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Platts Dubai/Oman benchmarks

What are the Platts Dubai/Oman crude oil benchmarks?

Platts Dubai and Oman crude oil benchmarks are the primary pricing references for crude oil delivered from the Middle East Gulf, Russia, Mexico and other parts of the world to refiners, and have been so since spot markets emerged in the 1980s. With deep financial markets available for hedging using Platts Dubai as a settlement, Dubai's influence as the world's leading reference price for all medium, sour crude oil has grown through the years. As one half of Brent/Dubai spreads, Platts Dubai also provides the key barometer for understanding the relative value of sweet and sour crude oil, which is the very engine that drives which crude oil, from which countries, moves through the global oil refining system.

How much physical crude oil is priced against Platts Dubai/Oman?

The vast majority of sour crude oil trading East of Suez is priced against the Platts Dubai and Platts Oman crude benchmarks, typically on the monthly average, on both free on board (FOB) Middle East and delivered bases. Many companies also use Platts Dubai as a reference for internal transfer prices. In 2020 Qatar's Qatar Petroleum changed the pricing basis for its crude official selling prices to using Platts Dubai / Platts Oman. Condensates loading from the Middle East including Deodorized Field Condensate (DFC), Low Sulfur Condensate (LSC) and South Pars also price against Platts Dubai. Russian grades such as Sokol, Sakhalin Blend and ESPO also reference Platts Dubai.

What volume of derivatives price against Platts Dubai?

An estimated 10 billion barrels — 27.4 million barrels per day — of Dubai oil futures traded in 2020. Platts Dubai derivatives are listed on major futures exchanges

including the Intercontinental Exchange, NYMEX, the Dubai Mercantile Exchange and TOCOM. Dubai derivatives contracts listed include Dubai futures, Dubai inter-month time spreads, Brent/Dubai spreads, WTI/Dubai spreads and Dubai/refined oil product cracks.

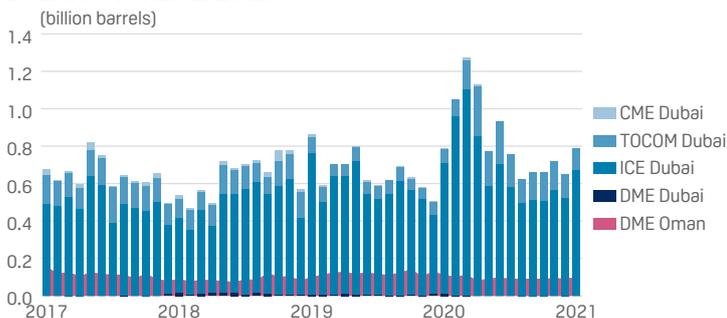
How does Platts assess Dubai/Oman?

Platts Dubai/Oman assessments reflect the repeatable, transactable price of Dubai and Oman crude oil for loading two, three and four months ahead of the assessment date. Platts considers bids, offers and trades for full and partial cargoes of crude oil in these benchmarks, with a large amount of flat-price activity reported in lot sizes of 25,000 barrels, with physical convergence at 500,000 barrels, or 20 partials, to a full cargo. Platts Dubai assessments reflect the value of Middle East sour crude oil, where the buyer is willing to accept delivery of Dubai crude oil itself, or alternative delivery of Oman, Upper Zakum, Al Shaheen, or Murban, at the seller's option. Platts Oman assessments reflect the value of Middle East sour crude oil, where the buyer is willing to accept delivery of Oman itself, or alternative delivery of Murban, at the seller's option. In all cases, cargoes must be free of any restrictions or limitations placed on the buyer, such as resale or destination clauses. The operational tolerance for these cargoes is +/- 1,000 barrels in the buyers' option. Partial cargoes between two counterparties that have not converged to full cargoes at the end of the calendar month settle financially using the relevant Platts assessment on the last day of that month.

How has participation in the Platts Middle East Market On Close process evolved over time?

The partials mechanism for Middle East crude was launched in 2004. The rise of trading activity in Asia in recent years has been reflected in the Middle East crude MOC. 2020 saw more than 2000 partials trade, with 43 convergence cargoes declared. These consisted of 16 cargoes of Upper Zakum, 12 cargoes of Murban, 10 cargoes of Al Shaheen, four cargoes of Dubai and one cargo of Oman. In 2020 there were also 35 full cargoes traded in the Market on Close assessment process. They consisted of 16 cargoes of Upper Zakum, 11 cargoes of Murban, seven cargoes of Das Blend and one cargo of Qatar Marine. The Middle East Market on Close assessment process sees participation from a broad cross section of the market, including Asian refiners, oil majors and trading houses.

DUBAI FUTURES LIQUIDITY



Source: FOW, Exchanges

How does the Platts Dubai benchmark relate to Brent?

Brent and Dubai are by far the most widely used benchmarks in the world for pricing physical crude oil, and are closely connected by the highly active Brent/Dubai Exchange of Futures for Swaps (EFS) derivatives contracts, which measure the difference in value that is observable between each Brent futures contract month and the corresponding Dubai derivatives for that contract month. The Dubai derivatives contracts in turn settle against the monthly average of the Platts Dubai physical assessment.

Why were additional crudes added to the Dubai/Oman crude benchmarks over the years?

Platts Dubai and Oman crude assessments are designed to reflect the value of widely tradeable, readily deliverable barrels of crude in the region's spot markets. The addition of new crudes as alternative delivery ensures that there is suitable availability of crudes to meet spot market demand. Dubai has evolved to represent the overall basket of crudes, rather than just the original single grade. Production of Dubai crude itself has fallen to around three cargoes a month in the last several years, but the benchmark represents around 60 times that volume through alternative delivery. Platts has progressively included additional grades into the Middle East crude benchmarks, with Qatar's Al Shaheen crude and Abu Dhabi's Murban crude the latest grades added from January 4, 2016.

What is the total production of Dubai, Oman, Upper Zakum, Al Shaheen and Murban crudes?

Currently there are five crude grades included in the Platts Dubai basket: namely Dubai, Oman, Upper Zakum, Al Shaheen, and Murban, a total of more than 3.5 million b/d of crude production.

What is the DME Oman Daily Marker Price and how is it different from Platts Oman?

Platts Oman and DME Oman regularly diverge in value, reflecting the different definitions in Oman itself in each benchmark, and indeed the different methodologies employed in producing a final value. A record spike was recorded in September 2018, and recently we have seen

significant differences over longer periods of time. Platts Oman assessments reflect the tradeable value of physical Oman crude, where there is alternative delivery available of Murban, should the market need it. The Dubai Mercantile Exchange (DME) Oman Daily Marker Price reflects a volume weighted average of trade on the exchange of Oman futures contracts, which is a physically delivered contract and does not have an alternative delivery mechanism. In physical crude markets, alternative delivery mechanisms are an essential component in ensuring adequate availability of barrels at all times in the market, particularly in the event of possible supply disruptions or surges in demand.

Why have we seen a divergence in Platts Oman and DME Oman at times?

The DME Oman settlement has frequently seen a volatile, and sometimes very wide, spread over other crude prices, including Platts Oman, and other benchmarks like Brent. Front month DME Oman futures averaged a \$0.67/b premium over Platts front month cash Oman for 2020, according to Platts data. In comparison over 2019 the spread stood at \$0.06/b. Oman, the only crude grade deliverable into the physically settled DME Oman futures contracts, saw its premium to all other crudes grow at a time of plunging oil demand due to the COVID-19 pandemic.

Demand for Oman crude from China, where typically 80-90% of monthly crude exports end up, is bringing unique support for stand-alone Oman. Oman crude production fell in 2020 as did its crude exports. In contrast, exports of Oman crude to China in 2020 averaged 678,000 b/d in 2020 rising from 665,000 b/d in 2019. China's share of Oman Blend exports rose to 86% during 2020, from 78% in 2019 according to data from Oman's Oil and Gas Ministry.

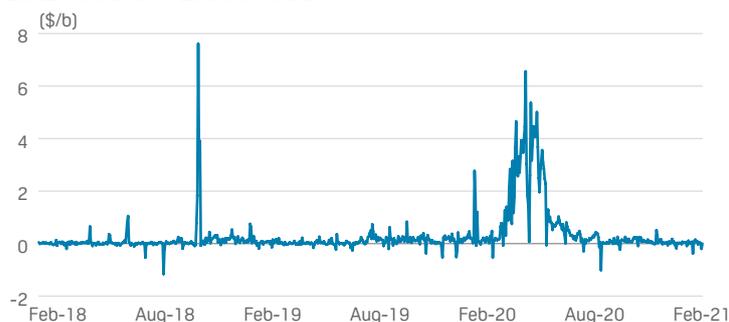
China has a floor for domestic oil product prices at \$40/b as part of government measures to support the domestic refining industry. Chinese refiners historically have preferred Oman crude due to its similarities to domestic grades. This creates significant extra demand for the grade, based on exceptional refining margins, unrelated to the wider crude complex.

Why does a high premium for DME Oman matter?

Crude oil prices are the key input value for refiners, and define the economics of producing oil products. Refiners therefore compare crude prices with the market values of their output to determine their margin. When a crude oil price disconnects from the wider complex, any refiner using this price therefore faces a challenge of starkly different economics from their competitors.

Platts believes strong benchmarks reflect broad market value for all market participants, including suppliers, consumers, traders and other market stakeholders.

DME OMAN vs PLATTS OMAN



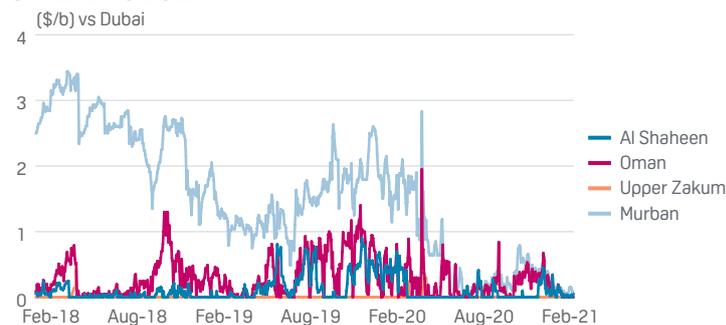
Source: S&P Global Platts

Why is there a Quality Premium for Murban and why has the minimum threshold been raised from April 2020?

Platts introduced a Quality Premium (QP) in July 2016 for Murban crude oil delivered into its Middle East crude oil assessment processes for cargoes nominated from September 2016 onwards. The QP is paid by a buyer to a seller for the nomination and delivery of a cargo of Murban crude oil into a physical convergence of Dubai, Oman, Al Shaheen or Upper Zakum. Platts announces the Murban QP on the first publishing day of each month, two months prior to the QP coming into effect. For instance, the QP for June 2020 was set at \$0.6376/b, and announced by Platts on April 1.

The QP is set at 60% of the net price difference between Platts front-month cash Murban assessment and Platts front-month cash Oman assessment during the full month prior to announcement. A QP of zero will be announced if 60% of the observed price difference between the grades is less than the minimum threshold of 50 cents/b. The minimum threshold was raised in April 2020 from 50 cents/b from 25 cents/b previously after extensive market consultation, following an unprecedented narrowing of the relative value of Murban compared with other grades in the Oman and Dubai baskets.

SPREAD TO DUBAI



Where can I find more details about the Platts Dubai/Oman crude assessments?

More information on Platts Dubai/Oman crude assessment methodology is publicly available on our website at www.spglobal.com/platts.

In addition, a research paper on: Yields vs. sulfur: What is driving crude benchmarks in 2020? Is publicly available at the Oxford Institute for Energy Studies website at <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2020/07/Yields-vs-sulfur-what-is-driving-crude-benchmarks-in-2020.pdf>

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