Oil Analyst

The Energy Crisis and Long-Run Oil Prices

- As oil prices have fallen back to their 2021H2 pre-war average, we ask if the 2022 energy crisis will have any longer-lasting effect on oil prices.
- We first note that much of the selloff over the past year reflects the policy and market response to the 2022H1 jump in oil prices and inflation. Record SPR releases, and upside surprises from US and sanctioned producers have boosted oil supply, while higher interest rates have weighed on demand. Looking at the next few months, the SPR and US shale headwinds should start to turn into moderate tailwinds as the SPR gradually refills while US supply slows.
- Turning to long-term supply, global oil investment did pick up by 8% in 2022 as the focus shifted from ESG to energy security, and European majors dialed down their plans to reduce oil production. Global oil investment, however, remained 40% lower last year than in 2014, despite the large price increases during the energy crisis. That said, the oil price cap—designed to keep barrels on the market while dwindling Russian revenues—may weigh on long-run prices by shifting power from producers to consumers if it became a blueprint for future sanctions.
- As oil demand has realized in line with fundamentals such as GDP, the energy crisis has not led to any significant already visible damage to demand. That said, investment in clean energy (+15% year-on-year) and EVs (+60%) jumped in 2022, and any sustained sharp rises in capex in substitutes would weigh on long-run oil demand.
- These findings support our view that oil prices will likely not rebound to their 2022 highs over the next year. At the same time, our oil price forecast remains constructive for 2023H2 on sizeable H2 deficits, and thereafter on still relatively low oil investment.

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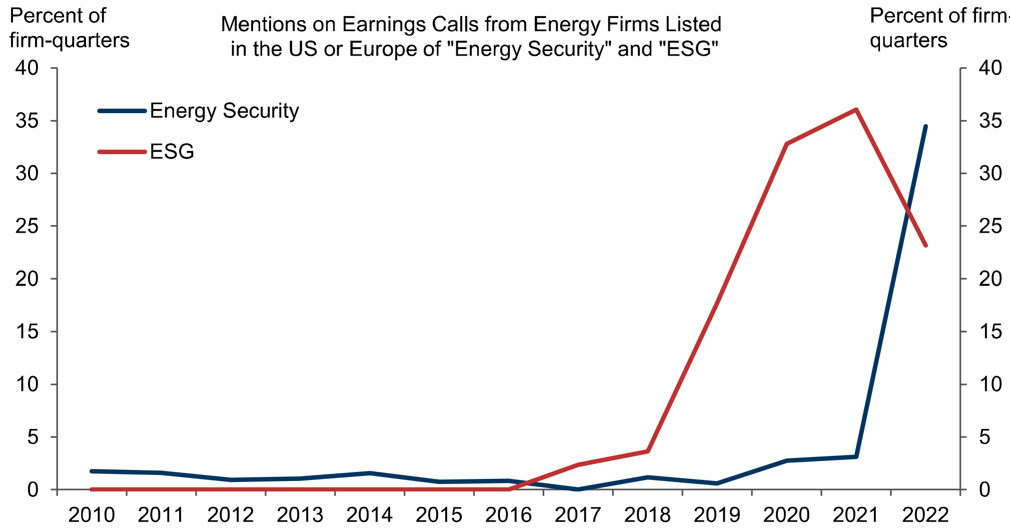
Energy Firms' Focus Has Shifted from ESG to Energy Security



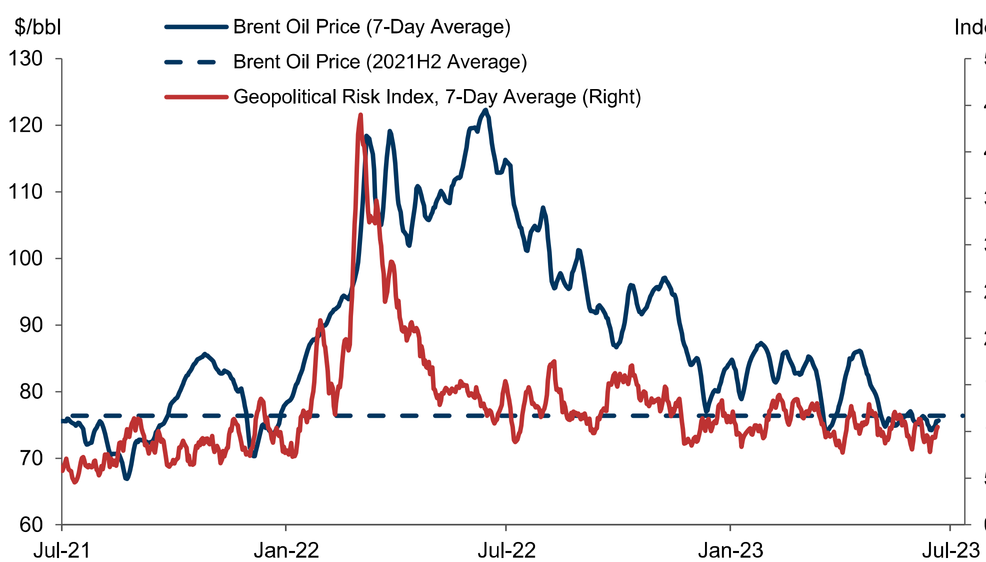
Source: Company data, GS Dataworks, Goldman Sachs Global Investment Research

The Energy Crisis and Long-Run Oil Prices

Brent oil prices surged from under $80/bbl at the start of 2022 to a peak of nearly $130/bbl in March 2022 as the geopolitical risk index quadrupled on the invasion of Ukraine. As markets anticipated persistently lower supply of Russian oil and gas, energy prices jumped, and the energy crisis started.

However, Exhibit 1 shows that this news-based geopolitical risk index and oil prices have both fallen back to around their 2021H2 pre-war averages.[1] This *Oil Analyst* revisits the market's adjustment to the 2022 price jump, and asks whether the war and the 2022 energy crisis will have any longer-lasting effects on oil prices.

Exhibit 1: The Geopolitical Risk Index and Oil Prices Have Returned to Pre-War 2021H2 Averages



Source: GPR, Bloomberg, Goldman Sachs Global Investment Research

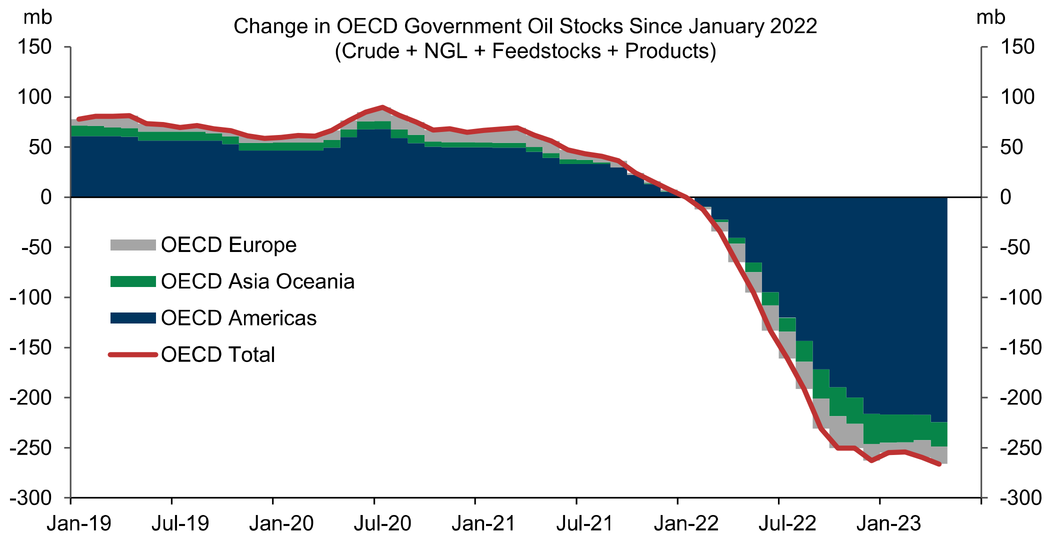
[1] Federal Reserve research economists Daria Caldara and Matteo Iacoviello construct a measure of adverse geopolitical events and associated risks based on a tally of newspaper articles covering geopolitical tensions, and examine its evolution and economic effects since 1900.

Near-Term Headwinds Should Turn into Tailwinds

We first note that much of the selloff over the past year reflects the policy and market response to the jump in oil prices and in consumer price inflation.

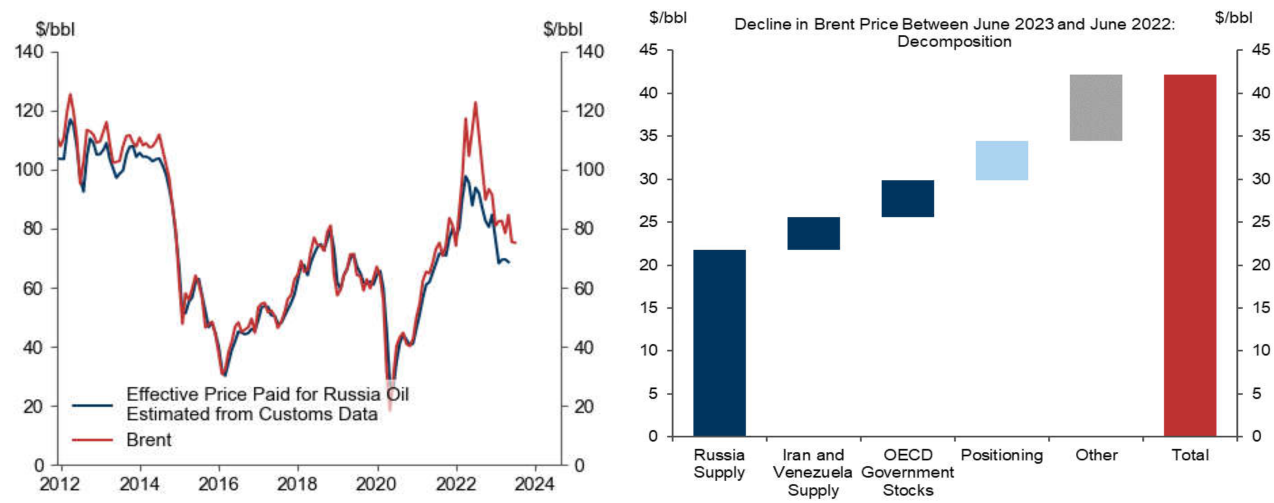
On the policy front, OECD governments fought the energy crisis by releasing a record 270 million barrels since early 2022 (Exhibit 2). Supply from sanctioned economies—Russia, Iran, and Venezuela—has also significantly exceeded consensus expectations. The fight against inflation led the G7 to cap Russian oil prices—to keep barrels on the market while dwindling Russian revenues—and may also have been associated with changes in sanctions enforcement. While China lockdowns last year and depressed positioning this year have also weighed on prices, we estimate that these positive policy supply shocks together explain about 70% of the selloff since last year (Exhibit 3).

Exhibit 2: OECD Governments Have Released 270 Million Barrels Over the Past 18 Months



Source: IEA, Goldman Sachs Global Investment Research

Exhibit 3: Positive Supply Shocks Explain About 70% of the Oil Selloff Over the Past Year

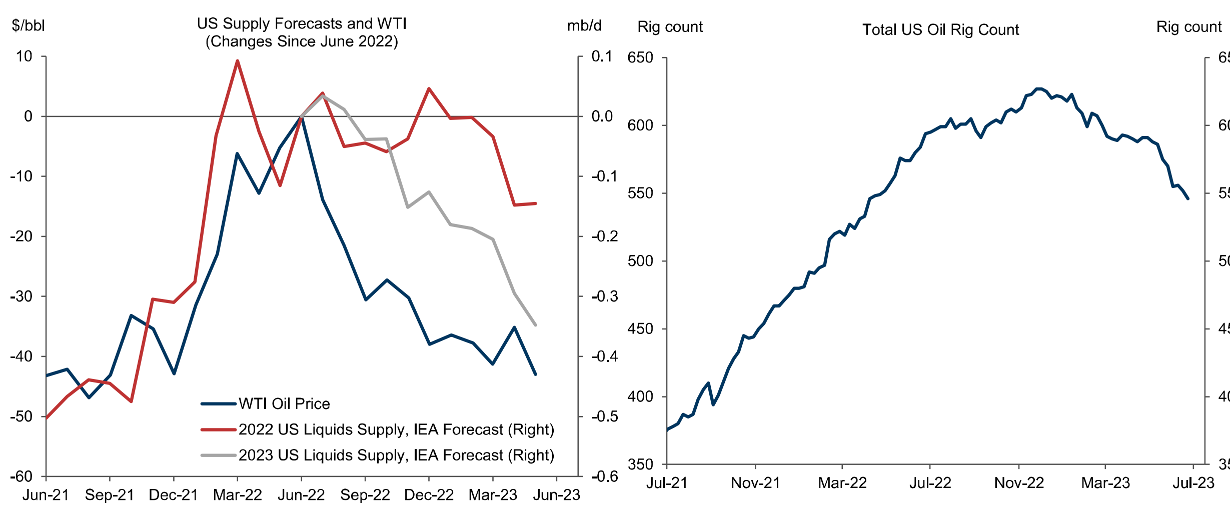


Source: GTT, Bloomberg, IEA, CFTC, Refinitiv Eikon, Goldman Sachs Global Investment Research

The monetary policy response to higher energy and consumer price inflation has also weighed on oil demand. Higher interest rates have incentivized destocking by increasing the opportunity cost of holding oil, and have pushed GDP growth—the key driver of oil demand—in the OECD below potential.

Market forces have also contributed to the normalization in oil prices. Liquids output for 2022 in the US—still the marginal producer—exceeded IEA expectations from the start of the year by 300-400kb/d following last year's $20/bbl rise in the annual average price (Exhibit 4, left panel).

Exhibit 4: Following Oil Prices, US Supply Got Revised Up in 2022 but Down in 2023



Source: Bloomberg, IEA, Baker Hughes, Goldman Sachs Global Investment Research

Looking at the next few months, the SPR and US shale headwinds should start to turn into moderate tailwinds for oil prices.

The US Department of Energy has awarded contracts to deliver 3mb of crude oil to the SPR in August, and has launched a solicitation for another 3mb for delivery in September. The 13% drop in the US oil rig count from its late 2022 peak suggests that US shale is likely to turn into a tailwind too (Exhibit 4, right panel). Following our recent modest downgrade, we expect US Lower 48 crude supply growth to slow to a sequential pace of just 0.2mb/d per year.

Interest rates are likely to remain a headwind in coming months as the Fed and the ECB hike somewhat further. Monetary policy, however, is likely to turn into a moderate tailwind next year if central banks start to cut.[2]

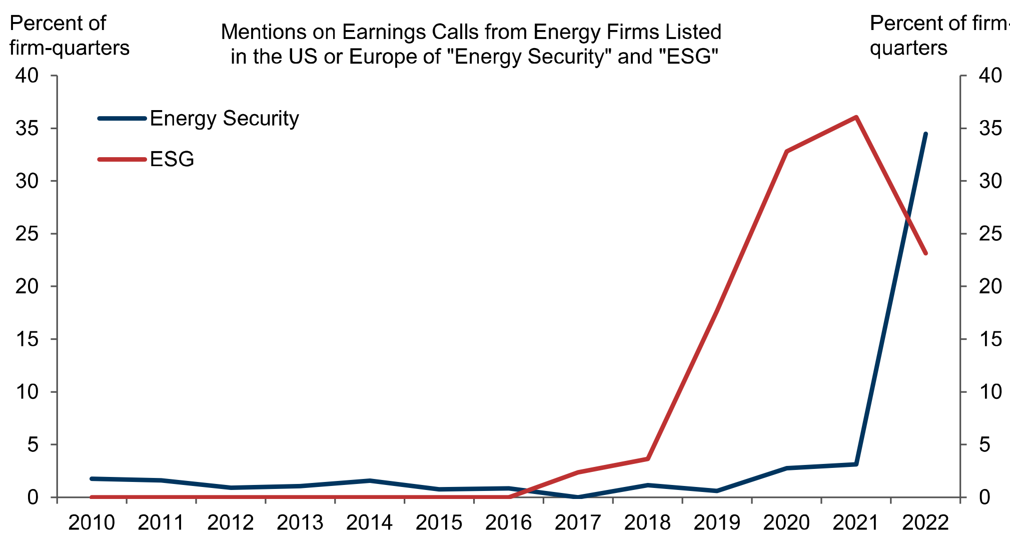
[2] Our economists expect no Fed and ECB rate cuts until 2024Q2 and 2024Q4, respectively.

Long-Term Supply Effects

Turning to long-term supply, global oil investment did pick up by 8% in 2022 as the focus shifted from ESG to energy security, and European majors dialed down their plans to reduce oil production.

Exhibit 5 shows that the share of energy firms publicly listed in the US or Europe mentioning energy security increased tenfold in 2022 to 34%, while the share mentioning ESG declined from 36% in 2021 to 23% in 2022. In the context of this shift to energy security and the ambition to increase the returns on capital, European majors' targets to cut oil production have been dropped by Shell and dialed down by BP.

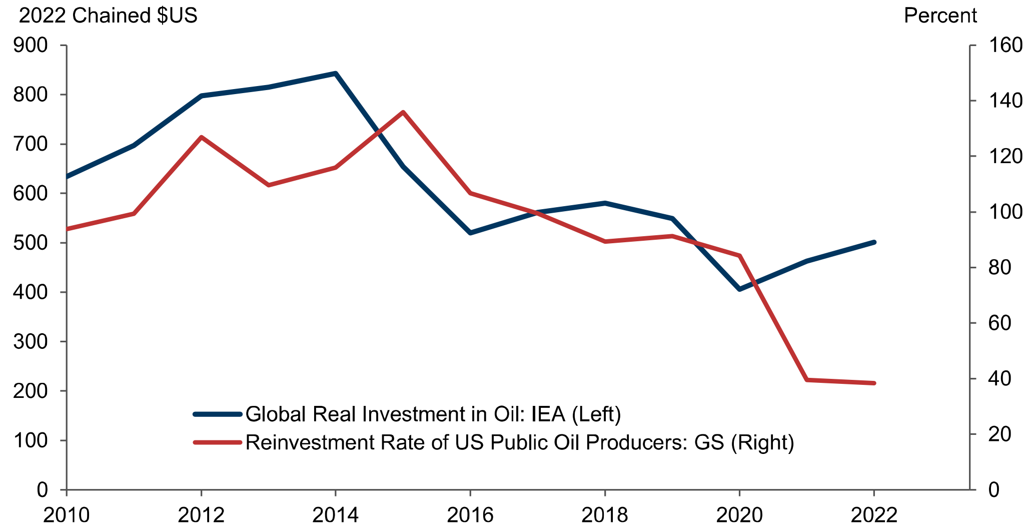
Exhibit 5: Energy Firms' Focus Has Shifted from ESG to Energy Security



Source: Company data, GS Dataworks, Goldman Sachs Global Investment Research

Despite the large increase in prices during the 2022 energy crisis and the 8% pick-up in global real oil investment, it nevertheless remained about 10% lower than in 2019, and about 40% lower than in 2014 (Exhibit 6). Consistent with strong financial discipline, the reinvestment rate—capex as share of operating cash flow—has remained low for US public oil producers through 2022. Moreover, the West has stopped investing in Russia's oil sector for the foreseeable future.

Exhibit 6: Oil Investment Rose 8% in 2022 But Remained Nealry 40% Below its 2014 Level



Source: IEA, Goldman Sachs Global Investment Research

Although the ongoing capital discipline in the global oil sector is supportive of long-term oil prices, the price cap on Russian oil may weigh on long-run oil prices if it were to become a blueprint for future sanctions.[3] The price cap allows firms in G7 countries to continue to provide shipping, finance, and insurance services for the transport of Russian oil only if that oil is sold at or below the price cap level.

The price cap could weigh on prices through two mechanisms. First, the price cap has led to higher Russia output than under standard sanctions limiting Russian exports (e.g. embargo, export quota) or than under a textbook price cap applied to all barrels in the global market, which would lead to shortages. In fact, the supply curve can become downward sloping, where lower global crude prices raise Russia supply, as we and a recent academic study showed.[4] Second, the availability of Russian barrels—a cheaper substitute with higher reputational risks—can put downward pressure on the price of non-Russian barrels as bargaining power shifts from producers to consumers.

That said, the bearish price effect of the cap may diminish over time. For one thing, the buildout of a large shadow fleet may lead to domestic production shut-ins, and to sales only outside of the price cap regime. Second, by removing the price upside, investment is discouraged.

[3] Sanctions on already sanctioned countries may change format. Alternatively, additional oil producers may become subject to a price cap.

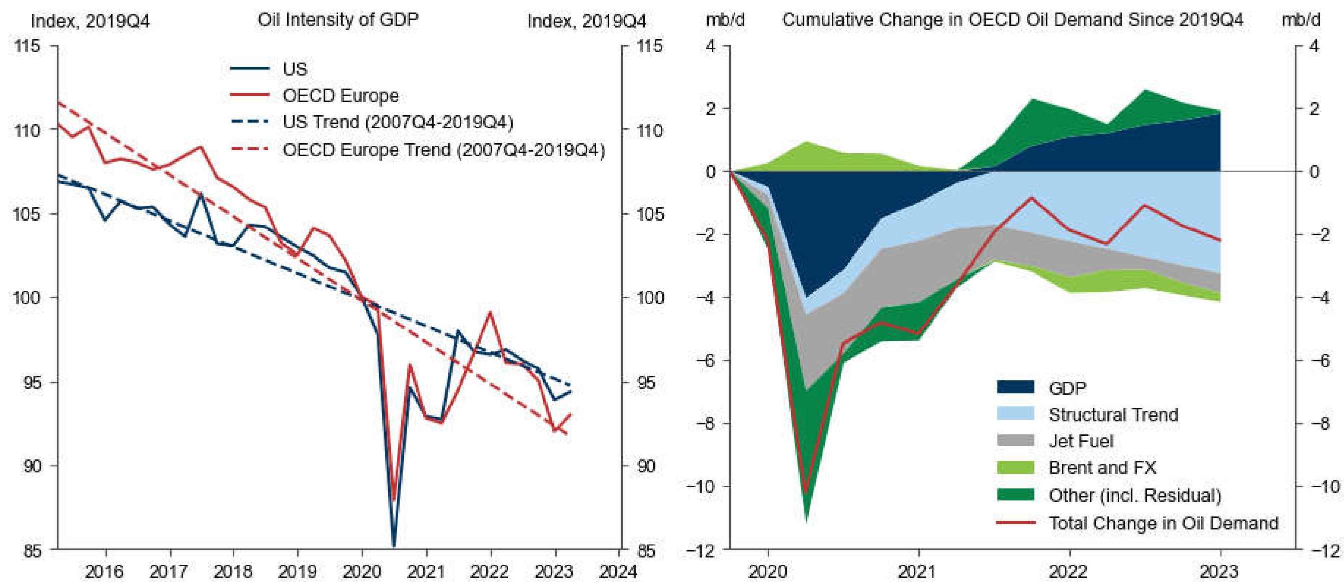
[4] The price cap, other sanctions, and military funding needs can lead to a downward sloping supply curve for three reasons. First, the cap reduces the option value of cutting production and waiting for higher prices when prices are low. Second, the greater difficulty to access financial markets increases the incentive to raise production when prices are low. Third, the war increases the pressure on state budgets.

Long-Term Demand Effects

Has the energy crisis altered long-term oil demand?

The left panel of Exhibit 7 shows that the oil intensity of GDP—the number of barrels burned per dollar of output—has recovered to its 2007-2019 trend in the US and Europe. Moreover, OECD oil demand through 2023Q1 is broadly in line with the predictions from our demand model.[5] As oil demand has realized in line with fundamentals such as GDP, the energy crisis has likely not led to substantial already visible damage to structural oil demand.[6]

Exhibit 7: OECD Oil Demand Has Come in in Line with Fundamentals Such as GDP



Source: Haver, IEA, OAG, Bloomberg, Goldman Sachs Global Investment Research

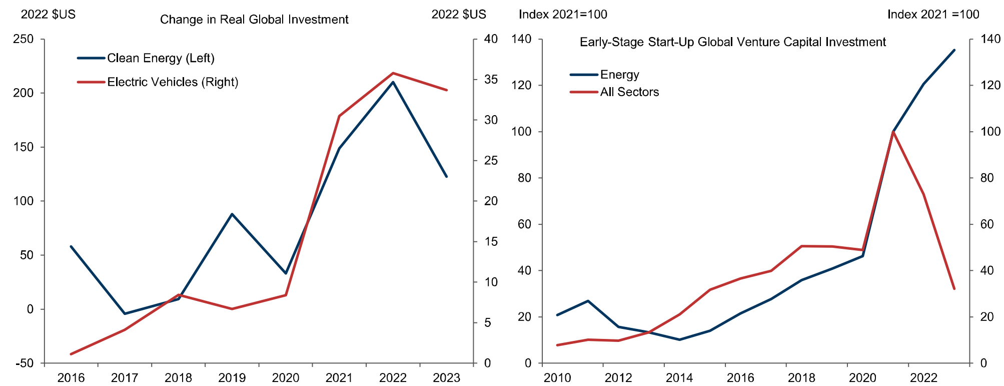
That said, investment in clean energy (+15% year-on-year) and EVs (+60%) jumped in 2022 (Exhibit 7, left panel). Any sustained sharp rises in capex in oil substitutes, facilitated by legislation such as the Inflation Reduction Act (IRA), would weigh on long-run oil demand.

At the margin, last year's jump in energy prices, and the focus on energy security may have helped policymakers in the US and Europe to pass legislation accelerating the shift to renewable energy. Our energy equity analysts estimate that the IRA will unlock $1.2tn of incentives by 2023, and to drive $3tn of investment across renewable electrons (mostly solar and wind) and molecules, including large green hydrogen and carbon capture projects. The passage of these new laws, and the jump in energy prices have also coincided with a sharp rise in early-stage global venture capital (VC) investment in the energy sector, while VC investment fell in other sectors (Exhibit 8, right panel).

[5] Very elevated gas prices boosted oil demand in 2022 through gas-to-oil substitution. As gas prices in Europe and Asia have fallen back sharply, we think that the gas-to-oil boost to oil demand has now largely faded.

[6] If the energy crisis were to lead to permanently lower GDP, then it would be be associated with structural damage to oil demand even if demand is in line with our GDP-based models. The energy crisis has likely also shifted petrochemical demand from Europe and Asia to the US.

Exhibit 8: Rapid Growth for Investment in Clean Energy and Energy Venture Capital



Source: IEA, Goldman Sachs Global Investment Research

Exhibit 9 summarizes our findings.

Exhibit 9: Largely Bearish Factors in 2022H2-2023H1 vs. a More Mixed Outlook

Effects of the 2022H1 Jump in Energy Prices			
Category	Response	Impact on Oil Prices: 2022H2-2023H1	Impact on Oil Prices: Future
Oil supply	Strategic Petroleum Reserves	↓	↑
	Oil supply from sanctioned economies	↓	↓
	Oil supply from US	↓	↑
	Shift in focus to energy security	↓	↓
	Design of oil price cap tool	↓	↓
Oil demand	Rise in policy rates in response to energy inflation	↓	↑ *
	Gas-to-oil switching	↑	
	Clean tech investment & legislation	↓	↓

Bearish Potentially Bearish Bullish Potentially Bullish

*Sligthly bearish in near-term as policy rates rise further but bullish once cuts start.

Source: Goldman Sachs Global Investment Research

The finding that oil supply has adjusted to the 2022H1 rally, largely through supply beats from sanctioned economies which are unlikely to reverse, supports our view that oil prices will likely not rebound to their 2022 highs over the next year.

At the same time, the insight that SPR policy and US shale supply should turn from headwinds into tailwinds supports our constructive call on oil prices in 2023H2, with our December forecast at $86/bbl given sizeable H2 deficits. Although access to capital has picked up with the shifting focus from ESG to energy security, and the innovative price cap and elevated investment in clean tech create uncertainty, the fact that global oil investment remains 40% lower than in 2014 also supports our still relatively constructive view on oil prices beyond 2023.

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Disclosure Appendix

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