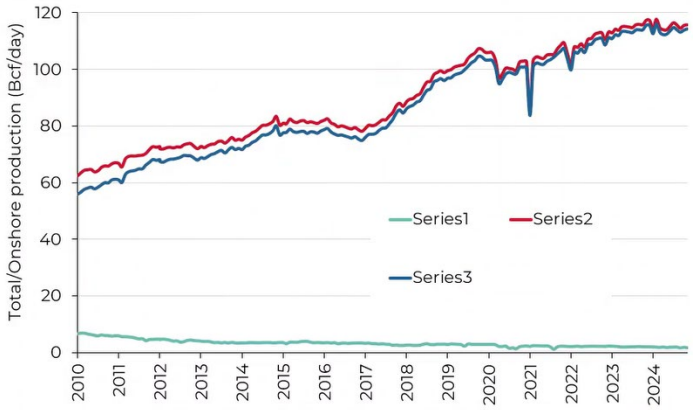
US natural gas supply

Bcf/day	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E
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	97.4	102.5	101.8	105.2
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	5.3	5.8	6.0
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**	**103.1**	**107.8**	**107.6**	**111.2**
Supply growth	2.4	-	4.4	3.3	- 0.3	0.4	10.1	6.4	- 0.7	1.4	6.2	4.7	- 0.2	3.6
(Supply)/demand balance	- 0.2	1.7	- 1.5	- 1.8	0.8	1.2	-	- 1.0	- 0.5	1.4	1.5	- 0.8	- 0.3	0.4

Source: EIA; GS; Guinness estimates, Jan 2025

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 just below 100 at the end of January 2025. 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, Jan 2025

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.

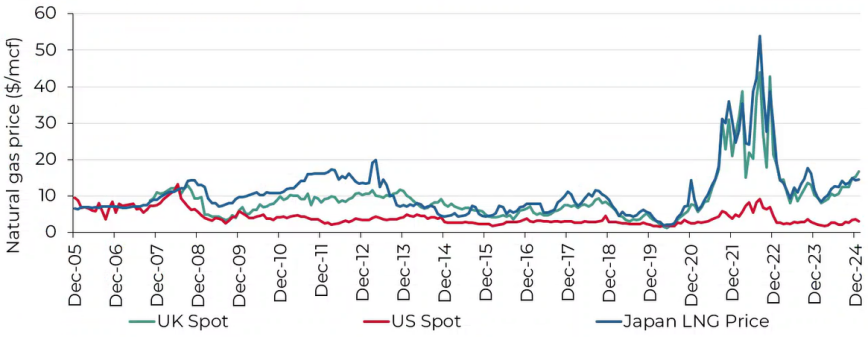
Associated gas production is expected to rise again in 2025 albeit at a slower pace (+0.8 Bcf/day) than in 2022 (+5.5 Bcf/day) and 2023 (+3.6 Bcf/day). Lower supply growth is expected from onshore properties as weaker natural gas prices have brought a lower rig count and lower investment.

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 $10/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 $9-11/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 $9-11/mcf is well down on the highs seen in 2022, but would leave the market at a higher price point than that seen in the few years prior to COVID and the Russian invasion of Ukraine.

International gas prices to January 2025



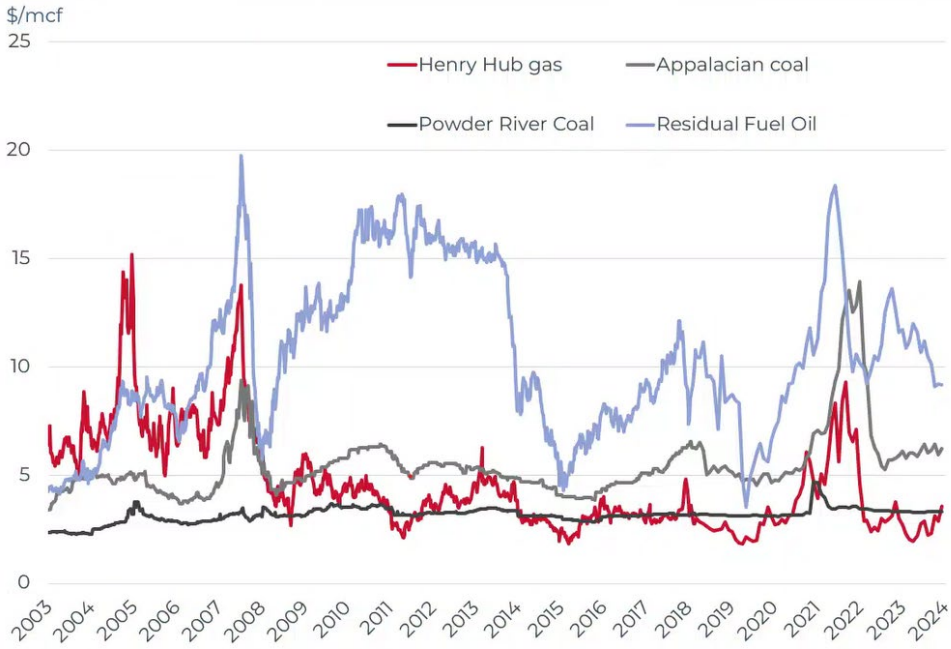
Source: Bloomberg; Guinness Global Investors, Jan 2025

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, Jan 2025

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 2025, we expect a Henry Hub price at around this level.

APPENDIX: Oil and gas markets historical context

Oil price (WTI $) since 1989

Source: Bloomberg, November 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.

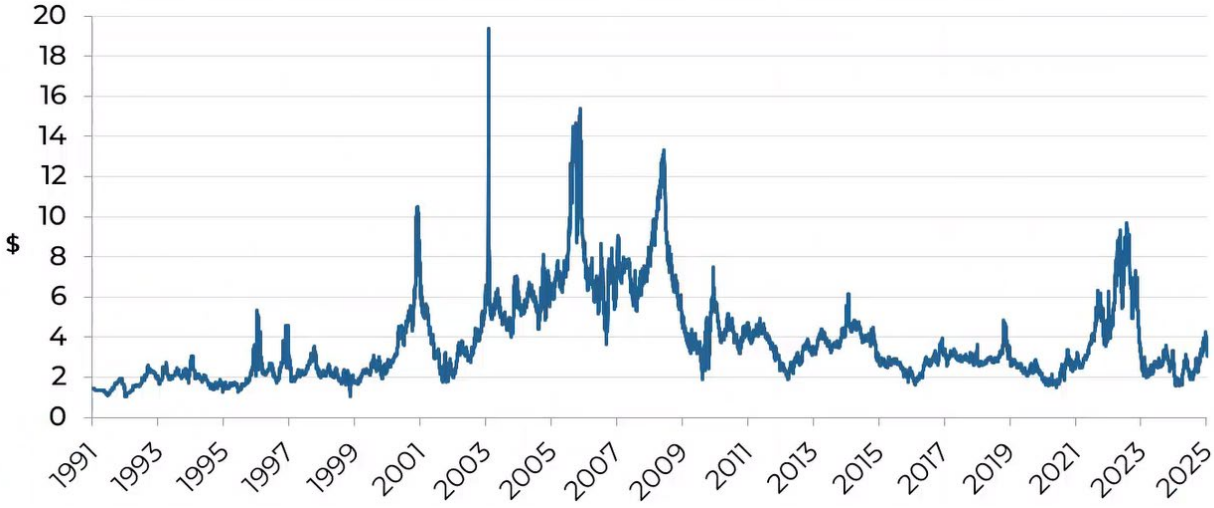
   Continued expectations of a supply crunch by the end of the decade, coupled with increased speculative activity in oil markets, contributed to the oil price surging past $90 in the final months of 2007 and as high as $147 by the middle of 2008. This spike was brought to an abrupt end by the collapse 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, Nov 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 extremely strong over the last decade 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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