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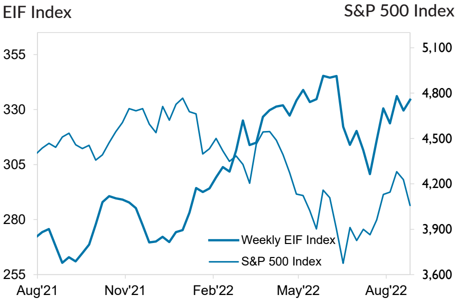

EIF Global Oil and Gas Index of 22 traded equities

OUR TAKE

International CCS Deal a Key First Step

This week's agreement partnering Dutch fertilizer giant Yara with the Northern Lights carbon capture and storage (CCS) project off Norway deserves its milestone attention, in our view. Viable CCS hub development depends on partnerships, and building CCS into a revenue-generating business will require taking those partnerships beyond the conventional oil and gas orbit. In fact, deals like Yara will likely make or break corporate CCS targets that reach beyond modest internal decarbonization goals.

- A deal to transport CO2 from one country to another may seem mundane in the globally commoditized world of oil and gas, but for CCS, it is a crucial first. Proponents have emphasized that CCS needs far more than fiscal incentives to become a material contributor to global decarbonization — sufficient regulatory, permitting and legal frameworks are also required. The successful negotiation of Yara's cross-border transfer of CO2 for storage demonstrates the maturation of these supports, at least in Europe.

- Successful partnerships across industries — and potentially geographies — will be required for CCS hubs to work efficiently. While individual companies can integrate their oil and gas value chains across broad distances and complexities, commercial CCS will require more collaboration. CCS could tap cross-industry support from hard-to-decarbonize sectors such as steel, cement and chemicals, but those opportunities could also quickly fade should alternate "green" solutions break through crucial cost barriers.

- Still, few companies produce enough carbon in a single place to feed industrial-scale CCS, potentially aligning interests around CCS-as-a-service fed hubs, for now. Such hubs like Teesside, the Port of Rotterdam and the Houston Ship Channel require linking multiple industries into a single system to reach economies of scale. In Europe, projects may require linking multiple countries to reach that scale and bring down costs. Cognizant of this, the Norwegian government — which is funding 80% of Northern Lights — stipulated to project partners Shell, Equinor and TotalEnergies that they develop a commercial business model that extends services to the rest of Europe.

- Proven commercial models are still needed if CCS is going to expand beyond projects backed by significant government funding. Companies from US E&Ps Talos Energy and Denbury to majors led by Exxon Mobil have talked about developing CCS as a service, but CCS contracts that do not rely on the economic uplift of enhanced oil recovery remain rare. Such arrangements will be necessary to show investors that CCS can shift from an emissions mitigation strategy to a viable transition business. Banks will also need long-term contracts to extend project financing for world-scale CCS facilities — just as they do on LNG.

- Major producers expect to rely on CCS for decarbonization with varying effect but all have it in their plans and with good reason. The limitations — and controversies — surrounding nature-based offset solutions are becoming more apparent. Achieving net-zero emissions while still maintaining oil and gas production necessitates some form of offset. Otherwise, preserving those targets will mean a further — or complete — retreat from hydrocarbons.

CORPORATE STRATEGY

Eni Eyes New Era in Sub-Saharan Africa

- *Eni is set to embark on a new round of fast-track oil, gas and LNG developments off sub-Saharan Africa to take advantage of near-term prices.*
- *The Italian major also sees great potential in the region to build its advanced biofuels business as it pursues all options to decarbonize its products.*
- *Aboveground risks could be a longer-term disruptor, however, and Eni still carries reputational baggage from legal proceedings in Nigeria and Congo (Brazzaville).*

The Issue

Eni has revised its strategic approach to developing projects in sub-Saharan Africa as it responds to the dual energy supply and climate change crisis. Its activities span both traditional fossil fuel and energy transition investments and are one example of a renewed focus on African investment driven, in part, by Europe's efforts to end its reliance on Russian energy.

Africa in Focus

Modular floating LNG (FLNG) concepts off Congo (Brazzaville) and Mozambique could deliver moderate volumes to the market relatively quickly. Eni's new Angolan joint venture (JV) with BP, Azule Energy, will breathe life into essentially noncore, but still cash-generating, assets, and expedite some new short-cycle projects. "This is the moment," Eni CEO Claudio Descalzi said of the company's African LNG prospects. "We are really focused and determined to go through with these developments."

Sub-Saharan Africa is expected to generate over $10 billion of annual free cash flow net for Eni between 2022 and 2025, based on the strip price for oil — around 20% of the group's overall expected cash flow for that period, according to consultancy Wood Mackenzie. It expects sub-Saharan Africa to account for 19% of group entitlement production of around 1.65 million barrels of oil equivalent per day in 2025, including joint ventures like Azule.

At the same time, Eni's sub-Saharan Africa portfolio is currently around 15% more emissions intensive — a measure of emissions per volume produced — than the company's global average, with Congo (Brazzaville) significantly above the average, according to Wood Mackenzie numbers. But it expects the region to fall in line with Eni's global average by the latter half of the decade. Eni's plan to commercialize flared gas at Marine XII in Congo (Brazzaville) with floating LNG will contribute to the improvements, the consultancy said.

Biofuels Expansion

The region could also support Eni's target to double its biorefining production capacity to 2 million tons per year by 2025 and 6 million tons/yr by 2035. Having its own steady supply of feedstock will be crucial in a highly competitive environment. The company has been investing to produce sustainable feedstocks across Africa for its biorefining operations in Italy. The company aims to cover 35% of its own feedstock needs by 2025. In the past year, it has agreed to set up local feedstock supply chains in several countries, including Angola, Benin, Congo (Brazzaville), Cote D'Ivoire, Mozambique, Kenya and Rwanda. Eni says these so-called "agri-hubs" will use crops grown on marginal land that don't compete with the food chain, such as castor oil, croton nuts and cotton seeds.

In Kenya, Eni is weighing plans to convert the Mombasa refinery into what would be Africa's first major biorefining hub for hydrotreated vegetable oil and biojet. In July, Eni produced its first vegetable oil in the country under Phase 1 of a scheme targeting total capacity of 30,000 tons/yr of vegetable oil in 2023. A wider development program calls for construction of 20 agri-hubs across Kenya.

Net-Zero Concept

Recent successful exploration efforts offshore Cote D'Ivoire tapping a new deepwater oil play could also fit with transition plans. Eni plans its fast-track Baleine oil project to be Africa's first to have net-zero operational (Scope 1 and 2) emissions through an offsetting program. Production will start to flow at around 15,000 barrels per day through an early production system in 2023, just 18 months after the initial discovery. A larger second phase, if sanctioned as planned in 2023, could start up in 2025 and would boost output to 120,000-150,000 b/d, Eni management said recently.

Rethinking Mozambique

Eni is reshaping plans in Mozambique, with talks ongoing among its Area 4 concession partners on developing a second, smaller FLNG facility than its 3.4 million ton/yr Coral South scheme. Eni would use the same modular FLNG system it is deploying offshore Congo (Brazzaville) where production is due to start up in 2023 from the Marine XII Block.

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A low-cost, fast-track floating project could pose less risk than the stalled Exxon Mobil-led onshore Rovuma LNG scheme. Eni and Exxon each hold a 25% stake in Area 4; China National Petroleum Corp. has 20%, and Mozambique's state ENH, Korea Gas Corp. and Portugal's Galp, all hold 10%.

Eni and its Rovuma LNG partners have shelled out for preparatory work on the $25 billion-plus Rovuma scheme. But the violent insurgency in Cabo Delgado that has already led TotalEnergies to declare force majeure at its own Mozambique LNG scheme will force all players in the region to re-evaluate their strategies.

Flexible Angolan JV

As the transition accelerates, Eni's self-funding Azule JV in Angola could offer it more flexibility to manage a gradual reduction in upstream investment and account for the financial liabilities associated with the assets. Azule will be among the country's top oil and gas producers, targeting 250,000 boe/d of production by 2027, up from 200,000 boe/d now.

Reliable upstream cash flow from Angola will continue to be essential to expand low-carbon businesses, says Eni CFO Francesco Gattei. The venture also allows Eni to remove almost €2 billion ($2 billion) of debt from the parent company and reallocate it to the new venture, he said. And Eni's four-year capital spending plan will benefit from the "deconsolidation" by around €3 billion.

Aboveground Risks

Eni's legacy assets in Nigeria could be most vulnerable to a shake-up and potential divestments. The Italian major is said to have curbed associated gas supplies to NLNG Trains 1-6 due to persistent security problems in the Niger Delta. However, this does not apply to Train 7, which has specially dedicated fields. The company's operations at the Brass terminal have consistently underperformed due to pipeline sabotage and theft. But while Eni is thought to want to offload those assets, it is unclear who would want to take them on.

Nigeria's government has recently improved investment conditions in the deepwater, renewing several oil leases, including Eni's oil mining license (OML) 125, which includes the Abo field. But deepwater expansion plans on the OPL 245 Block are still in legal limbo. Italian prosecutors in July dropped criminal proceedings against Eni and Shell over the block after a long-running corruption case. But Nigeria's government is still pursuing claims through civil proceedings.

Eni's position in Ghana is also in flux — and it is thought to be considering exiting the country altogether. Eni and JV partner Vitol launched arbitration proceedings last year against Ghana, accusing it of breaching a 2006 contract for a deepwater block that includes the producing Sankofa oil field. Ghana ordered Eni and Vitol to unitize Sankofa with the undeveloped Afina discovery in an adjacent block operated by local player Springfield Exploration & Production. The JV partners claim this would give Springfield a 55.5% stake in the combined block, even though the Afina discovery remains untested.

The dispute has so far not impacted production of around 36,000 boe/d net to Eni. But a recent further legal move by Springfield to try to prevent the government from paying the JV for gas supplied to Ghana from Sankofa could frustrate efforts to reach an amicable settlement. "Operational activities are in line with programs and with expectations. Gas payments are also in line with contractual agreements," the company told Energy Intelligence.

Deb Kelly, London

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CORPORATE STRATEGY

Kosmos Looks to Capitalize on Europe's LNG Hunt

- *Kosmos is shifting its strategy from a focus on offshore oil to a greater emphasis on natural gas just as European nations go looking for additional supplies to diversify away from Russian imports.*
- *Gas from the Tortue development offshore Senegal and Mauritania is well placed to flow into Europe, with BP taking all of the offtake from the first phase.*
- *Kosmos is striving to push down emissions from its LNG projects in recognition that Europe's energy policy will remain carbon conscious near term and only get more so in the future.*

The Issue

The ongoing energy crisis in Europe with record-high prices and fear of shortages of power and natural gas has pushed the continent to search the globe for supply diversification. While energy transition efforts in recent years put major question marks over the financing of upstream gas projects across Africa, Europe's shift away from Russian energy has turned Africa into a key source of supply now and into the future. The shift could benefit companies that have advanced projects through the pandemic-driven downturn and secured prospective upstream acreage.

Tortue Winning the Race

Among the best placed to capitalize on Europe's gas quest is US independent producer Kosmos Energy, whose Greater Tortue Ahmeyim floating LNG project offshore Senegal and Mauritania is scheduled to begin operation at the end of 2023. During its Phase 1, which was already over 80% complete by the end of the second quarter of this year, the project is set to produce 2.4 million tons per year of LNG. UK major BP, the operator and majority partner in the project, is lifting the entire output via a term offtake contract.

Cargoes will primarily be destined for European markets, as the project's proximity to the continent helps reduce shipping costs. Longer term, the partnership is looking to ramp up production from the project to 10 million tons/yr through two additional development phases. A final investment decision on Phase 2 is expected during the second half of this year.

"There is a significant lower-carbon advantaged gas resource available offshore that could help provide more energy security for the world and Europe, in particular," Kosmos CEO Andy Inglis told investors. "Equally important, given the characteristics of the gas and its lower-carbon intensity, this resource could play a significant part in bridging the energy transition and in providing the affordable energy that Mauritania and Senegal rightly demand for their own development."

New Supply for Europe

The efforts of European countries to diversify their supply sources and find low-cost and low-carbon alternatives to Russian gas could not have come at a better time for Kosmos. The company is looking to grow production by more than 50% by 2024, with much of the volume coming from Tortue. Looking beyond 2024, the company sees almost all of its production growth coming from African gas.

"One thing that came through loud and clear in our meetings in Brussels and Berlin was the realization that they put all their eggs in one basket and they are very much looking to diversify their sources of supply," Thomas Golembeski, Kosmos' vice president of corporate communications, told Energy Intelligence in a July interview.

Germany is particularly keen to secure LNG supplies from Senegal. During an official visit there in June, German Chancellor Olaf Scholz announced the two countries had opened talks to jointly develop gas and LNG projects in the West African nation.

Still, while Germany needs gas now, it is not clear how long that need will last as it continues to move to renewable energy. Mike Anderson, Kosmos' senior vice president of sustainability and external affairs, sees German demand lasting at least a decade. The EU as a whole will likely need supplies into 2035 and beyond.

European buyers are meanwhile keen to source gas supplies with the lowest carbon intensity possible, Anderson explained. "If you look at carbon content of our gas in Tortue, it is under 1%," Anderson said. "If you compare with US LNG, it is 40% less carbon intensive. If you compare it with Qatar, it is 25% less carbon intensive."

African Push

The exit of some of the biggest energy companies from the African upstream sector and Kosmos' portfolio shift opens the door for the company to obtain new fields on the continent, according to Anderson. This could include outright purchases or potential ventures with supermajors active in Africa. "A small company like ours can actually produce the LNG really quickly with a small, modular, more flexible approach that is going to be low cost rather than a monster build-out," he said, pointing to the struggles of large onshore LNG schemes in places like Mozambique.

Kosmos' low-cost, quick and flexible approach could be particularly effective in providing reliable supply to Europe at a time when some of the largest exporters in Africa are struggling to ramp up LNG production, despite the incentive of sky-high prices. Nigeria has been facing upstream issues, which have prevented Africa's largest LNG producer to take advantage of the European price bonanza. Angola has similar problems, although the formation of independent producer Azule Energy, a 50-50 joint venture between BP and Italy's Eni, may pave the way for higher upstream and LNG production in Angola. Flagship LNG projects in Mozambique are facing multiyear delays due to the unstable security situation in the country's north, where French major TotalEnergies Mozambique LNG and US major Exxon Mobil's Rovuma LNG projects are located.

Daniel Stemler, Madrid

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CORPORATE STRATEGY

Inflation Moves Santos to Rethink Projects

- *Pressure from project cost inflation can vary depending on the geography, type and progress status of the project.*
- *Santos is taking advantage of locked-in savings at the Pikka project in Alaska even without a planned farm-in partner.*
- *At Dorado offshore Australia, Santos hopes to bring down costs by co-developing multiple fields at the same time, rather than developing in phases.*

The Issue

Santos is shifting development schedules of two major projects to manage growing inflationary pressure, economic uncertainty and supply-chain concerns. The complex issues Santos is trying to navigate are shared by companies globally that are trying to balance near-term calls for more production with rising costs that can undercut long-term returns.

Lock-In Costs

Santos decided to go ahead with sanctioning the first phase of the US$2.6 billion Pikka oil project on Alaska's North Slope, in large part to make sure it doesn't lose favorable contracts. Santos could have lost "very competitive rates" secured through contracts signed in 2019, Santos CEO Kevin Gallagher said recently, adding that he wanted to maintain the cost of steel that had been secured. "We do not need to wait and delay our investment decision and risk a loss in value for Santos shareholders," Gallagher added.

The first phase of the Pikka project on Alaska's North Slope consists of a single drill site and a production facility. Existing infrastructure, including the Kuparuk and Trans-Alaska pipelines, will be utilized to limit the project's environmental footprint. First oil is planned for 2026, with an estimated break-even cost of supply of around $40 per barrel, including carbon pricing. Santos was initially aiming to sell down its 51% operated interest, which it inherited as a result of its acquisition of Oil Search, prior to taking a final investment decision.

Further delay for Santos, however, would have exposed Pikka to greater cost risk given the current environment, although Pikka is less exposed to the volatility and economic instability that exists in Asia. About 89% of the expenditure is within North America and about 55% of the cost is fixed rate, while the remaining 45% is mostly labor costs. But Santos has not dropped its plan to sell down Pikka. On the contrary, Gallagher argued, the project will become more valuable over time now that it has been sanctioned.

Waiting for a Better Time

The same inflation pressures led to a very different outcome at the Dorado oil project offshore Australia, where Santos decided to put the development on hold as it rethinks the scope. "The shipyard environments across Asia, the contractor availabilities, the impacts of Covid still with some of those workforces and, of course, the labor shortages we are seeing in certain parts, all add to a very inflationary environment," Gallagher said, adding that in this context it did not make sense to sanction Dorado. Santos now expects to sanction Dorado in 2023 at the earliest instead of this year.

The partners still need to negotiate the engineering, procurement and construction (EPC) contract for the project's floating production, storage and offloading (FPSO) vessel. The FPSO represents more than 50% of the expected project cost and is the main outstanding matter that needs to be finalized, partner Carnarvon Energy said. Singapore's Sembcorp Marine, which has been conducting the front-end engineering and design (Feed) work for Dorado's FPSO vessel, is hoping to win the EPC award.

In Singapore, access to labor is constrained for engineering contractors. Many are heavily hiring from Malaysia to mitigate the scarcity of workers. Limited access to manpower could result in delays and extra costs. In the fast-moving offshore market, the length of time that a quote for costs remains valid has dramatically decreased, while lead time for delivery of materials and equipment has increased. For example, a quote that would normally be valid for 60 days may last only seven days now or even as little as 24 hours in some cases, a source told Energy Intelligence. Given the new environment, there is also a lack of benchmarking data that companies can use to compare project timelines and costs between competitors.

New Development Plan

Santos will use the additional time to revisit the Dorado development plan. Dorado was initially planned to be developed in two phases, starting with the production of oil and condensate through a wellhead platform linked to an FPSO vessel. The initial phase of development was due to involve reinjection of gas to maximize liquids recovery. In a second phase, Santos was planning to develop the natural gas resources and supply gas to the company's existing domestic infrastructure assets in Western Australia.

Now, the company is seeking to fast-track the monetization of its resources in the Carnarvon Basin offshore Western Australia, moving from a phased to an integrated concept that develops both oil and gas resources in parallel. The new plan would incorporate potential resources from the Pavo field, where Santos is drilling additional wells to appraise the discovery made earlier this year. Pavo's volumes could be a low-cost tie-back option for Dorado to backfill its Varanus Island processing facility. "If we can get a development that gives us backfill for Varanus Island for the longer term without having to go spending significant capex up and down the Carnarvon Basin chasing backfill, we see that as an optimal outcome for all parties," Gallagher said.

Marc Roussot, Singapore

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ENERGY AND EQUITY MARKET DATA For the week ended Aug 26, 2022

EIF GLOBAL INDEX COMPONENTS*

	Close Aug 26	1-Wk Chg.	% Chg. 1-Wk	% Chg. 52-Wk	% Chg. YTD
CNOOC-H (sehk)	1.36	+0.13	+10.52	+37.37	+46.36
PetroChina-H (sehk)	0.48	+0.04	+9.89	+19.15	+7.94
Equinor (osl)	41.59	+3.36	+8.80	+96.79	+55.26
Petrobras-3 (spse)	7.40	+0.57	+8.39	+67.04	+94.26
Petrobras-4 (spse)	6.65	+0.51	+8.32	+50.01	+94.21
Ecopetrol (bvc)	0.55	+0.03	+6.08	-19.18	-16.83
Suncor (tse)	34.32	+1.70	+5.20	+84.04	+37.00
Sinopec-H (sehk)	0.49	+0.02	+4.64	+8.94	+4.55
Exxon Mobil (nyse)	97.87	+3.79	+4.03	+78.89	+59.94
Eni (mise)	12.27	+0.46	+3.88	+1.31	-11.69
Chevron (nyse)	163.41	+5.72	+3.63	+68.08	+39.25
Rosneft (mos)	6.10	+0.20	+3.43	-15.02	-24.23
Shell (lse)	27.42	+0.82	+3.10	+39.74	+24.96
Lukoil (mos)	69.39	+1.50	+2.20	-19.00	-21.25
TotalEnergies (par)	53.75	+0.88	+1.67	+22.61	+5.94
BP (lse)	5.38	+0.08	+1.54	+32.38	+20.27
ONGC (bse)	1.71	+0.03	+1.51	+9.76	-10.60
Reliance Industries (bse)	32.75	+0.05	+0.15	+8.87	+2.98
Sinopec-S (sesh)	0.47	-0.00	-0.18	-9.36	-28.84
Saudi Aramco (sse)	10.48	-0.04	-0.41	+24.00	+20.82
EIF Global Index	**351.39**	**+5.54**	**+1.60**	**+34.96**	**+21.10**

*Converted US$/share.

INDEXES

Equity Indexes	Close Aug 26	1-Wk Chg.	% Chg. 1-Wk	% Chg. 52-Wk	% Chg. YTD
DJIA	32,283.40	-1423.34	-4.22	-8.32	-11.16
S&P 500	4,057.66	-170.82	-4.04	-9.22	-14.87
FTSE 100	7,427.31	-123.06	-1.63	+4.24	+0.58
FTSE All-World	748.49	-24.44	-3.16	-13.75	-16.65
EIF Global	351.39	+5.54	+1.60	+34.96	+21.10
S&P Global Oil	1,829.55	+69.69	+3.96	+33.16	+17.86
FT Oil, Gas & Coal	8,103.15	+264.20	+3.37	+58.76	+41.46
TSE Oil & Gas	2,993.70	+106.58	+3.69	+50.31	+31.39
Emerging Markets					
Hang Seng Energy (HK)	23,240.01	+1895.44	+8.88	+53.19	+38.28
BSE Oil & Gas (India)	19,728.00	+45.06	+0.23	+20.61	+12.68
RTS Oil & Gas (Russia)	+200.54	+1.94	+0.98	-10.08	-15.69

COMMODITY PRICES

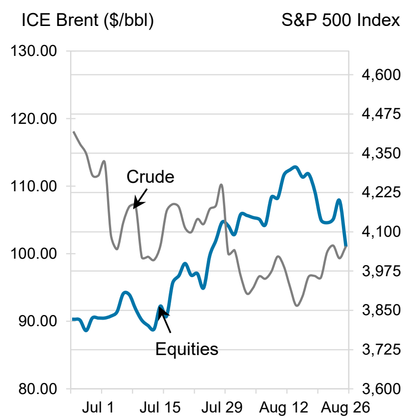
	Close Aug 26	1-Wk Chg.	% Chg. 1-Wk	% Chg. 52-Wk	% Chg. YTD
Dated Brent	100.64	+4.77	+4.98	+42.15	+30.13
Brent 1st ICE	100.99	+4.27	+4.41	+42.10	+29.84
WTI 1st (Nymex)	93.06	+2.29	+2.52	+38.03	+23.73
Oman 1st (DME)	101.49	+5.34	+5.55	+46.01	+32.34
RBOB (Nymex)	2.85	-0.17	-5.51	+26.42	+27.95
Heating Oil (Nymex)	4.01	+0.31	+8.30	+92.38	+71.99
Gas Oil (ICE)	1,194.00	+106.75	+9.82	+102.80	+79.01
Henry Hub (Nymex)	9.30	-0.04	-0.43	+122.18	+149.22
Henry Hub (Cash)	9.48	+0.34	+3.74	+135.33	+147.88
UK NBP (Cash)	550.00	+189.00	+52.35	+386.73	+323.08

SHARE PRICES IN LOCAL CURRENCY†

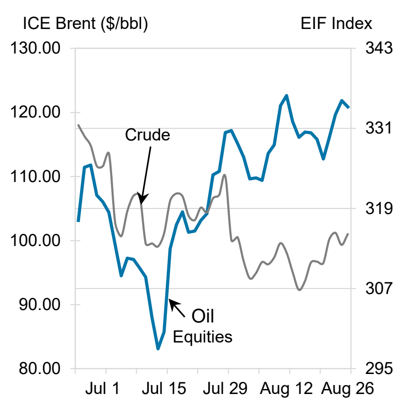
NOCs	Close Aug 26	1-Wk Chg.	% Chg. 1-Wk	% Chg. 52-Wk	% Chg. YTD
CNOOC-S (sesh)	16.71	+1.87	+12.60	NA	NA
CNOOC-H (sehk)	10.70	+1.02	+10.54	+38.42	+47.31
PetroChina-H (sehk)	3.77	+0.34	+9.91	+20.06	+8.65
PTTEP (set)	168.00	+13.00	+8.39	+54.84	+42.37
Equinor (osl)	406.15	+31.20	+8.32	+117.38	+72.17
Ecopetrol (bvc)	2,418.00	+151.00	+6.66	-8.13	-10.11
Petrobras-3 (spse)	37.46	+2.15	+6.09	+60.93	+76.46
Petrobras-4 (spse)	33.64	+1.91	+6.02	+44.53	+76.42
PetroChina-S (sesh)	5.44	+0.26	+5.02	+16.99	+10.79
Rosneft (mos)	361.50	+16.70	+4.84	-32.01	-39.74
Sinopec-H (sehk)	3.82	+0.17	+4.66	+9.77	+5.23
Gazprom (micex)	183.62	+6.02	+3.39	-37.73	-46.51
Sinopec-S (sesh)	3.21	+0.02	+0.63	-3.89	-23.02
Saudi Aramco (sse)	39.35	-0.15	-0.38	+24.20	+20.91
Majors					
Exxon Mobil (nyse)	97.87	+3.79	+4.03	+78.89	+59.94
Shell (lse)	2,334.00	+85.50	+3.80	+62.97	+43.91
Chevron (nyse)	163.41	+5.72	+3.63	+68.08	+39.25
TotalEnergies (par)	53.96	+1.27	+2.41	+44.63	+20.91
BP (lse)	457.80	+10.00	+2.23	+54.38	+38.52
Regional Integrateds					
Eni (mise)	12.32	+0.55	+4.64	+19.50	+0.79
Lukoil (mos)	4,115.00	+143.00	+3.60	-35.19	-37.37
OMV (vse)	41.53	+1.31	+3.26	-11.49	-16.86
Repsol (bme)	13.43	+0.36	+2.72	+38.55	+28.69
Global Independents					
APA (nyse)	40.18	+4.03	+11.15	+127.13	+49.42
Kosmos Energy (nyse)	7.23	+0.57	+8.56	+234.72	+108.96
Woodside Petroleum (asx)	35.95	+2.45	+7.31	+76.83	+63.93
Hess (nyse)	124.60	+7.97	+6.83	+84.87	+68.31
ConocoPhillips (nyse)	112.12	+6.98	+6.64	+103.37	+55.33
EOG Resources (nyse)	124.57	+5.82	+4.90	+90.67	+43.39
Occidental (nyse)	73.55	+2.26	+3.17	+206.46	+153.71
Refiners					
Phillips66 (nyse)	92.18	+3.74	+4.23	+30.42	+27.22
Marathon Petroleum (nyse)	104.34	+3.89	+3.87	+79.62	+63.06
HollyFrontier (nyse)	54.34	+1.69	+3.21	+75.97	+65.77
Valero (nyse)	121.88	+3.33	+2.81	+86.19	+62.27
PBF Energy (nyse)	36.70	+0.91	+2.54	+275.26	+182.96
Eneos (tyo)	523.60	+11.80	+2.31	+23.78	+21.68
Reliance Industries (bse)	2,618.75	+5.15	+0.20	+18.91	+10.58
Oil-Field Services, EPC					
Worley (asx)	15.41	+1.26	+8.90	+47.18	+44.97
Schlumberger (nyse)	39.42	+2.30	+6.20	+40.14	+31.62
Halliburton (nyse)	31.10	+1.71	+5.82	+57.31	+35.99
Baker Hughes (nyse)	26.12	+0.96	+3.79	+17.13	+8.61
Fluor (nyse)	27.70	+0.75	+2.78	+71.62	+11.83
Transocean (nyse)	3.71	+0.07	+1.92	+11.41	+34.42
TechnipFMC (nyse)	8.58	+0.11	+1.30	+30.40	+44.93
Saipem (mise)	0.72	-0.03	-4.35	-64.02	-84.41
Petrofac (lse)	118.30	-5.40	-4.37	+18.12	+2.60
Wood Group (lse)	127.70	-26.90	-17.40	-49.16	-33.18
Midstream					
Plains All-American (nyse)	12.26	+0.57	+4.83	+33.12	+31.26
TC Energy (tsx)	65.74	+1.49	+2.32	+11.01	+11.75
Kinder Morgan (nyse)	18.99	+0.27	+1.44	+17.66	+19.74
Enbridge (tsx)	56.80	+0.55	+0.98	+15.03	+14.96
Williams (nyse)	35.03	+0.10	+0.29	+45.05	+34.52
Enterprise Products (nyse)	26.88	-0.10	-0.37	+22.35	+22.40

*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

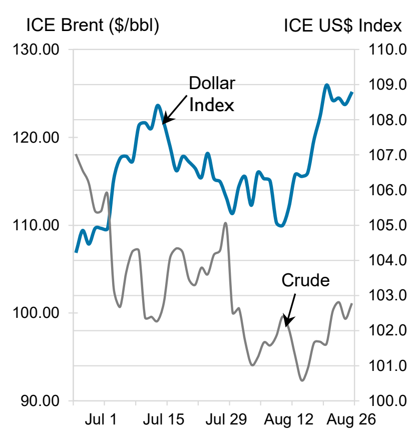
CRUDE VS. EQUITIES



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.