Guinness Atkinson

Global Energy Fund

Managers Update – October 2020

REPORT HIGHLIGHTS

OIL

Brent/WTI down slightly in September but flat over the quarter as OPEC battle maintains market balance

Brent and WTI both fell in September. WTI closed September down $3/bl at $40/bl, while Brent was down $4/bl to $41/bl. A resurgence of COVID-19 post the northern hemisphere summer has put a dent in the recovery of global oil demand. We now expect Q4 demand to be down around 7m b/day vs 2019, vs previous expectations of around 5m b/day. Libyan production starting to recover. OPEC are continuing to call out quota compliance laggards.

NATURAL GAS

US, European and Asian gas prices stronger

The US natural gas price opened June at $1.75/mcf (1,000 cubic feet) and traded down up the quarter to $2.53/mcf. European and Asian gas prices rose to the $4-$5/mcf (up from $2-3/mcf in the second quarter), as gas demand picked up after the worst of the COVID-related lockdowns.

EQUITIES

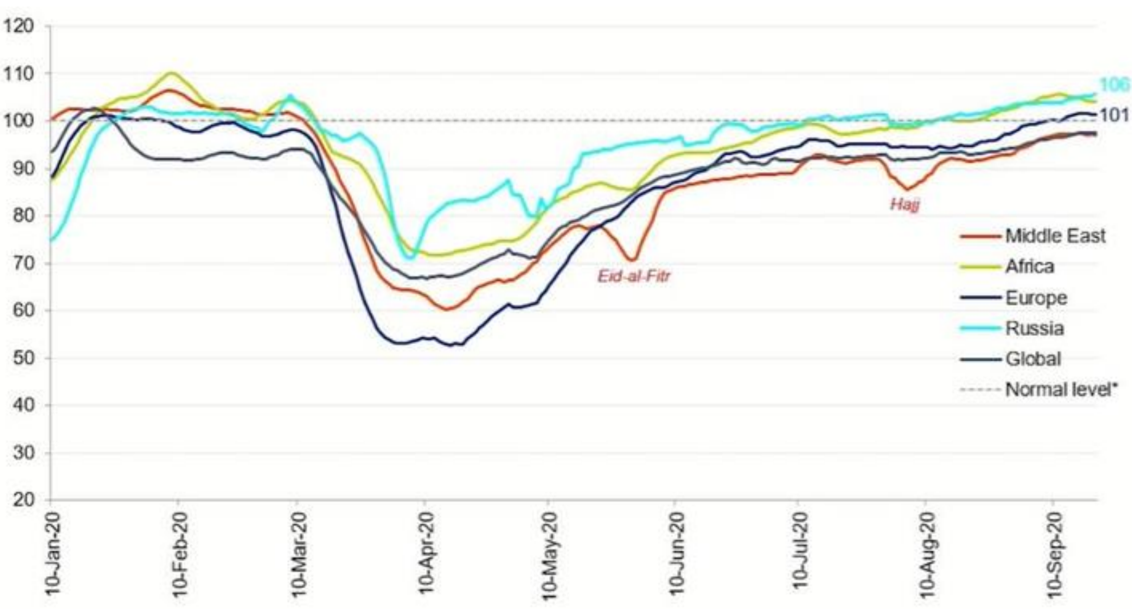
Energy underperforms the broad market over the quarter

The MSCI World Energy Index (net return) fell by 16.0% in the first quarter, underperforming the S&P 500 Index which rose by 8.9% over the quarter (all in US dollar terms).

CHART OF THE QUARTER – Oil demand from road transport has largely recovered

Road traffic activity globally recovered in September to around 98% of 2019 levels, having been down below 70% at the worst point of lockdowns in April. Some regions, such as Europe, are now seeing traffic above the 2019 level, likely a function of an avoidance of public transport. US road activity remains lower, held back by a lack of commuting traffic.

Road traffic activity in 2020 (indexed to 2019 average)



Source: Rystad Energy; Guinness Atkinson Asset Management. Data as of September 30, 2020.

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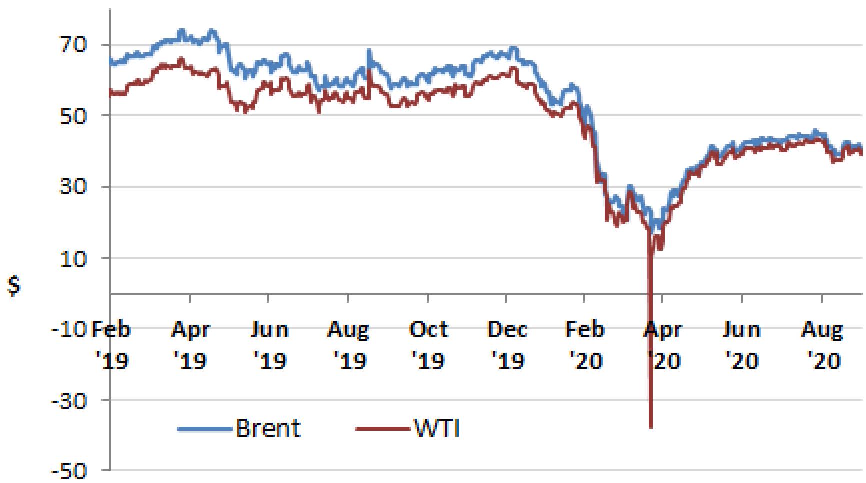
1. Third Quarter 2020 in Review

i) Oil market

Oil price (WTI and Brent $/barrel) 18 months: March 2019 to September 2020



Source: Bloomberg LP. Data as of September 30, 2020.

Spot oil prices, a key driver of the sector, traded in a tight range over the quarter. The West Texas Intermediate (WTI) oil price opened the quarter at $39.1/bl, traded in August to a high of just over $42.bl, before slipping back to close the quarter at $40.2/b. WTI has so far averaged $38/bl in 2020, having averaged $58/bl in 2019, $65/bl in 2018 and $51/bl in 2017.

Brent oil traded in a similar shape, opening the quarter at $40.1/bl and edging higher to close September at $41.0/bl. Brent has averaged $40/bl so far in 2020, having averaged $64/bl in 2019 and $72/bl in 2018. The gap between the WTI and Brent benchmark oil prices decreased slightly over the quarter, ending September at just below $1/bl, versus over $2/bl on average in 2020.

Factors which weakened WTI and Brent oil prices over the quarter:

- **A slowdown in the pace of demand recovery**
  The resurgence of COVID-19 after the Northern Hemisphere summer has led to a to a higher level of lockdowns, which in turn is slowing the recovery in global oil demand. It now seems likely that oil demand in the fourth quarter of 2020 will be down 6-7m b/day (year-on-year), compared to an expectation over the

summer that demand would recover better, to be down "only" 4-5m b/day. Our conversations with refiners in the US, for example, indicate that while recreational and "short trip" travel is back to normal, commuting traffic is still down by around a third, while air travel remains around 50% of 2019 levels. A slowing in the recovery in global oil demand puts pressure back on OPEC, who are due to taper their cuts in Jan 2021 by a further 2m b/day.

- **Recovery in Libyan production**
  Libya's oil production reached 0.25m b/day in late September, up from the 0.1m b/day level reported for the last six months. The rise in production follows a partial lifting two weeks ago of the blockade on the country's oil export facilities. Fields that feed the three eastern export terminals of Hariga, Brega and Zueitina have added about 0.15m b/day of fresh output. Production will rise further as ships dock and load crude from storage tanks, allowing fields to pump more. The National Oil Corp. (NOC) is evaluating security at Libya's four other onshore oil ports ,including Zawiya, which handles crude from Sharara (Libya's biggest field), to see if it's safe to restart. If so, we would expect Libyan production to rise to around 0.6m b/day by the end of the year.

- **A recovery in US onshore oil production**
  Weekly data indicates that global oil production started to rise again in August. We expect that this will be attributed to increases from OPEC+ (as the group tapers its quota cuts in line with their agreement) as well as a recovery in US onshore production as wells that were voluntarily curtailed are brought back onto production.

Factors which strengthened WTI and Brent oil prices over the quarter:

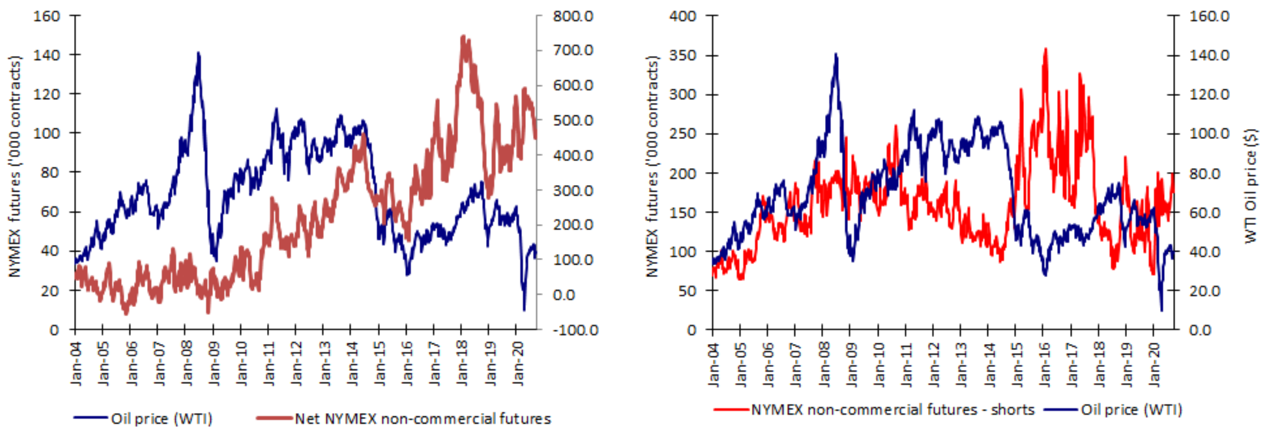
- **The start of oil and product inventory contractions**
  OECD total product and crude inventories at the end of August (latest data point) were estimated by the IEA to be 3,207m barrels, down by 18m barrels versus the level reported for July. This compares to a 10-year average increase for August of 15m barrels, implying that the market was undersupplied. The significant oversupply situation this year has pushed OECD inventory levels close to maximum capacity (c3.3m barrels), though August's data indicated that the period of increase was coming to an end.

- **JMMC (OPEC+) meeting comments**
  The OPEC+ Joint Ministerial Monitoring Committee (JMMC) met in mid-September, with the Saudis putting renewed pressure on members who are falling short of quota cuts. Saudi are insisting that members hit compliance, as well as compensate for their lack of compliance so far. OPEC+ calculated cumulative over-production from May through August at almost 2.4m b/day. The JMMC supported the request of several of these laggards to extend the period for compensatory cuts through until the end of December 2020. Some of the most notable over-producers to date include Iraq, the UAE and Russia. The UAE, which has emerged has the biggest laggard the last two months, has said that it will not exceed its quota in September, and will make up for its shortfall over October and November. The JMMC also said that member countries should be willing to take further action if necessary. But as of now, the OPEC+ deal will continue in its current form, with the group cutting by 7.7m b/day. According to the OPEC+ agreement the cut of 7.7m b/day is valid to year end, before being eased to 5.8 m b/day in January next year.

Speculative and investment flows

The New York Mercantile Exchange (NYMEX) net non-commercial crude oil futures open position was 473,000 contracts long at the end of September versus 501,000 contracts long at the end of August. 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 rose to 175,000 contracts at the end of September versus 171,000 at the end of the previous month.

NYMEX Non-commercial net and short futures contracts: WTI January 2004 – September 2020

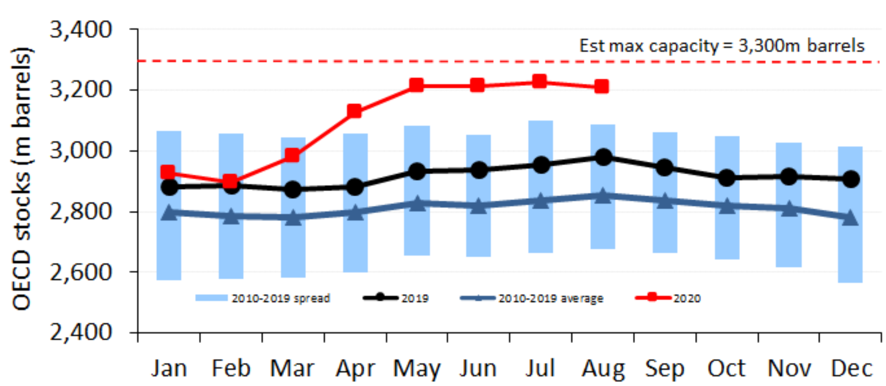


Source: Bloomberg LP/NYMEX/ICE. Data as of September 30, 2020.

OECD stocks

OECD total product and crude inventories at the end of August (latest data point) were estimated by the IEA to be 3,207m barrels, down by 18m barrels versus the level reported for July. This compares to a 10-year average increase for August of 15m barrels, implying that the market was undersupplied. The significant oversupply situation this year has pushed OECD inventory levels close to maximum capacity (c3.3m barrels), though August's data indicated that the period of increase was coming to an end.

OECD total product and crude inventories, monthly, 2004 to 2020



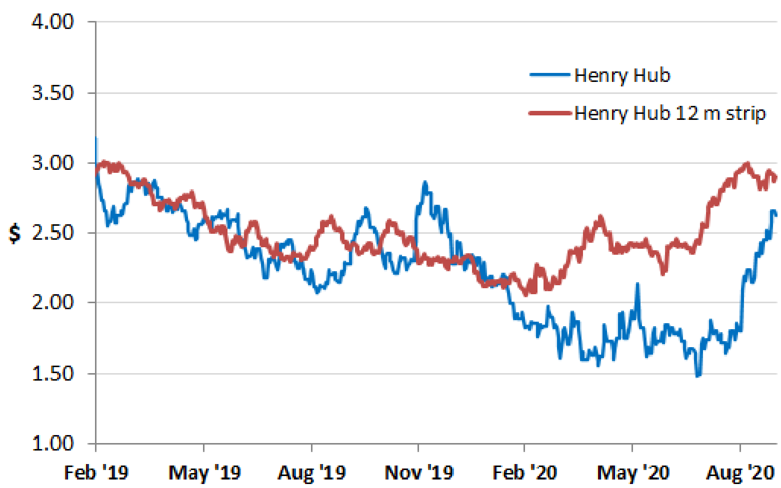
Source: IEA Oil Market Reports (Sept 2020 and older). Data as of September 30, 2020.

ii) Natural gas market

The US natural gas price (Henry Hub front month) opened July at $1.75/mcf (1,000 cubic feet), and generally traded higher over the quarter, closing at $2.53/mcf. The spot gas price has averaged $1.91/mcf so far in 2020, having averaged $2.53/mcf in 2019, $3.07 in 2018 and $3.02 in 2017.

The 12-month gas strip price (a simple average of settlement prices for the next 12 months' futures prices) also rose over the quarter, opening at $2.41/mcf and closing at $2.93 /mcf. The strip price averaged $2.60 in 2019, having averaged $2.90 in 2018 and $3.12 in 2017.

Henry Hub gas spot price and 12m strip ($/Mcf) 18 months: March 2019 to Sept 2020



Source: Bloomberg LP. Data as of September 30, 2020.

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

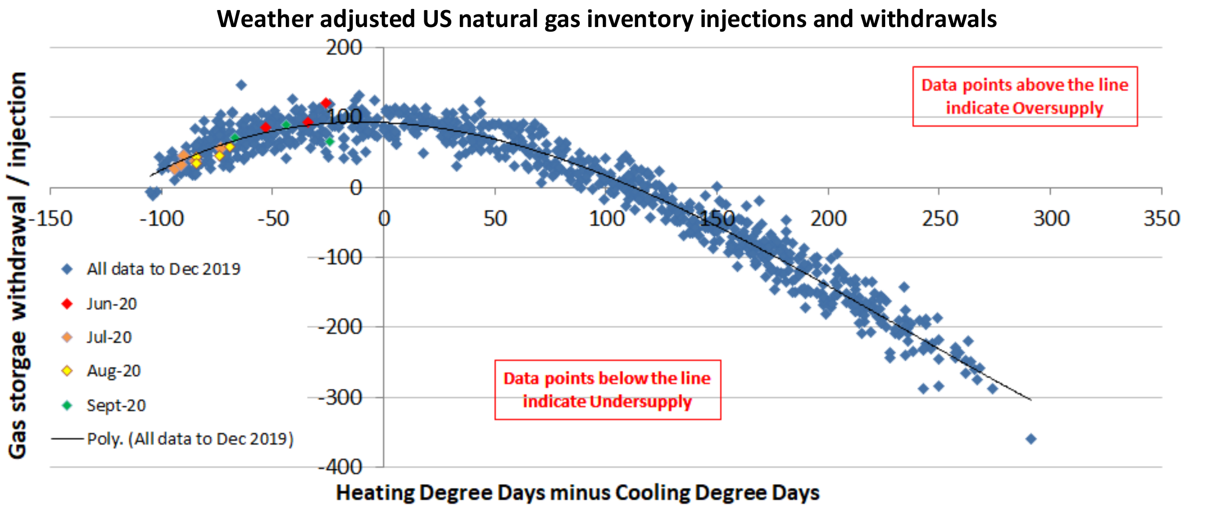
- **Lower WTI oil price holding back associated gas prospects**
  The continued low oil price in the third quarter diminished the prospect of a meaningful recovery in US shale oil drilling, which brings with it associated gas production. There is an increasing likelihood that 2021 gas supply in the US will be lower than 2020 supply, while demand forecasts are holding up, driving a tighter market.

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

- **Inventories above the ten-year average, as demand dips**
  Inventories of natural gas in the US maintained an elevated level in September, as COVID-19 related slowdown caused natural gas demand to drop across the country, particularly in the commercial sector. At the end of the month, natural gas in storage had risen to 3.68 Tcf, 14% higher than the ten-year average (3.22 Tcf). On a weather-adjusted basis, the US gas market moved to small undersupply in late September.

- **Modest recovery in US onshore natural gas production**

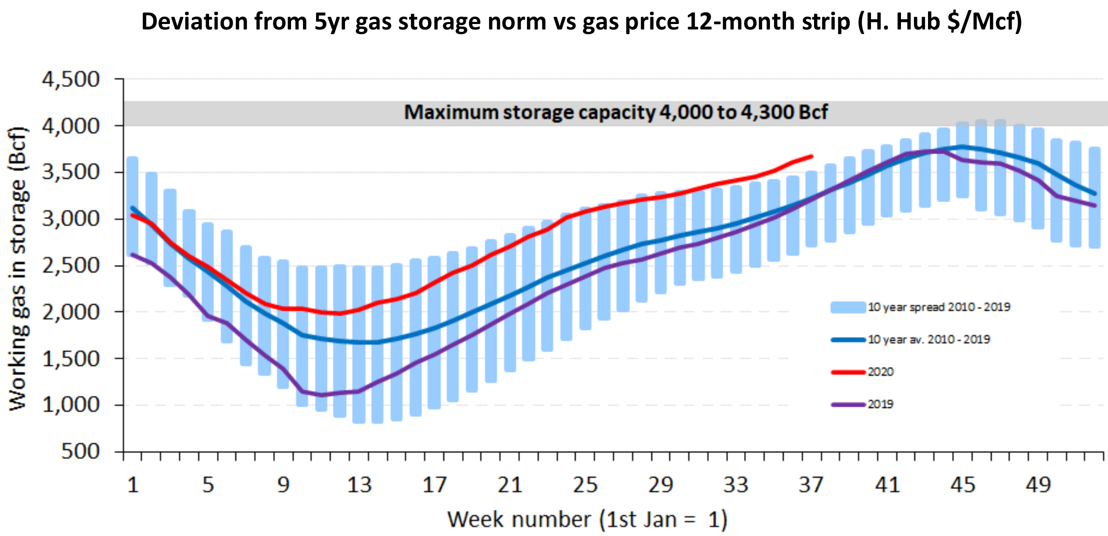
Onshore US gas production averaged 98.6 Bcf/day in July 2020 (the latest data point), up by 1.8 Bcf/day versus the level reported for June. The increase came via a recovery in associated gas production, a by-product of shale oil production, given the number of shale oil wells being brought back online after shut-ins.



Source: Bloomberg LP, Guinness Atkinson Asset Management. Data as of September 30, 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 September were reported by the EIA to be 3.68 Tcf. Current gas in storage is nearly 0.5 Tcf above the 10-year average, thanks to COVID-19 mitigation measures dampening demand. The high visibility of low-cost supply growth kept a cap on prices in 2019 despite the fact that inventories have spent much of the year below the 10-year average level.



Source: Bloomberg, IEA. Data as of September 30, 2020.

2. MANAGER'S COMMENTS

Here, we discuss the outlook for oil & gas markets and equities the remainder of 2020 and 2021, focusing on the three key variables that could affect the trajectory of oil prices and energy equities over this period.

OPEC+ strategy and compliance

OPEC+ has reacted to the COVID-19 demand fall by delivering a rare combination of record-deep production quotas together with a record-high compliance rate. Their ability to maintain compliance on their production agreement is our first key factor for determining the future direction of oil price.

The deepest part of OPEC+'s cuts are now over, and the current plan sees the group cutting production (relative to the October 2018 baseline) by 7.7m b/day until December 2020 before reducing to a 5.8m b/day cut until April 2022. Compliance has been higher than many expected, averaging around 90% from May to August, according to the IEA.

The production agreement, both in terms of scale and remaining duration, appears "fit for purpose" and hence the key issue becomes the compliance of individual countries to their individual quotas. The OPEC Joint Ministerial Monitoring Committee (JMMC) has been monitoring compliance closely and, for the first time in its history, OPEC has agreed to enforce "compensation cuts" where individual countries are required to make up for poor compliance by being over compliant in future months. Nigeria, Iraq and Kazakhstan have been singled out as key culprits and they now appear to be delivering on their "compensation cuts". Evidence so far suggests the OPEC+ is achieving good compliance and therefore the outlook for the agreement remains favorable.
Beyond the agreement, we must also remember that there are three OPEC counties that are exempt from the OPEC+ cuts: Iran, Libya and Venezuela. Production from Iran and Venezuela (at 1.9m b/day and 0.35m b/day respectively) is seriously hampered by US sanctions and is unlikely to recover quickly, in our opinion, if US foreign policy is sustained. Production from Libya however is affected by regional politics (a civil war and a blockage of oil export facilities) and here, the situation has improved. Libyan production was running at 0.1m b/day over the summer but has now recovered to around 0.3m b/day.

Overall, the agreement gives us confidence that OPEC is looking maintain a balanced market through the COVID-19 crisis, and will continue to do "what it takes". As such, the OPEC+ agreement is effectively a framework which will allow OPEC+ ministers some flexibility in their decision-making process. OPEC will be realistic, though, about the challenges that lie ahead in achieving as good an oil price as they can without overstimulating non-OPEC supply and restarting a cycle of over-supply which is out of their control.

The evolution of global oil demand

After falling by around 22m b/day in April, global oil demand has recovered sharply as economies have started to return from COVID-19 lockdown measures. Assuming continued global economic recovery we expect oil demand to average around 91.5m b/day in 2020. This would be 8.5m b/day lower than the 2019 level (and down nearly 9.5m b/day on our initial pre-COVID 2020 oil demand expectation) but is biased upwards in 2021, recovering to

97.1m b/day (growth of 5.6 m b/day versus 2020). The final trajectory of global oil demand is our second key factor in determining the future direction of oil price.

Transportation is responsible for around two thirds of world oil demand and a recovery in aviation demand (which represented 7.9m b/day of oil demand in 2019) is a key factor in the recovery of overall global oil demand. According to the IEA, global air traffic was down around two thirds from normal levels in July, having been down 75% in June and 79% in May. Overall, global aviation demand is likely to be down around 3.1m b/day (around 40%) in 2020 and a recovery to prior levels will be hampered by structural changes to aviation demand resulting from COVID-19.

China's importance to the global oil markets has continued to increase as its GDP recovered fast (+3.5% yoy) in the second quarter while GDP elsewhere suffered. Underlying oil demand has recovered significantly since March, meaning that 2020 Chinese oil demand is likely to fall by only 0.1m b/day in 2020 (less than 1%) before recovering by 0.7m b/day (5%) in 2021. Supplementing the underlying demand improvement, we believe that China has also used the low oil price environment to boost strategic reserves, potentially by as much as 2m b/day during May.

The threat of a second wave of COVID-19 remains but we see the threat as being less impactful on future transportation and oil demand. The use of local lockdowns, face masks and greater access to testing leads us to believe that economies, and travel demand, will be more robust than in the first "blanket" lockdown measures. While the media suggests increasing confidence that vaccines could start to bring an end to the COVID-19 pandemic in early 2021, we note that it would take time for economies to recover fully and for oil demand to return to more normal levels.

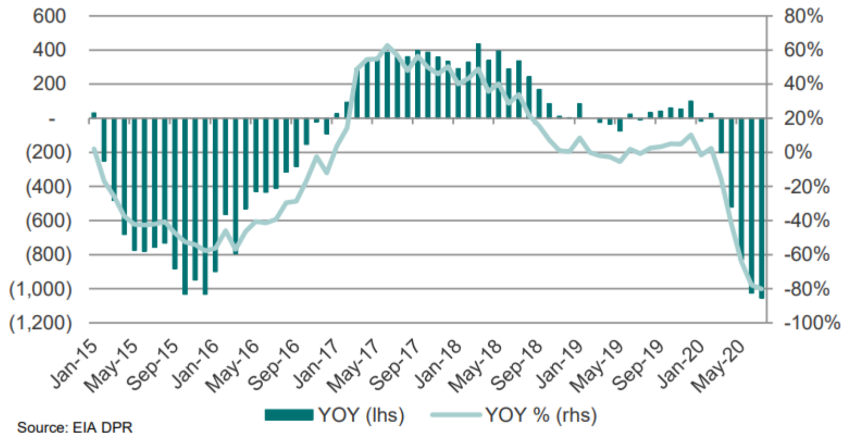
By the end of 2021, we expect that global oil demand will have recovered to a level of around 98m b/day, around 2m b/day lower than the end 2019 level, assuming oil prices average around $50/bl over the period.

The response of the US oil industry

US onshore oil production has been a particularly dynamic factor this year, falling from 10.3m b/day in March to 8.0m b/day in May before recovering to 8.5m b/day in June (latest data) predominantly as a result of voluntary production curtailments. Current production is likely to be around 1m b/day higher and we now believe that less than 0.5m b/day of US onshore oil production is being voluntarily curtailed, meaning that underlying US onshore oil production has fallen by around 0.5 m b/day since March. The future trajectory of this short-cycle oil production is our third key factor in determining the future direction of oil price.

US oilfield activity has been crushed, with the US horizontal oil rig count falling from around 600 rigs to around 150 rigs, where it has now started to stabilize. This is around 100 rigs lower than the trough seen in 2016. Accordingly, the number of shale wells being completed has also fallen very sharply, with around 1,000 less wells being completed in the month of May 2020 versus May 2019. Activity is unlikely to stay at these trough levels and long-term oil price correlations imply that the US horizontal oil rig count will recover back to around 400 rigs if WTI averages around $45/bl.

Year over year growth in completed shale oil wells



Source: Dun & Bradstreet, Energy Information Administration. Data as of September 30, 2020.

The US onshore industry is clearly under significant stress and there is hope that E&P management teams will change their behavior as the next cycle develops. According to Goldman Sachs "*After years of focusing primarily on growth to the detriment of corporate returns and FCF, shale producer managements are embracing lower reinvestment rates, stronger balance sheets and a path towards returning cash to shareholders*". This would undoubtedly improve the macro outlook, but we note capital is still available and that management teams are still incentivized to pursue growth strategies. We expect future US activity to be focused predominantly on the Permian Basin, because it is most efficient and most economically viable of the US shale basins, but we note that expectations for continued efficiency gains are now quite muted.

The nature of shale oil development is that production is guaranteed to decline if new well completion activity stops. At a US$50/bl WTI oil price, our models indicate that US oil production will steadily fall (by around 0.5-1.0m b/day) over the next 12 months before stabilizing as production from new wells starts to offset the decline in production from older wells. By the end of 2021, we expect US oil production to be increasing again but around 2m b/day lower than it would otherwise have been.

Even if capital discipline weakens, we do not expect US oil production to grow in the next 12 months and hence the outlook for oil price over the next 12-18 months to be broadly unaffected by US production.

Pulling it all together: the 12-18-month outlook

Dramatic action from OPEC+ has defended oil prices and brought the oil market into small undersupply in July & August having been heavily oversupplied in the first half of the year. On balance, we expect the continuation of these OPEC+ cuts to keep the market balanced throughout the remainder of 2020 and in undersupply in 2021, effectively mopping up the excess oil that was put into storage (floating and commercial onshore) in the first half of 2020.

We believe that this environment will allow OPEC to defend against lower oil prices, assuming that compliance levels are maintained. On the one hand, the OPEC agreement appears to offer good downside protection to oil prices in the next 12 to 18 months while on the other hand, OPEC+ must not allow oil prices to rally too far, since this will incentivize a recovery in US oil production and heap further pressure on OPEC to accommodate US growth beyond 2021.

We believe that oil prices, both near term and long term, will likely trade in a $50-60/bl range throughout the period. For reference, average Brent/WTI spot oil prices are currently averaging $44/bl and five-year forward oil prices are currently averaging $51/bl.

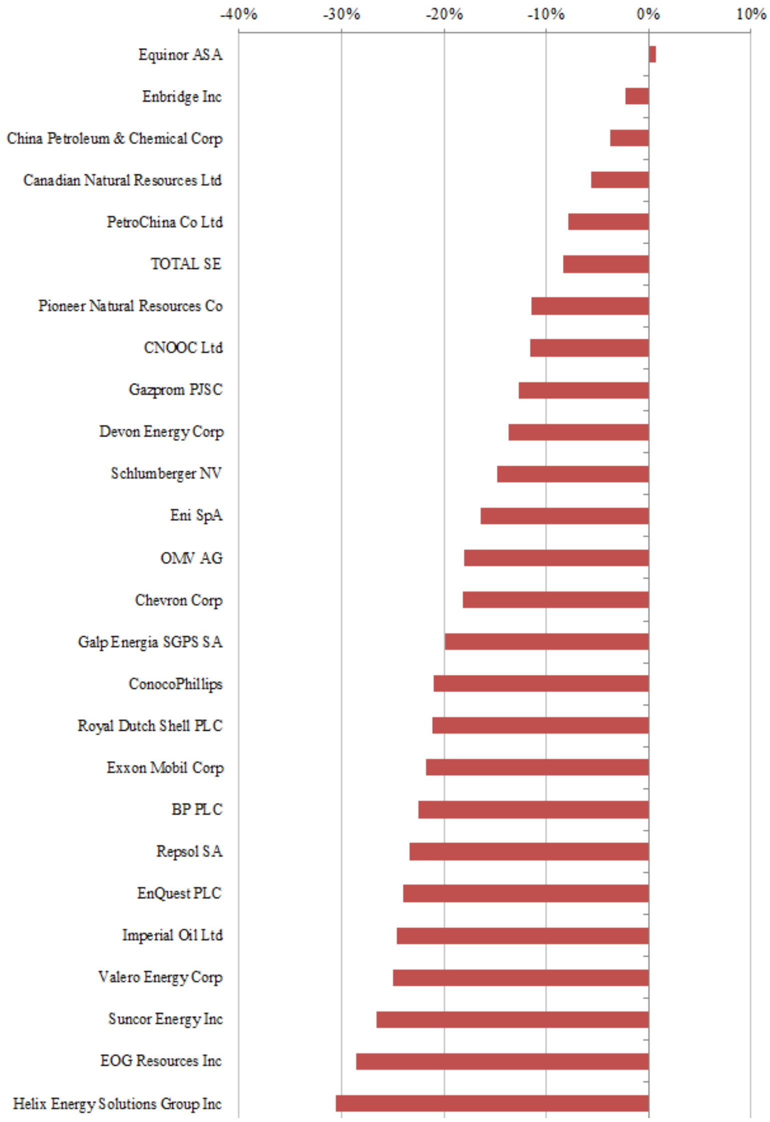
In terms of energy equities, the MSCI World Energy Index is now down around 45% year to date (USD), having been down 58% on 18 March; a partial recovery then but still the weakest equity sector in the MSCI World so far this year. By comparison, spot oil prices this year are down around 32% and, together with a number of other energy commodity futures, remains among the weakest of all the major commodities.

With this in mind, we turn to the relative valuation of the Guinness Atkinson Global Energy portfolio which appears to price in a long-term oil price of around $44/bl. In our opinion, the discount reflects general poor sentiment towards the conventional energy companies (including factors such as poor return on capital employed, the threat from de-carbonization and the recent flurry of dividend cuts) and the fact the outlook for oil prices is dependent upon COVID-19 and the actions of OPEC. If the equity markets price in a $50/bl long term oil price into energy equities then we believe they offer around 30-40% upside, rising to around 80-90% upside if $60/bl long term oil was reflected.
Our portfolio is currently tilted to large caps and majors, a mix of companies who we think are best placed in the energy sector to weather the downturn, while offer attractive upside in an oil price recovery. Our priority remains balance sheet work: ensuring that the oil producers we own have strong enough liquidity to come through a period of low prices in good shape.

3. Performance – Guinness Atkinson Global Energy Fund

The third quarter of 2020 was positive for global equities, though not for the energy sector. The MSCI World Energy Index (net return) was down by 16.0%, underperforming the MSCI World Index which was up by 7.9%. Your fund was down by 14.8%, outperforming the energy index by 1.2%. The return of each individual position held in the fund over the end of the quarter (total return in USD), excluding research holdings, can be seen in the chart below:

Individual stock performance over quarter (total return USD) excluding stocks held in the research portfolio



Source: Guinness Atkinson Asset Management. Data as of September 30, 2020.

Performance as of Sept 30, 2020 (inception date is June 30, 2004)

Inception date 6/30/04	Full Year 2012	Full Year 2013	Full Year 2014	Full Year 2015	Full Year 2016	Full Year 2017	Full Year 2018	Full year 2019
Global Energy Fund	3.45%	24.58%	-19.62%	-26.99%	27.04%	-1.06%	-18.92%	10.40%
MSCI World Energy NR Index	1.87%	18.12%	-11.60%	-22.80%	26.56%	4.97%	-15.84%	11.45%
MSCI World Energy Small Cap Index (NR)	1.01%	16.06%	-33.33%	-37.58%	36.48%	-12.29%	-31.54%	-2.77%
S&P 500 Index	15.99%	32.36%	13.66%	1.38%	11.76%	21.82%	-4.37%	31.48%

Inception date 6/30/04	YTD 2020	1 year	Last 3 years (annualized)	Last 5 years (annualized)	Last 10 years (annualized)	Since Inception (annualized)
Global Energy Fund	-49.75%	-47.56%	-21.88%	-10.83%	-7.99%	0.57%
MSCI World Energy NR Index	-45.92%	-43.22%	-18.49%	-7.71%	-4.25%	0.69%
MSCI World Energy Small Cap Index (NR)	-51.34%	-47.33%	-30.06%	-18.20%	14.10%	-3.89%
S&P 500 Index	5.57%	15.14%	12.15%	13.4%	-14.00%	9.09%

Source: Bloomberg
Expense ratio: 1.91% (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 Fund 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, 2021. 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. The expense limitation agreement may be terminated by the Board of the Fund at any time without penalty upon 60 days' notice.

4. Portfolio – Guinness Atkinson Global Energy Fund

Sector Breakdown

The following table shows the asset allocation of the Fund at **Sept 30, 2020**.

Asset allocation as %NAV	Current	*Change*	Last year end	Previous year ends						
	Sep-20		Dec-19	Dec-18	Dec-17	Dec-16	Dec-15	Dec-14	Dec-13	Dec-12
Oil & Gas	**95.4%**	***-3.3%***	**98.7%**	**96.7%**	**98.4%**	**96.7%**	**95.1%**	**93.7%**	**93.6%**	**98.6%**
Integrated	55.0%	*4.2%*	50.8%	46.4%	42.9%	46.4%	41.5%	37.3%	38.4%	39.1%
Exploration & Production	23.4%	*-6.9%*	30.3%	35.8%	36.9%	35.8%	36.5%	36.2%	35.2%	41.6%
Drilling	0.0%	*-0.1%*	0.1%	2.2%	1.9%	2.2%	1.5%	3.3%	7.0%	7.4%
Equipment & Services	4.7%	*-4.9%*	9.6%	8.6%	9.5%	8.6%	11.4%	13.4%	9.8%	7.1%
Storage & Transportation	4.9%	*0.8%*	4.0%	0.0%	3.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Refining & Marketing	7.5%	*3.6%*	3.9%	3.7%	3.7%	3.7%	4.2%	3.5%	3.1%	3.4%
Solar	2.3%	*1.1%*	1.2%	0.9%	1.4%	0.9%	4.7%	3.7%	2.6%	1.2%
Coal & Consumable Fuels	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%	1.2%	0.6%
Cash	2.3%	*2.2%*	0.1%	2.4%	0.2%	2.4%	0.2%	2.6%	2.6%	-0.4%

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

Portfolio Holdings

Our integrated and similar stock exposure (c.58%) is comprised of a mix of mid cap, mid/large cap and large cap stocks. Our five large caps are Chevron, BP, ExxonMobil, Royal Dutch Shell and Total. Mid/large and mid-caps are ENI, Equinor, GALP, Repsol and OMV. At Sept 30 2020 the median P/E ratio of this group was 8.0x 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 (c.22%) 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, Pioneer and Devon), with one other name (ConocoPhillips) having a mix of US and international production. One of the key metrics behind a number of the E&P stocks held is low enterprise value / proven reserves.

We have exposure to five (pure) emerging market stocks in the main portfolio, though one is a half-position, and in total represent 16% of the portfolio. Two are classified as integrateds (Gazprom and PetroChina), one as refining (Sinopec) and two as E&P companies (CNOOC and Pharos Energy). Gazprom is the Russian national oil and gas company which produces approximately a quarter of the European Union gas demand and trades on 3.4x 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.

The portfolio contains one midstream holding, Enbridge, North America's largest pipeline company. With the growth of hydrocarbon demand 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 modest exposure to oil service stocks, which comprise around 4% of the portfolio. The stocks we own are mainly diversified internationally (Helix 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 as of September 30, 2020

Guinness Atkinson Global Energy Fund (30 September 2020)			Total return (USD)								P/E			EV/EBITDA		
Stock	% of NAV	Market Cap USD	1 month	3 months	6 months	1 year	YTD	3 years	5 years	10 years	2019	2020E	2021E	2019	2020E	2021E
Integrated Oil & Gas																
Exxon Mobil Corp	4.5%	140,081	-0.2%	-9.9%	-31.0%	-31.9%	-32.6%	-35%	-34%	6%	14.7x	n/a	22.9x	5.6x	9.9x	7.1x
Chevron Corp	4.4%	131,494	1.1%	-0.4%	-19.7%	-15.7%	-21.9%	0%	10%	81%	11.4x	n/a	26.6x	4.5x	9.2x	6.0x
Royal Dutch Shell PLC	3.9%	91,791	-6.1%	-25.5%	-43.5%	-46.2%	-44.9%	-31%	-27%	8%	5.9x	18.5x	9.2x	3.0x	4.8x	4.3x
Total SA	4.5%	87,736	3.9%	-9.8%	-26.5%	-23.9%	-30.2%	-17%	-2%	39%	7.4x	24.9x	11.7x	4.0x	6.8x	5.2x
BP PLC	4.0%	56,235	-1.8%	-23.5%	-36.6%	-40.4%	-37.1%	-24%	-23%	-9%	6.1x	n/a	10.7x	3.6x	6.5x	4.7x
Equinor ASA	4.5%	44,690	5.9%	-1.0%	-18.4%	-19.3%	-24.7%	-4%	0%	18%	9.5x	26.6x	13.9x	2.7x	4.4x	3.2x
ENI SpA	4.1%	27,385	-0.7%	-22.9%	-37.4%	-35.7%	-39.0%	-31%	-32%	-10%	7.7x	n/a	16.3x	2.6x	4.7x	3.6x
Repsol SA	3.2%	10,421	2.2%	-16.6%	-39.2%	-38.5%	-40.6%	-34%	-34%	-14%	4.2x	19.5x	6.4x	3.0x	5.4x	3.9x
Galp Energia SGPS SA	3.8%	7,506	7.2%	-9.4%	-24.3%	-16.1%	-26.3%	-12%	26%	10%	11.3x	34.1x	12.9x	4.5x	6.6x	4.8x
OMV AG	4.1%	8,639	0.9%	-20.8%	-42.1%	-29.8%	-41.3%	-32%	33%	45%	4.5x	10.6x	6.4x	3.0x	4.8x	3.5x
	40.9%															
Integrated / Oil & Gas E&P - Canada																
Suncor Energy Inc	3.3%	17,749	-3.8%	-36.9%	-43.9%	-41.8%	-47.0%	-39%	-30%	-28%	5.1x	n/a	34.8x	3.3x	8.6x	5.5x
Canadian Natural Resources Ltd	2.9%	18,276	8.8%	-26.5%	-31.7%	-27.8%	-41.6%	-28%	-28%	-33%	6.4x	n/a	48.1x	4.3x	9.9x	7.0x
Imperial Oil Ltd	3.6%	8,438	-3.5%	-28.3%	-36.9%	-40.5%	-40.7%	-42%	-56%	-54%	6.2x	n/a	27.0x	4.5x	21.6x	7.1x
	9.8%															
Integrated Oil & Gas - Emerging market																
PetroChina Co Ltd	3.5%	104,177	-4.7%	-11.4%	-25.6%	-35.9%	-31.6%	-43%	-67%	-57%	7.7x	n/a	19.1x	4.4x	5.9x	5.1x
Gazprom PJSC	3.8%	50,141	9.4%	-7.9%	-30.1%	-9.3%	-32.5%	61%	38%	-16%	3.0x	11.4x	5.1x	3.9x	6.1x	4.5x
	7.3%															
Oil & Gas E&P																
ConocoPhillips	3.6%	34,783	1.2%	-12.0%	-28.4%	-26.3%	-34.0%	1%	-24%	49%	9.0x	n/a	41.7x	2.8x	8.1x	5.4x
EOG Resources Inc	3.1%	20,297	7.3%	-18.7%	-27.2%	-36.5%	-38.4%	-42%	-40%	5%	7.4x	86.8x	18.7x	3.1x	5.6x	4.6x
Pioneer Natural Resources Co	3.3%	13,893	2.6%	-24.8%	-27.5%	-34.5%	-39.0%	-44%	-37%	47%	10.9x	50.7x	18.0x	4.5x	7.2x	5.7x
Devon Energy Corp	2.6%	3,483	-13.3%	-32.6%	-49.8%	-56.0%	-57.9%	-67%	-82%	-81%	6.9x	n/a	26.2x	2.6x	4.6x	3.4x
	12.5%															
International E&Ps																
CNOOC Ltd	3.8%	42,918	-1.8%	-18.8%	-23.3%	-27.5%	-33.1%	13%	-9%	4%	5.0x	13.0x	7.9x	2.1x	3.2x	2.5x
Pharos Energy PLC	0.5%	61	-20.3%	-54.0%	-73.3%	-78.5%	-74.1%	-88%	-92%	-95%	8.5x	n/a	n/a	0.8x	2.1x	1.4x
	4.2%															
Midstream																
Enbridge Inc	4.9%	58,812	7.8%	-11.7%	-11.7%	-6.1%	-15.7%	1%	-12%	118%	14.5x	15.5x	14.3x	11.6x	11.4x	10.8x
	4.9%															
Equipment & Services																
Schlumberger Ltd	3.4%	20,835	9.8%	-31.8%	-47.5%	-43.6%	-53.4%	-70%	-76%	-58%	10.7x	28.0x	23.3x	5.4x	8.7x	8.7x
Helix Energy Solutions Group Inc	1.1%	353	32.3%	-49.9%	-59.5%	-50.3%	-65.1%	-33%	-79%	-69%	6.8x	n/a	n/a	3.2x	4.3x	5.5x
	4.4%															
Oil & Gas Refining & Marketing																
China Petroleum & Chemical Corp	3.4%	65,256	-8.4%	-10.2%	-17.4%	-28.5%	-23.1%	-29%	-29%	27%	5.8x	27.0x	8.8x	4.3x	6.0x	4.6x
Valero Energy Corp	4.1%	16,424	6.9%	2.3%	-28.2%	-0.6%	-26.8%	22%	37%	425%	8.8x	n/a	17.7x	5.4x	16.8x	6.7x
	7.5%															
Research Portfolio																
Deltic Energy PLC	0.8%	20	-19.4%	-44.6%	-51.5%	-70.7%	-60.2%	-76%	-86%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EnQuest PLC	0.6%	222	0.8%	-43.0%	-38.7%	-42.2%	-49.0%	-63%	-77%	-87%	1.3x	n/a	45.0x	2.3x	4.1x	4.1x
JKX Oil & Gas PLC	0.5%	37	-0.7%	-16.0%	-29.1%	-64.1%	-33.7%	-21%	-54%	-94%	n/a	n/a	n/a	n/a	n/a	n/a
Reabold Resources PLC	0.8%	55	36.6%	1.6%	-30.7%	-26.8%	-25.7%	-24%	-61%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Shandong Molong Petroleum Machinery Co Ltd	0.2%	302	-15.2%	-28.7%	-37.9%	-56.8%	-43.2%	-51%	-90%	-84%	n/a	n/a	n/a	n/a	n/a	n/a
Sunpower Corp	1.8%	2,272	-1.8%	-15.8%	-3.6%	-3.2%	-7.4%	-8%	-76%	-45%	n/a	n/a	158.4x	26.4x	145.6x	28.1x
Maxeon Solar Technologiess Ltd	0.5%	542	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10.4x
Diversified Gas & Oil Company	1.0%	941	10.2%	34.0%	4.2%	-12.7%	-3.7%	82%	n/a	n/a	8.0x	5.9x	8.0x	6.4x	5.8x	5.9x
	6.3%															
Cash	**2.3%**															
Portfolio	**100.0%**										**7.2x**	**36.5x**	**14.1x**	**3.8x**	**6.6x**	**5.0x**

Source: Guinness Atkinson Asset Management. Data as of September 30, 2020.

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.

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

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.

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