

## 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

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

## INVESTMENT POLICY

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

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## COMMENTARY

### OIL

#### Spot prices drifted lower in February

Brent and WTI spot oil prices fell during the month as US President Trump's threat of tariffs brought concerns about global GDP slowdown. We also saw OPEC+ confirm their plan to add 0.14m b/day of supply in April. Brent and WTI both declined around \$3/bl, closing at \$73/bl and \$70/bl.

### NATURAL GAS

#### International gas prices fall on Russia/US talks

International gas prices fell sharply in February, with the UK National Balancing Point price down by \$3.3/mcf to \$13.4/mcf and Japanese liquefied natural gas down \$0.5/mcf to \$13.9/mcf. US/Russian talks around ending the Ukraine war have increased expectations that additional Russian gas may start flowing to Eastern Europe again. Inventories of gas in Europe remain well down on last year.

### EQUITIES

#### Energy outperforms the broad market in February

The MSCI World Energy Index (net return) rose by 2.6% (USD) in February, outperforming the MSCI World Index (net return) which fell by 0.7%.

## CHART OF THE MONTH

### European gas in storage has declined sharply

Since the middle of 2022, Europe has been successful in building a surplus of natural gas in storage, setting itself up for the uncertainties around demand that each winter has brought. The last 9 months, however, has seen a sharp drop off in inventories, driven by a combination of reduced Russian gas imports, colder weather, lower wind power and increased competition for LNG cargoes from Asia.

European gas in storage – deviation to norm (%)

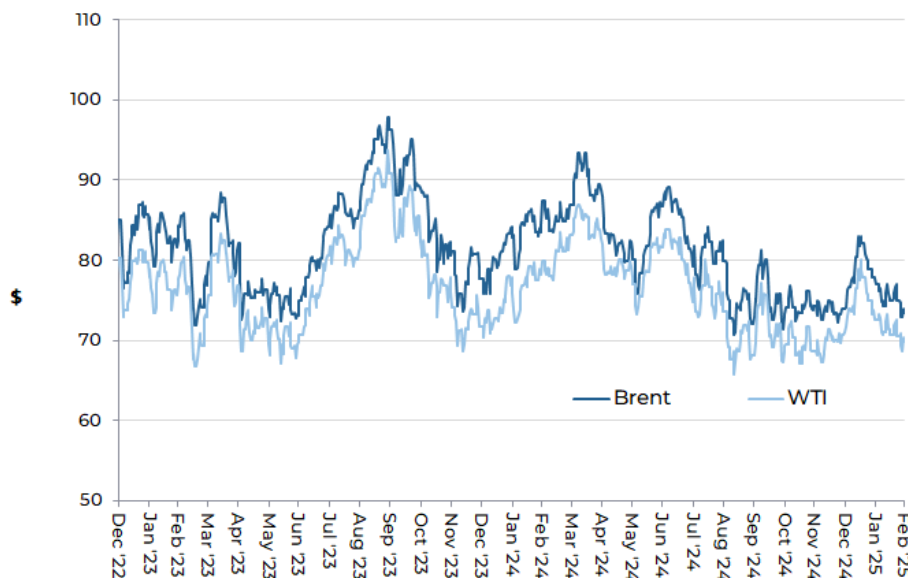


Source: DNB, March 2025

**February IN REVIEW**

**i) Oil market**

**Oil price (WTI and Brent \$/barrel): December 2022 to March 2025**



Source: Bloomberg; Guinness Global Investors

The West Texas Intermediate (WTI) oil price began February at \$73/bl and traded in a relatively tight band of \$69-\$73/bl for most of the month, before settling at the end of the month at \$69.8/bl. WTI has averaged just over \$73/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 \$77/bl and drifting lower to close at nearly \$73/bl. Brent has averaged \$77/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 February at \$3.6/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 February:**

- **Venezuelan oil production growth under threat**

In late February, US President Trump announced the cancellation of a “concession agreement” on Venezuela’s energy sector that allowed Chevron to produce export oil from the country. The concessions had been put in place by President Biden in November 2022. The shutting down of Chevron’s activities in particular threatens the supply of diluent, a substance produced by the company which is used to thin out Venezuela’s heavy oil, allowing it to be transported. Without the diluent supply, heavy oil production in the country is likely to fall sharply.

- **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 104.0m 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 February Oil Market Report, the IEA kept its global demand forecast unchanged but reduced 2025 non-OPEC oil supply by 0.1m b/day.

**Factors which weakened WTI and Brent oil prices in February:**

- **OPEC+ production increases**

During February, the OPEC+ group spoke of their plan to increase production monthly (by 140,000 b/day), starting in April. The oil to be added back into the market comes from a group of eight countries within OPEC+ (Saudi included), who have provided voluntary production cuts over the last two years, above formal quota adjustments. In early March, the group confirmed this plan, though stressed that it could be reversed at any time, should market conditions become looser.

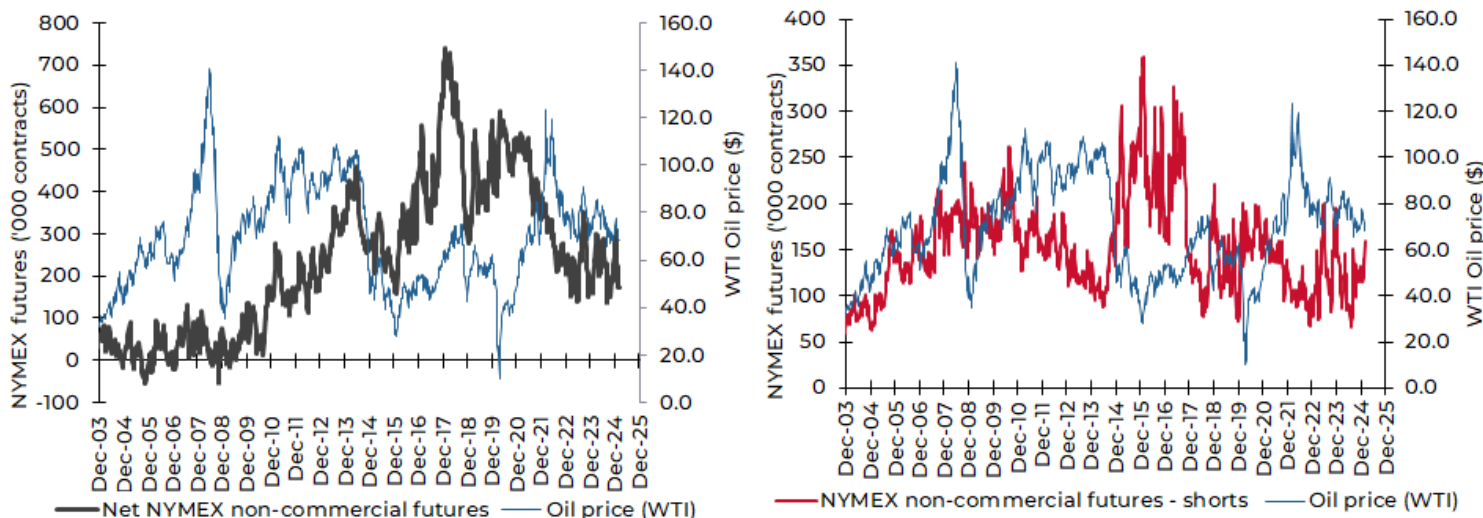
- **US tariffs**

On February 1, President Trump signed executive orders imposing a 25% additional tariff on imports from Canada and Mexico, and a 10% additional tariff on imports from China. On February 26, Trump followed up plans to impose a 25% tariff on imports from the European Union. These actions, part of a broader strategy to address trade imbalances and protect U.S. industries, remain fluid, but have brought into question whether world GDP will slow as a result. Correspondingly, oil demand growth may also be slower.

**Speculative and investment flows**

The New York Mercantile Exchange (NYMEX) net non-commercial crude oil futures open position was 171,000 contracts long at the end of February versus 264,000 contracts long at the end of January. 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 160,000 contracts at the end of February versus 115,000 at the end of the previous month.

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

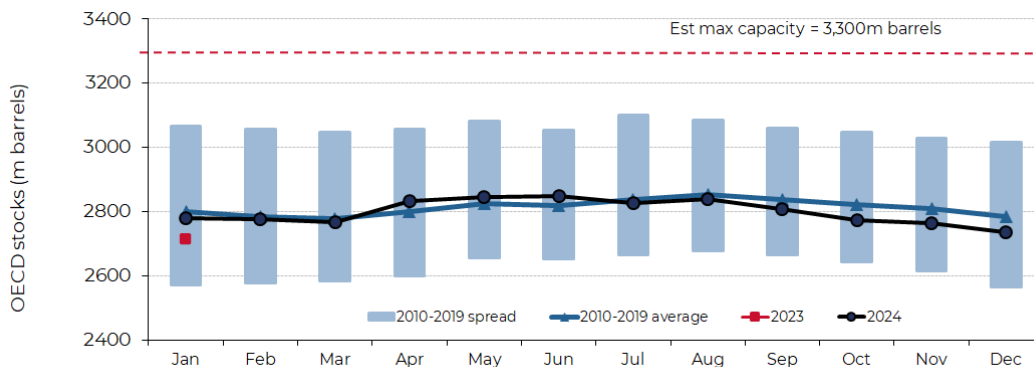


Source: Bloomberg LP/NYMEX/ICE (2025)

**OECD stocks**

OECD total product and crude inventories at the end of January (latest data point) were estimated by the IEA to be 2,712m barrels, down by 25m barrels versus the level reported for the previous month. The fall in January compares to a 10-year average (pre COVID) rise of 32m 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 January 2025**



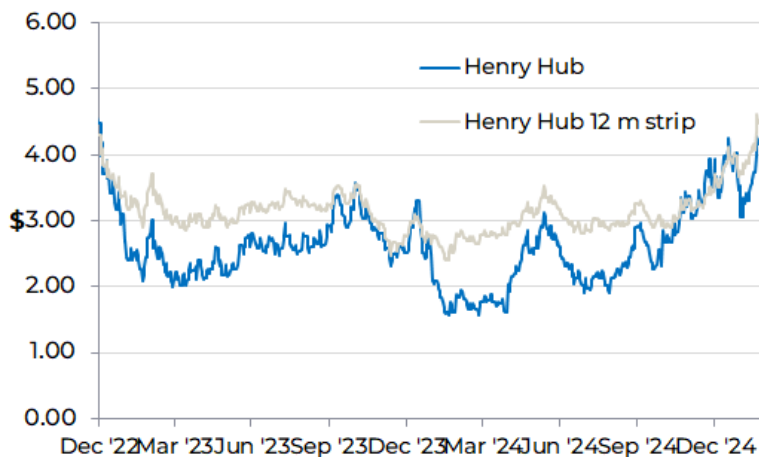
Source: IEA Oil Market Reports (February 2025 and older)

**ii) Natural gas market**

The US natural gas price (Henry Hub front month) opened February at \$3.04/Mcf (1,000 cubic feet) and traded steadily higher over the month to reach \$4.23/Mcf on February 21, before slipping to close lower at \$3.83/Mcf. The spot gas price has averaged \$3.73/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 \$3.71/Mcf but closing stronger, at \$4.31/Mcf. The strip price has averaged \$3.97/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 February 2025**



Source: Bloomberg LP

**Factors which strengthened the US gas price in February included:**

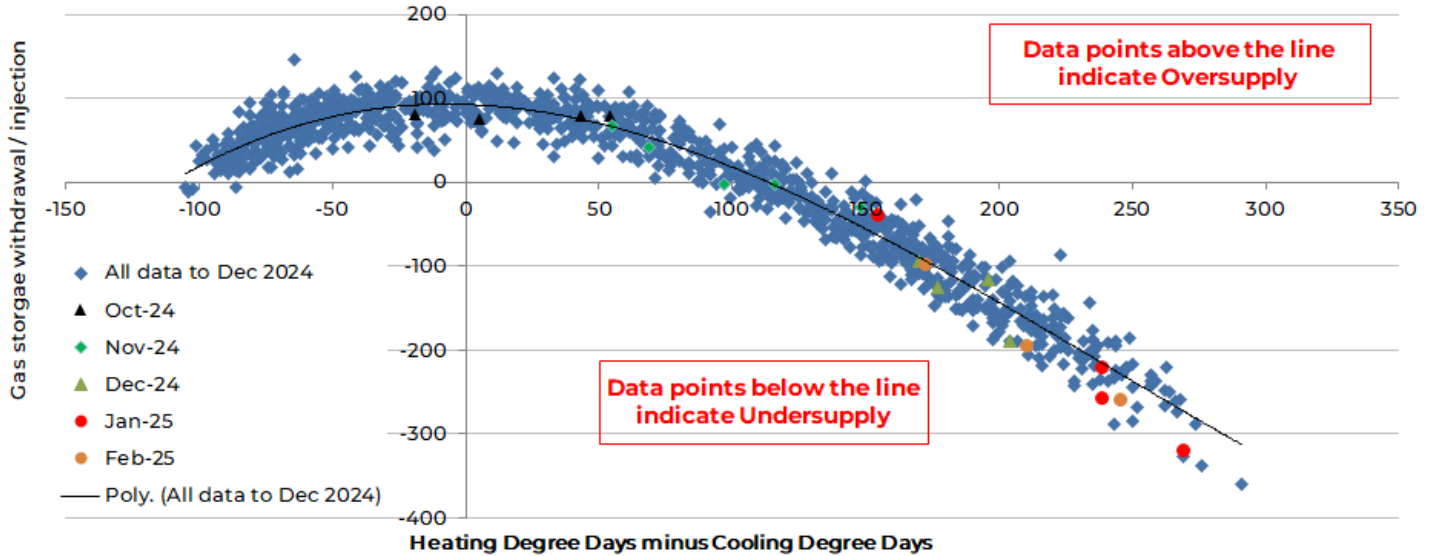
- Falling rig count**

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 rise slightly to 102 rigs at the end of February 2025. Overall, the low number of gas rigs operating 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 2 Bcf (billion cubic feet) per day undersupplied during February. This is similar to the undersupply for January, as illustrated in the chart below.

Weather-adjusted US natural gas inventory injections and withdrawals

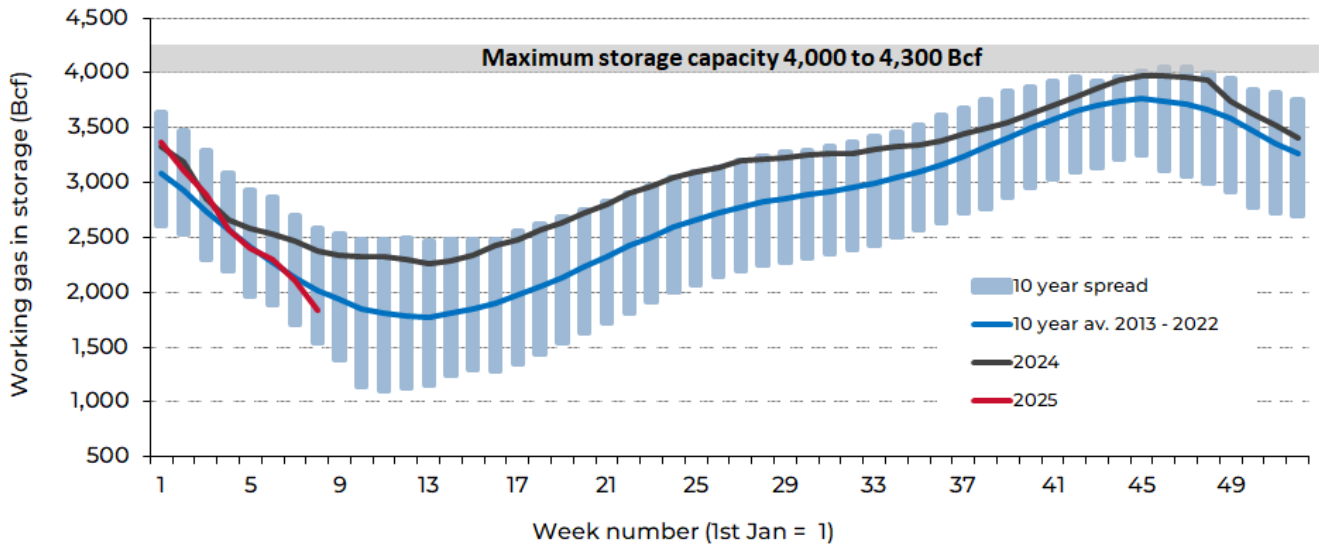


Source: Bloomberg LP; Guinness Global Investors, March 2025

• **Natural gas in inventories falling below 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 February 2025, US natural gas inventories stood at 1.8 Tcf, a little below the 10-year average.

**Deviation from 10yr US gas storage norm**



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

**Factors which weakened the US gas price in February included:**

• **Warmer weather denting heating demand**

Following a cold snap in late January, February saw milder temperatures for much of the US, which reduced heating demand. Nevertheless, heating demand was around 15% higher than February 2024.

**MANAGERS' COMMENTS**

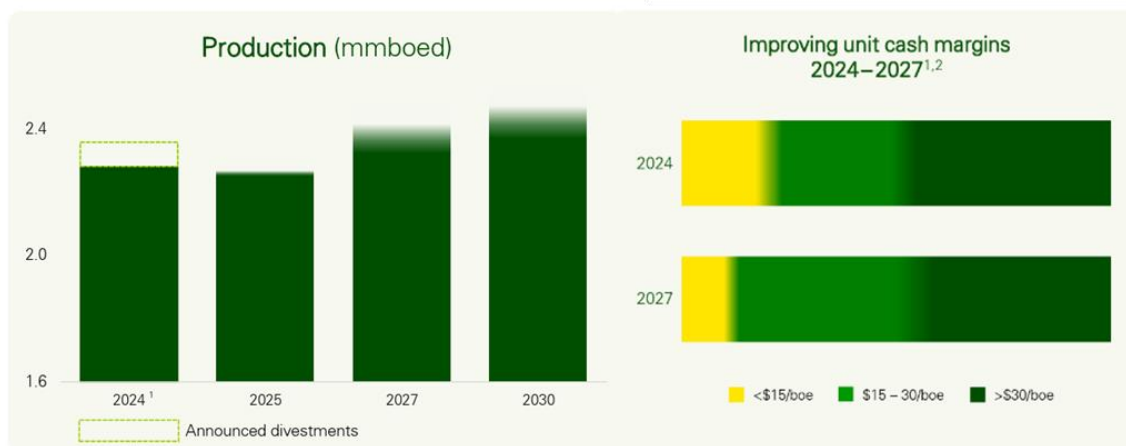
During February, BP announced a reset back towards growth in fossil fuels (at the expense of low carbon activities) while Shell showcased an attractive long-term outlook for LNG demand. With political focus now prioritising pragmatism (energy security and resilience) over decarbonisation, we believe that this newly emerging growth thematic may be a catalyst in helping to return energy equity valuations back to historic norms.

**BP turns to fossil fuel growth and maintains strong free cash flow generation**

In the opening comments of his strategy day presentation, CEO Murray Auchincloss stated BP's conviction that "energy demand is growing over the next decade and beyond" and that "the world is in an 'energy addition' phase, consuming increasing amounts of both fossil fuels and low carbon energy". Informing the decision to return to fossil fuel growth, BP believes that "oil and gas will be needed for decades to come" with oil and gas demand robust out to 2035 including strong growth in natural gas demand from emerging Asian economies.

As such, BP acknowledged its push into renewables over the last five years had been "too far, too fast" and the company announced plans to cut low carbon capex from \$7bn pa to \$1.5bn pa. In its place, a renewed focus on upstream and exploration spend was announced to "refill the exploration hopper" and to deliver at least 100% reserve replacement by 2027. The company announced a 2%pa liquids growth target to 2030, bringing overall oil and gas volumes to 2.3-2.5m boe/d by 2030. To enable this, upstream capital expenditure, targeting higher cash margin projects with a minimum 15% internal rate of return (IRR) projects, is due to increase to \$10bn pa (from \$8.5bn pa).

**Upstream production and cash margins for BP**

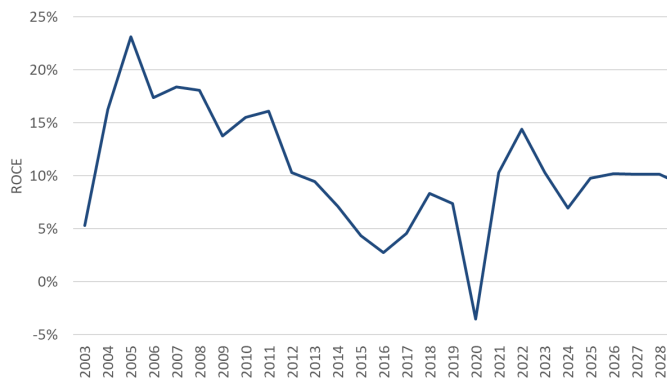


Source: BP, 28.02.2025

Aggregate capital expenditure levels were reduced allowing, together with divestments of \$20bn, a strong free cash flow outlook with 30-40% of operating cash flow being returned to shareholders as dividends or share buybacks. A new swathe of upstream projects (delivering 20% IRRs) will add to the higher margin growth bringing corporate return on capital employed to around 16% in 2027 (based on an oil prices assumption of \$60/bl in real terms), substantially higher than the 20 year average of 11%.

## Guinness Global Energy

### Return on average capital employed



Source: Company data, Guinness Global Investors, Bloomberg, 28.02.2025

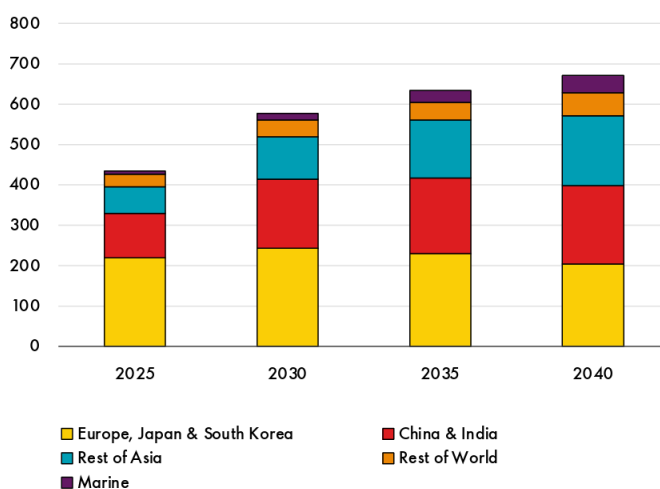
Ultimately, the strategy reset is likely to result in lower investment, a focus on higher return projects, further cost cutting and the divestment of non-priority assets. We consider these actions to be very much in the interests of equity holders although we note that they may not be sufficient to satisfy the demands of new activist shareholder Elliott Investment Management. We expect further positive news flow, especially around divestments, during 2025.

### Shell highlighted the importance of Liquefied Natural Gas

The strong outlook for global LNG was a contributing factor to the strategy reset at BP and Shell also highlighted the attractive LNG growth potential in its LNG market update, also during February.

Shell sees global demand for LNG growing around 60% by 2040, to 630-718mtpa, driven by a range of factors including Asian economic growth, emissions reductions in heavy industry, direct LNG use in transport, and as a source of electricity for growing AI demand. With global LNG supply equalling 407mtpa in 2024 and with around 170 mtpa of new LNG supply currently being built, total future supply capacity of around 517mtpa is envisaged. It is clear that a sizeable demand gap is opening up beyond 2030.

### Global LNG demand (million tonnes per annum)



Source: Shell, 28.02.2025

Gas demand will likely peak well beyond oil and growing LNG demand is supported by China's plans to add piped gas connections for 150 million people by 2030 while India is building natural gas infrastructure and adding gas connections to 30 million people over the next five years. Often overlooked is the energy transition potential for LNG as a direct fuel and Shell noted that demand for LNG-powered vessels will likely reach 16 million tonnes a year by 2030, up 60% from the previous forecast.

**A focus on satisfying long term energy demand growth**

Both the BP and Shell events in February highlighted the need for greater energy supply to satisfy growing demand and energy security needs. We note a shift in market sentiment more broadly towards a stronger long-term demand outlook for both oil and natural gas and we think that corporate strategies that are focused on providing growth within a disciplined cash flow model are likely to be valued more highly.

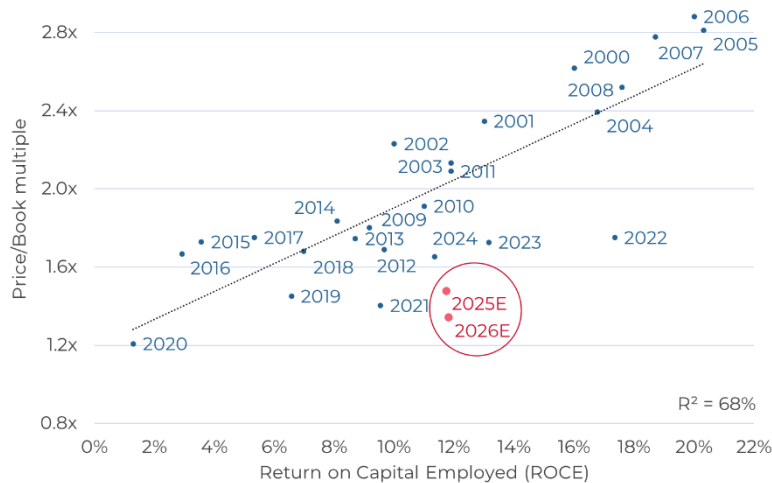
These two events give greater confidence on the long-term oil and gas demand outlook and, in the context of a global drive to enhance energy security at the expense of decarbonisation, they may help to support a re-rating of global energy equities as investors to ascribe a more meaningful terminal value to oil and gas producers.

On our analysis, the stock market has historically valued energy companies based on their sustainable levels of profitability (generally a combination of both return on capital employed (ROCE) and free cash flow return). Periods of growth, either coming from volumes or higher oil prices expectations, typically coincide with periods of relatively higher valuation versus the trend.

With full year results nearly finished, we see ROCE for the Guinness Global Energy portfolio in 2024 (with Brent oil averaging \$80/bl) at around 11.6%, slightly higher than the mid-cycle ROCE which we peg at nearly 11%. With the Brent oil price averaging around \$80/bl in 2025, we see ROCE at around 11.8%, a level that we expect to be maintained in 2026 with Brent at the same level.

Current valuation implies that the long-term ROCE of our companies should average only around 3%, significantly below the mid cycle or long-term average level of nearly 11%. If ROCE remains at our 2025 forecast level of nearly 12%, and the market were to pay for it as it has done on average over the last 20 years, it would imply an increase in the equity valuation of around 40%.

**Price/Book valuation versus return on capital employed for the Guinness Global Energy portfolio**



Source: Guinness Global Investors, Bloomberg



**PERFORMANCE**

The main index of oil and gas equities, the MSCI World Energy Index (net return), increased by 2.6% in February, while the MSCI World Index (net return) fell by 0.7% in USD.

Within the portfolio, February's strongest performers included Devon Energy, Helix, Chevron, Repsol and BP while the weakest performers included Canadian Natural Resources, Cenovus, Sinopec, Diamondback and Baker Hughes.

Past performance does not predict future returns.

**Guinness Global Energy Fund  
Performance (in USD) as at 28.02.2025**

<b>Cumulative returns</b>	<b>YTD</b>	<b>1 year</b>	<b>3 years ann.</b>	<b>5 years ann.</b>	<b>Launch of strategy* ann. (31.12.98)</b>		
<b>Guinness Global Energy Fund</b>	4.2%	2.1%	6.7%	11.9%	8.0%		
<b>MSCI World Energy NR Index</b>	5.2%	7.5%	10.1%	14.7%	6.3%		

<b>Calendar year returns</b>	<b>2024</b>	<b>2023</b>	<b>2022</b>	<b>2021</b>	<b>2020</b>	<b>2019</b>	<b>2018</b>
<b>Guinness Global Energy Fund</b>	-1.3%	2.6%	32.4%	44.5%	-34.7%	9.8%	-19.7%
<b>MSCI World Energy NR Index</b>	2.7%	2.5%	46.0%	40.1%	-31.5%	11.4%	-15.8%

	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>
<b>Guinness Global Energy Fund</b>	-1.3%	27.9%	-27.6%	-19.1%	24.4%	3.0%	-13.7%
<b>MSCI World Energy NR Index</b>	5.0%	26.6%	-22.8%	-11.6%	18.1%	1.9%	0.2%

	<b>2010</b>	<b>2009</b>	<b>2008*</b>	<b>2007*</b>	<b>2006*</b>	<b>2005*</b>	<b>2004*</b>
<b>Guinness Global Energy Fund</b>	15.3%	61.8%	-48.2%	37.9%	10.0%	62.3%	41.0%
<b>MSCI World Energy NR Index</b>	11.9%	26.2%	-38.1%	29.8%	17.9%	28.7%	28.1%

	<b>2003*</b>	<b>2002*</b>	<b>2001*</b>	<b>2000*</b>	<b>1999*</b>
<b>Guinness Global Energy Fund</b>	32.3%	6.7%	-4.1%	39.6%	22.5%
<b>MSCI World Energy NR Index</b>	25.9%	-6.4%	-7.2%	6.0%	22.0%

Source: FE fundinfo, Guinness Global Investors and Bloomberg, bid to bid, net of fees, 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.

## Guinness Global Energy

Past performance does not predict future returns.

### WS Guinness Global Energy Fund Performance (in GBP) as at 28.02.2025

Cumulative returns	YTD	1 year	3 years ann.	5 years ann.			
WS Guinness Global Energy Fund	3.8%	2.2%	9.6%	13.0%			
MSCI World Energy NR Index	4.7%	8.0%	12.4%	15.0%			
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, net of fees, 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 February, 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 **February 28 2024**.

Asset allocation as %NAV	Current	Change	Last year end										
	Feb-25		Dec-24	Dec-23	Dec-22	Dec-21	Dec-20	Dec-19	Dec-18	Dec-17	Dec-16	Dec-15	Dec-14
<b>Oil &amp; Gas</b>	<b>98.1%</b>	<b>0.3%</b>	<b>97.8%</b>	<b>98.9%</b>	<b>97.4%</b>	<b>96.9%</b>	<b>94.8%</b>	<b>98.3%</b>	<b>96.7%</b>	<b>98.4%</b>	<b>96.7%</b>	<b>95.1%</b>	<b>93.7%</b>
Integrated	56.1%	0.9%	55.1%	54.7%	54.7%	57.7%	56.3%	51.1%	46.4%	42.9%	46.4%	41.5%	37.3%
Exploration & Production	18.8%	-0.5%	19.3%	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%	0.0%	0.1%	2.2%	1.9%	2.2%	1.5%	3.3%
Equipment & Services	9.9%	0.1%	9.8%	10.0%	9.0%	4.0%	4.6%	9.6%	8.6%	9.5%	8.6%	11.4%	13.4%
Storage & Transportation	7.8%	-0.2%	8.0%	5.0%	4.8%	4.3%	4.4%	4.0%	0.0%	3.5%	0.0%	0.0%	0.0%
Refining & Marketing	5.6%	0.0%	5.6%	6.0%	5.8%	7.2%	7.3%	3.8%	3.7%	3.7%	3.7%	4.2%	3.5%
Solar	0.0%	0.0%	0.0%	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%	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%	0.0%
Cash	1.9%	-0.3%	2.2%	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 February 2025 was on a price to earnings (PE) ratio for 2024/2025 of 10.8x/10.2x versus the MSCI World Index at 21.3x/19.6x as set out in the following table:

PE		
2024	2025E	2026E
10.8x	10.2x	9.3x
21.3x	19.6x	17.7x
-49%	-48%	-47%

Source: Bloomberg; Guinness Global Investors

**Portfolio holdings**

Our integrated and similar stock exposure (c.56%) 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 February 28 2024 the median P/E ratio of this group was 8.3x 2025 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.

## Guinness Global Energy

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 January 31 2025 (for compliance reasons disclosed one month in arrears)

Guinness Global Energy Fund (31 January 2025)			P/E			EV/EBITDA			Price/Book		
Stock	ISIN	% of NAV	2024	2025E	2026E	2024	2025E	2026E	2024	2025E	2026E
<b>Integrated Oil &amp; Gas</b>											
Exxon Mobil Corp	US30231G1022	5.3%	13.7x	14.2x	12.0x	8.1x	6.8x	6.2x	1.8x	1.8x	1.7x
Chevron Corp	US1667641005	5.9%	17.8x	13.6x	11.8x	8.9x	6.3x	5.4x	1.8x	1.8x	1.5x
Shell PLC	GB00BP6MXD84	5.9%	9.1x	8.9x	8.0x	4.1x	4.0x	4.0x	1.1x	1.1x	1.0x
Total SA	FR0000120271	5.2%	9.4x	7.5x	7.1x	4.3x	4.3x	4.1x	1.1x	1.0x	1.0x
BP PLC	GB0007980591	4.9%	9.2x	8.4x	7.5x	3.7x	3.6x	3.6x	1.3x	1.2x	1.2x
Equinor ASA	NO0010096985	3.3%	7.4x	7.4x	7.3x	1.7x	1.7x	1.8x	1.6x	1.5x	1.3x
ENI SpA	IT0003132476	3.4%	7.9x	7.7x	7.1x	3.6x	3.8x	3.7x	0.8x	0.8x	0.8x
Repsol SA	ES0173516115	2.9%	4.2x	4.8x	4.4x	3.2x	3.4x	3.2x	0.5x	0.5x	0.4x
Galp Energia SGPS SA	PTGALOAM0009	3.4%	11.8x	14.1x	12.8x	4.7x	5.2x	4.7x	2.7x	2.5x	2.4x
OMV AG	AT0000743059	2.7%	10.5x	6.8x	6.4x	3.6x	3.5x	3.6x	0.8x	0.7x	0.7x
		<b>42.9%</b>									
<b>Integrated / Oil &amp; Gas E&amp;P - Canada</b>											
Suncor Energy Inc	CA8672241079	4.3%	10.5x	11.3x	10.3x	5.2x	5.0x	4.7x	1.4x	1.4x	1.3x
Canadian Natural Resources Ltd	CA1363851017	3.5%	12.3x	11.2x	10.7x	6.4x	5.6x	5.4x	2.3x	2.2x	2.1x
Cenovus Energy Inc	CA15135U1093	2.8%	11.2x	9.4x	7.9x	4.7x	4.3x	4.0x	1.3x	1.2x	1.2x
Imperial Oil Ltd	CA4530384086	3.7%	10.2x	11.5x	11.3x	6.0x	6.7x	6.6x	2.0x	1.9x	1.7x
		<b>14.3%</b>									
<b>Integrated Oil &amp; Gas - Emerging market</b>											
PetroChina Co Ltd	CNE1000003W8	2.2%	6.1x	6.2x	6.1x	3.5x	3.6x	3.5x	0.7x	0.6x	0.6x
		<b>2.2%</b>									
<b>Oil &amp; Gas E&amp;P</b>											
ConocoPhillips	US20825C1045	4.6%	12.9x	12.0x	11.0x	5.7x	5.0x	4.8x	2.0x	2.0x	1.9x
EOG Resources Inc	US26875P1012	3.9%	10.9x	11.0x	10.4x	5.4x	5.5x	5.2x	2.4x	2.2x	2.0x
Diamondback Energy Co	US25278X1090	3.6%	10.3x	10.5x	10.3x	8.4x	5.9x	5.8x	0.9x	1.2x	1.1x
Devon Energy Corp	US25179M1036	2.6%	7.2x	7.3x	6.8x	4.1x	3.9x	3.8x	1.5x	1.4x	1.2x
		<b>14.7%</b>									
<b>International E&amp;Ps</b>											
Pharos Energy PLC	GB00B572ZV91	0.2%	n.m.	n.m.	n.m.	1.2x	1.4x	1.4x	0.4x	0.3x	0.3x
		<b>0.2%</b>									
<b>Midstream</b>											
Kinder Morgan Inc	US49456B1017	4.2%	23.6x	21.6x	20.1x	14.2x	11.4x	10.9x	2.0x	2.0x	1.9x
Enbridge Inc	CA29250N1050	3.7%	22.0x	20.0x	18.9x	13.5x	12.5x	12.0x	2.3x	2.3x	2.3x
		<b>8.0%</b>									
<b>Equipment &amp; Services</b>											
Schlumberger Ltd	AN8068571086	3.2%	10.9x	11.7x	10.6x	6.2x	7.2x	6.8x	2.7x	2.3x	2.2x
Halliburton Co	US4062161017	2.7%	8.8x	9.8x	8.5x	5.8x	6.2x	5.7x	2.2x	2.0x	1.7x
Baker Hughes a GE Co	US05722G1004	3.2%	20.2x	17.7x	15.3x	10.8x	10.4x	9.5x	2.7x	2.5x	2.3x
Helix Energy Solutions Group Inc	US42330P1075	0.8%	21.2x	10.0x	8.9x	5.5x	4.5x	4.2x	0.8x	0.7x	0.7x
		<b>9.9%</b>									
<b>Oil &amp; Gas Refining &amp; Marketing</b>											
China Petroleum & Chemical Corp	CNE1000002Q2	1.6%	8.5x	7.8x	7.1x	5.6x	5.3x	5.1x	0.6x	0.6x	0.5x
Valero Energy Corp	US91913Y1001	4.2%	15.5x	17.3x	12.1x	7.4x	7.7x	6.3x	1.7x	1.6x	1.6x
		<b>5.8%</b>									
<b>Research Portfolio</b>											
EnQuest PLC	GB00B635TG28	0.3%	3.4x	2.7x	2.3x	1.4x	1.6x	1.6x	0.6x	0.5x	0.5x
Diversified Energy Company	GB00BQHP5P93	0.4%	15.3x	9.1x	6.2x	5.6x	4.7x	4.0x	1.5x	1.2x	1.1x
Deltic Energy PLC	GB00BNTY2N01	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%	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
		<b>0.8%</b>									
<b>Cash</b>	<b>Cash</b>	<b>1.2%</b>									

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
	<i>IEA</i>										
<b>World Demand</b>	<b>95.3</b>	<b>96.4</b>	<b>98.2</b>	<b>99.5</b>	<b>100.7</b>	<b>91.8</b>	<b>97.4</b>	<b>99.9</b>	<b>102.0</b>	<b>102.9</b>	<b>104.0</b>
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	71.6
OPEC NGLs	5.2	5.3	5.4	5.5	5.3	5.2	5.3	5.4	5.5	5.6	5.7
<b>Non-OPEC supply plus OPEC NGLs</b>	<b>67.3</b>	<b>66.8</b>	<b>67.9</b>	<b>70.5</b>	<b>72.3</b>	<b>69.6</b>	<b>70.3</b>	<b>72.3</b>	<b>74.8</b>	<b>75.8</b>	<b>77.3</b>
<b>Call on OPEC (crude oil)</b>	<b>28.0</b>	<b>29.6</b>	<b>30.3</b>	<b>29.0</b>	<b>28.4</b>	<b>22.2</b>	<b>27.1</b>	<b>27.6</b>	<b>27.2</b>	<b>27.1</b>	<b>26.7</b>
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
<b>Call on OPEC-9 (crude oil)</b>	<b>27.4</b>	<b>29.0</b>	<b>29.7</b>	<b>28.4</b>	<b>27.8</b>	<b>21.6</b>	<b>26.5</b>	<b>27.0</b>	<b>26.6</b>	<b>26.5</b>	<b>26.1</b>

Source: Bloomberg; IEA; Guinness Global Investors, March 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 2020 and 2024 by over 11m b/day, leaving overall consumption in 2024 over 2m 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	31-Jan-25	28-Feb-25	Current vs Dec 2019	Current vs last month
Saudi	9,730	8,940	<b>8,970</b>	-760	30
Iran	2,080	3,320	<b>3,310</b>	1,230	-10
Iraq	4,610	4,010	<b>4,160</b>	-450	150
UAE	3,040	3,230	<b>3,300</b>	260	70
Kuwait	2,710	2,490	<b>2,470</b>	-240	-20
Nigeria	1,820	1,520	<b>1,450</b>	-370	-70
Venezuela	730	900	<b>980</b>	250	80
Libya	1,110	1,210	<b>1,290</b>	180	80
Algeria	1,010	890	<b>910</b>	-100	20
<b>OPEC-9</b>	<b>26,840</b>	<b>26,510</b>	<b>26,840</b>	<b>0</b>	<b>330</b>

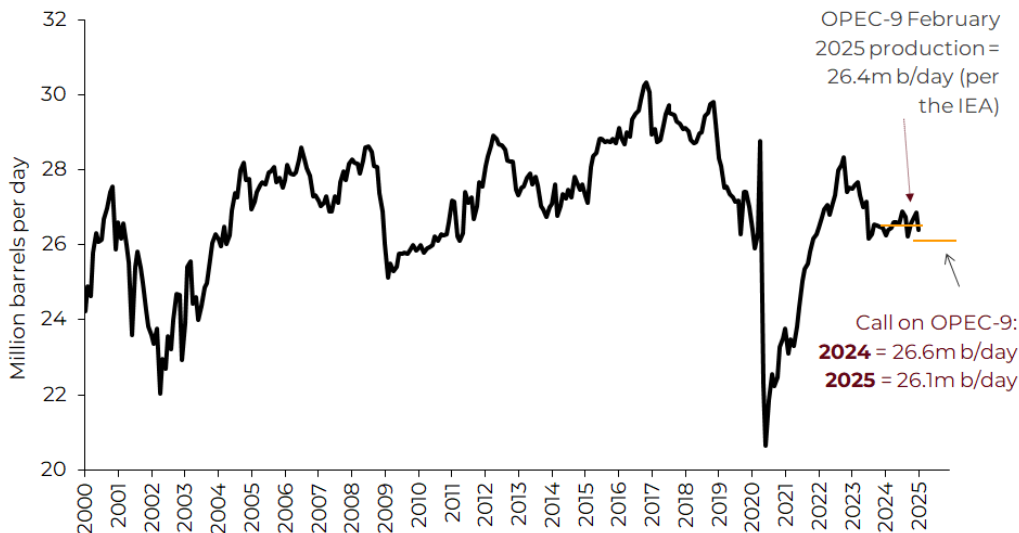
Source: Bloomberg; Guinness Global Investors, 31.12.2024

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.

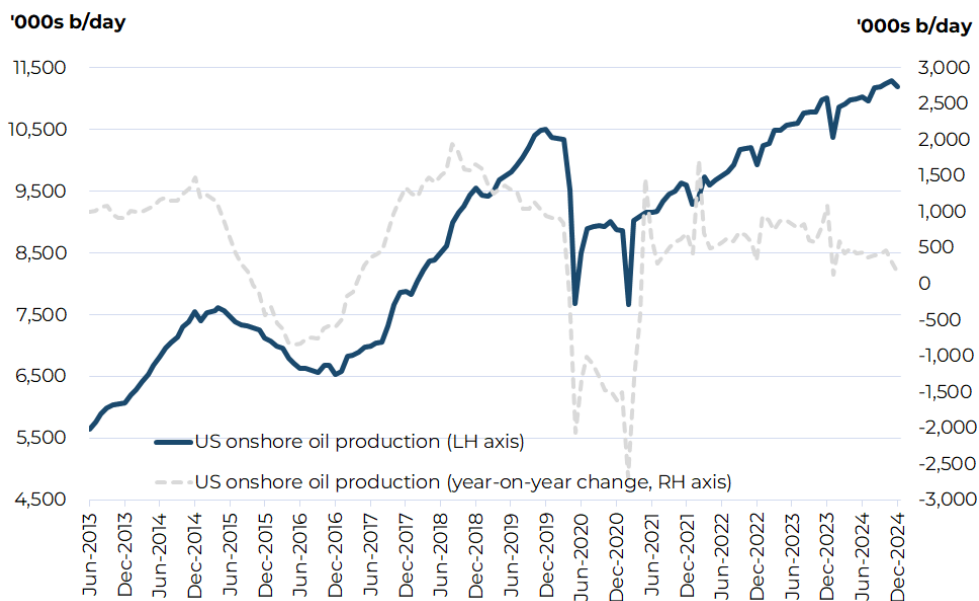
Nothing in the market in recent years has changed our view that OPEC can put a floor under the price – as they did in 2020, 2018, 2016, 2008, 2006, 2001 and 1998.

### 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 1.7% p.a. from 2009-2024.

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 1.1m 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 2025 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
<b>Brent/WTI (12m MAV)</b>	<b>73</b>	<b>99</b>	<b>62</b>	<b>80</b>	<b>103</b>	<b>103</b>	<b>103</b>	<b>96</b>	<b>51</b>	<b>44</b>	<b>53</b>	<b>68</b>	<b>61</b>	<b>41</b>	<b>70</b>	<b>97</b>	<b>80</b>	<b>78</b>	<b>79</b>
<b>Brent/WTI y-on-y change</b>	-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.



## Guinness Global Energy

### US natural gas demand

Bcf/day	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025E
<b>US natural gas demand:</b>														
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
<b>Total demand</b>	<b>71.7</b>	<b>73.6</b>	<b>74.8</b>	<b>77.8</b>	<b>80.1</b>	<b>80.9</b>	<b>89.8</b>	<b>95.2</b>	<b>95.0</b>	<b>98.3</b>	<b>104.6</b>	<b>107.0</b>	<b>107.3</b>	<b>111.6</b>
<b>Demand growth</b>	<b>3.1</b>	<b>1.9</b>	<b>1.2</b>	<b>3.0</b>	<b>2.3</b>	<b>0.8</b>	<b>8.9</b>	<b>5.4</b>	<b>- 0.2</b>	<b>3.3</b>	<b>6.3</b>	<b>2.4</b>	<b>0.3</b>	<b>4.3</b>

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.

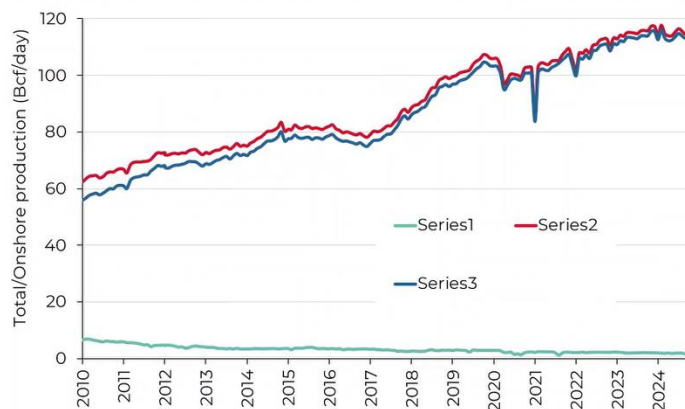
### US natural gas supply

Bcf/day	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025E
<b>US natural gas supply:</b>														
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	-	-	-
<b>Total supply</b>	<b>71.9</b>	<b>71.9</b>	<b>76.3</b>	<b>79.6</b>	<b>79.3</b>	<b>79.7</b>	<b>89.8</b>	<b>96.2</b>	<b>95.5</b>	<b>96.9</b>	<b>103.1</b>	<b>107.8</b>	<b>107.6</b>	<b>111.2</b>
<b>Supply growth</b>	<b>2.4</b>	<b>-</b>	<b>4.4</b>	<b>3.3</b>	<b>- 0.3</b>	<b>0.4</b>	<b>10.1</b>	<b>6.4</b>	<b>- 0.7</b>	<b>1.4</b>	<b>6.2</b>	<b>4.7</b>	<b>- 0.2</b>	<b>3.6</b>
<b>(Supply)/demand balance</b>	<b>- 0.2</b>	<b>1.7</b>	<b>- 1.5</b>	<b>- 1.8</b>	<b>0.8</b>	<b>1.2</b>	<b>-</b>	<b>- 1.0</b>	<b>- 0.5</b>	<b>1.4</b>	<b>1.5</b>	<b>- 0.8</b>	<b>- 0.3</b>	<b>0.4</b>

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 above 100 at the end of February 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, Feb 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.

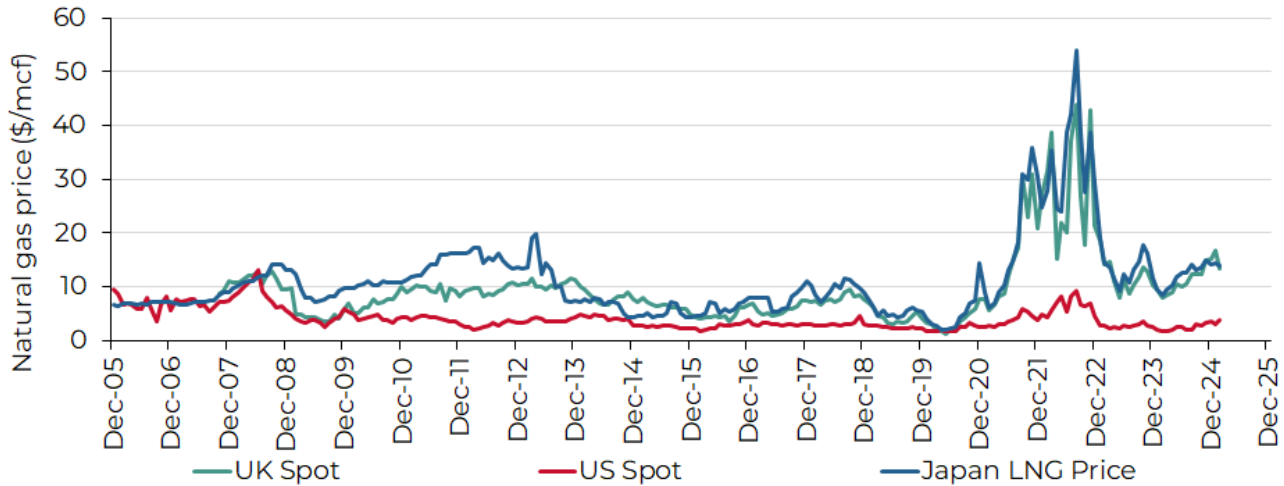
Associated gas production is expected to rise again in 2025 albeit at a slower pace (+0.8 Bcf/day) than in 2022 (+5.5 Bcf/day) and 2023 (+3.6 Bcf/day). Lower supply growth is expected from onshore properties as weaker natural gas prices have brought a lower rig count and lower investment.

#### 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 March 2025

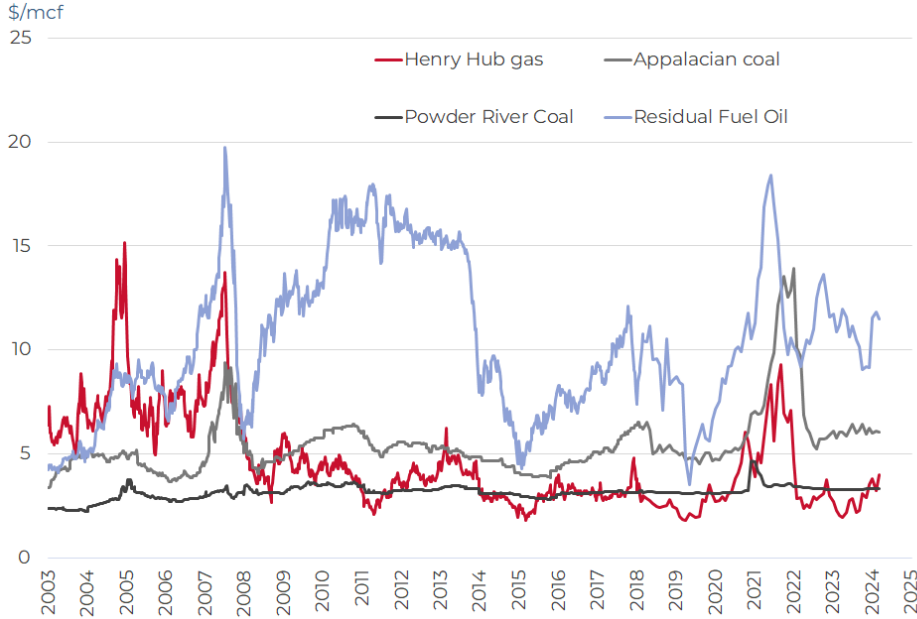


Source: Bloomberg; Guinness Global Investors, March 2025

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, March 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.

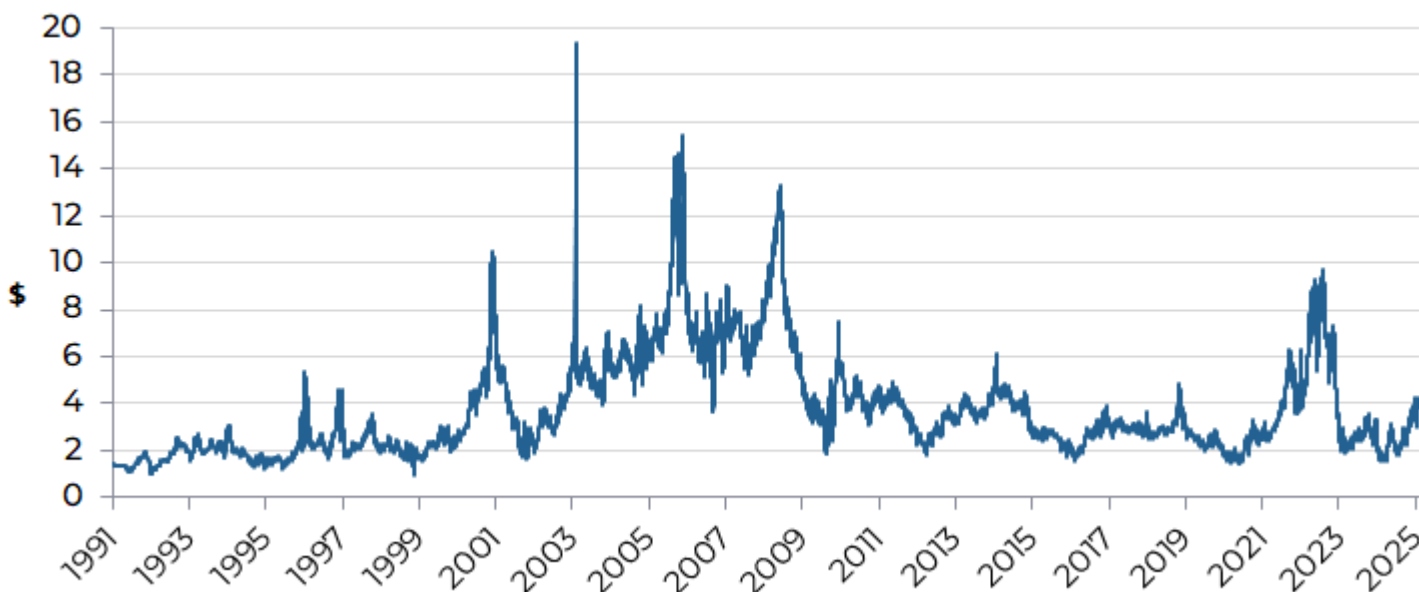
Continued expectations of a supply crunch by the end of the decade, coupled with increased speculative activity in oil markets, contributed to the oil price surging past \$90 in the final months of 2007 and as high as \$147 by the middle of

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 range 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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