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ENERGY INTELLIGENCE **FINANCE**®

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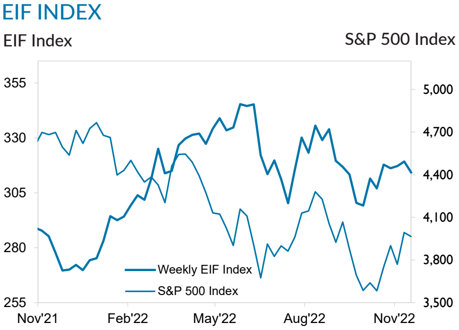

EIF Global Oil and Gas Index of 22 traded equities

OUR TAKE

Know Your Host's Transition Plan

For energy companies, managing the impact of national approaches to the energy transition is becoming a key part of their corporate strategies — and negotiations at the COP27 conference provided a timely reminder of this. Energy Intelligence, which tracks countries' resilience and adaption to the energy transition in our Transition Risk Index, believes companies must understand how nations where they have exposure are approaching the transition and account for that in their broader thinking about geopolitics and aboveground risk.

- The strategies of national oil companies (NOCs) such as Indonesia's Pertamina and Angola's Sonangol will be particularly tied to the energy and transition policies of their host governments. For NOCs in resource-rich countries, a lack of planning and diversification can mean governments increasingly leaning on them for revenue — potentially hindering investment in future energy capacity. These national champions can also find themselves tasked with fulfilling often contradictory goals to achieve emissions reductions at home, while maintaining export revenues.

- International oil companies (IOCs) can have more freedom from the policies of their home jurisdictions but need to manage a more diverse set of risks across a broader portfolio of countries where they operate. Some have retrenched to fewer core jurisdictions, which can mean less exposure but more concentrated risks. Like their NOC counterparts, IOCs face a growing risk of changes to fiscal terms in countries that are overly dependent on fossil fuel revenues or simply have a budget deficit to plug.

- Transition approaches are becoming increasingly important to understand in countries in key consumer regions as global energy trade flows shift to account for the split between Russia and the West in the wake of the Ukraine conflict. Traditional supplies of LNG to markets like China and India are being pushed into Europe — and vice versa in the case of Russian crude. Transition approaches in European countries, as well as in China and India, will have outsized impacts on energy companies reliant on those markets, whether as destinations for their oil and gas supplies or as places to grow renewables investment.

- Not all the risks of the transition will be to the downside. A well-managed transition policy at national level can benefit both state-backed and private-sector companies. Policies that provide clear priorities and direction can give firms the confidence they need to make long-term investments. And this is just as important for new technologies as it is for existing ones, with energy executives recently hailing the US Inflation Reduction Act as a successful example of using carrots rather than sticks to guide the transition. In Europe, meanwhile, confusion over the long-term role of natural gas has hindered the investment needed to diversify supplies. The continent would do well to learn its lesson by adopting policies with incentives for burgeoning transition businesses such as electric vehicles, hydrogen or carbon capture.

PEER STRATEGY

Offshore Wind Squeeze Tests Majors' Resolve

- *European majors are positioning themselves for a period of rapid growth in offshore wind, as new markets open up around the globe.*
- *But near-term inflationary pressures and heightened competition for wind acreage are putting their strategies to the test.*
- *Companies must ensure their investments remain robust and that they are not wrong-footed as the global economy enters stormier waters.*

The Issue

European majors have invested far more in offshore wind energy since 2015 than in any other low-carbon technology. Yet this year, wind investment has dried up. The slowdown in spending signals a shift in focus to maturing and whittling down predevelopment project pipelines. But it could also reflect wider inflationary pressures and supply-chain issues, which have led companies to delay committing investment. That could be a blow to global efforts to ramp up offshore wind capacity.

Winds of Change

The European majors' operational offshore wind capacity is roughly 0.7 gigawatts, or 3% of the global total outside China, according to consultancy Wood Mackenzie. They had 30% of the 9 GW that were sanctioned in 2020 but — despite the Global Wind Energy Council's call for a "gargantuan effort" from policymakers and industry to meet its 2030 offshore wind target of 380 GW — FIDs this year have been few and far between and the majors have not played a large role.

FIDs have been stalled partly due to the challenging macroeconomic environment, but also because of the natural cycle in offshore wind, which is tied to tender timelines, Woodmac's head of offshore wind, Soeren Lassen, told Energy Intelligence. "It's really the policymakers that are setting the pace." The current difficult market conditions will make it more challenging for countries to achieve big offshore wind ambitions, especially 2030 targets, he said.

Wise to the potentially huge opportunity, the majors have been diversifying across geographies and technologies, testing new waters with small investments in emerging wind markets — and pulling back if risks become too onerous. In addition to trying to get a foot in the door in top renewables market China, companies are looking to the US, Poland, southern Europe, Vietnam, Brazil and Australia, as well as growing markets in South Korea, Japan and Taiwan. Further out, a new wave of wind capacity in Latin America could materialize in the 2030s. Companies have also started to plan and deliver a first generation of floating wind projects in the UK and France. TotalEnergies in August brought on line some operational capacity from its 1.14 GW Seagreen joint-venture project with SSE Renewables off Scotland. That scheme will be fully operational next summer.

Elsewhere, however, Shell this month quit a floating wind pilot project in France, citing rising costs and supply-chain challenges. It had joined the scheme in 2019 when it acquired French floating wind specialist Eolfi, through which it has captured a share of global floating wind markets. Its locations include Norway and South Korea, where it is now advancing a 1.3 GW floating joint venture. In September, Shell pulled out of two floating schemes offshore Ireland, with Dublin's policy framework likely a key factor. It meant the pipeline of projects Shell acquired in Ireland would have been unlikely to materialize in the 2030s. But, Lassen emphasizes, "I think it's very natural that you're seeing attrition across the pipeline, especially as this is a new space."

Cutthroat Competition

In Europe, tenders in the UK and EU for offshore wind capacity have provided the framework to build projects within the 2020s. But with policymakers still only moving ahead sporadically with auctions and lease sales, too many developers are competing for too few projects. Companies have bid aggressively, notably in the UK, paying a premium to secure longer-term growth. That could also make it harder for companies to deliver their promised project returns.

Equinor CFO Torgrim Reitan, whose company this month started up the world's first floating scheme powering oil and gas platforms, noted that the Norwegian major had come away empty handed from four recent tenders for seabed leases in the UK and US. "To be frank, I'm OK with that because the prices were too stiff as we saw it," he said on Equinor's third-quarter earnings call. "I do believe that increasing interest rates and tighter capital available will drive more normal economic behavior in many of these lease rounds. So we take a long-term perspective on that." Equinor is targeting an internal rate of return of 4%-8% on its renewable projects.

The majors are also teaming up in alliances to compete in the growing number of tenders, especially in Europe, for offshore wind plus green hydrogen. They recently lost out to Germany's RWE, which won a tender for the 700 megawatt Hollandse Kust West 7 site in the Dutch North Sea. The tender attracted bids from: BP; Orsted with Total; Shell and Eneco; Vattenfall and BASF; and SSE Renewables with Brookfield. Meanwhile, the US plans to hold its first-ever offshore wind lease sale in the Pacific Ocean on Dec. 6 for areas off California with the potential to produce over 4.5 GW of offshore wind energy. "I think that will be a litmus test for the appetite of the [international oil companies] from Europe where perhaps Shell and Total are more aggressive than Equinor and BP," one industry source said.

Onshore Option

While the majors see offshore wind as particularly attractive due to its scalability, Equinor is among several companies eyeing opportunities to build its onshore wind and solar portfolio, notably in Europe and Brazil. Equinor's power trading arm and route-to-market for renewables, Danske Commodities, will play a key role in supporting its onshore push, for example in Poland.

Denmark's Orsted, the largest offshore wind developer, is also targeting a big expansion in onshore wind and solar in Europe, the US and Asia. Its recent joint venture with Repsol could potentially facilitate that push on the Iberian Peninsula, while the partnership ostensibly paves the way for the Spanish major to invest in floating wind off Spain.

Companies are also moving to take advantage of the potential to harness wind and solar energy to produce green hydrogen. BP recently acquired a 40.5% stake and operatorship of the Asian Renewable Energy Hub, a giga-scale green hydrogen scheme tapping onshore wind and solar power in Australia. That followed Total's acquisition of a 25% stake in a similar venture in India.

Deb Kelly, London

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PEER STRATEGY

Permian Operators Battle Slower Output Growth

- *Production growth in the Permian Basin is set to be lower than expected this year after the US oil patch was hit hard by supply-chain and labor issues.*
- *Asset maturation could be a long-term contributor to slowing growth, according to ConocoPhillips, although opinions vary on how big a factor it could be.*
- *Slow growth is set to persist into next year but some operators believe it's only a matter of time before the next technological breakthrough boosts flagging reserves.*

The Issue

US crude oil production growth is set to be lower than previously expected this year, driven by slowdowns in the Permian Basin. The country's largest onshore oil play has been hit hard by supply-chain snags, labor shortages and inflation. Most publicly traded oil companies are bowing to investor demands to prioritize returning cash to shareholders over double-digit production growth but signs are emerging that some operators are beginning to experience resource exhaustion.

Permian Projections

A number of forecasters have recently slashed projections for US output growth. Analytics firm Enverus last week downgraded its forecast for 2022 oil output growth in the lower 48 states from 560,000 barrels per day to 450,000 b/d, citing "the headwinds created by oil-field services limitations, the risk of recession and reduced performance from wells drilled recently in the Permian Basin."

ConocoPhillips is slightly more optimistic, expecting production growth of around 700,000 b/d. However, Chief Economist Helen Currie warned of risk to the downside. "We're not looking for this big explosion and ramp-up in frack crews or rigs out there," she told Energy Intelligence. "But it's going to be an incremental uptick in the rig count and a few more frack crews running at a time. And that should stack up to that amount of production."

ConocoPhillips produced a record 1 million barrels of oil equivalent per day in the third quarter, the bulk of which came from the Permian. However, it also raised its capital budget by an extra $300 million to deal with inflation in the oil patch.

Analysts broadly believe Permian growth will continue to slow next year, which could keep overall US output lower than current forecasts suggest and further complicate the global supply picture. And the outcome won't just be decided by a handful of big producers. Majors and larger independents like ConocoPhillips don't operate all of their wells in the Permian, so some production is tied to the ability of smaller players that are not as well funded or equipped to manage supply-chain challenges.

ConocoPhillips CEO Ryan Lance said his company would "assess what our partners are doing" to determine its share of funding for nonoperated projects, as well as inflation, before deciding on capex for next year. Occidental Petroleum, meanwhile, said its third-quarter production came in at the lower end of guidance due to higher downtime and lower output from nonoperated assets.

Exhausted Inventory

Some Permian operators are also confronting another challenge: the exhaustion of the basin's resources as it matures. Pioneer Natural Resources CEO Scott Sheffield said during his company's third-quarter earnings call that resource exhaustion could become a significant barrier to growth. Pioneer has since shifted its strategy to target high-performing well locations in the Permian following disappointing performance in July-September.

Indeed, Energy Information Administration data suggests operators are not drilling in the most efficient areas. While oil production has increased in the Permian over the past year, the amount of oil produced by a new well per rig has declined, according to the agency's monthly drilling productivity reports.

Other operators, including EOG Resources and Diamondback Energy, see asset maturation happening, but they also speak about it as part of a laundry list of items that are keeping growth in check. Asset maturation, supply-chain constraints and capital discipline "weigh into more of a muted production growth from US shale going forward," said Diamondback CEO Travis Stice.

Hess CEO John Hess recently named limited shale inventory life in general as an obstacle to future growth. He predicts US production will get back to 13 million b/d, compared to around 12 million b/d currently, in the next two to three years, and plateau afterward. "The problem ... is there's not a lot of spare capacity there," he said last week. "And then you look at the one other area we can go in the world to get increased oil supply, and it's the offshore."

ConocoPhillips, meanwhile, sees resource exhaustion as a long-term issue. "It's a matter of how far in time do you want to go when you look across the play," Currie said. "I think that when you start focusing on specific companies, based on our analysis of the publicly available data on their acreage, they may start to run out of running room in the next couple of years."

Trust in Technology

The inventory degradation issue mostly affects large public companies that have drilled up premium inventory over the past few years, according to Tall City Exploration CEO Mike Oestmann.

That makes smaller private Permian players like Tall City, which claims to have a drilling inventory of about 20 years, attractive M&A targets, Oestmann said. He also believes that while there are finite resources in the formations that have already been discovered, technology and exploration could lead to stronger reserves replacement in the future.

"There's going to be something new pop up," he said. "And I wish I knew what it was, but it always has. There'll be another shale out here or there'll be another completion technique to unlock more and more reserves from this basin." Back in the 1980s, companies were leaving the Permian because there was nothing left to be discovered, he explained. "Now they're all coming back," he said. "And that's always been the case."

That argument has traction. Ademiju Allen, senior client analyst at Rystad Energy, said at a recent conference in Houston that technology would evolve to boost flagging reserves. "Tier 2 [assets] can become Tier 1 if you invest in the right technology for the extraction process," he said. "So as capital allocators continue to optimize their spend going forward, that will also help them to devote spend to [research and development], which will help in reserve replacement."

Caroline Evans, Houston

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INDUSTRY TREND

Downstream Retrenchment, M&A Shake Up Oil Hierarchy

Energy Intelligence's annual ranking of the world's Top 100 oil companies has thrown up intriguing changes to the industry's pecking order that could signal a bigger shift ahead, as independents gained ground through M&A and majors scaled back in refining and reserves replacement. Based on operational results for national and international oil companies' 2021 fiscal years, our proprietary Top 100: Global NOC & IOC Rankings analysis shows an energy world bouncing back from the coronavirus pandemic but also continuing to navigate the transition. Here are our key takeaways from the 2023 edition:

- **The majors' overall operational footprint is shrinking.**

The five leading Western majors have seen their collective operational footprint over the years shrink on the back of dwindling reserves and downstream footprint, even if their continued participation in the Top 10 has held broadly constant. Refinery divestments and closures in pursuit of stronger downstream margins and/or low-carbon fuel transition strategies have hit both refinery throughput and oil product sales: their combined refining footprint is down by more than 20% over the past 10 years, our historical rankings show, with the reduction most pronounced among the more renewables-inclined European majors.

In fact, UK major BP's downstream retrenchment helped facilitate a slip in its ranking by one place, to sixth, in our latest list, putting it behind Russia's state-controlled Rosneft.

BP, which restated how it classifies product sales in its 2021 annual report, sold its petrochemicals division to Ineos for $5 billion in 2020 and this year agreed to sell its 50% stake in the BP-Husky Toledo refinery in Ohio to Cenovus Energy, continuing the trend.

Further capturing the shift in ownership of the world's downstream, two Asian NOCs moved up the rankings — by four and eight places, respectively. Upstream-heavy China National Offshore Oil Corp. (CNOOC) and Thailand's PTT both expanded downstream for government-mandated energy security reasons, bringing on stream value-added business lines.

Majors' oil reserves fell by some 2 billion barrels over the nine years from 2012-21, while their gas reserves dropped by about 8 billion barrels of oil equivalent, underscoring the focus on value over volume since the 2014 downturn. While some reserves taken off the balance sheet during the more recent, pandemic-driven price slump may be rebooked in a higher price environment, portfolio rationalization, capital discipline and constraints around investing in oil and gas — certainly for the European companies — will likely send majors' reserves lower over time.

- **Independents are the biggest buyers in oil and gas M&A.**

The five upstream acquisitions with the highest price tags in 2021 were all made by independent companies — a trend that has continued into this year. Under less pressure than the majors to cut oil from their portfolios — France's TotalEnergies, for example, will spin off its Canadian oil sands assets next year — independents have been able to get deals done while still under the guise of capital discipline.

Indeed, one of the biggest movers in the 2023 rankings was Calgary-based Cenovus, which advanced 16 places to 35th. Last year, Cenovus bought oil sands-focused Husky Energy for C$8.9 billion (US$6.6 billion), boosting both its upstream production and refining capacity. This year it added BP's 50% stake in the Sunrise oil sands project in a swap deal that saw BP gain access to less carbon-intensive barrels at Bay du Nord in East Canada.

M&A also propelled other big climbers like Arc Resources. The Canadian firm moved up 25 places to 68th after its takeover of Montney Shale player Seven Generations Energy dramatically increased its production and reserves base. In the US, Texas-based Southwestern Energy moved up seven places after its purchase of GEP Haynesville in late 2021, catapulting in into the Top 50 for the first time.

Like Cenovus, US independents EQT, Chesapeake Energy, Devon Energy and Diamondback Energy have all announced high-value acquisitions in 2022. As Energy Intelligence flagged back in 2020, consolidation will remain a key feature of the US shale patch for years to come. Larger companies are generally better suited to navigate a world with less available external capital, investor demands for rigorous balance sheet discipline and robust returns, and the challenges of managing high decline rates and depleted drilling inventories in a capital-efficient manner.

- **Pure-play shale firms closed the production gap, but NOC output will rebound.**

Independents produced a lot more oil and gas in 2021 than they did in the pre-pandemic year of 2019, while Western majors and NOCs went in the opposite direction. After dropping off in 2020, pure-play US shale operators in particular increased output of both oil and gas by 12% on average in 2021 versus 2019, whereas majors' oil production was down 7% and gas output down 8%. Regional integrated firms saw output followed a similar trajectory, while resource-rich NOCs — which largely held onto their ranking positions — saw oil output fall 6%.

NOC production has mounted a comeback in 2022 after Opec-plus-mandated output curbs eased. The producer alliance last month agreed a renewed cut which will somewhat limit supply from Mideast Gulf NOCs such as Saudi Aramco and Abu Dhabi National Oil Co. (Adnoc), but we generally see that region's NOC output trending higher as producing nations look to cash in on high prices while demand for oil remains robust. US majors Chevron and Exxon Mobil have plans to raise output from places like the Permian Basin, but their European counterparts have stuck with sharp constraints, in particular on oil. Capital discipline and shareholder returns will keep a dampener on additional independent E&P production growth, but not prohibit it.

- **Russian majors have little room for growth, barring consolidation.**

Russian duo Rosneft and Gazprom cemented their places in the Top 10, climbing up one place each thanks to rising production relative to their Western rivals. But Russia's invasion of Ukraine in February this year and Europe's subsequent move to seek out non-Russian supplies could have a potentially permanent impact on the pair as the companies are forced to contend with sanctions and a push toward domestic and increasingly Eastern markets.

Although the effects could take time to show up in the annual rankings, we expect Rosneft's new position in the fifth slot to mark a peak, absent further consolidation. Speculation has suggested that top independent oil producer Lukoil could be its next target. Without M&A, or a massive operational collapse, Rosneft is likely to remain in the Top 10 despite the myriad challenges.

Tom Daly, London

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ENERGY AND EQUITY MARKET DATA

For the week ended Nov 18, 2022

EIF GLOBAL INDEX COMPONENTS*

	Close Nov 18	1-Wk Chg.	1-Wk	% Chg. 52-Wk	YTD
PetroChina-H (sehk)	0.43	+0.01	+1.70	-5.48	-3.49
TotalEnergies (par)	59.26	+0.22	+0.38	+21.02	+16.80
BP (lse)	5.66	-0.00	-0.08	+24.67	+26.53
Sinopec-H (sehk)	0.43	-0.00	-0.11	-9.50	-6.92
Shell (lse)	27.86	-0.07	-0.25	+24.38	+26.98
Ecopetrol (bvc)	0.50	-0.00	-0.28	-29.50	-25.14
ONGC (bse)	1.74	-0.01	-0.52	-16.56	-9.18
Sinopec-S (sesh)	0.44	-0.00	-0.81	-34.60	-32.60
Eni (mise)	14.65	-0.13	-0.90	+3.65	+5.44
CNOOC-H (sehk)	1.30	-0.01	-0.98	+39.32	+39.97
Lukoil (mos)	77.33	-0.84	-1.08	-17.08	-12.24
Saudi Aramco (sse)	8.97	-0.13	-1.44	+0.54	+3.43
Exxon Mobil (nyse)	112.08	-1.87	-1.64	+76.20	+83.17
Chevron (nyse)	182.99	-3.47	-1.86	+59.89	+55.94
Petrobras-3 (spse)	5.65	-0.12	-2.07	+52.48	+48.15
Petrobras-4 (spse)	4.96	-0.11	-2.13	+36.71	+44.90
Reliance Industries (bse)	31.83	-0.87	-2.66	-4.55	+0.08
Suncor (tse)	35.61	-1.19	-3.23	+38.91	+42.15
Equinor (osl)	33.61	-1.69	-4.78	+30.58	+25.49
Rosneft (mos)	5.63	-0.32	-5.41	-32.78	-30.02
EIF Global Index	**330.39**	**-5.40**	**-1.61**	**+19.01**	**+13.87**

*Converted US$/share.

INDEXES

Equity Indexes	Close Nov 18	1-Wk Chg.	1-Wk	% Chg. 52-Wk	YTD
DJIA	33,745.69	-2.17	-0.01	-5.92	-7.13
S&P 500	3,965.34	-27.59	-0.69	-15.71	-16.80
FTSE 100	7,385.52	+67.48	+0.92	+1.79	+0.01
FTSE All-World	738.11	-3.96	-0.53	-17.60	-17.81
EIF Global	330.39	-5.40	-1.61	+19.01	+13.87
S&P Global Oil	1,908.25	-38.95	-2.00	+21.05	+22.93
FT Oil, Gas & Coal	8,194.88	-67.60	-0.82	+39.82	+43.06
TSE Oil & Gas	3,030.64	-67.46	-2.18	+29.49	+33.01
Emerging Markets					
Hang Seng Energy (HK)	21,727.11	-331.81	-1.50	+33.63	+29.28
BSE Oil & Gas (India)	19,776.39	-189.04	-0.95	+7.04	+12.96
RTS Oil & Gas (Russia)	+186.15	-4.27	-2.24	-24.53	-21.74

COMMODITY PRICES

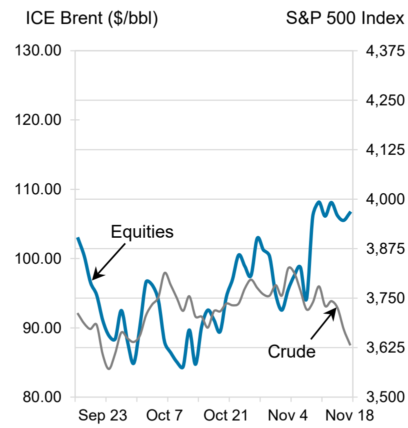
	Close Nov 18	1-Wk Chg.	1-Wk	% Chg. 52-Wk	YTD
Dated Brent	89.21	-6.85	-7.13	+8.42	+15.35
Brent 1st ICE	87.62	-8.37	-8.72	+7.85	+12.65
WTI 1st (Nymex)	80.08	-8.88	-9.98	+1.35	+6.48
Oman 1st (DME)	81.97	-9.14	-10.03	+2.21	+6.88
RBOB (Nymex)	2.42	-0.19	-7.23	+5.51	+8.63
Heating Oil (Nymex)	3.52	-0.04	-1.05	+47.57	+50.98
Gas Oil (ICE)	946.00	-41.75	-4.23	+37.70	+41.83
Henry Hub (Nymex)	6.30	+0.42	+7.21	+28.58	+68.98
Henry Hub (Cash)	6.10	+1.30	+27.05	+23.27	+59.57
UK NBP (Cash)	104.00	+4.00	+4.00	-51.67	-20.00

SHARE PRICES IN LOCAL CURRENCY†

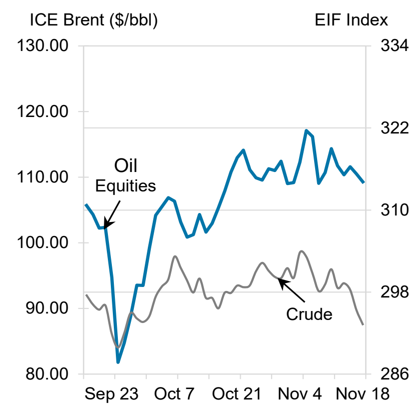
NOCs	Close Nov 18	1-Wk Chg.	1-Wk	% Chg. 52-Wk	YTD
Ecopetrol (bvc)	2,469.00	+84.00	+3.52	-10.51	-8.22
PetroChina-H (sehk)	3.36	+0.05	+1.51	-5.08	-3.17
Gazprom (micex)	168.69	-1.27	-0.75	-51.15	-50.86
Sinopec-H (sehk)	3.39	-0.01	-0.29	-9.12	-6.61
Sinopec-S (sesh)	3.15	-0.02	-0.63	-27.08	-24.46
PetroChina-S (sesh)	5.00	-0.05	-0.99	+4.82	+1.83
Petrobras-3 (spse)	30.39	-0.31	-1.01	+47.68	+43.16
PTTEP (set)	187.00	-2.00	-1.06	+57.81	+58.47
Petrobras-4 (spse)	26.70	-0.29	-1.07	+32.41	+40.02
CNOOC-H (sehk)	10.20	-0.12	-1.16	+39.91	+40.43
Saudi Aramco (sse)	33.70	-0.50	-1.46	+0.73	+3.55
Equinor (osl)	342.55	-8.25	-2.35	+51.00	+45.21
CNOOC-S (sesh)	15.67	-0.63	-3.87	NA	NA
Rosneft (mos)	337.00	-17.50	-4.94	-44.90	-43.82
Majors					
TotalEnergies (par)	57.40	+0.37	+0.65	+33.27	+28.61
BP (lse)	476.05	-2.35	-0.49	+41.49	+44.04
Shell (lse)	2,344.50	-15.50	-0.66	+41.17	+44.56
Exxon Mobil (nyse)	112.08	-1.87	-1.64	+76.20	+83.17
Chevron (nyse)	182.99	-3.47	-1.86	+59.89	+55.94
Regional Integrateds					
Repsol (bme)	13.80	+0.04	+0.25	+29.41	+32.19
Eni (mise)	14.19	-0.09	-0.63	+14.14	+16.10
Lukoil (mos)	4,628.00	-27.00	-0.58	-32.02	-29.56
OMV (vse)	48.38	-1.06	-2.14	-6.39	-3.14
Global Independents					
Hess (nyse)	143.99	-1.59	-1.09	+78.34	+94.50
Woodside Petroleum (asx)	37.89	-0.61	-1.58	+72.23	+72.78
ConocoPhillips (nyse)	128.59	-5.37	-4.01	+76.83	+78.15
EOG Resources (nyse)	141.02	-6.09	-4.14	+64.64	+64.33
Occidental (nyse)	71.25	-3.08	-4.14	+132.54	+145.77
APA (nyse)	46.34	-2.42	-4.96	+68.02	+72.33
Kosmos Energy (nyse)	6.50	-0.59	-8.32	+80.06	+87.86
Refiners					
Valero (nyse)	137.62	+3.66	+2.73	+88.62	+83.22
HollyFrontier (nyse)	63.72	+1.67	+2.69	+95.82	+94.39
Marathon Petroleum (nyse)	121.18	-0.05	-0.04	+93.27	+89.37
PBF Energy (nyse)	45.84	-0.21	-0.46	+229.55	+253.43
Reliance Industries (bse)	2,597.55	-33.80	-1.28	+5.05	+9.69
Phillips66 (nyse)	108.99	-2.31	-2.08	+47.86	+50.41
Eneos (tyo)	465.90	-24.70	-5.03	+7.67	+8.27
Oil-Field Services, EPC					
TechnipFMC (nyse)	11.96	+0.14	+1.18	+82.60	+102.03
Petrofac (lse)	119.50	+0.40	+0.34	-4.25	+3.64
Fluor (nyse)	33.58	+0.11	+0.33	+49.11	+35.57
Saipem (mise)	1.04	+0.00	+0.29	-78.36	-77.65
Wood Group (lse)	159.45	+0.45	+0.28	-22.78	-16.56
Worley (asx)	14.75	-0.21	-1.40	+50.51	+38.76
Schlumberger (nyse)	53.44	-1.38	-2.52	+67.73	+78.43
Halliburton (nyse)	36.71	-2.03	-5.24	+61.29	+60.52
Baker Hughes (nyse)	29.13	-1.90	-6.11	+21.73	+21.12
Transocean (nyse)	4.14	-0.28	-6.33	+32.27	+50.00
Midstream					
Plains All-American (nyse)	12.34	+0.02	+0.16	+18.54	+32.12
TC Energy (tsx)	64.00	-0.02	-0.03	+5.45	+8.79
Enterprise Products (nyse)	24.98	-0.02	-0.08	+12.17	+13.75
Kinder Morgan (nyse)	18.42	-0.27	-1.44	+13.14	+16.14
Williams (nyse)	33.40	-0.68	-2.00	+19.41	+28.26
Enbridge (tsx)	53.97	-1.50	-2.70	+6.93	+9.23

*set=Bangkok; bme=Madrid; sehk=Hong Kong; osl=Oslo; bvc=Bogota; micex=Moscow; bse=Mumbai; par=Paris; nyse=New York; lse=London; mise=Milan; tyo=Tokyo; tsx=Toronto; asx=Sydney; spse=Sao Paulo; sse=Riyadh

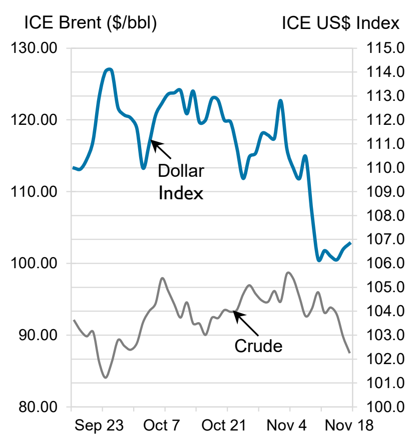
CRUDE VS. EQUITIES



CRUDE VS. OIL EQUITIES



CRUDE VS. CURRENCY



EIF Index based on share prices of the 22 equities listed under EIF components, adjusted for US$ market capitalization. All equities listed are ordered by percentage change over the previous week. Local share prices are shown in local currency. Crude prices in $/bbl; Nymex oil products prices in $/gallon; ICE gas oil in $/ton; Henry Hub natural gas prices in $/MMBtu; UK NBP natural gas prices in pence/therm.