



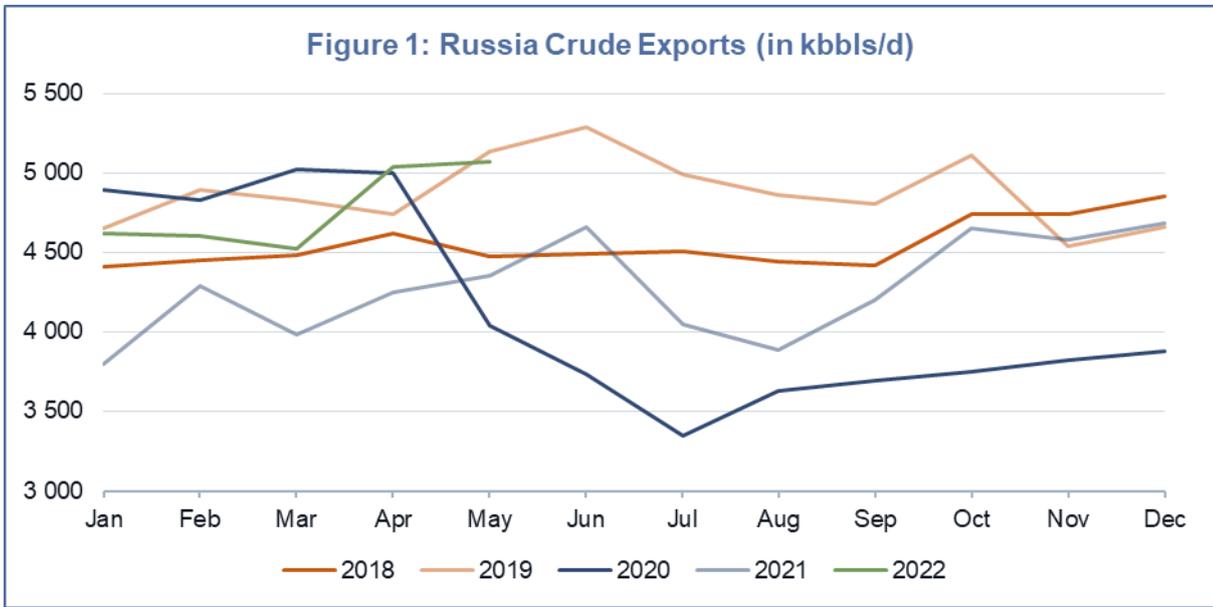
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The outlook for oil prices – is there still opportunity in the sector for investors?

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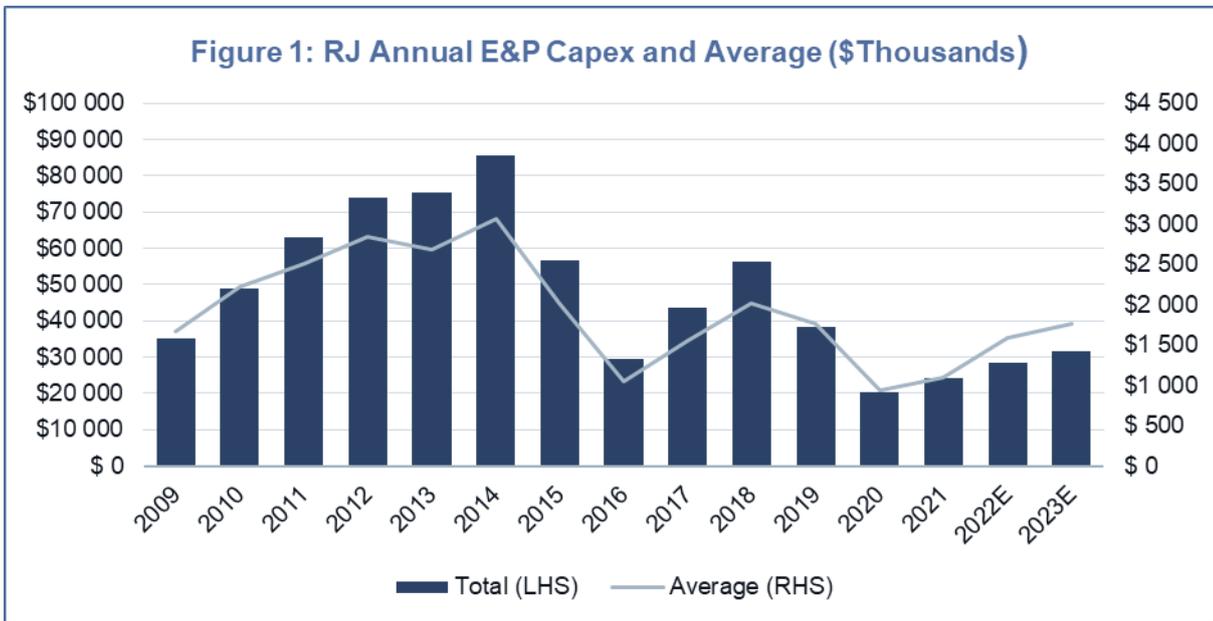
In this article, we will evaluate the outlook for oil prices and by association, the equity valuations attached to companies producing this key commodity. Specifically, we will discuss whether oil prices are likely to be sustainable above USD100 per barrel for the foreseeable future and whether there are still opportunities for investors to profit from the sector, despite the large gains the sector has delivered over the past 18 months.

To the casual observer, the recent spike in oil prices is mainly the result of supply constraints associated with the recent sanctions imposed on Russia and Russian oil exports following that country's invasion of Ukraine. However, this is not the case (thus far) and in reality, the current supply constraint and structural deficit in the oil market have been building for a number of years. As is evident in the chart below, Russian oil exports have yet to decline and remain at levels consistent with prior years. This may yet change as recent EU oil sanctions take effect, but thus far the Russia "story" has not been a significant factor in sending oil prices higher.



Source: HFI Research

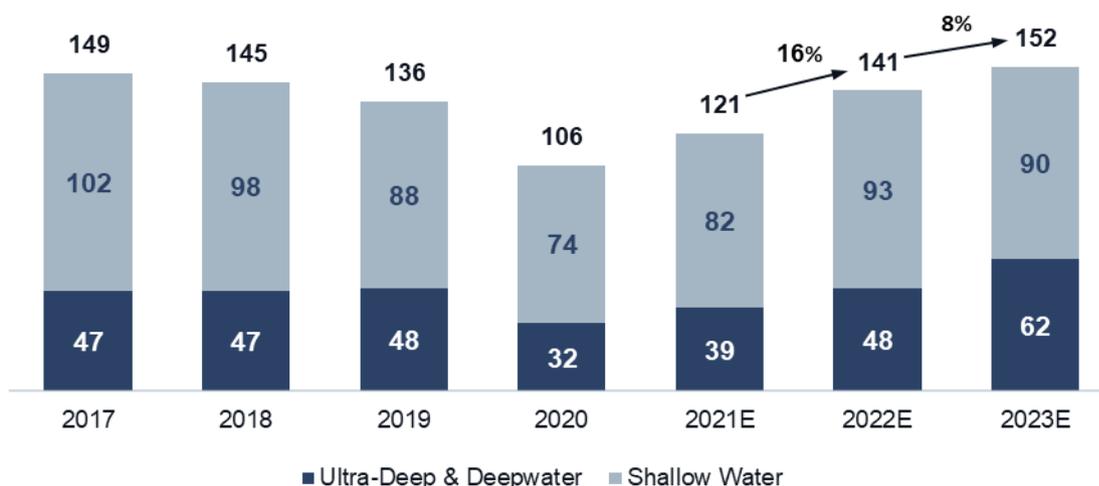
Rather, a combination of disciplined OPEC management of the oil market during the COVID pandemic and more recently the evolving effects of years of underinvestment in new greenfields production have been the primary causes of present supply constraints. These constraints show little sign of being resolved over the near-term. The enormous growth in US oil output (which practically doubled over a period of 12 years) over the last decade due to the shale revolution, led to a persistent oversupply of oil in the market between 2014 and 2019. Consequently, prices crashed between 2014 and 2015 and then for the second time as a result of the COVID-19 pandemic in 2020. This protracted depressed price environment coupled with the growing influence of the environmentalist movement, led to a significant and sustained decline in capital investment. This trend was clearly evident even prior to the pandemic as the chart below reflects (US-listed producers).



Source: Raymond James

The COVID-19 crisis ended up further exacerbating the chronic underinvestment in new oil supply outside of North America. As the chart below reflects, capital expenditure on new offshore production is only expected to exceed its already depressed 2017 (significantly below peak levels from 2013-14) levels by 2023.

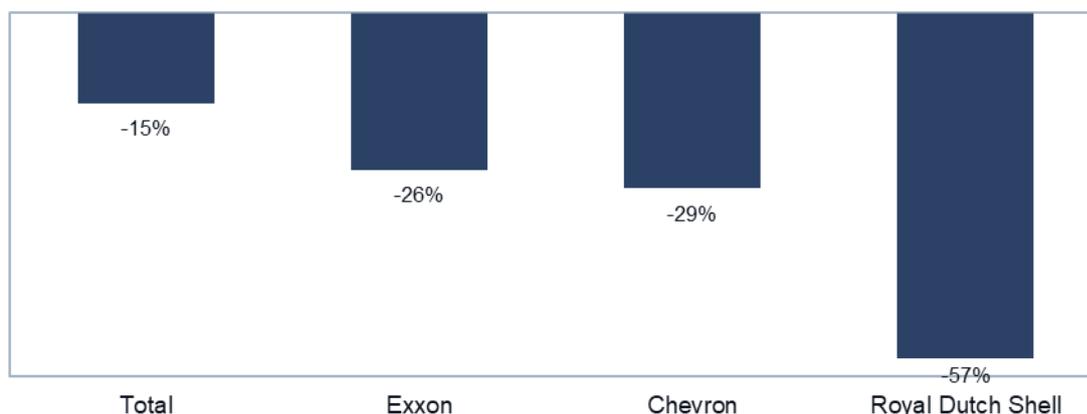
Figure 3: Offshore Upstream Capex (\$ Billion)



Source: Valaris (2022)

This new regime of “capital starvation” appears set to continue for the foreseeable future, underscored by concerns with regard to peak oil demand and ESG. Various institutional pressures as well as a depressed pricing environment in the prior decade have severely limited exploration expenditure in the oil industry. This dynamic is reflected in the decline in booked reserve at four of the world’s largest privately-owned oil producers.

Figure 4: Oil Reserve Growth 2002 to 2020



Source: Gochring & Rozenchwajg

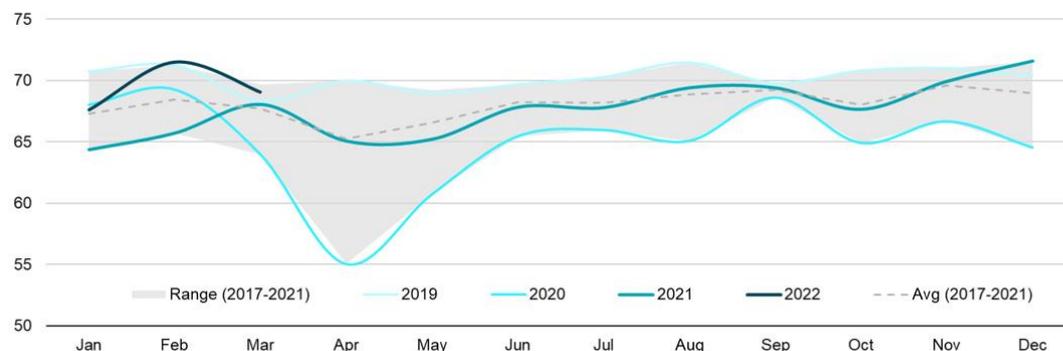
As such, we can conclude that current and near-term expected levels of capital investment will simply not be sufficient to ensure meaningful supply growth in order to meet likely demand growth this decade. It should be further noted that a significant portion of recoverable oil reserves outside North America require significant upfront capital expenditure and many years of development before coming on stream. As an example, the much-publicised Johan Sverdrup field, Norway’s third largest field ever developed, is expected to produce 750,000 bpd (about 0.5% of projected global demand) by late 2023 (after completion of phase 2).

Construction on this field began in 2015 and only commenced production in October 2019. Despite this field being recognised as one of the most economic fields ever developed outside of the Middle East, total capital investment on the project is still expected to reach \$10.5bn with a projected operating cost of \$2 per barrel and a development cost of \$20 per barrel.

What about the demand side?

On the other side of the equation, demand has recovered from the impact of the pandemic and has been fairly robust up until recently, as can be seen below.

Oil Product Demand (44 Countries)
Million Barrels Per Day



Source: IEF, JODI Oil



Based on current forecasts, total global oil demand is expected to exceed 102mn bpd in the final quarter of 2022. Assuming a meagre 1% in annual demand growth per annum, global oil demand could reach 110mn bpd by 2030.

Table 1: World oil demand in 2022*, mb/d

	2021	1Q22	2Q22	3Q22	4Q22	2022	Change 2022/21	
							Growth	%
Americas	24.28	24.78	25.09	25.67	25.72	25.32	1.04	4.30
of which US	19.93	20.10	20.67	21.17	21.18	20.78	0.86	4.30
Europe	13.08	12.98	13.06	14.29	14.14	13.62	0.54	4.14
Asia Pacific	7.41	7.96	7.22	7.25	7.93	7.59	0.18	2.42
Total OECD	44.76	45.71	45.36	47.21	47.79	46.53	1.76	3.94
China	14.84	14.57	15.26	15.28	15.83	15.24	0.40	2.70
India	4.77	5.18	4.82	4.97	5.35	5.08	0.31	6.43
Other Asia	8.63	9.13	9.59	8.93	8.95	9.15	0.52	6.04
Latin America	6.23	6.32	6.25	6.53	6.42	6.38	0.16	2.53
Middle East	7.89	8.16	7.86	8.41	8.18	8.15	0.26	3.29
Africa	4.22	4.51	4.14	4.23	4.55	4.36	0.13	3.13
Russia	3.61	3.67	3.28	3.45	3.54	3.48	-0.13	-3.58
Other Eurasia	1.21	1.22	1.15	1.01	1.24	1.15	-0.06	-4.71
Other Europe	0.75	0.81	0.71	0.73	0.80	0.76	0.01	1.01
Total Non-OECD	52.16	53.57	53.08	53.53	54.85	53.76	1.60	3.07
Total World	96.92	99.28	98.44	100.74	102.64	100.29	3.36	3.47
Previous Estimate	96.82	98.95	99.12	101.06	102.81	100.50	3.67	3.79
Revision	0.10	0.33	-0.67	-0.32	-0.16	-0.21	-0.31	-0.32

On the supply side, we can see in the table below that total supply excluding OPEC member output, grew modestly to 65.2mn bpd in the first quarter of 2022 from an average of 63.56mn bpd in 2021. If we include natural gas liquids (NGLs) produced by OPEC, total non-OPEC liquids production amounted to roughly 70mn bpd in the first quarter of 2022.

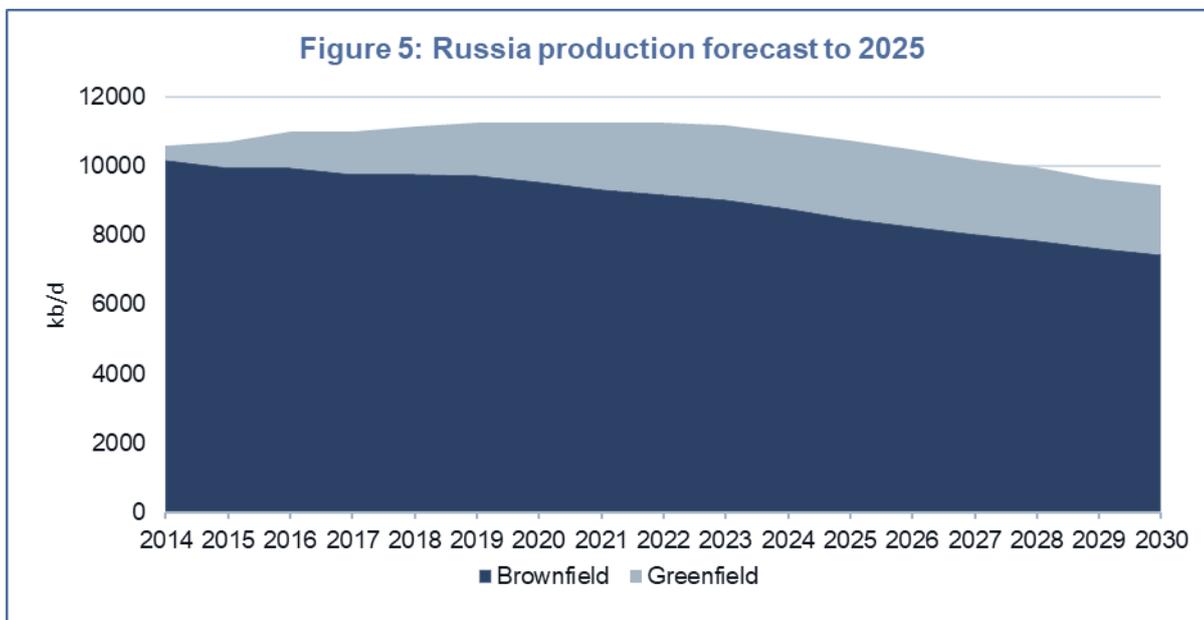
Table 2: Non-OPEC liquids production in 2022*, mb/d

Non-OPEC liquids production	2021	1Q22	2Q22	3Q22	4Q22	2022	Change 2022/21 Growth	%
Americas	25.15	25.74	26.29	27.01	27.47	26.63	1.48	5.88
of which US	17.75	18.22	18.94	19.29	19.69	19.04	1.29	7.24
Europe	3.76	3.73	3.74	3.80	4.12	3.85	0.09	2.36
Asia Pacific	0.50	0.49	0.54	0.53	0.53	0.52	0.02	4.41
Total OECD	29.41	29.96	30.56	31.34	32.13	31.00	1.59	5.41
China	4.31	4.48	4.31	4.35	4.43	4.39	0.08	1.97
India	0.77	0.77	0.78	0.80	0.83	0.79	0.02	2.78
Other Asia	2.41	2.38	2.39	2.37	2.36	2.38	-0.03	-1.43
Latin America	5.96	6.15	6.21	6.17	6.40	6.23	0.27	4.62
Middle East	3.24	3.30	3.36	3.38	3.38	3.35	0.11	3.52
Africa	1.34	1.32	1.31	1.30	1.31	1.31	-0.03	-2.13
Russia	10.80	11.33	10.68	10.76	10.74	10.88	0.08	0.72
Other Eurasia	2.93	3.06	3.06	3.17	3.22	3.13	0.20	6.67
Other Europe	0.11	0.11	0.11	0.10	0.10	0.10	-0.01	-6.90
Total Non-OECD	31.87	32.89	32.22	32.41	32.77	32.57	0.70	2.19
Total Non-OPEC production	61.28	62.85	62.78	63.75	64.89	63.57	2.29	3.73
Processing gains	2.28	2.39	2.39	2.39	2.39	2.39	0.11	4.91
Total Non-OPEC liquids production	63.56	65.24	65.17	66.14	67.28	65.97	2.40	3.78
Previous estimate	63.56	65.47	65.65	66.42	67.50	66.26	2.70	4.25
Revision	0.00	-0.23	-0.48	-0.28	-0.21	-0.30	-0.30	-0.47

However, it is important to note that this figure includes an output level of 11.3mn in liquids production from Russia. Recent data suggests that although Russian crude exports have not declined, total liquids production has declined towards 10mn bpd. It is possible that domestic demand in Russia has softened, while refined and associated product exports have declined. This dynamic is reflected in the significant widening in global refining margins over the past two months, specifically for diesel.

Although Russian production as reflected in the table above is expected to recover modestly from the 10.68mn bpd expected in the second quarter in 2022, there is reasonable evidence to suggest that Russian oil production may in fact decline further, to below 10mn bpd by the end of the year. Without Western oil service companies and coupled with sanctions on key equipment imports, Russia may find it challenging to complete new greenfields projects to replenish declining brownfields production. As the chart below suggests, without new investment, Russian oil production could fall to 8mn bpd by the end of the decade.

Figure 5: Russia production forecast to 2025



Source: Oxford Institute for Energy Studies (2019)

However, over the medium term (18 to 24 months), if we assume U.S. oil production can grow to around 12.7mn bpd (1mn bpd higher than at present) and this offsets a decline in Russian production of the same magnitude, then non-OPEC oil production including NGLs will likely remain around 70mn bpd. Therefore, the balancing factor in the oil market will be determined by how much spare production capacity the various OPEC member nations have.

The conventional wisdom is that OPEC maintains spare capacity of around 2mn-3mn bpd. However, even within OPEC, some countries have experienced a decline in capacity due to a lack of investment. This is most notably evident in the case of Angola where current production is 1.1mn bpd compared to 1.5mn bpd prior to the pandemic (and well below the country's allowable OPEC production quota). This dynamic is also reflected in Nigeria, a country which has struggled to arrest a decline in its oil production since 2019.

Based on the analysis below, the potential spare capacity that OPEC has at present is mainly concentrated in Iran (1.5mn bpd but limited by sanctions), Saudi Arabia (0.5mn bpd) and Iraq (0.5mn bpd). In Saudi Arabia's case, their stated capacity is higher at 12.5mn bpd, but the country has never produced at this level and there is good reason to believe that they would not be able to sustain these production levels indefinitely, at least without further capital investment.

Country	Actual May 2022	Maximum Capacity?	Average 2019
Saudi Arabia	10.4	11.0	9.8
UAE	3.0	3.2	3.1
Kuwait	2.7	2.7	2.7
Iraq	4.4	5.0	4.7
Iran	2.5	4.0	2.4
Venezuela	0.7	0.7	0.8
Libya	1.0	1.2	1.1
Algeria	1.0	1.0	1.0
Angola	1.1	1.1	1.4
Congo	0.3	0.3	0.3
Equatorial Guinea	0.1	0.1	0.1
Gabon	0.2	0.2	0.2
Nigeria	1.3	1.5	1.8
Total	28.7	32.0	29.4

Source: OPEC

Therefore, even if all OPEC countries produced at their maximum capacity (Saudi Arabia at 11mn bpd) and assuming Iran sanctions were lifted, the cartel would only be able to produce around 32mn bpd, which added to the 70mn bpd production from other producers, would translate to an upper limit of around 102mn bpd in total global supply. Saudi Arabia recently announced a 50% increase in annual capital investment (\$30bn to \$50bn), targeting a maximum sustainable production capacity of 13mn bpd by 2027. Therefore, incorporating this growth factor, global supply based on Saudi Arabian growth could reach 104mn bpd by 2027, but by which time global demand, growing at 1mn bpd per day may already exceed 106mn bpd.

This high-level analysis suggests that unless U.S. production rebounds to a new cyclical peak (exceeding 13mn bpd) AND Russian oil production stabilises, global oil production capacity is probably limited to around 101mn-102mn bpd for the next 18 to 24 months. This implies that an entrenched structural deficit will take hold of the oil market by the end of the year, which can only be resolved over time via a significant increase in capital investment. The alternative would obviously be a further rise in oil prices, leading to eventual demand destruction.

Therefore, as we concluded earlier in this article, apart from US shale reservoirs (short cycle), most conventional greenfields require substantial upfront capital investment and lengthy lead-times before coming onstream. There is no doubt that sustained oil prices above \$100 per barrel will lead to an uptick in investment and an eventual supply response, but this will not happen overnight. Coupled with previously highlighted ESG pressures, a meaningful supply response may only really materialise in the latter half of the decade.

What about electric vehicles – do they pose a threat to continued oil demand growth?

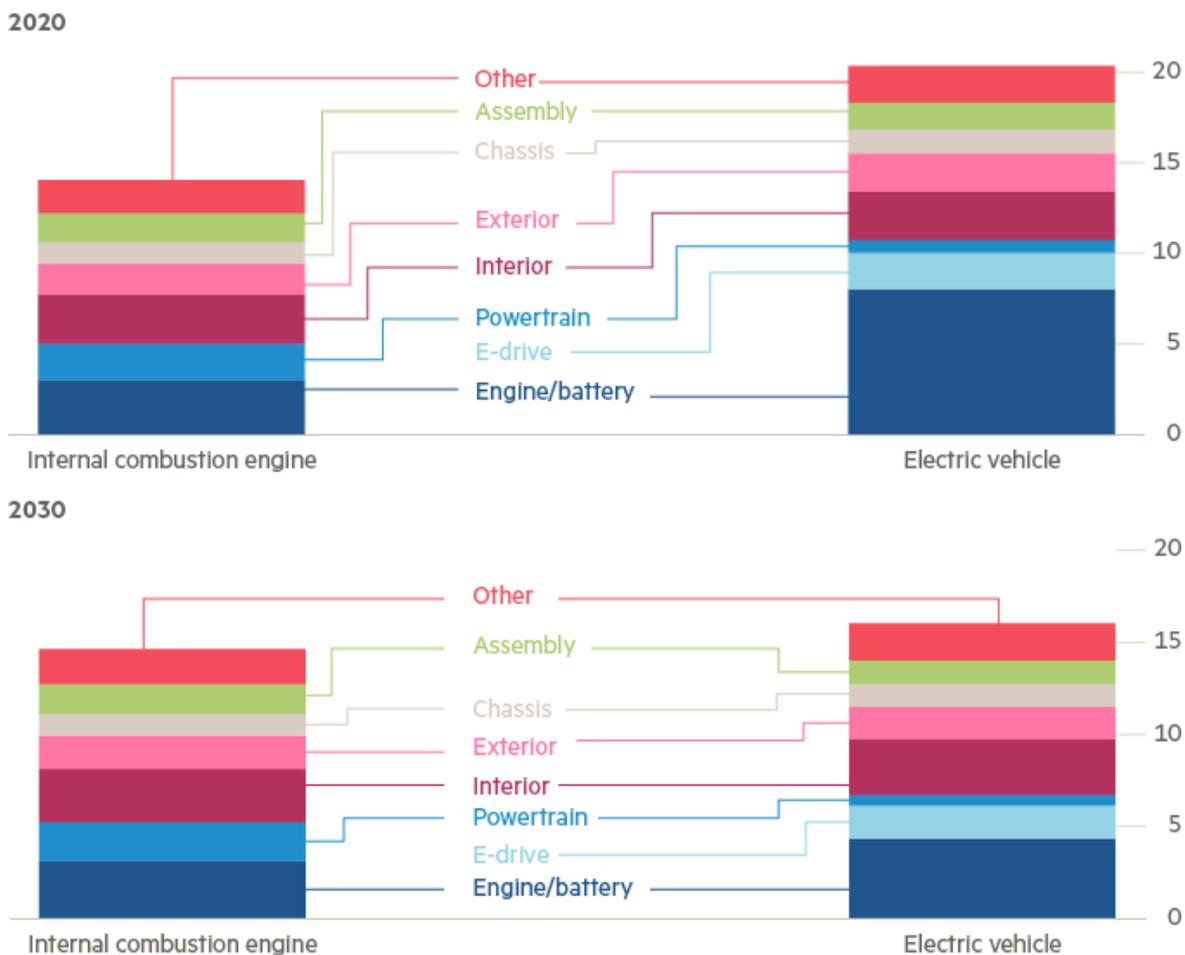
Electric vehicles (EVs) may eventually pose a threat to oil demand. However, at present EVs on average remain more expensive (see below) than internal combustion vehicles and have a lower mileage range. As such, and especially in poorer or developing countries with limited charging infrastructure, EVs are impractical for most consumers. Furthermore, it should be noted that road transportation only accounts for roughly 40% of annual oil demand.

If we assume that of the roughly 80mn new vehicles sold annually, 60mn are replacement vehicles, in order for the global vehicle fleet to start declining (implying a decline in road transportation oil demand), EV sales as a %

of total sales would need to exceed at least 30% as opposed to 8% in 2021. If we assumed zero oil demand growth for non-road transportation segments, and EV market share reaches 30% by 2030, then oil demand may peak and embark on a gradual decline in the next decade. However, there are still many uncertainties, such as whether global automakers will be able to roll out EV production capacity of this magnitude by the end of the decade and whether there will be sufficient supply of raw materials, particularly nickel, copper, and cobalt.

Electric car costs will not fall in line with combustion engines until 2030

Estimated costs (€'000)

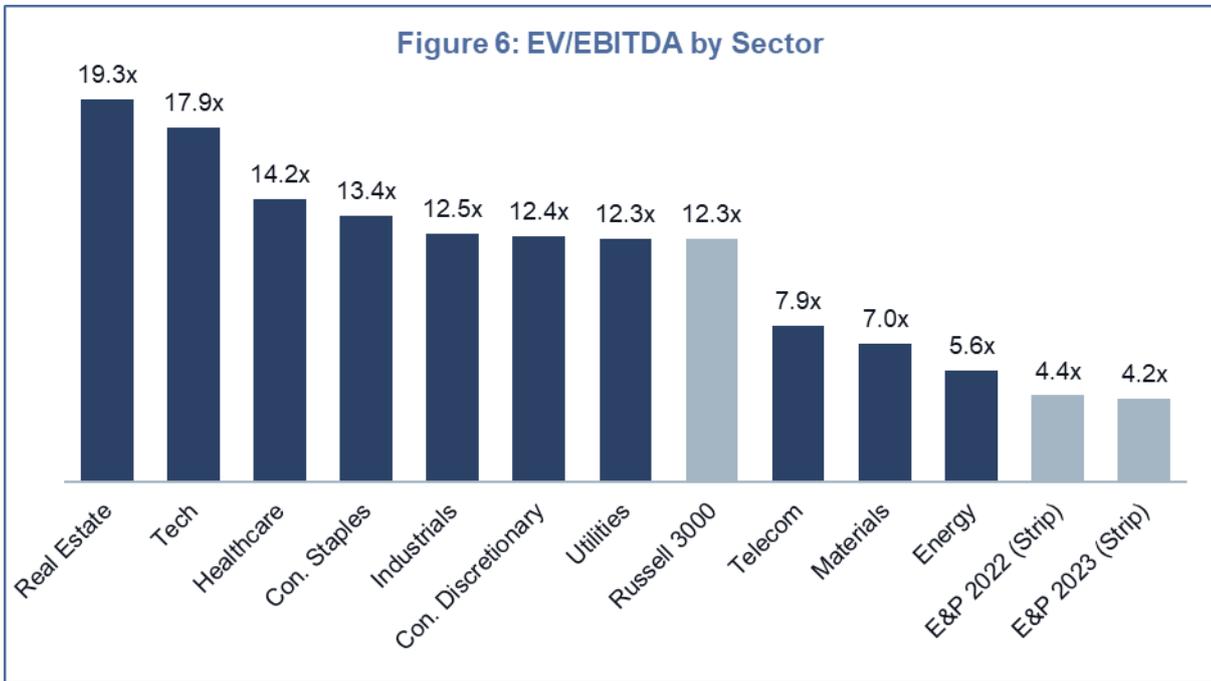


Source: Oliver Wyman
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Are there still opportunities in the sector for investors?

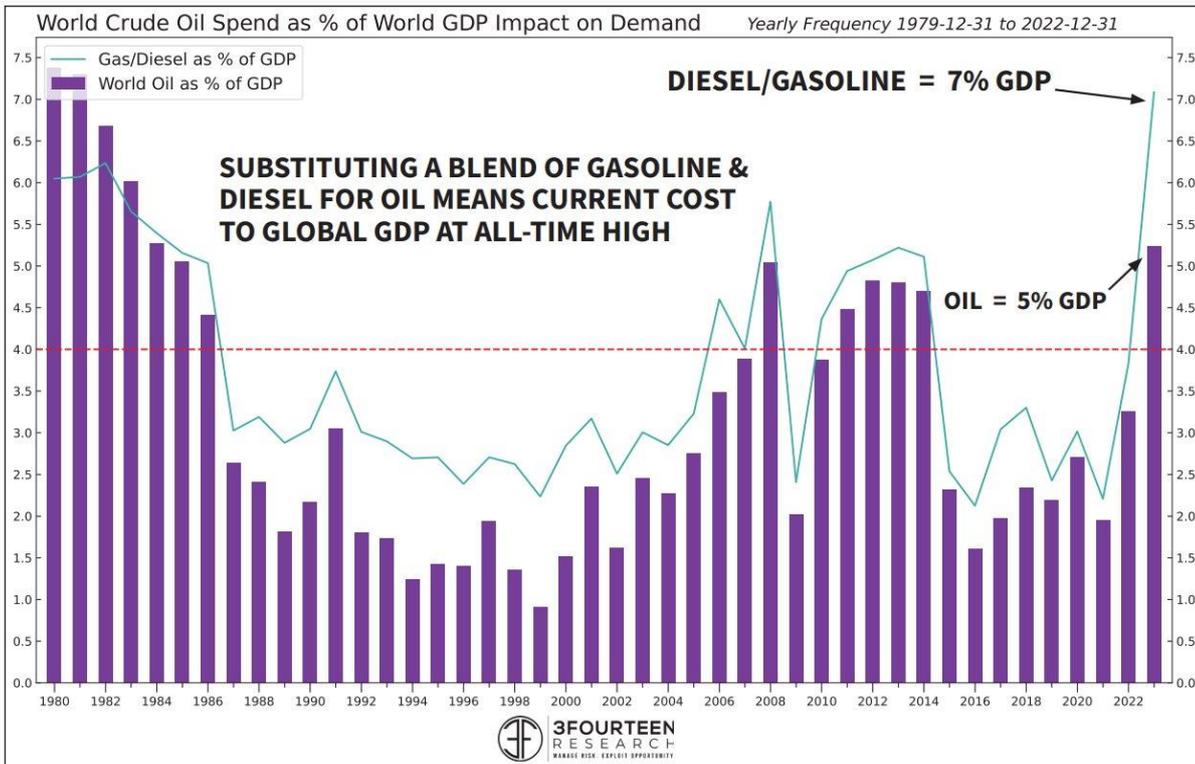
Given the large returns delivered by the energy sector over the past 18 months, investors may quite rightly ask themselves whether they have already missed the bus. In our view, although the “easy money” has certainly already been made, we believe the sector can still deliver positive returns going forward and quite possibly in excess of the overall equity market.

As the graphic below depicts, based on current strip prices (\$80 - \$100), the sector still trades at very low multiples and importantly, at a significant discount to the overall market. Given that many energy producers are now in “maintenance mode” (i.e., their capital expenditure levels are limited to levels required to maintain rather than grow production), they are generating significant amounts of free cash flow and accordingly are expected to pay healthy dividends and/or embark on share buybacks.

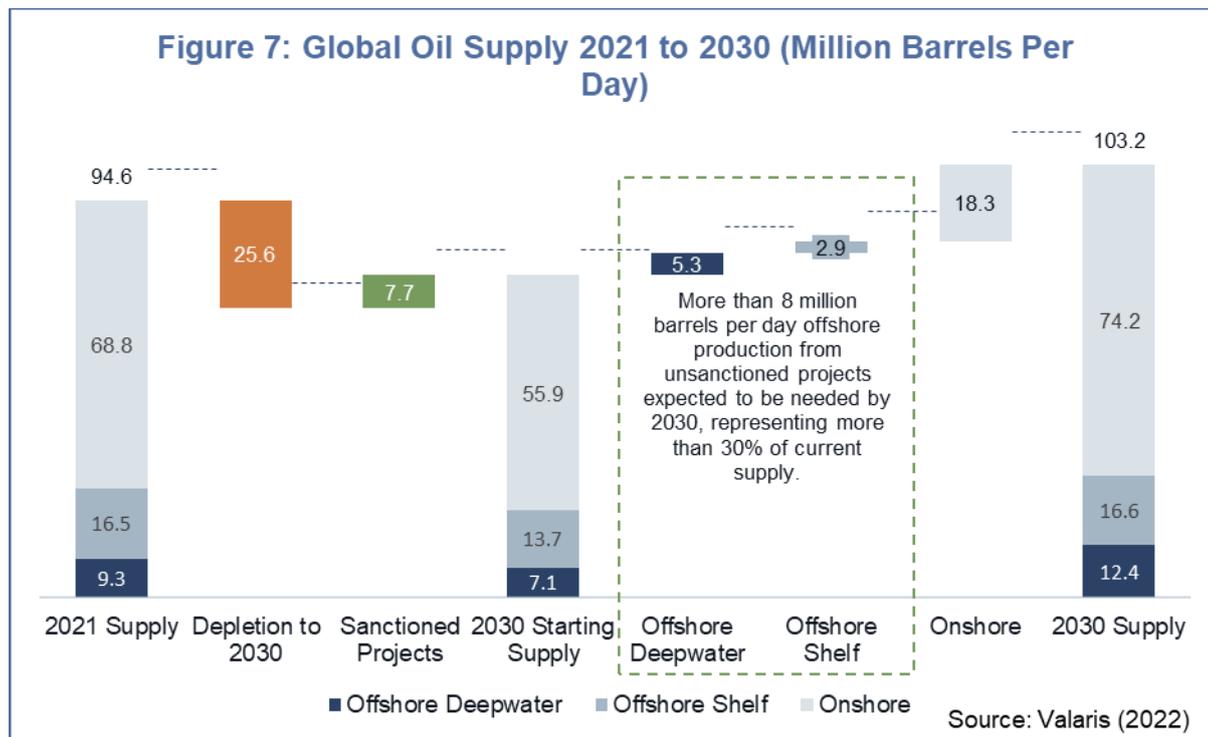


Source: Raymond James

Although, there is certainly the potential that an entrenched supply deficit could lead to a spike in oil prices above \$150, we do not believe prices above this level would be sustainable. Based on current wide refining margins, the amount of expenditure being directed towards energy as a % of global GDP is already running at the highest levels since the early 1980s (as depicted below). Rather, we think it is sensible for investors to remain disciplined and apply a long-term (10 years) average price of \$100 per barrel in their valuation models. Nevertheless, as indicated earlier, even at an oil price of \$100, energy companies remain attractive, with upside of at least 50% on a total return basis over the next few years.



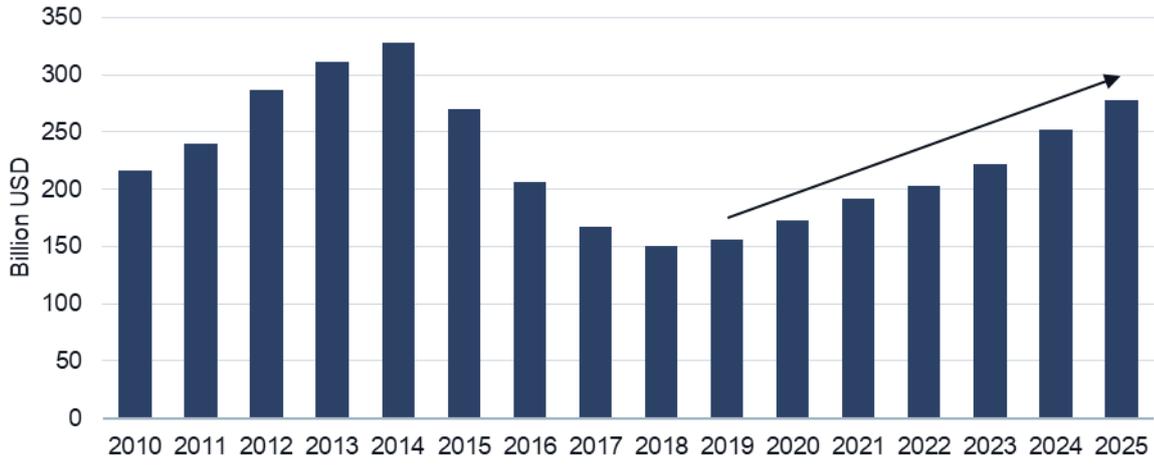
However, the most significant opportunities that remain in the energy sector may be among energy service companies or those companies that provide the “tools” and services that energy producers require to produce oil. Specifically, the equity valuations of many energy service companies operating in the offshore sector, remain well below pre-COVID and prior cycle highs.



As the graphic above shows, industry analysis consistent with a global oil demand forecast of 110mn bpd (2030) suggests that offshore oil production would need to grow by 3mn bpd between 2021 and 2030, to complement expected growth in onshore production. This will likely require an increase in offshore capital investment back towards cycle peak levels attained during 2013 and 2014 – a fairly dramatic relative increase based on trough levels registered in 2020 and 2021.

The capital investment projections (below) were made in 2019 and prior to the COVID pandemic. At present, offshore capital spending is only expected to recover to \$150bn by 2023, which in itself is still roughly 50% below the peak recorded in 2014. As noted, the upside potential for capital investment in the offshore energy segment is very significant and therefore by implication, revenue and profits for companies operating in the space.

Figure 8: Offshore Spending



Source: Bank of America (2019)

**Glacier Research would like to thank Leandro Gastaldi for his contribution to this week's
*Funds on Friday***



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Leandro is a director and founder of Blue Quadrant Capital Management. He is the portfolio manager for the Blue Quadrant Capital Growth Fund, a multi-strategy hedge fund, and the Blue Quadrant Worldwide Flexible Prescient Fund, a long-only unit trust. He has extensive experience in the industry having worked previously as a research analyst and portfolio manager. Leandro graduated from the University of Cape Town with a BCom (Honours) degree in Accounting and Economics. In 2007, he attained the Chartered Financial Analyst (CFA®) designation.