Energy Brief

July 2019

REPORT HIGHLIGHTS

OIL

Brent and WTI decline; OPEC+ agree to extend existing quotas

Brent and West Texas Intermediate (WTI) both declined over the quarter; Brent was down from $67/bl to $64/bl; WTI fell from $60/bl to $58/bl. It was confirmed at the start of July that OPEC+ are extending their existing production quotas for a further nine months. Participating non-OPEC producers have signed a new Charter of Cooperation which formalizes their involvement. Otherwise, attacks on tankers in the key Gulf of Oman export route helped to elevate spot prices.

NATURAL GAS

US gas prices lower; Asian & European prices also weak

Henry Hub prices weakened from $2.66/mcf to $2.31/mcf. Large builds in storage showing up, with US gas supply nearly 11 Bcf/day higher than twelve months ago, thanks to growth in Appalachia and in associated gas from US shale oil production. Asian and European gas prices have weakened (about $5/mcf and about $4/mcf at end-June) as a result of seasonal glut of LNG (liquefied natural gas).

EQUITIES

Energy underperforms the broad market

The main index of oil and gas equities, the MSCI World Energy Index, was down by 1.6% in the second quarter of 2019. The S&P 500 Index was up by 4.3% over the same period.

CHART OF THE QUARTER – OPEC extend existing production quotas

OPEC met on July 1 and agreed to extend existing quotas until March 2020. OPEC are currently producing around 1.6m b/day less than their official quota of 31.5m b/day (million barrels per day). Adjusting for the production outages in Iran (sanctions) and Venezuela (underinvestment and sanctions), the rest of OPEC is producing in-line with their overall production quota. While collective compliance from OPEC has been strong, it has relied on Saudi cutting production beyond their implied quota.

OPEC production vs quotas

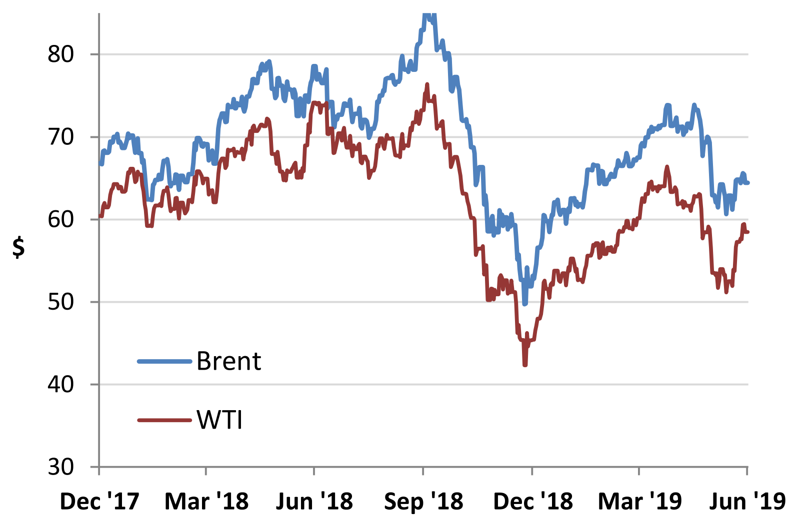
	May 2019 production	July 2019 quota	
(m b/day)	m b/day	m b/day	Actual vs quota m b/day
Saudi	9.70	**10.33**	-0.63
Iran	2.40	**3.34**	-0.94
Iraq	4.78	**4.51**	0.27
UAE	3.05	**3.11**	-0.06
Kuwait	2.71	**2.68**	0.03
Nigeria	1.69	**1.62**	0.07
Venezuela	0.81	**1.26**	-0.45
Angola	1.45	**1.46**	-0.01
Libya	1.16	**1.07**	0.09
Algeria	1.03	**1.04**	-0.01
Equatorial Guinea	0.10	**0.13**	-0.03
Congo	0.34	**0.31**	0.03
Gabon	0.20	**0.18**	0.02
Ecuador	0.53	**0.50**	0.03
OPEC-14	**29.95**	**31.54**	**-1.59**

Second Quarter 2019 in Review
Manager's Comments
Performance: Guinness Atkinson Global Energy Fund
Portfolio: Guinness Atkinson Global Energy Fund
Outlook
Appendix: Oil and Gas Markets, Historical Context

1. Second quarter 2019 in review

i) Oil market

Figure 1: Oil price (WTI and Brent $/barrel) 18 months December 31 2017 to June 30 2019



Source: Bloomberg LP

Spot oil prices, a key driver of the sector, fell over the quarter. The Brent oil price started the quarter at $67/bl, peaked at nearly $74 in April, before declining to close the quarter at $64/bl. Brent is averaging $66/bl so far in 2019, down from $72/bl during 2018, but higher than the average level for 2017 ($55/bl). The West Texas Intermediate (WTI) oil price traded in a similar fashion, falling from $60/bl to $58/bl over the quarter.

Longer dated oil prices were more subdued: the five year forward Brent and WTI prices both essentially flat over the quarter.

Factors which strengthened WTI and Brent spot oil prices in the quarter:

- **Multiple supply outages across OPEC+**
  The last few months have seen continued decline in supply from Venezuela, the removal of Iranian oil import waivers, renewed fighting in Libya and disruption to Russian supply due to contamination issues. These factors, each one significant in its own right, combine to indicate a shortage of oil supply in 2H 2019, assuming oil demand holds reasonably steady.

- **Prospect of OPEC+ maintaining existing quotas**
  OPEC postponed their scheduled meeting from the 25th of June to July 1st, but it was widely anticipated that OPEC+ would roll over their existing production quotas, as has now been confirmed. OPEC have extended

current quotas for a further nine months, while the 10 participating non-OPEC producers have signed a new Charter of Cooperation which formalizes their involvement.

- **Heightened tensions around Middle Eastern oil export routes**
  The second quarter saw an escalation of tensions around Middle Eastern oil export routes. On June 13, attacks were reported on two tankers in the Gulf of Oman, which were taking refined products to Asia. The attacks were followed on June 20th by the shooting down of a US drone aircraft by Iran, which prompted President Trump to promise intensified sanctions against Iran in response. 21m b/day of crude oil and refined product pass through the Strait of Hormuz/Gulf of Oman each day, of which around two-thirds ends being shipped to Asian markets.

Factors which weakened WTI and Brent spot oil prices in the quarter:

- **Concerns around global oil demand**
  During the second quarter the IEA downgraded their global oil demand forecast for 2019 from 1.4m b/day to around 1.2m b/day. The non-OECD region is still expected to grow by around 1.1m b/day, but the OECD (Organisation for Economic Co-operation and Development) saw its growth cut from 0.3m b/day to 0.1m b/day. The downgrade comes in response to the IMF lowering their expectations for global GDP growth in 2019.

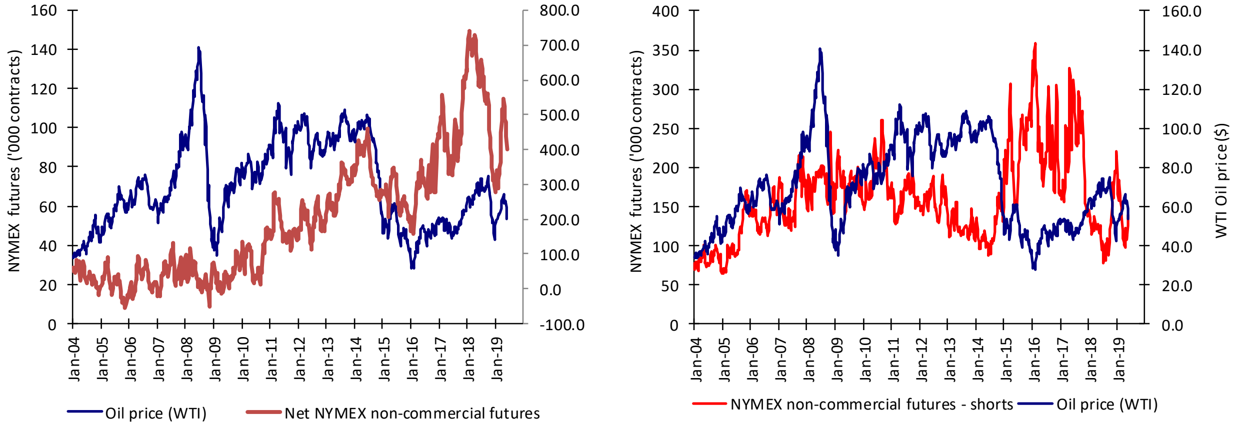
- **US supply growth picking up**
  The latest EIA production data showed a 175,000 b/day oil production increase in April 2019 (latest data point), taking year-on-year growth up to 1.3m b/day. This was supplemented by 73,000 b/day growth in oil production in the US Gulf of Mexico. The US onshore drilling rig count fell by 7 rigs in June, taking the total decline in 2019 to 95 rigs (-11%). This increases expectations that US shale oil production growth will not accelerate later this year. There is typically a 5-6 month lag from rig count change to production change.

- **IEA outlook for non-OPEC supply in 2020**
  On June 14, the IEA published their outlook for non-OPEC supply in 2020, showing an increase of around 2m b/day versus their 2019 forecast. With demand expected to grow by 1.4m b/day, the IEA report highlighted the risk that OPEC+ may need to cut production further in 2020 to keep inventories at current levels.

Speculative and investment flows

The New York Mercantile Exchange (NYMEX) net non-commercial crude oil futures open position was 379,000 contracts long at the end of June versus 439,000 contracts long at the end of May. 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 118,000 contracts at the end of June versus 125,000 at the end of May.

Figure 2: NYMEX Non-commercial net and short futures contracts: WTI January 2004 – June 2019

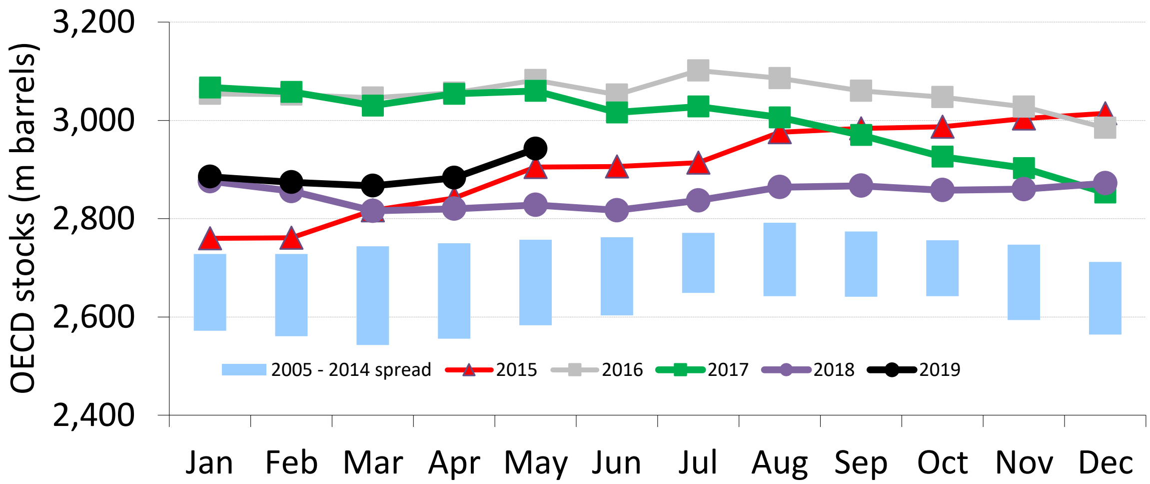


Source: Bloomberg LP/NYMEX/ICE (2019)

OECD stocks

OECD total product and crude inventories at the end of May (latest data point) were estimated by the IEA to be 2,942m barrels, up by 59m barrels versus the level reported for April. This compares to a 10-year average increase for May of 22m barrels, implying that the market was oversupplied in May by around 1m b/day. Inventories were broadly flat in 2018.

Figure 3: OECD total product and crude inventories, monthly, 2004 to 2019

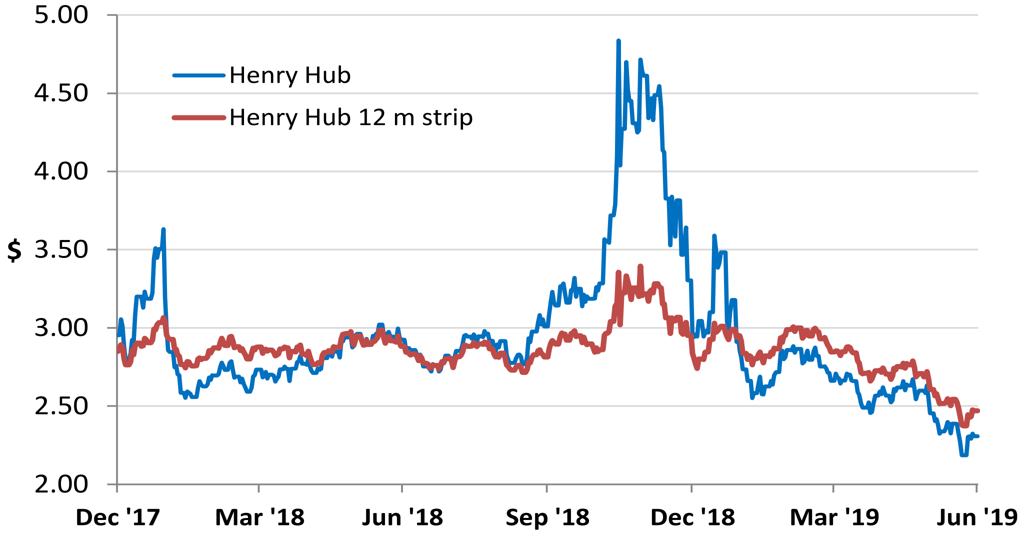


Source: IEA Oil Market Reports (June 2019 and older)

ii) Natural gas market

The US natural gas price opened April at $2.66/mcf (1,000 cubic feet), fell steadily throughout the quarter to close at $2.31/mcf. The spot gas price has averaged $2.69/mcf so far in 2019, which compares to an average gas price of $3.07/mcf in 2018, $3.02 in 2017 and $2.55/mcf in 2016. High onshore gas production growth has caused inventories to normalize, and the high visibility of further low cost supply growth for 2019 is keeping a cap on prices.

Figure 4: Henry Hub gas spot price and 12m strip ($/Mcf) December 31 2018 to June 30 2019



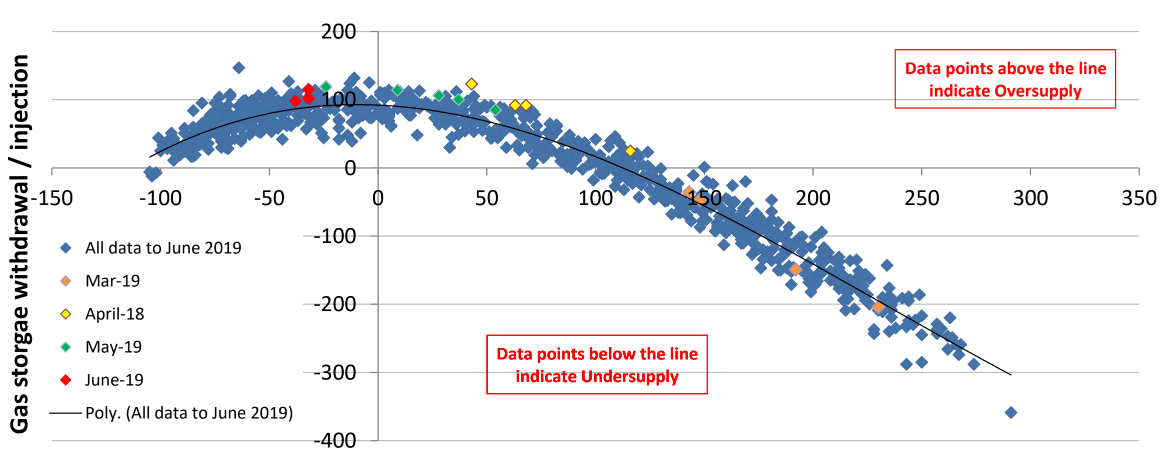
Source: Bloomberg LP

Factors which weakened the US gas price in the quarter included:

- **Strong US onshore natural gas production**
  Onshore US natural gas production averaged 97.4 Bcf/day in April 2019 (the latest available data point), up by 10.6 Bcf/day on the level reported twelve months earlier. Rising associated gas supply from shale oil, and a pickup of activity in the Marcellus basin, are the key reasons for the rise in production: both look set to continue for the rest of 2019.

- **Structurally oversupplied market**
  Adjusting for the impact of weather in May, the most recent movements of gas in storage suggest the market is, on average, operating at a surplus of around 2 Bcf/day (as indicated by the red dots on the graph below).

Figure 5: Weather adjusted US natural gas inventory injections and withdrawals from December 2010



Source: Bloomberg LP; Guinness Atkinson Asset Management

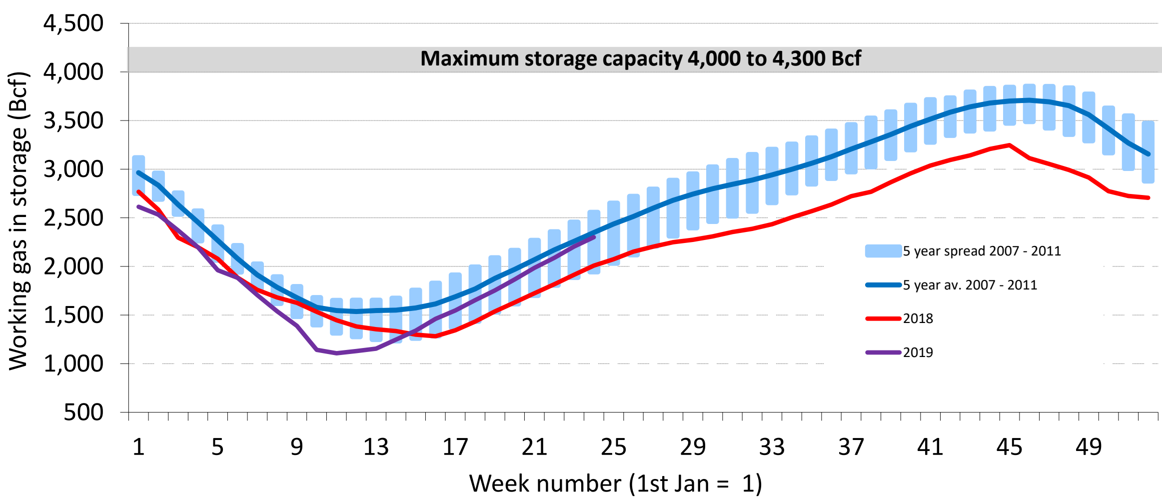
Factors which strengthened the US gas price in the quarter included:

- **FID of additional liquefaction capacity at Sabine Pass**
  In early June, Cheniere Energy confirmed plans to build a sixth liquefaction train at its Sabine Pass LNG export terminal in Louisiana. The project is expected to cost around $2.5bn and will come into service in 2023. Cheniere also confirmed that they are likely to start expanding their Corpus Christi LNG export terminal in 2020.

Natural gas inventories

Swings in the balance for US natural gas should, in theory, show up in movements in gas storage data. Natural gas inventories at the end of June were reported by the EIA to be 2.3 Tcf. Current gas in storage is, below the 10 year average as a result of strong demand plus increasing volumes of gas exported via LNG. While gas inventories today are low, the high visibility of low cost supply growth for 2019 is keeping a cap on prices.

Figure 6: Deviation from 5yr gas storage norm vs gas price 12-month strip (H. Hub $/Mcf)



Source: Bloomberg; EIA (July 2019)

1. MANAGER'S COMMENTS

OPEC concluded their latest formal meeting on July 1st with an agreement to maintain existing quotas for a further nine months. The meeting produced interesting commentary around Saudi's attitude to global oil inventories, and to the growth of US shale oil.

What has been announced?

At the conclusion of their meeting on July 1st 2019 in Vienna, OPEC's headline announcement was an agreement to maintain existing production quotas for a further nine months. In other words, the OPEC production cut of 0.8m b/day, that was agreed in December 2018, is extended until March 2020. There is an understanding that non-OPEC 'partners' will continue to keep 0.4m b/day from the market (shouldered mostly by Russia), also a continuation of the December 2018 agreement. There remain no individual country quotas were announced but, based on comments from OPEC, we assess the extended quotas as:

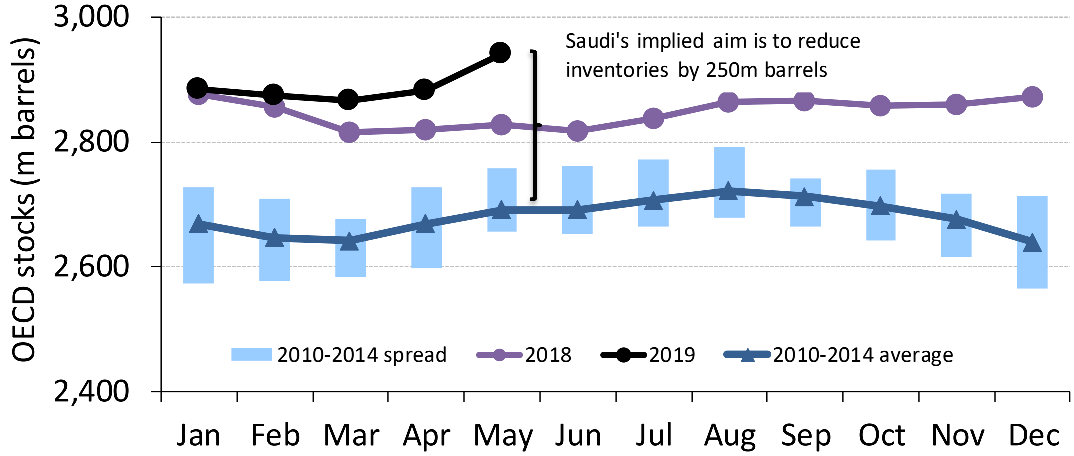
	May 2019 production	July 2019 quota	
(m b/day)	m b/day	m b/day	Actual vs quota m b/day
Saudi	9.70	**10.33**	-0.63
Iran	2.40	**3.34**	-0.94
Iraq	4.78	**4.51**	0.27
UAE	3.05	**3.11**	-0.06
Kuwait	2.71	**2.68**	0.03
Nigeria	1.69	**1.62**	0.07
Venezuela	0.81	**1.26**	-0.45
Angola	1.45	**1.46**	-0.01
Libya	1.16	**1.07**	0.09
Algeria	1.03	**1.04**	-0.01
Equatorial Guinea	0.10	**0.13**	-0.03
Congo	0.34	**0.31**	0.03
Gabon	0.20	**0.18**	0.02
Ecuador	0.53	**0.50**	0.03
OPEC-14	**29.95**	**31.54**	**-1.59**

Source: IEA; OPEC; Guinness Atkinson Asset Management

While it is evident that OPEC+ maintain the common goal of a stable oil market and reasonable prices, the commentary from OPEC+ members after the meeting illustrated the range of views on how stability might be achieved.

At the OPEC press conference after the meeting, Saudi oil minister Al-Falih indicated that Saudi would like a key goal of oil and product inventories being managed to 2010-2014 average inventory levels. This implies that May 2019 OECD inventories of 2.94bn barrels would need to be managed down by around 250m barrels, to the 2010-14 average of 2.69bn:

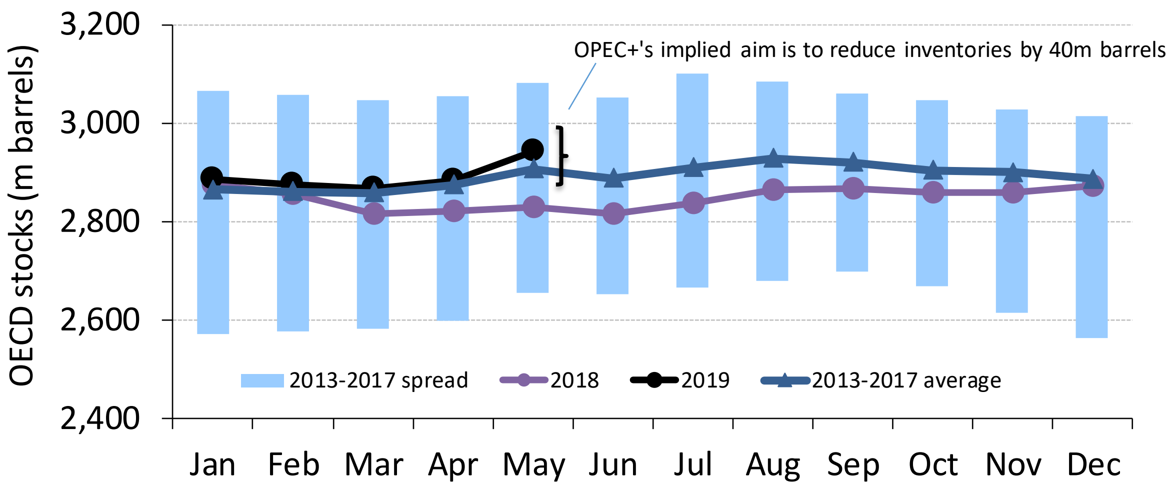
OPEC inventories: 2010-2014 spread (the Saudi view)



Source: IEA; OPEC; Guinness Atkinson Asset Management

On the other hand, it became clear that the wider OPEC+ consensus is to try to bring inventories in line with the five year average (2013-17) of 2.9bn barrels, which implies a decline of around 40m barrels from the current level. The logic of this softer position is that the growth in demand over the past few years creates room for a higher baseline for inventories (i.e. a days of demand cover being the more relevant metric).

OPEC inventories: 2013-2017 spread (the OPEC+ view)



Source: IEA; OPEC; Guinness Atkinson Asset Management

OPEC are currently producing around 1.6m b/day less than their official quota of 31.5m b/day. Adjusting for the production outages in Iran (sanctions on exports) and Venezuela (underinvestment and sanctions), the rest of OPEC is producing in-line with their overall production quota. While collective compliance from OPEC was strong in the first half of the year, it did rely on Saudi cutting production beyond their implied quota. Reference was made to Iraq (producing nearly 0.3m b/day over quota) as a country which will be under greater pressure to comply in the second half of 2019.

It was interesting to note Al-Falih's stance after the meeting towards US shale oil. In 2014, OPEC took a specific 'market share' approach towards shale and other non-OPEC supply. In this meeting, however, there was effectively an acknowledgement that OPEC were trying to stabilize price at a reasonable level, making space for shale oil to grow until it peaked. Al Falih stated: "*until [US shale supply peaks], it is prudent for those of us who have a lot at* *stake ... to keep adjusting to it .... It increases the reasoning for us to stay vigilant, watchful and adjust slightly here - up and down as necessary to keep markets balanced".*

The message from OPEC, and in particular from Saudi over the last 12 months, has been a desire to normalize global oil inventories, and stabilize oil at a price which benefits producers without placing stress on consumers. We believe the price being sought is Brent at around $60-70/bl. Monday's action is the latest milestone in OPEC's efforts to achieve a price around this level.

Looking beyond this year, the challenge OPEC faces comes in the form of non-OPEC supply, which is forecast (IEA) to grow in 2020 by a further 2m b/day, versus demand growth of 1.4m b/day. We believe OPEC has an expectation that the underinvestment in non-OPEC (ex US) regions since 2014, coupled with the 'decline curve' challenges of US shale, create significant challenges for non-OPEC supply to continue to grow in this fashion. But until that supply slowdown comes, tensions within the OPEC+ group are likely to remain.

Within the OPEC group, we continue to think that Saudi are managing the oil price in a rational fashion: trying to support the price as high as possible, while avoiding pushing it too far over-stimulate non-OPEC supply (in particular US shale production). The volatility in the spot price can give the impression that the game is more random than it really is. For all the price swings over the last 18 months, we expect Brent oil to average somewhere in the $60-70/bl range over 2018 & 2019, in -line with Saudi's plan. It is longer term oil price averages, and ultimately actual revenue from oil sales, that Saudi are interested in.

Overall, we believe that Saudi's long-term objective remains to maintain a 'good' oil price, a little higher than the current oil futures curve is indicating, and July 1st's action was another step on that journey.

2. Performance – Guinness Atkinson Global Energy Fund

The second quarter of 2019 was positive for global equities. However, energy equities underperformed as a result of oil prices falling during the quarter. The MSCI World Energy Index (Net Return) was down by 1.6%, underperforming the MSCI World Index which was up by 4.2%. Your fund fell by 2.3%, underperforming the energy index by 0.7%.

Within the portfolio, the strongest performers were Anadarko and Gazprom. Anadarko (+62%) was subject to acquisition by from Occidental at a substantial premium, following a bidding war with Chevron. And in May, Gazprom (+63%) announced changes to its senior management team, and a larger increase in dividend than the market was anticipating, both events being well received.

Large integrated oil and gas companies (Chevron +2%; Shell +5%; Total +2%) demonstrated the fruits of their focus on capital discipline, with impressively high cashflows, whilst away from the upstream, the widening of the Brent-WTI spread during much of the first half of the year was a benefit for US refiners (Valero +2%).

The weaker performers in the portfolio were generally to be found in the onshore energy service and natural gas sectors. Halliburton (-22%) suffered from its exposure to US onshore operations, where fears of a continued surplus of service capacity produced share price weakness. In the natural gas sector, Unit (-38%) suffered from very weak US gas pricing and poor utilization of its rig fleet, while Equinor (-8%) was impacted by the decline in European gas prices.

Performance as of June 30, 2019 (inception date is June 30, 2004)

Inception date 6/30/04	Full Year 2016	Full Year 2017	Full Year 2018	YTD 2019	1 year (annualized)	Last 3 years (annualized)	Last 5 years (annualized)	Last 10 years (annualized)	Since inception (annualized)
Global Energy Fund	**27.04%**	**-1.06%**	**-18.92%**	**12.41%**	**-18.09%**	**-0.13%**	**-10.97**	**0.90**	**5.47**
MSCI World Energy NR Index	**26.56%**	**4.97%**	**-15.84%**	**12.66%**	**-11.07%**	**2.72%**	**-5.48**	**3.23**	**5.03**
S&P 500 Index	**11.76%**	**21.82%**	**-4.37%**	**18.54%**	**10.41%**	**14.21%**	**10.71**	**14.69**	**8.75**

Source: Bloomberg
Expense ratio: 1.60% (gross) 1.45% (net)

Performance data quoted represent past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance of the Fund may be lower or higher than the performance quoted. For most recent month-end and quarter-end performance, visit https://www.gafunds.com/our-funds/#fund_performance or call (800) 915-6566.

The Advisor has contractually agreed to reimburse expenses (excluding Acquired Fund Fees and Expenses, interest, taxes, dividends on short positions and extraordinary expenses) in order to limit the Fund's Total Annual Operating Expenses to 1.45% through June 30, 2020. To the extent that the Advisor absorbs expenses to satisfy this cap, it may recoup a portion or all of such amounts absorbed at any time within three fiscal years after the *fiscal year in which such amounts were absorbed, subject to the expense cap in place at the time recoupment is sought, which cannot exceed the expense cap at the time of the waiver.*

4. Portfolio – Guinness Atkinson Global Energy Fund

In April, we sold our position in QEP Resources. QEP was subject to an acquisition bid in January by an activist investor, Elliot Advisors. Given that little clarity emerged on the acquisition process after the bid, but that QEP was trading close enough to the proposed takeover price, we took the opportunity to sell our holding.

In April, we also purchased a research position in Diversified Gas & Oil (DGOC). DGOC is a UK listed stock that specializes in mature conventional gas production in the Marcellus and Utica fields in the US. The company completed a transformational deal in 2018, buying $575m of producing gas assets from EQT, and has raised money in 2019 for further acquisitions. While we are cautious about US gas macro generally, we are attracted by DGOC's impressive returns on capital at low gas prices, and dividend yield of over 7%.

Sector Breakdown

The following table shows the asset allocation of the Fund at **June 30, 2019**.

(%)	31 Dec 2010	31 Dec 2011	31 Dec 2012	31 Dec 2013	31 Dec 2014	31 Dec 2015	31 Dec 2016	31 Dec 2017	31 Dec 2018	30 June 2019
Oil & Gas	**93.2**	**98.5**	**98.6**	**95.6**	**95.3**	**94.4**	**97.9**	**97.7**	**98.6**	**99.3**
Integrated	41.2	39.6	39.1	39.6	37.5	40.5	45.8	41.8	45.3	47.5
Exploration and production	36.9	41.5	41.6	36.8	38.1	37.0	37.3	38.0	35.9	34.6
Drilling	6.3	6.0	7.4	6.8	3.1	1.7	2.3	1.8	1.5	1.0
Equipment and services	5.3	6.6	7.1	9.0	13.1	11.1	8.9	9.2	8.3	8.4
Storage & transportation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	3.7	3.8
Refining and marketing	3.5	4.8	3.4	3.4	3.5	4.1	3.6	3.5	3.9	4.0
Coal and consumables	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Solar	**3.2**	**1.2**	**1.2**	**2.8**	**3.5**	**4.9**	**1.0**	**2.1**	**0.6**	**1.4**
Construction and engineering	**0.4**	**0.4**	**0.6**	**0.9**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Cash	**3.2**	**-0.1**	**-0.4**	**0.7**	**1.2**	**0.7**	**1.1**	**0.2**	**0.8**	**-0.7**
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Guinness Atkinson Asset Management
Basis: Global Industry Classification Standard (GICS)
Holdings are subject to change at any time

Guinness Atkinson Global Energy Fund Portfolio

Based on the information shown previously, the table below shows the fund valuation in terms of historical and forward (analyst consensus estimates from Bloomberg) price/earnings (P/E) ratios versus the S&P500 Index.

	2012	2013	2014	2015	2016	2017	2018	2019
Fund P/E	7.1	7.6	7.9	20.5	39.5	21.8	12.1	12.2
S&P 500 P/E	30.4	27.4	24.5	29.3	27.8	23.6	19.4	17.9
Premium (+) / Discount (-)	*-77%*	*-72%*	*-68%*	*-30%*	*42%*	*-8%*	*-38%*	*-32%*
Average oil price (WTI $/bbl)	94	98	93	49	43	51	66	

Source: Standard and Poor's; Guinness Atkinson Asset Management Ltd

Forecasts are inherently limited and cannot be relied upon. Holdings are subject to change.

Portfolio Holdings

Our integrated and similar stock exposure (about 48%) is comprised of a mix of mid cap, mid/large cap and large cap stocks. Our four large caps are Chevron, BP, Royal Dutch Shell and Total. Mid/large and mid-caps are ENI, Equinor and OMV. At June 30, 2019 the median P/E ratios of this group were 11.7x/11.8x 2018/2019 earnings. We also have two Canadian integrated holdings, Suncor and Imperial Oil. Both companies have significant exposure to oil sands in addition to downstream assets.

Our exploration and production holdings (about 35%) 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 (EnCana, Devon and Oasis), with five other names (Apache, Occidental, ConocoPhillips, Noble Energy, Anadarko) having a mix of US and international production and one (Tullow) which is African focused. One of the key metrics behind a number of the E&P stocks held is low enterprise value / proven reserves. Almost all of the US E&P stocks held also provide exposure to North American natural gas.

We have exposure to four (pure) emerging market stocks in the main portfolio, though one is a half-position, and in total represent 12% of the portfolio. Two are classified as integrateds (Gazprom and PetroChina) and two as E&P companies (CNOOC and SOCO International). Gazprom is the Russian national oil and gas company which produces approximately a quarter of the European Union gas demand and trades on 3.8x 2019 earnings. PetroChina is one of the world's largest integrated oil and gas companies and has significant growth potential and, alongside CNOOC, enjoys advantages as a Chinese national champion. SOCO International is an E&P company with production in Vietnam.

The portfolio contains one midstream holding, Enbridge, North America's largest pipeline company. With the growth of onshore oil and gas production expected in the US and Canada over the next five years, we believe Enbridge is well placed to execute its pipeline expansion plans.

We have useful exposure to oil service stocks, which comprise around 9.4% of the portfolio. The stocks we own are split between those which focus their activities in North America (land driller Unit Corp) and those which operate in the US and internationally (Helix, Halliburton and Schlumberger).

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 the rise in US exports of refined products seen in recent times.

Portfolio at June 30, 2019

Guinness Atkinson Global Energy Fund (28 June 2019)			Total return (USD)						P/E			EV/EBITDA		
Stock	% of NAV	Market Cap USD	1 month	3 months	1 year	3 years	5 years	10 years	2018	2019E	2020E	2018	2019E	2020E
Integrated Oil & Gas														
Chevron Corp	4.2%	234,149	2.0%	16.7%	16.7%	33%	17%	172%	15.4x	16.5x	14.0x	6.2x	6.4x	5.6x
Royal Dutch Shell PLC	4.1%	263,007	5.4%	14.3%	14.3%	44%	9%	134%	12.7x	11.8x	10.2x	5.8x	5.8x	5.3x
BP PLC	4.0%	141,490	-2.6%	13.5%	13.5%	45%	9%	50%	11.7x	12.8x	11.1x	5.4x	5.0x	4.7x
Total SA	4.0%	148,822	2.1%	8.6%	8.6%	36%	2%	81%	11.0x	10.5x	9.4x	5.5x	5.1x	4.7x
ENI SpA	4.0%	59,915	-3.5%	8.5%	8.5%	22%	-19%	28%	12.1x	11.6x	10.3x	3.6x	3.7x	3.4x
Equinor ASA	3.6%	66,168	-8.9%	-4.2%	-4.2%	31%	-19%	59%	9.8x	10.7x	9.4x	2.8x	2.9x	2.6x
OMV AG	3.9%	15,872	-6.8%	15.6%	15.6%	92%	29%	89%	9.0x	8.6x	7.5x	4.3x	4.0x	3.7x
	27.8%								**11.7x**	**11.8x**	**10.3x**	**4.8x**	**4.7x**	**4.3x**
Integrated / Oil & Gas E&P - Canada														
Suncor Energy Inc	3.8%	48,849	-2.7%	13.7%	13.7%	24%	-14%	30%	14.6x	12.5x	12.5x	6.2x	5.7x	5.7x
Canadian Natural Resources Ltd	3.8%	31,797	-0.7%	13.8%	13.8%	-4%	-31%	28%	12.6x	10.7x	11.8x	5.9x	5.7x	5.6x
Imperial Oil Ltd	3.8%	21,003	2.1%	10.3%	10.3%	-7%	-43%	-19%	13.2x	13.4x	14.3x	7.2x	7.2x	7.5x
	11.4%								**13.5x**	**12.2x**	**12.9x**	**6.4x**	**6.2x**	**6.3x**
Integrated Oil & Gas - Emerging market														
PetroChina Co Ltd	3.4%	173,473	-12.9%	-9.3%	-9.3%	-12%	-50%	-31%	12.2x	11.7x	10.6x	5.1x	5.3x	5.1x
Gazprom PJSC	5.8%	92,303	62.3%	65.4%	65.4%	102%	10%	7%	3.9x	3.8x	4.0x	3.5x	3.7x	3.6x
	9.2%								**8.0x**	**7.7x**	**7.3x**	**4.3x**	**4.5x**	**4.4x**
Oil & Gas E&P														
Occidental Petroleum Corp	2.9%	36,488	-22.8%	-15.7%	-15.7%	-23%	-36%	11%	10.2x	13.5x	13.9x	4.8x	5.6x	4.9x
ConocoPhillips	3.5%	67,924	-8.2%	-1.2%	-1.2%	49%	-18%	169%	13.7x	14.0x	13.9x	5.0x	5.0x	5.1x
Anadarko Petroleum Corp	3.9%	35,625	55.8%	62.7%	62.7%	37%	-32%	70%	28.4x	30.8x	26.3x	7.0x	6.7x	6.1x
Apache Corp	3.3%	10,300	-15.8%	12.0%	12.0%	-44%	-68%	-54%	17.3x	28.5x	18.1x	4.4x	5.0x	4.6x
Devon Energy Corp	3.2%	11,435	-9.3%	27.3%	27.3%	-19%	-62%	-41%	18.9x	18.1x	11.7x	5.5x	5.4x	5.4x
Noble Energy Inc	3.3%	10,425	-9.0%	20.6%	20.6%	-35%	-69%	-14%	23.2x	n/a	23.7x	6.2x	7.1x	5.1x
EnCana Corp	2.6%	7,182	-28.9%	-10.7%	-10.7%	-32%	-77%	-76%	7.7x	7.2x	6.1x	7.0x	4.3x	3.9x
Oasis Petroleum Inc	1.2%	1,668	-6.0%	2.7%	2.7%	-39%	-90%	n/a	20.1x	43.7x	22.0x	4.9x	4.7x	4.4x
	23.9%								**17.4x**	**22.3x**	**17.0x**	**5.6x**	**5.5x**	**4.9x**
International E&Ps														
CNOOC Ltd	3.8%	76,972	-5.7%	14.3%	14.3%	58%	20%	107%	9.6x	9.5x	9.0x	3.6x	3.9x	3.7x
Tullow Oil PLC	1.8%	3,630	-13.6%	18.3%	18.3%	-9%	-78%	-78%	24.0x	10.7x	10.3x	4.9x	4.8x	4.8x
Soco International PLC	1.1%	339	7.5%	10.8%	10.8%	-44%	-83%	-72%	26.9x	20.1x	15.0x	2.2x	1.6x	1.3x
	6.7%								**20.1x**	**13.4x**	**11.4x**	**3.6x**	**3.4x**	**3.3x**
Midstream														
Enbridge Inc	3.8%	72,776	1.0%	19.7%	19.7%	0%	-5%	204%	18.1x	18.6x	17.6x	13.7x	12.9x	12.3x
	3.8%								**18.1x**	**18.6x**	**17.6x**	**13.7x**	**12.9x**	**12.3x**
Drilling														
Unit Corp	1.0%	463	-37.6%	-37.7%	-37.7%	-43%	-87%	-68%	8.9x	11.7x	6.7x	3.9x	4.0x	3.5x
	1.0%								**8.9x**	**11.7x**	**6.7x**	**3.9x**	**4.0x**	**3.5x**
Equipment & Services														
Halliburton Co	2.8%	19,796	-21.8%	-13.2%	-13.2%	-47%	-65%	27%	12.3x	16.8x	11.2x	7.0x	7.8x	6.5x
Helix Energy Solutions Group Inc	2.0%	1,281	9.1%	59.5%	59.5%	28%	-67%	-21%	39.2x	29.4x	20.7x	11.0x	9.8x	7.9x
Schlumberger Ltd	3.5%	54,269	-7.5%	13.0%	13.0%	-44%	-61%	-9%	24.4x	25.9x	18.7x	10.3x	10.4x	9.1x
	8.2%								**25.3x**	**24.0x**	**16.9x**	**9.4x**	**9.3x**	**7.8x**
Solar														
Sunpower Corp	1.4%	1,608	64.2%	115.1%	115.1%	-31%	-74%	-60%	n/a	n/a	109.1x	25.8x	28.4x	13.6x
	1.4%								**n/a**	**n/a**	**109.1x**	**25.8x**	**28.4x**	**13.6x**
Oil & Gas Refining & Marketing														
Valero Energy Corp	4.0%	33,671	2.0%	16.7%	16.7%	88%	103%	626%	13.9x	13.3x	8.1x	7.6x	7.4x	5.4x
	4.0%								**13.9x**	**13.3x**	**8.1x**	**7.6x**	**7.4x**	**5.4x**
Research Portfolio														
Cluff Natural Resources PLC	0.5%	31	-30.1%	-27.2%	-27.2%	36%	-70%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EnQuest PLC	0.9%	413	1.5%	-10.4%	-10.4%	-24%	-87%	n/a	5.0x	2.6x	2.1x	4.1x	3.3x	3.2x
JKX Oil & Gas PLC	0.6%	87	-31.4%	-2.7%	-2.7%	127%	-50%	-85%	24.5x	16.3x	n/a	3.4x	3.1x	n/a
Reabold Resources PLC	0.8%	55	86.9%	49.1%	49.1%	40%	-64%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Shandong Molong Petroleum Machinery	0.2%	410	-11.7%	0.3%	0.3%	-60%	-63%	-75%	n/a	n/a	n/a	n/a	n/a	n/a
Diversified Gas & Oil Company	0.4%	947	-14.8%	-1.2%	-1.2%	n/a	n/a	n/a	9.2x	6.9x	7.1x	10.2x	4.7x	4.7x
	3.3%								**12.9x**	**8.6x**	**4.6x**	**5.9x**	**3.7x**	**3.9x**
Cash	**-0.7%**													

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.
Forecasts are inherently limited and cannot be relied upon. Holdings are subject to change.

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

The Fund's holdings, industry sector weightings and geographic weightings may change at any time due to ongoing portfolio management. References to specific investments and weightings should not be construed as a recommendation by the Fund or Guinness Atkinson Asset Management, Inc. to buy or sell the securities. Current and future portfolio holdings are subject to risk.

Mutual fund investing involves risk and loss of principal is possible. The Fund invests in foreign securities which will involve greater volatility, political, economic and currency risks and differences in accounting methods. The Fund is non-diversified meaning it concentrates its assets in fewer individual holdings than a diversified fund. Therefore, the Fund is more exposed to individual stock volatility than a diversified fund. The Fund also invests in smaller companies, which involve additional risks such as limited liquidity and greater volatility. The Fund's focus on the energy sector to the exclusion of other sectors exposes the Fund to greater market risk and potential monetary losses than if the Fund's assets were diversified among various sectors. The decline in the prices of energy (oil, gas, electricity) or alternative energy supplies would likely have a negative effect on the fund's holdings.

MSCI World Energy Index is the energy sector of the MSCI World Index (an unmanaged index composed of more than 1400 stocks listed in the US, Europe, Canada, Australia, New Zealand, and the Far East) and as such can be used as a broad measurement of the performance of energy stocks.

MSCI World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets.

The S&P 500 Index is a broad based unmanaged index of 500 stocks, which is widely recognized as representative of the equity market in general.

One cannot invest directly in an index.

West Texas Intermediate (WTI) crude oil is produced, refined, and consumed in North America and it is an oil benchmark. WTI crude oil is the underlying commodity of the New York Mercantile Exchange's oil futures contracts and is considered a "sweet" crude because it is about 0.24% sulfur, which is a lower concentration than North Sea Brent crude.

The Henry Hub pipeline is the pricing point for natural gas futures on the New York Mercantile Exchange.

The Organization of Petroleum Exporting Countries and its new crude-producing allies make up OPEC+, with the "+" consisting of ten additional oil-producing nations, the largest three being Russia, Mexico and Kazakhstan.

Price to earnings (P/E) ratio (PER) reflects the multiple of earnings at which a stock sells and is calculated by dividing current price of the stock by the company's trailing 12 months' earnings per share

The New York Mercantile Exchange is the world's largest physical commodity futures exchange.

Enterprise Value, or EV for short, is a measure of a company's total value, often used as a more comprehensive alternative to equity market capitalization

Standard Deviation (SD) is applied to the annual rate of return of an investment to measure the investment's volatility. Standard deviation is also known as historical volatility and is used by investors as a gauge for the amount of expected volatility.

Debt/EBITDA is a measure of a company's ability to pay off its incurred debt. This ratio gives the investor the approximate amount of time that would be needed to pay off all debt, ignoring the factors of interest, taxes, depreciation and amortization.

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

Distributed by Foreside Fund Services, LLC