S&P Global
Platts

METHODOLOGY AND SPECIFICATIONS GUIDE

CRUDE OIL

Latest update: May 2016

INTRODUCTION

Platts' methodologies are designed to produce price assessments that are representative of market value, and of the particular markets to which they relate. Methodology documents describe the specifications for various products reflected by Platts' assessments and indexes, the processes and standards Platts adheres to in collecting data, and the methods by which Platts arrives at final assessment values for publication.

Platts discloses publicly the days of publication for its price assessments and indexes, and the times during each trading day in which Platts considers transactions in determining its assessments and index levels. This schedule of publication is available on Platts' website, at the following link: http://www.platts.com/HolidayHome.

The dates of publication and the assessment periods are subject to change in the event of outside circumstances that affect Platts' ability to adhere to its normal publication schedule. Such circumstances include network outages, power failures, acts of terrorism and other situations that result in an interruption in Platts' operations at one or more of its worldwide offices. In the event that any such circumstance occurs, Platts will endeavor, whenever feasible, to communicate publicly any changes to its publication schedule and assessment periods, with as much advance notice as possible.

All Platts methodologies reflect Platts' commitment to maintaining best practices in price reporting.

Platts' methodologies have evolved to reflect changing market conditions through time, and will continue to evolve as markets change. A revision history, a cumulative summary of changes to this and previous updates, is included at the end of the methodology.

How this methodology statement is organized

This description of methodology for indexes and assessments is divided into seven major parts (I-VII) that parallel the entire process of producing the end-of-day price values.

- Part I describes what goes into Platts indexes and price values, including details on what data market participants are expected to submit, the process for submitting data and criteria for timeliness of market data submissions.

- Part II describes any security and confidentiality practices that Platts uses in handling and treating data, including the separation between Platts price reporting and its news reporting.

- Part III is a detailed account of how Platts collects bids, offers, trades and other market data, and what Platts does with the data to formulate its indexes and assessments. It includes descriptions of the methods that Platts uses for reviewing data, and the methods used to convert raw data into indexes and assessments, including the procedures used to identify anomalous data. This section describes how and when judgment is applied in this process, the basis upon which transaction data may be excluded from a price assessment, and the relative importance assigned to each criterion used in forming the price assessment. This section describes the minimum amount of transaction data required for a particular price assessment to be published, and the criteria for determining which values are indexes, and which are assessments, based on reported transactions and other market information. Finally, this section describes how Platts addresses assessment periods where one or more reporting entities submit market data that constitute a significant proportion of the total data upon which the assessment is based.

- Part IV explains the process for verifying that published prices comply with Platts' standards.

- Part V lays out the verification and correction process for revising published prices and the criteria Platts uses to determine when it publishes a correction.

- Part VI explains how users of Platts assessments and indexes can contact Platts for clarification of data that has been published, or to share a complaint. It also describes how to find out more about Platts' complaint policies.

- Part VII is a list of detailed specifications for the trading locations and products for which Platts publishes indexes or assessments in this commodity. This section describes why specific units of measurement are used, and what conversion factors are used to move between units of measurement, where relevant.

PART I: DATA QUALITY AND DATA SUBMISSION

Platts' objective is to ensure that the submission of transactional information and other data inputs that editors use as the basis for their price assessments is of the highest quality. Ensuring that data used in Platts assessments is of high quality is crucial to maintaining the integrity of Platts' various price assessment processes.

Platts encourages entities that submit any market data for consideration in its assessment processes to submit all market data that they have which may be relevant to the assessment being made. Platts' aim is to determine the full circumstances surrounding all reported transactional data, including details of quality, specifications, order sizes, dimensions, lead times and any locational and loading/delivery information. Platts uses that information to determine a typical and repeatable market level for refined oil products being assessed.

Platts routinely, and as part of standard editorial practice, reviews the companies participating in its price assessment processes. These reviews ensure the suitability of data and information that are used to formulate Platts' end-of-day price assessments. These reviews are conducted on a regular basis, and may take into consideration an array of issues including, but not limited to, adherence to editorial guidelines, operational and logistical issues, as well as counterparty acceptance.

The reviews are not designed to impede a company's ability to bilaterally engage in market transactions; the objective at all times is to ensure the integrity of published price assessments. Platts does not disclose the nature or scope of routine reviews of data providers that participate in its price assessment activities.

What to report

- Firm bids that are open to the marketplace as a whole, with standard terms
- Firm offers that are open to the marketplace as a whole, with standard terms
- Expressions of interest to trade with published bids and offers, with standard terms
- Confirmed trades
- Indicative values, clearly described as such
- Reported transactional activity heard across the market, clearly described as such
- Other data that may be relevant to Platts assessments

How to report

- **Platts accepts information provided for publication in real-time across a wide variety of media. The following reporting methods are accepted by Platts' editorial staff:**
- Commonly used Instant Messaging software
- eWindow
- Telephone
- Email
- Fax

Platts accepts any reasonable method of delivery/communication for bids, offers and transactions. Platts editors typically communicate with trading companies through phone, eWindow or online instant messaging systems. Platts tries to accommodate the communication needs of its customers and will endeavor to open any additional communication channels required.

Reporters covering the products markets in Europe are on the phone from around 09:30 to around 18:30 London time. The list below gives key telephone and Instant Messaging contact points for Platts European products team effective June, 2009. Please note that all telephone numbers and Yahoo IDs are subject to change.

Product	Phone number	Yahoo address
Naphtha	44 20 7176 3144	plattseuronaphtha
Gasoline	44 20 7176 6120	plattsgasoline
Jet	44 20 7176 6683	jetplatts
Diesel	44 20 7176 6684	Plattsdiesel
Gasoil	44 20 7176 6161	plattsgasoil
Fuel Oil	44 20 7176 6104	plattsfueloil
Feedstocks	44 20 7176 6112	plattsfeedsuk
LPG	44 20 7176 6672	plattslpg
Products Manager	44 20 7176 6164	platts_europeanmarketscan
Oil Manager	44 20 7176 6115	platts_european_oil

MOC data publishing principles

Platts assesses the value of oil globally using its Market on Close (MOC) assessment process. The MOC assessment process establishes core standards for how data is collected and published, how data is prioritized by value, and ultimately how data is analyzed in the course of completing Platts assessments.

Transparency underpins Platts' data publishing processes in the oil markets. Under Platts MOC guidelines for collecting and publishing data, Platts publishes market information including but not limited to firm bids and offers from named companies, expressions of interest to trade and confirmed trades that are received from market participants throughout the day.

This information is published in real-time, as it is received, on Platts' information service, Platts Global Alert. Platts publishes all information received so that it can be fully tested by the market at large. Information collected and published includes the identities of buyers and sellers, confirmed prices, volumes, location, and stated trading terms.

Platts assessments are designed to reflect repeatable market value at the close of the assessment process. Platts tracks market price evolution during the entire day, and publishes a wide range of data relating to market value as it does so. All data that has been published through the day is analyzed during the assessment process. Towards the close of the day, Platts focuses its assessment process to publish named firm bids and offers, expressions of interest to trade and confirmed trades, with all relevant details. This transparent data is prioritized in the assessment process, because it is available to the entire market for testing.

In order to ensure that all firm bids and firm offers that still stand at the close of the assessment process have been fully tested in the market at large, Platts has established clearly defined time cut-offs that apply when publishing firm bids and firm offers in the MOC process. Time cut-offs for the submission and subsequent publication of new bids and offers are applied so that MOC participants cannot bid or offer late in the process, and to ensure that every bid and offer published by Platts is logistically executable.

Bids and offers published by Platts are considered to be firm until Platts is informed otherwise, or until the close of the assessment process for the day, whichever comes first. Platts expects all participants in the MOC process to be contactable at all times.

Platts will consider all firm bids and offers as open to the market at large and executable unless informed otherwise by the counterparty submitting the market information. If no communication is made to Platts to withdraw or change the parameters of the bid or offer it is assumed that it is available to the marketplace. Platts seeks verification of any transaction originating from a bid or offer submitted for inclusion in the Platts MOC process.

Detailed guidelines on MOC timings can be found at http://www.platts.com/IM.Platts.Content/MethodologyReferences/

MethodologySpecs/Oil-timing-increment-guidelines.pdf. The purpose of the time cut-offs is primarily to ensure logistical executability and standards of incrementability and repeatability to ensure orderly price discovery. As such, they may be changed at short notice if evolving market conditions require.

To ensure proper dissemination of market information, new bids and offers for publication by Platts must be received by Platts no later than stated cut-off periods.

In order to ensure that all published data is fully tested in the market, Platts has established guidelines around how quickly bids and offers may be improved when they have been published, and by what amount. These incrementability guidelines define the quantum and speed at which bids and offers may typically be improved in the MOC assessment process. Incrementability does not apply to bids and offers that are moving away from market value, though Platts analyzes bids and offers that are moved lower, and higher, respectively, to ensure reasonability.

Incrementability varies between each market assessed through the MOC assessment process and can be found at http://www.platts.com/IM.Platts.Content/MethodologyReferences/MethodologySpecs/timingincrementguidelines.pdf.

Platts may notify the market of any adjustment to the standard increments in the event of market volatility or a disruptive event. A market participant can withdraw a bid or offer from Platts MOC process at any time, so long as no other potential trading counterparty has indicated that it has interest to buy or sell into the bid/offer.

Platts expects that market participants bidding and offering in the MOC process should perform on their bid/offer with the first company of record to express interest to Platts for publication during the MOC process. In the event of a dispute on the timing, Platts will review its records and determine which company communicated to Platts first its intention to execute on a bid/offer displayed on the Platts systems. All the Platts systems operate on a first come, first served basis. This sequence is critical for orderly price discovery.

Platts' editorial guidelines governing its assessment process require it must consider only those transactions, bids or offers where market participants perform under typical contractual terms. Platts accepts that individual companies may have trading limits with counterparties and that national legislation may prevent companies from dealing in materials of certain origins. Such counterparty issues are dealt with on a case-by-case basis. Platts cannot make any guarantee in advance about how and whether market information received and published but not fully adhering to its defined methodology will be incorporated in its final assessments.

All bids and offers are firm from the moment of submission. For information communicated directly to a reporter, rather than through the eWindow software, bids and offers on barges for inclusion in the assessment process are to be submitted prior to 16:00:00 London time. Bids/offers which are time-stamped at 16:00:00 precisely will not be considered in the assessment process.

All swaps bids and offers are firm from the moment of submission. For information communicated directly to a reporter, bids and offers on swaps for inclusion in the assessment process are to be submitted prior to 16:15:00 London time. Bids/offers which are timestamped at 16:15:00 precisely may not be considered in the assessment process.

Submissions of bids, offers or transactions should not be considered as received by Platts unless acknowledged as received by Platts. For communication initiated by phone Platts will consider the time when the trader actually communicated the bid/offer or transaction.

For bids/offers and transactions communicated online, traders should not assume that Platts has received the communication unless acknowledged by Platts. Acknowledgment may take the form of "yes," "OK," "y," "k" or any other reasonable form.

For communication initiated by phone Platts will consider the time when the trader actually communicated the bid/offer or transaction.

Bids and offers submitted on time but in an incomplete form, where the terms are only clarified after the cut-off deadline, will not be used in the assessment process.

As a general recommendation Platts advises market participants not to wait for the last possible minute before the cut-off deadlines for bids and offers, as the communication may not be completed on time.

A buyer or seller can communicate with Platts directly to express buying or selling interest. Platts may also take into consideration bids and offers made via a broker, provided the buyer or seller have communicated to Platts that they have authorized the broker to speak on their behalf.

Platts only considers for publication and assessment transactional interest that is expressed by participants for bids or offers that have already been published by Platts. Interest in bids or offers at prices that have not been published, and therefore may not be fully available for testing in the marketplace as a whole, may be disregarded. Should a buyer lower its bid or a seller increase its offer, an expression to trade at a previously published level will not be considered.

Platts' editorial processes require full clarity when communicating bids/offers and intentions to trade. When expressing an intention to hit a bid or lift an offer in the MOC processes, any message should typically include the specific price of the trade and the name of the counterparty. Information may not be published if it is not sufficiently clear when communicated to Platts.

Wide laycan dates should also be narrowed by the buyer/seller where applicable. In the case of middle distillate barges, buyers should provide the volume at the time of lifting an offer, e.g.: "Buyer 1 wants Seller 1 ULSD barge offer at September +$25/mt for 2kt", would be best practice. Platts reserves the right not to publish indications to trade that do not meet the above conditions.

Platts recognizes the time of receiving a message of a company's intent to buy/sell, as opposed to the time a message was sent by the trading party.

Following any trade, the original on-screen seller/buyer must revert immediately as to whether or not he/she is prepared to offer or bid. An intention to rebid or reoffer must be received by Platts as soon as is possible and within a reasonable time frame.

Unless sellers/buyers expressly inform Platts of their continued interest to buy/sell after a deal, Platts will presume the original buyers or sellers are not there for more volume.

A rebid or reoffer must match the initial position's parameters, with the exception of price. A rebid or reoffer can be made at the same level or inferior to the traded price. For example Company B hits Company A's bid for $500/mt during the MOC. Company A can rebid at $500/mt or below this level. If the MOC process for the market includes a "freeze" period at the close of the process, bids and offers may only be repeated at the last published price.

When there are multiple bids or offers at the same level, the first person to reach the market maker bid/offer level is the first person to be filled. Subsequent deals will go to the second, third and fourth market maker. This means that as each market maker at a level gets filled, repeat bids and offers will move to the back of the bid/offer order.

In the event that more than one counterparty expresses his/her intention to execute a transaction based on an existing bid or offer, the logical counterparty should be the first party that demonstrated its intention to trade. Platts will monitor time stamps or any other available time mechanism in the event of a dispute with the aim of determining who the first potential buyer of record was.

In the event of a market maker rebidding or reoffering during the Platts MOC assessment process, the queue of market takers expressing interest in that position will reform once the rebid or reoffer is published on PGA pages 5, 3, and 468. Platts will not consider any interest expressed in a rebid or reoffer before the position is published to be executable during the MOC assessment process.

After a bid or offer is published, only price can be changed. The volume, quality or loading/delivery timing cannot be changed.

Buyers or sellers can withdraw bids/offers at any time, provided no prior interest to transact has been expressed by any potential counter-party. If a market maker takes out another position during the assessment process, they must communicate to Platts if they wish to withdraw their existing position following the trade. Otherwise, it is assumed the market maker's own position remains active.

All participants that have reported bids and offers for inclusion into page 5 are expected to promptly report any transactions stemming from their publicly available bids or offers.

Platts synchronizes its computer clocks every day precisely, and will compare the time of any submitted bid/offer or communication by a market participant intending to transact, against the computer time, in order to ensure that the cut-off points for new bids and offers, price changes and the market's close are accurate. Please note that Platts applies the timing deadlines strictly.

For the purposes of clock synchronization, market participants may find the following internet link to be helpful: www.time.gov. This link offers an atomic clock reading for US time zones.

In markets where Platts' eWindow is in operation, the eWindow clock will be used to determine the correct sequence of events when a bid or offer is amended, withdrawn, or traded by an interested counterparty. Bids or offers submitted by phone, or any other medium such as instant messaging software, shall be clocked at the time the bid, offer or trade indication is actually transmitted through the Platts eWindow system. As per Platts methodology, buyers or sellers can withdraw bids/offers at any time when communicating through eWindow, provided no prior interest to transact has been expressed by any potential counterparty. All bids and offers are firm from the moment submitted into Platts eWindow to the moment they are traded, the window period closes or the bid/offer is withdrawn from the system by the trader or a Platts editor.

Platts is an information company and it aims to publish any credible bid or offer reported to it. Platts makes no commitment to publish every bid or offer submitted to it, however. For instance, frivolous bids and offers may not be retransmitted. Information reported by market participants that may have legal implications, for instance potential slander, will not be reported.

Terms of trade such as quality, delivery port, timing of delivery/loading and price are fully up to the company issuing the bid or offer.

Bids and offers which are deemed as atypical relative to the market will not be fully taken into consideration for the assessment process. Such bids/offers or transactions would be at best indicators of an overall market condition but they would not be seen as exact indicators of market price.

Any unusual condition or request regarding the cargo should be specified at the moment the initial bid or offer is made. Any unusual request that surfaces at the time a counterparty is ready to trade and that impedes the normal flow of a transaction could be seen as an impediment to trade.

Information reported by market participants that may have legal implications, including but not limited to potential libel, will not be published.

Market participants are encouraged to inform Platts when they cannot trade with another typical market participant due to performance, credit or legal issues before the cut off deadlines for initial bids and offers. Platts may ask market participants to provide supportive documentation to ensure the integrity of its assessment process.

Platts applies a survey assessment methodology where market conditions do not support an MOC assessment environment. Platts collects a wide variety of transactional and market information through a survey of participants, which typically includes communicating with sources via phone, email, and instant messaging, among other communication methods. Although the survey assessment methodology is in many respects similar to the MOC assessment methodology there are key distinctions between the assessment approaches.

In such environments, Platts collects as much data as possible, including bids, offers, interest to trade, transactions that have been previously concluded, and indications of value from participants in the market. Platts seeks to collect, confirm and analyze as much information as possible in survey markets, and encourages market participants to provide all relevant information. Platts publishes credible information collected that meets our methodological standards, typically through real-time information services and with as much transparency as possible. This information is considered when determining and completing a final assessment.

All Platts market reporters are trained to analyze the data they receive and to question sources to establish the fullest set of information possible around price data. Reporters are trained to seek a wide variety of information to test reported transactional activity, including the specific price agreed, the counterparty to the trade, the point of origin and destination for delivery of the commodity, the size of the transaction, any physical quality commitments agreed as part of the trade, the terms and conditions of a trade and when a trade was agreed.

Survey and MOC environments are linked. Survey assessment environments are a common ground for future MOC assessment environments, and Platts regularly reviews its survey environments to determine which may be suited to an MOC approach. Similarly, MOC environments are underpinned by data collected by surveying sources throughout the day, to ensure that Platts is aware of market values as the MOC process begins, and so that Platts has data to review when considering information

For analysis of the data, Platts survey methodologies will typically give priority to data collected that is confirmed and published, and which is most relevant to closing values in the markets covered.

PART II: SECURITY AND CONFIDENTIALITY

Data is stored in a secure network, in accordance with Platts' policies and procedures. Platts refined oil product assessments are produced in accordance with Platts Market on Close assessment methodology. This means that all data for use in Platts refined oil product assessments may be published by Platts editorial staff while assessing the value of the markets.

Platts does not have confidentiality agreements in place for information that is sent for use in its refined oil product assessments.

PART III: CALCULATING INDEXES AND MAKING ASSESSMENTS

The following section describes how Platts uses the specific volume, concluded and reported transactions, bids, offers and any other market information it has collected, in the manner described in section one, to formulate its price assessments. Additionally, this section describes other information, including the normalization of market data, assumptions and extrapolations that are considered when making a final assessment.

MOC price assessment principles

Through the MOC assessment process, Platts considers market information gathered throughout the normal trading day, and publishes such information throughout the day. Platts analyzes all published information in determining its final published price assessments.

Through the MOC assessment process, Platts seeks to establish and publish the value of markets that prevail at the close of the assessment process itself. Platts has aligned the timestamps reflected in its assessments with what typically is a period of high activity in the markets that Platts observes. The typical period of high activity in oil markets tends to be in the afternoon in every major trading location around the world. Platts believes that aligning its price assessments to typical periods of greater market activity and liquidity provides a robust basis upon which to derive a reliable assessment of market value.

Platts has adopted the MOC methodology in order to provide complete clarity over the precise point in time reflected in its market assessments. Like the quality of oil, its delivery location, delivery dates, contract terms, and the volume to be supplied, the time of commercial activity is an important attribute considered in Platts price assessments. The time that a bid or offer is shown to the market, or a transaction concluded, is vitally important in understanding the market value of the respective commodity, in the same way that the quality of the oil, where it will be delivered and when it will be delivered are important factors. By clearly reflecting value at a defined point in time Platts is able to properly reflect outright and spread values.

The clarity established by providing a well-defined timestamp for Platts assessments is important in understanding every oil assessment published by Platts. It is also important for understanding the relationships between the markets that Platts assesses. By ensuring that all assessments within a region reflect market values at the same moment in time, spreads that exist between those products are also able to be fully and properly reflected. For example, comparing the value of gasoline to crude oil is possible when both values have been determined at the same moment in time. By contrast, comparing the price of gasoline in the morning, to crude oil in the afternoon, might deeply impair the relationship between the products – particularly when the respective market prices move independently during the intervening period.

By providing clear timestamps for assessments, the Platts MOC process is designed to provide assessments that properly reflect outright and spread values during times of high volatility equally well as in times of modest volatility.

MOC guidelines are designed to avoid distortion of the final price assessments by eliminating inputs that are not fully verifiable, and by disregarding one-offs or unrepeatable transactions, or those that may distort the true market level. Transactions between related parties are, for instance, not considered in the assessment process.

Deals done below the level of prevailing bids or above the level of prevailing offers (i.e., selling through the bid or buying through the offer) will not be reflected in Platts assessments. Platts will only publish expressions of interest to trade with the most competitive, tradeable bid or offer available.

Platts does not specify a minimum amount of transaction data, or a transaction data threshold, for the publication of its price assessments. Physical commodity markets vary in liquidity. Any particular market analyzed on its own will typically demonstrate rising and falling levels of transactional activity through time. Platts is committed to providing an assessment of value for every market that it covers, equally well in times of heightened or reduced liquidity.

Platts seeks to receive market information from as broad a cross section of the market as possible. If a very limited number of market-makers are active in the market, or if a limited number submit data that constitutes a significant proportion of the total data upon which the assessment is based, Platts will continue to seek fully transparent and verifiable data from the market at large and to apply Platts methodology principles of transparency and time sensitivity. Platts considers data for assessment of any market where a single company provides more than half of all available information to be one where such a company provides a significant proportion of data. For consideration in the MOC process such a company's bids or offers must be clearly available for execution by any other potential MOC trading counter party.

Normalization price adjustment techniques

Platts seeks to align the standard specifications for the oil markets it assesses and the timestamps reflected in its assessments with standard industry practice. However, physical commodity markets are generally heterogeneous in nature – not only can time of transactional activity considered for inclusion in the price assessment process vary through the day, other key attributes often vary from the base standard reflected in Platts assessments as oil is supplied to market.

The quality of fuel supplied, delivery location, and other specific terms of trade may be varied in the physical commodity markets assessed by Platts. This is one reason among many why data collected from the physical oil markets may not be simply averaged to produce a representative benchmark value.

Because of the complex nature of the physical oil markets, oil market data typically must be aligned with standard definitions to allow for a fully representative final published assessment. Platts aligns data collected through an analysis of the physical oil markets with its standard assessment specifications through a process called normalization.

Normalization is an essential price adjustment technique applied by Platts, to align reported market information to reflect the economic relationship between specific reported activity and the base standard reflected in Platts price assessments.

By surveying markets and observing the economic impact of variance from the base standard reflected in Platts assessments, Platts regularly normalizes disparate information from the diverse physical commodity markets back to the standard reflected in Platts price assessments. This is done by analyzing freight rates (for locational differences), quality premiums (for quality differences), the movements of all markets through time (for time differences) and other premiums associated with the size of trades and delivery terms.

Normalization for time may be done by analyzing movement in a related market observed through time, and that movement may provide a basis by which to align market value of an earlier reported bid, offer or transaction to market value at the MOC close. This alignment for time is essential to ensure that Platts price assessments reflect the prevailing value of a market at the close of the MOC process.

Prioritizing data

Platts assessment process considers firm bids, firm offers and transactions that are transparent and open to any counterparty with the proper financial and operational resources. Bids, offers or transactions that are not transparent may not be considered in the assessment process. Naturally, bids above transparent offers or offers below transparent bids are not considered in the assessment process. Platts considers changes to bids or offers when those changes are made transparently and in normal increments.

The level of each bid or offer must stand firm in the marketplace long enough for any counterparty to hit the bid or lift the offer, otherwise the bid or offer may be deemed non-executable. Platts may not consider bids, offers or transactions that are the result of market gapping, i.e. changes that are in excess of normal market practice.

Transparency underpins Platts' assessment process, just as it does Platts data publishing processes, in the oil markets. When determining a final market assessment, Platts gives the greatest priority to fully verifiable and transparent market information. A firm bid or offer that has been published by Platts in accord with its data publishing standards, and which still stands open to the marketplace at the close of the assessment process, will establish clear parameters for Platts' final published assessments. Platts will typically assess market value somewhere between the best bid, and best offer, open to the market at the close of the MOC process. This ensures that Platts assessments reflect the transactable value of the commodities it is assessing at the close of the market.

Completed, transparent transactions that are fully published by Platts are important in helping establish where trading interest prevails in the market, and may help determine where, in a bid/offer spread, Platts may assess value for publication.

Firm bids and offers that are available to the entire market take precedence over trades that have been concluded earlier in the assessment process when establishing the value of the market, particularly if bids are available at the close above previously traded levels, or offers are available to the market below previously traded levels. Value is a function of time.

Similarly, firms bids and offers that are available to the entire market take precedence over transactional activity reported to Platts after the fact.

When no bid, offer or transaction data exists, Platts may consider other verifiable data reported and published through the day, including fully and partially confirmed trades, notional trading values and other market information as provided for publication. Under such circumstances, Platts may also be able to observe direct market activity or the effect of commonly traded commodities on illiquid markets via spread differentials or via blending and shipping economics.

Platts also analyzes the relationships between different products, and factors these relationships into assessments for markets where transactional data falls to low levels. Finally, Platts normalizes other available data that may be relevant to the assessment during periods when low amounts or no transactional data exists, including transactional data from related markets, in the manner described above.

To do this, Platts takes into account representative transactions executed at arms-length in the open market occurring during the MOC price assessment period and additionally taking into account bid and offer information submitted during this period. Platts editors always seek direct verification from the principals to a reported bid, offer or deal.

Platts MOC guidelines are designed to avoid any distortion of the final price assessment and so inputs that are not verifiable are eliminated and "one-off" or unrepeatable transaction data may be disregarded from the price assessment process.

Single transactions may be a reflection of market value. However single transactions need to be measured against the broad span of similar transactions. If for instance a buyer decides to lift an offer but is unwilling to buy more material offered at the same level if the seller reoffers it would be determined that the buyer failed the repeatability test. Equally if the seller does not reoffer, the seller fails the repeatability test. As such the transaction may not be fully reflected in the price assessment.

Similarly, Platts may not publish bids or offers that are provided through untested levels of resistance or price support. When transactions are concluded at levels that have not been fully tested by the market because price changes have been non incremental, Platts may determine that actual market value is somewhere between the last incremental bid and the transaction at the gapped level.

Assessment Calculations

Platts publishes its assessments reflecting the currencies and units of measurement in which the products typically trade.

Oil is generally traded in US dollars, and Platts assessments are typically published in that currency as a result. Certain markets, such as regional markets, trade using local currency. Platts assesses the value of such markets as appropriate in local currency.

Crude oil is typically traded in barrels or metric tons, and Platts publishes its assessments using these units of measurement as they prevail in practice. Likewise, refined oil products typically traded in barrels, metric tons or gallons, and Platts assessments for these markets reflect common practice in each market. The minimum and maximum volume considered for each individual Platts assessment of a physical market is described in section VII of this document.

In certain cases Platts converts its assessments to other currencies or units of measurement to allow for ease of comparison or analysis in regional markets. Such conversions are done using published exchange rates and conversion factors.

Platts reporters follow specific methodology when exercising editorial judgment during their assessment process. Platts editors apply judgment when determining (1) whether information is suitable for publication, (2) when normalizing data and (3) where to assess final value of market.

Judgment may be applied when analyzing transactional data to determine if it meets Platts standards for publication; judgment may also be applied when normalizing values to reflect differences in time, location, and other trading terms when comparing transactional data to the base standard reflected in Platts assessments.

All such judgment is subject to review by Platts editorial management for adherence to the standards published in Platts methodologies. The following section illustrates how these guidelines work when calculating indexes and making assessments.

To ensure the assessments are as robust as possible, Platts editorial systems are backed by a strong corporate structure that includes managerial and compliance oversight. To ensure reporters follow Platts methodological guidelines in a consistent manner, Platts ensures that reporters are trained and regularly assessed in their own and each other's markets.

Application of professional judgment guidelines promotes consistency and transparency in judgments and is systematically applied by Platts. Where professional judgment is exercised, all information available is critically analyzed and synthesized. The various possibilities are critically analyzed and fully evaluated to reach a judgment. Platts manages and maintains internal training guides for each of the different products assessed which aim to assist assessors and ensure Platts' price assessments are produced consistently. Platts' price assessments are reviewed prior to publication and exercise of professional judgment is further discussed and verified during this process. Finally, consistent with the concept of proportionality, assessments that are referenced by derivatives contracts are supported by assessment rationales, including the application of judgment, which is published together with the price assessment offering full transparency to the market.

Reporters are trained to identify potentially anomalous data. Platts defines anomalous data as any information, including transactions, which is inconsistent with or deviates from our methodology or standard market conventions.

As a publisher owned by McGraw Hill Financial, independence and impartiality are at the heart of what Platts does. Platts has no financial interest in the price of the products or commodities on which it reports. Platts' aim is to reflect where the actual market level is.

Platts focuses primarily on assessing the value of oil trading in the spot market. A spot price for a physical commodity is the value at which a standard, repeatable transaction for merchantable material takes place, or could take place in the open market at arms' length. In oil, Platts' spot price assessments reflect the value at which transactions take place, or could take place, at precisely the close of the MOC process.

Platts' overall objective is to reflect the transactable value of the commodity assessed. In cases where the apparent value of the commodity includes extra optionalities, the intrinsic value of the commodity may be masked. In such cases, Platts may use its editorial judgment to factor out such extraneous elements from the value of the commodity, or it may decide not to use the bid, offer or transaction in its assessment process. Optionalities that may mask the value of the commodity include but are not limited to loading or delivery options held by the buyer or seller, volume option tolerances exercisable by the buyer or seller or quality specifications.

Platts assesses the outright value of oil around the world, as well as differentials for oil when it trades with reference to a benchmark. Platts analyzes all data collected and published by Platts throughout the day. Final assessments are above firm bids, and below firm offers, that stand at the close of the Market on Close assessment process. This is true for outright values and differentials. In the event of an observed conflict between outright values and differentials, outright values prevail in Platts final published assessments.

Platts produces time-sensitive assessments that reflect the value of the markets it covers precisely at the close of the MOC price assessment process in Singapore, Dubai, London and Houston. By providing clear timestamps for every region the Platts assessment process is designed to provide price assessments that properly reflect outright and spread values.

As an example, gasoline has a value, naphtha has a value and the gasoline versus naphtha spread has a value, and all three make sense when measured on a same-time basis. By contrast, a system of averages can lead to distortions in the gasoline versus naphtha spread if the distribution of deals done for gasoline and naphtha differs over the averaging period. Thus if gasoline trades actively at the beginning of the assessment period and naphtha trades actively at the end of the assessment period in a rising market, the assessed spread value resulting from an averaging process will not be reflective of actual market values. This distortion can arise even if the value of spread trades in their own right has remained constant. The MOC approach drastically reduces the possibility of such distortions.

Assessments reflect typical loading and delivery schedules for each market assessed. The standard loading and delivery windows are specified under each data code.

Market structure such as backwardation and contango is also factored into the Platts' assessment process. If a company offers a cargo loading 15 days forward, the offer may provide market information for the Platts assessment for cargoes loading 15 days forward. Platts would still need to assess days 16 through 30 (in a 15-30 day market) and publish an assessment that reflects market value 15-30 days forward ahead of the day of assessment.

Assessment parameters

Platts' cargo assessments generally reflect bids/offers and transactions for loading/delivery 10 to 25 days from the day of publication. For example, on October 1 Platts' CIF cargo assessments would reflect cargoes for delivery between October 11 and October 26.

Platts' barge assessments consider bids, offers and transactions for loading 3 to 15 days from the day of publication. For example on October 1, Platts barge assessments would reflect barges loading between October 4 and October 16. A 5-15 day window is reflected on Wednesdays, Thursdays and Fridays.

Typically, Platts will take into consideration bids and offers made in 5-day loading or delivery windows, inclusive of the first and fifth day. For instance on October 1, Platts would consider bids and offers made starting with October 11-15 and ending with October 22-26.

Please note that a bid and offer made for October 20-25 actually has a six-day window. A fully representative bid or offer would need to be October 20-24 or October 21-25.

Time gradient

Platts is very stringent in following timings for loading or delivery due to the variability in market values across time. This variability increases as the backwardation or contango in the markets increases.

It is not uncommon in times of tight supply for the backwardation to be over $15.00/mt per month or roughly the equivalent of $0.50/mt per day. This means that cargoes loading one week apart can vary in price by close to $3.50/mt, or possibly more, depending on the steepness of the price curve. Thus it is extremely important for Platts to follow pricing windows very methodically.

Platts factors in the backwardation/contango and reflects its impact on the published assessment. The assessment reflects the value of the commodity normalized to the center of the loading/delivery window. In a contango market, the excess of prompt barrels causes the front end to be significantly cheaper than barrels available at the end of the window. In a backwardated market the tightness of supply causes the prompter barrels to be at a higher price than barrels available at the end of the window.

Platts' methodology eliminates any arbitrary movement in assessments caused simply by the different loading/delivery ranges traded. By normalizing prices to the mid-point of a clearly defined date range, the consistency of prices is maintained. The day-to-day changes in the price assessments therefore reflect an actual price move in the value of the commodity, rather than an artificial change because a cargo happens to be loading/delivering in the front end of the window rather than the back end, or vice versa.

The date ranges reflected by Platts reflect the prevailing trading practices in the European region. By not taking the first ten days into consideration, transactions reflecting distressed prices are excluded.

Determination of backwardation or contango

Platts' assessments determine fair market value and therefore consider backwardation and contango. Where indications are on differing date ranges, a calculation is made to determine the value the market is assigning for the difference between loading dates. In calculating this time gradient, the prices of tradable instruments such as futures and swaps may be used.

Typical calculations include a determination made for the difference in price for a month, and a daily value is then assigned for each day.

The three main factors used in the European products market for price determination are:

- Outright price
- Premiums
- Paper/Swaps

Outright price
The ultimate question in the mind of an end-user, producer, refiner, trader or broker is price. Outright prices are the simple statement of a price at which something can be bought or sold, with the entire value stated – for example, an offer of a cargo of naphtha at $950/mt. Price in turns determines expense, refining margin, profit, loss, etc. The spot market trades actively on a outright price basis and a floating price basis. Platts takes both into account in its assessments. Platts will publish activity on both a fixed and floating basis.

Premiums/discount
Many transactions are carried out in relation to a benchmark. In this case a differential, also known as premium/discount is generated. Premiums/discounts can arise if the quality, volumes or loading times differ from the benchmark. In addition, floating price transactions are done in relation to assessments that will be published in the future – for example, an bid for a cargo of naphtha at $10/mt above the Platts CIF NWE naphtha, as published immediately before, during and after delivery of the cargo.

Premiums will usually rise in those times when the market is backwardated, and the steeper the curve, the greater the premium. In a contango situation, premiums will have a tendency to turn into discounts. Platts will publish activity on both a fixed and a floating basis.

Paper/Swaps
Paper/swaps are a major determinant in price. Swaps trade freely in an over the counter market and can trade at any time. Paper markets are very reactive and may provide players with an instant feedback of market conditions. Swaps react to arbitrage conditions or movements in overseas markets as well as local conditions.

Swaps or paper are risk-management tools. Swaps allow players to lock prices because swaps enable players to transform floating prices to fixed or fixed to floating. Swaps are also used as a speculative tool. Swap market values and indications are carried in real-time on PGA page 5.

Buyers and sellers may show buying and selling interest for all derivatives assessed by Platts through MOC processes in the same way as is done in physical markets.

The spot market
These three factors — outright price, premiums and paper – converge in a spot price. Platts may use all three in its assessments.

For instance, if a physical fuel cargo trades at $150.00/mt for a 30,000 metric tonne parcel loading 15-19 days forward FOB NWE, this commodity's spot level is clearly around $150.00/mt.

In the absence of outright prices, swaps and prevailing premiums/discounts may be used in the assessments.

For example, if a jet cargo CIF NWE trades at a premium of $30.00/mt over November ICE gasoil futures, then the outright price equivalent is precisely $30.00/mt over November ICE gasoil futures. If the gasoil November futures contract is trading at $550.00/mt then the price of the jet cargo is $580.00/mt.

If a jet cargo loading in November trades at a premium of $2.00/mt over Platts assessments in November, then Platts would need to determine the value of the Platts swaps after factoring in any ICE rolls of months within November and add the $2.00 to obtain the outright price equivalent in November.

Law
Contracts using English law are considered standard in the assessment process.

Embargoed products
Laws stating that nationals from specific countries may not buy products from embargoed countries may prevent market participants from lawfully executing transactions. A seller therefore may not assume that a buyer has the obligation to buy embargoed materials. Under Platts Market on Close assessment guidelines, commodities supplied from countries or entities that are subject to trading embargoes and sanctions recognized under international law should not be delivered against transactions concluded during the Platts MOC assessment processes. Bids and offers that contain statements surrounding delivery of embargoed materials will be considered by Platts for publication, and if published after review may be subject to normalization in value.

Late performance
Platts is aware that physical conditions regarding shipping, terminals, tanks, or blending which are beyond the control of the seller or buyer may result in lateness, quality issues or conditions seen as a deviation from the original wording in the contract, for example late delivery/loading.

These deviations will be seen in the larger context of physical trading, and should not be seen as an indication of Platts condoning lateness.

Platts will review patterns of logistical performance, as adjustments due to late performance and/or quality issues should be extraordinary and not recurring events.

Participants who are intending to sell should not offer when there is a known and distinct possibility that loading/delivery may be delayed. If congestion or delays prevent performance under the contractual terms, the seller should make reasonable and timely efforts to supply from an alternative source, or the seller should engage in other measures to alleviate the buyer's exposure.

Equally, a buyer should not over-commit and then aggregate nominations in a way that makes it logistically impossible for the seller to perform.

Platts will take appropriate steps to ensure the integrity of its assessments if issues of non-performance should arise.

In summary, performance is paramount and all bids and offers must be firm and transactions should be performable within the contractual parameters.

Platts only recognizes bids, offers and transactions where no party claims a right to unilaterally cancel a transaction. If a transaction becomes difficult the party causing the issue must seek resolution including alternative loadings, qualities, dates or book outs.

Compensation

Platts only publishes bids, offers and transactions on the basis that participants will fulfill the full value of the physical contract.

A party deemed to have underperformed or not performed under the original contract is expected to compensate the affected party.

In almost all circumstances, the compensation is not, and should not be due to a flat price movement, but should include parameters such as backwardation, shipping costs, and the inconvenience for the buyer in the case of a seller not performing, or contango, storage costs and the inconvenience for the seller in the case of a buyer not performing.

Such adjustments should be fair and in line with market practice, and should be reciprocal in the event that the inverse situation occurs in the future.

Force majeure

Force majeure is part of trading and may be invoked under very special circumstances. Platts editors will monitor the application of it to ensure that force majeure is not invoked frivolously.

Booking out trades

Booking out trades done during the Platts Market-on-Close assessment process is acceptable under exceptional circumstances. A stressed party may request to book out a trade, but its counterparty is under no obligation to accept such request.

In those exceptional cases where both counterparties agree to book out a trade, Platts expects the original spirit of the contract to be fulfilled where the non-performing party offers to buy/sell back the position and compensates the affected party.

In almost all circumstances, the adjustment is not and should not be due to a flat price movement, but should be to include parameters such as backwardation, shipping costs and the inconvenience for the buyer or seller expecting a normal transaction. Such adjustments should be fair and in line with market practice, and should be reciprocal in the event that the inverse situation occurs in the future.

Furthermore, circle outs may occur when the original seller sells a cargo that is later sold into a third party that has a sale into the primary seller. Such "circle outs" are considered a normal part of trading as sometimes chains originate and finish at the same point.

Book outs and circle outs are subject to editorial review to ensure market practices and overall fairness in the transaction have been followed. Platts review may include proposals/arrangements to protect the integrity of its assessment process.

Review of trades

Platts tracks all circumstances surrounding trades reported during its MOC assessment process, and any issues regarding performance. Platts not only focuses on the performance of the transaction at the time of trade, but also on any significant issues stemming from such trades, including logistics and eventual delivery of the product. Trades executed through the Platts Market On Close assessment process may be reviewed from time to time for performance completion. Platts therefore may request documentary material to determine performance and validity. Such material may include details of fuel quality, terminal, vessel and laycan nominations. MOC trades may be subject to editorial review to ensure market practices and performance in the transaction have been followed. Platts' review may include arrangements to protect the integrity of its assessment process.

Post-deal tracking enables Platts to determine the actual performance of the participants in the trade and the validity of their inputs. Platts may publish confirmation of trade performance information.

Specification

Platts assessments will reflect typically traded qualities of products. Specifications are available on the Platts website www.platts.com.

Note that Platts assessments reflect undyed material. Dyed material may trade at a differential to normal undyed material. If a transaction occurs for dyed product it will be normalized to the value of undyed material.

Testing of products

Products traded are subject to standard testing techniques to determine contractual performance. Platts typically follows the standards already in place in the trading market, although it may monitor these to ensure that the standards are adequate.

Implied guarantees in specifications

Bids and offers submitted to Platts that include numerical specifications will be assumed to have a series of zeroes to the right of the decimal point or to the right of the last digit to the right of the decimal point.

As an example, a fuel oil cargo with a maximum guarantee of 0.1 Shell Hot Filtration will be considered as 0.1000 etc. If the specification guarantees are otherwise, the buyer or seller should specify it clearly to avoid potential disputes.

Merchantability

Platts only considers in its assessments products that are merchantable. Hence, buyers may assume that offers or transactions are for a product that is merchantable. Sellers must ensure their offers or transactions are for merchantable products.

Shipping considerations

Bids: For the cargo assessment processes bids may be expressed with a specific location. Bids with excessive limitations – whether expressed or implied – may be deemed atypical and not considered for assessment purposes.

The name of the buyer and the location chosen set the conditions for any potential counterparty considering trading. The implied set conditions for a CIF bid include:

Up front conditions	Conditions to be met
Name of the buyer	Ship must meet vetting conditions of buyer
Volume	Volume delivered must match volume requested +/- normal tolerances (in cargos this tolerance is commonly 10%; tolerance is usually specified at time of bid, offer or trade)
Port	Ship must meet physical limitations of port, e.g., draft, beam, etc. Ship must also meet conditions set by country of destination.

Offers: Offers may be made into a specific location or to meet a broad area. CIF offers may be made with a named or unnamed ship.

Up front conditions	Conditions to be met
Name of Ship	Buyer to determine if ship is acceptable to its vetting department
Unnamed ship	Seller has the responsibility to declare its commitment to meet either the vetting requirement of any buyer or conversely to declare up front how many ship vettings the seller is confident the ship will meet. Platts standard requires a seller name at least 3 relevant oil majors.

Please note that offers made with ships that have restrictions limiting the number of potential buyers would be considered atypical and not used in the assessment process.

Platts will also monitor vetting to ensure that ships are not rejected because of commercial considerations but only because of internal and consistently applied company standards.

Nomination Procedure

In all European CIF refined oil product cargo bids, offers and transactions, Platts guidelines require that the seller should narrow the five day delivery range to a three day delivery range by the earliest of five clear calendar or three clear working days before the first day of the narrowed delivery range, whichever falls sooner. Platts also expects the seller to nominate the performing vessel by the earliest of either five clear calendar or three clear working days. For CIF Mediterranean gasoil cargo nominations, the vessel nomination and the narrowing of the delivery range should be made by the earliest of seven clear calendar or five clear working days before the first day of the actual delivery range, again, which ever falls sooner. Platts FOB Northwest European and FOB Mediterranean oil product cargo assessments reflect market activity where the seller nominates the loading terminal 7 calendar days ahead of the first day of the 5-day laycan. Additionally, Platts reflects cargoes which stipulate the buyer must nominate the vessel 7 calendar days ahead of the first day of the original 5-day laycan. Buyer must also narrow the 5-day laycan to a 3-day laycan at the same time. On barges, the buyer must give the seller 48 clear working hours notice of the date required.

CIF transactions

A CIF buyer has the right to request a deviation of the ship to another port, provided the ship-owner has granted, or has the ability to grant, the deviation to the charterer. Any incremental expenses associated with the deviation are borne by the buyer as he/she is initiating the request for the deviation.

Charges incurred because of the deviation must be transparent and be granted at cost and in line with normal market practices. Platts will monitor such charges if they result in anomalies.

Ship-to-ship transfers

Platts CIF refined product cargo assessments in Northwest Europe and in the Mediterranean reflect offers where the seller has the option to make final delivery on a vessel that had received its cargo on a ship-to-ship basis.

Should the seller elect to deliver a CIF cargo that has loaded on a ship-to-ship basis, the binding quantity and quality would be established on a ship's composite basis in the final delivering vessel.

The seller may not unreasonably withhold a buyer's request for title to transfer after the separation of the vessels involved in the ship-to-ship transfer.

Furthermore, Platts reflects offers which grant the buyer the option to request delivery into a vessel, rather than into a port. Under these circumstances the quantity and quality as title and risk will pass in line with typical practices in CIF transactions.

Location

Platts publishes assessments for several locations on a FOB and CIF basis. The location parameters for each assessment are published in Platts Guide to Specifications.

The following notes are intended to clarify Platts' working practice in making its FOB ARA barge assessments, in particular how freight differentials are being applied when the location basis is other than Rotterdam. These are based on current trading patterns. Platts may adjust these as market conditions change.

Barges

Platts reflects barge deals where the buyer has the right to request alternative loading mechanisms after the seller nominates a loading terminal. These alternative loading terms may include pumpover, inter tank transfer or cargo loading. The seller should not unreasonably withhold these requests and any alternative loading basis should be granted at operational cost only to the buyer.

Platts FOB barge assessments, basis ARA, reflect bids and offers where the buyer commits to load the contractual volumes as per the agreed volume at the time of trade, where the quantity delivered to a buyer is measured in line with the typical practice established at the nominated terminal at the loading port. According to research undertaken by Platts, the typical method of measuring quantity in the ARA barge market uses the terminal's shore tank results, where quantity is metered between the shore tank and the receiving barge's flange. Platts assessment processes reflect these standard processes and conventions.

Any potential for short loading -beyond the normal 5% operational tolerance- for logistical reasons, such as water level issues on inland waterways, must be agreed with the seller prior to the commencement of loading.

The seller retains the option on whether to accept or reject the buyers request to short load. Any buyer who wishes to retain an option to short load barges due to water level concerns on inland waterways must express this in their bid. Bids with such stipulations will be considered atypical and may be subject to normalization.

PART IV: PLATTS EDITORIAL STANDARDS

All Platts' employees must adhere to the McGraw Hill Financial Code of Business Ethics (COBE), which has to be signed annually. The COBE reflects McGraw Hill Financial's commitment to integrity, honesty and acting in good faith in all its dealings.

In addition, Platts requires that all employees attest annually that they do not have any personal relationships or personal financial interests that may influence or be perceived to influence or interfere with their ability to perform their jobs in an objective, impartial and effective manner.

Market reporters and editors are mandated to ensure adherence to published methodologies as well as internal standards that require accurate records are kept in order to document their work.

Platts has a Quality & Risk Management (QRM) function that is independent of the editorial group. QRM is responsible for ensuring the quality and adherence to Platts' policies, standards, processes and procedures. The QRM team conduct regular assessments of editorial operations, including checks for adherence to published methodologies.

McGraw Hill Financial's internal auditor, an independent group that reports directly to the parent company's board of directors, reviews the Platts risk assessment programs.

PART V: CORRECTIONS

Platts is committed to promptly correcting any material errors. When corrections are made, they are limited to corrections to data that was available when the index or assessment was calculated.

PART VI: REQUESTS FOR CLARIFICATIONS OF DATA AND COMPLAINTS

Platts strives to provide critical information of the highest standards, to facilitate greater transparency and efficiency in physical commodity markets.

Platts customers raise questions about our methodologies and the approach we take in our price assessments, proposed methodology changes and other editorial decisions in relation to our price assessments. These interactions are strongly valued by Platts and we encourage dialog concerning any questions a customer or market stakeholder may have.

However, Platts recognizes that occasionally customers may not be satisfied with responses received or the services provided by Platts and wish to escalate matters. Full information about how to contact Platts to request clarification around an assessment, or make a complaint, is available on our website, at: http://www.platts.com/ContactUs/Complaints.

PART VII: DEFINITIONS OF THE TRADING LOCATIONS FOR WHICH PLATTS PUBLISHES DAILY INDEXES OR ASSESSMENTS

The following crude specifications guide contains the primary specifications and methodologies for Platts crude oil cargo and pipeline assessments throughout the world. The various components of this guide are designed to give Platts subscribers as much information as possible about a wide range of methodology and specification issues.

This methodology is current at the time of publication. Platts may issue further updates and enhancements to this methodology and will announce these to subscribers through its usual publications of record. Such updates will be included in the next version of the methodology. Platts editorial staff and managers will usually be ready to provide guidance when assessment issues require clarification.

NORTH SEA

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
DATED BRENT												
Dated Brent	PCAAS00	PCAAS03			FOB	North Sea	10-M+1	600,000	600,000	US $	Barrels	
Dated North Sea Light	AAOFD00	AAOFD03			FOB	North Sea	10-M+1	600,000	600,000	US $	Barrels	
Brent/Ninian Blend (BNB)	AAVJA00	AAVJA03			FOB	Sullom Voe	10-M+1	600,000	600,000	US $	Barrels	
BNB vs North Sea Dated Brent Strip	AAVJB00	AAVJB03		AAVJA04	FOB	North Sea	10-M+1	600,000	600,000	US $	Barrels	
Dated Brent (Euro)	AAPYR00	AAPYR03			FOB	North Sea	10-M+1	600,000	600,000	Euro	Barrels	
Dated Brent 5 Day Rolling Average	AAIVI00				FOB	North Sea	10-M+1	600,000	600,000	US $	Barrels	
Dated Brent Differential	AAXEZ00	AAXEZ03			FOB	North Sea	10-M+1	600,000	600,000	US $	Barrels	
BFOE												
Brent M1 (London close)	PCAAP00	PCAAP03			FOB	North Sea	M+1	100,000	600,000	US $	Barrels	
Brent M1 (Asia close)	PCAJE00	PCAJF03			FOB	North Sea	M+1	100,000	600,000	US $	Barrels	
Brent M2 (London close)	PCAAQ00	PCAAQ03			FOB	North Sea	M+2	100,000	600,000	US $	Barrels	
Brent M2 (Asia close)	PCAJG00	PCAJH03			FOB	North Sea	M+2	100,000	600,000	US $	Barrels	
Brent M3 (London close)	PCAAR00	PCAAR03			FOB	North Sea	M+3	100,000	600,000	US $	Barrels	
Brent M3 (Asia close)	PCAJI00	PCAJJ03			FOB	North Sea	M+3	100,000	600,000	US $	Barrels	
Brent M4 (London close)	PCARR00	PCARR03			FOB	North Sea	M+4	100,000	600,000	US $	Barrels	
Brent M4 (Asia close)	PCAJ000	PCAJ003			FOB	North Sea	M+4	100,000	600,000	US $	Barrels	
Brent EFP M1	AAGVW00	AAGVW03			FOB	North Sea	M+1	100,000	600,000	US $	Barrels	
Brent EFP M2	AAGVX00	AAGVX03			FOB	North Sea	M+2	100,000	600,000	US $	Barrels	
Brent EFP M3	AAGVY00	AAGVY03			FOB	North Sea	M+3	100,000	600,000	US $	Barrels	
Brent EFP M4	AAMVY00	AAMVY03			FOB	North Sea	M+4	100,000	600,000	US $	Barrels	
Brent M1 vs WTI M1	AALAT00	AALAT03								US $	Barrels	
Brent M2 vs WTI M2	AALAU00	AALAU03								US $	Barrels	
Brent M3 vs WTI M3	AALAV00	AALAV03								US $	Barrels	
Brent M4 vs WTI M4	AALAY00	AALAY03								US $	Barrels	
FORTIES AND THE DEESCALATOR												
Forties Blend	PCADJ00	PCADJ03			FOB	Hound Point	10-M+1	600,000	600,000	US $	Barrels	
Forties Blend vs North Sea Dated Brent Strip\	AAGWZ00	AAGXA00			FOB	Hound Point	10-M+1	600,000	600,000	US $	Barrels	
Sulfur de-escalator	AAUXL00									US $	Barrels	

NORTH SEA

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
OSEBERG, EKOFISK AND OTHER NORTH SEA GRADES												
Oseberg	PCAEU00	PCAEU03			FOB	Sture	10-M+1	600,000	600,000	US $	Barrels	
Oseberg vs North Sea Dated Brent Strip	AAGXF00	AAGXG00			FOB	Sture	10-M+1	600,000	600,000	US $	Barrels	
Oseberg FOB North Sea QP Current Month	AAXDW00											
Oseberg FOB North Sea QP Mo01	AAXDX00											
Ekofisk	PCADI00	PCADI03			FOB	Teesside	10-M+1	600,000	600,000	US $	Barrels	
Ekofisk vs North Sea Dated Brent Strip	AAGXB00	AAGXC00			FOB	Teesside	10-M+1	600,000	600,000	US $	Barrels	
Ekofisk FOB North Sea QP Current Month	AAXDY00											
Ekofisk FOB North Sea QP Mo01	AAXDZ00											
Flotta Gold	PCACZ00	PCACZ03			FOB	Flotta	10-M+1	600,000	600,000	US $	Barrels	
Flotta Gold vs North Sea Dated Brent Strip	AAGXH00	AAGXI00			FOB	Flotta	10-M+1	600,000	600,000	US $	Barrels	
Duc	AAWEZ00	AAWEZ03			FOB	Fredericia	10-M+1	600,000	600,000	US $	Barrels	
Duc vs North Sea Dated Brent Strip	AAWFL00	AAWFL03			FOB	Fredericia	10-M+1	600,000	600,000	US $	Barrels	
Troll	AAWEX00	AAWEX03			FOB	North Sea	10-M+1	600,000	600,000	US $	Barrels	
Troll vs North Sea Dated Brent Strip	AAWEY00	AAWEY03			FOB	North Sea	10-M+1	600,000	600,000	US $	Barrels	
Statfjord (FOB North Sea)	PCAEE00	PCAEE03			FOB	North Sea	10-M+1	600,000	600,000	US $	Barrels	
Statfjord FOB vs North Sea Dated Brent Strip	AAGXD00	AAGXE00			FOB	North Sea	10-M+1	600,000	600,000	US $	Barrels	
Statfjord (CIF Rotterdam)	AASAS00	AASAS03			CIF	Rotterdam	10-M+1	600,000	600,000	US $	Barrels	
Statfjord CIF vs North Sea Dated Brent Strip	AASAT00	AASAT03			CIF	Rotterdam	10-M+1	600,000	600,000	US $	Barrels	
Gullfaks CIF Rotterdam	AASAU00	AASAU03			CIF	Rotterdam	10-M+1	600,000	600,000	US $	Barrels	
Gullfaks CIF vs North Sea Dated Brent Strip	AASAV00	AASAV03			CIF	Rotterdam	10-M+1	600,000	600,000	US $	Barrels	
North Sea Basket	AAGIZ00	AAGIY00			FOB	North Sea	10-M+1	600,000	600,000	US $	Barrels	
BRENT CFDS												
Brent CFD (Week 1)	PCAKA00	PCAKB03						100,000	100,000	US $	Barrels	
Brent CFD (Week 2)	PCAKC00	PCAKD03						100,000	100,000	US $	Barrels	
Brent CFD (Week 3)	PCAKE00	PCAKF03						100,000	100,000	US $	Barrels	
Brent CFD (Week 4)	PCAKG00	PCAKH03						100,000	100,000	US $	Barrels	
Brent CFD (Week 5)	AAGLU00							100,000	100,000	US $	Barrels	
Brent CFD (Week 6)	AAGLV00							100,000	100,000	US $	Barrels	
Brent CFD (Week 7)	AALCZ00	AALCZ03						100,000	100,000	US $	Barrels	
Brent CFD (Week 8)	AALDA00	AALDA03						100,000	100,000	US $	Barrels	
BRENT-RELATED CRUDES AND THE FORWARD CURVE												
North Sea Dated Brent Strip	AAKWH00	AAKWI00					10-M+1			US $	Barrels	
Mediterranean Dated Brent Strip	AALDF00	AALDG00					13-28 days			US $	Barrels	
BTC Dated Brent Strip	AAUFI00	AAUFI03					13-33 days			US $	Barrels	
15-45 Day Dated Strip	AALGM00	AALGN00					15-45 days			US $	Barrels	

NORTH SEA

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
30-60 Day Dated Brent Strip	AAXRK00	AAXRK03					30-60 days			US $	Barrels	
Canada Dated Brent Strip (31-45 days)	AALDJ00	AALDK00					31-45 days			US $	Barrels	
Latin America Brent Futures Strip	AAXBQ00	AAXBQ03								US $	Barrels	
Latin America Dated Brent Strip	AAXBR00	AAXBR03								US $	Barrels	
Latin America WTI Futures Strip	AAXBP00	AAXBP03								US $	Barrels	
ADB Strip Middle East (Asia close)	AARBW00	AARBW03								US $	Barrels	
ADB Strip Middle East (London close)	AARBY00	AARBY03								US $	Barrels	
ADB Strip Asia (Asia close)	AARBV00	AARBV03								US $	Barrels	
ADB Strip Asia (London close)	AARBX00	AARBX03								US $	Barrels	
WTI CMA M1	AAVSN00	AAVSN03	AAVSN02							US $	Barrels	

NORTH SEA

Dated Brent

Platts' North Sea crude oil assessments reflect the value of crude oil for loading a month-ahead of the date of publication. The assessment date range starts 10 days forward from the day of assessment, and will stretch to the equivalent date of the following month. So, on April 1, 2015, the assessment range will be April 11-May 1. As a result, the actual number of days reflected each day in the range of dates reflected in Dated Brent will depend on the length of the month in which the assessment takes place. North Sea crude grades are generally traded as a differential to Dated Brent or as a differential to cash BFOE.

Platts considers bids and offers that specify a minimum three-day laycan. If a buyer bids for a loading date range of more than three days the seller should specify a three day laycan at the time of expressing interest in the bid. If a seller offers a loading date range of more than three days the buyer should specify the three day laycan at the time of expressing interest in the offer.

Physical Brent crude oil represents commingled crude from the Brent and Ninian systems, known in Platts processes since 2007 as Brent/Ninian Blend (BNB), slated to load at the Sullom Voe terminal. Platts no longer assesses a Brent-only price, due to challenges resulting from the decline in its production to a relatively low level. Beginning in mid-2002, Platts substituted for straight Brent a combination of Brent/Forties/Oseberg, known as BFO. In 2007, Platts incorporated Ekofisk into the assessment price formation for physical benchmark Dated Brent, giving rise to the term "BFOE." However, the nomenclature for Dated Brent did not change, and Platts still refers to its key wet assessment as Dated Brent, and its key paper assessments as Brent. Platts also launched a North Sea Light assessment which is identical to the Brent price.

Platts' Brent assessments incorporate the values of Brent, Forties, Oseberg and Ekofisk with the most competitive grade setting the price at the margin. If Brent is the most competitive grade then Brent will be the grade reflected in the Dated Brent assessment. The methodology operates as a relief valve, with the other grades reflected in the assessment if they are more competitive in the market than Brent itself. Platts does not average the price of Brent, Oseberg, Forties and Ekofisk to set its Dated Brent assessment. The most competitive grade at the margin will have the one reflected in the benchmark assessment.

Most grades in the North Sea are light and low in sulfur, with Oseberg and Ekofisk fairly close in quality, price and geographical location to Brent. Oseberg and Forties were originally considered the closest grades in terms of quality and volume and historically have been worth more than Brent. This allows them, together with Ekofisk, to act as a "price cap" on upward spikes in the Brent market without causing any flat price distortions in the final Brent assessment.

The cargoes are loaded FOB terminal and may include stored material at each location. Since January 2001, Platts considers offers and resulting transactions of ship-to-ship (STS) transfers at Scapa Flow of Brent crude oil that has been recently loaded at Sullom Voe and remains in its original condition, and provided the seller agrees to cover all additional costs incurred by the buyer who agrees to lift the oil on a STS basis. In September 2006 the ex-ship offer mechanism was broadened to the evaluation of Forties and Oseberg crude, which form part of the BFOE complex. Following the addition of Ekofisk to the BFO complex, it was further added to the ex-ship mechanism in February 2008.

In October 2009, Platts broadened its definition of ship-to-ship transactions to consider offers and resulting transactions where the seller commits to delivery crude oil from a vessel that has itself been loaded via a ship-to-ship transfer. In such offers, the vessel named by the seller will have loaded via a ship-to-ship transfer from a vessel originally loaded from the terminals supplying BFOE crude oil. Offers on an STS basis at Scapa Flow must be submitted by 15.30:00 London time for inclusion in the Platts price discovery process and should include a named vessel. In such deliveries the quality of the crude oil must be congruent with that at the time of its original loading from its respective terminal.

Dated Brent Differential: Platts started publishing a Dated Brent crude differential assessment on July 1, 2013 (data was backfilled to May 1). The differential reflects the difference in value between Dated Brent and the North Sea Dated Strip each day. In the past, the difference in value between Dated Brent and the North Sea Dated Strip was typically equal to the differential of the most competitive grade of Brent Ninian Blend, Forties, Oseberg or Ekofisk to the Dated North Sea Strip. Since the introduction of Quality Premiums to the Dated Brent assessment process and related instruments for June-loading Ekofisk and Oseberg crude, the Dated Brent assessment may no longer reflect one specific grade of Brent/Ninian Blend, Forties, Oseberg or Ekofisk. The Dated Brent differential is sometimes a combination of multiple differential assessments, for Brent Ninian Blend, Forties, Oseberg or Ekofisk, including Quality Premium-adjusted Ekofisk and Oseberg differentials.

BFOE

Platts' month-ahead cash BFOE assessment, also commonly known as cash BFOE or paper BFOE, reflects the value of a cargo with physical delivery within the month specified in the contract. Platts publishes assessments for four forward BFOE monthly contracts each day, which represent Platts forward Brent assessments. The name month-ahead stems from the practice of sellers notifying buyers of the loading dates for their cargoes one month in advance of the loading date. The assessed level reflects the tradable value for full (600,00barrels) and partial cargoes (100,000 barrels) in the month-ahead BFOE market. All aspects of the BFOE assessment methodology were developed by Platts and are proprietary to Platts.

The front month, month-ahead BFOE contract expires two months prior to its reflection and on the last working day of that month, but the Platts assessment continues until the last business day of the preceding calendar month for legacy reasons. For example, July month-ahead BFOE will expire on May 31 but Platts will assess at a constant spread to the July contract until June 30. On July 1, August BFOE becomes the first month, September BFOE becomes the second month, October BFOE is added as the third month, and November BFOE is added as the fourth month. The process will repeat itself on July 31.

Platts publishes in effect synthetic month-ahead BFOE assessments for the front month between the first and the end of the preceding month. Platts assesses the front-month month-ahead BFOE at a constant spread to the second month month-ahead BFOE from the first of every calendar month to the end of the month.

The minimum volume that Platts takes into consideration for cash BFOE assessment is 100,000 barrel per transaction. These minimums are a reflection of standard market practices and may be subject to review if market conditions change.

Terms & Conditions: Offers, bids and transactions for forward Brent, Oseberg, Forties and Ekofisk (BFOE) are used for assessment purposes in the forward daily Brent monthly Platts assessments. The bids/offers and transactions are recognized for assessment purposes provided they meet the following conditions:

- Cargo date nominations are declared one month in advance.
- Cargoes load under normal terms and conditions.
- Normally, Forties cargoes are loaded under BP's terms and conditions, Brent cargoes are loaded under Shell's terms and conditions, Oseberg cargoes are loaded under Statoil's terms and conditions, and Ekofisk under ConocoPhillips' terms and conditions.

Bids and offers for Cash BFOE published during the Platts Market on Close assessment process reflect BFOE transactions of 100,000 barrels (partials). If a single buyer and a single seller transact six partials of 100,000 barrels with each other, the transactions converge into one physical Cash BFOE cargo of 600,000 barrels. If, after all convergences have been completed, any two counterparts have outstanding partials that do not amount to a 600,000-barrel cargo, those partials are to be financially settled using the Platts assessment published on the final working day of the calendar month for the relevant contract month (which is calendar month M+2).

For example, if a single buyer and a single seller trade six July partials with each other in the Platts MOC process prior to 4:30 pm London time on May 29, 2015, the partials converge into a full physical cargo of 600,000 barrels for loading any day in the month of July, according to standard nomination procedures as detailed in the SUKO-90 contract and explained in the Platts Crude Oil Methodology and Specifications Guide. However, in the same example, if two counterparties trade five July partials, then the financial settlement of the 500,000 barrels is based on the Platts assessment for July Cash BFOE published on May 29, 2015.

Operational tolerance: Platts reflects in its assessments cargoes loading 'within' 1% plus or minus operational tolerance. Platts believes that cargoes trading with pre-known tolerances ahead of the actual cargo loading include an option value that distorts the true value of the assessed commodity.

Platts assesses three forward months of Brent/BFOE EFPs (exchange for physical). The relevant assessment deltas refer to the corresponding month of Platts Brent/BFOE spot price assessments.

Platts assesses four forward months of Brent/WTI cash spreads. The assessments reflect market value at 4:30 PM. local London time.

Forties and the de-escalator

The assessment for Forties Blend is based on FOB Hound Point, UK. Since the start-up of the Buzzard field in January 2007, the quality of Forties has changed significantly. In July 2007, Platts implemented a quality standard for Forties crude assessments. Platts, from this date, assessed crude meeting 37 degree API minimum and 0.6 pct sulfur maximum content in Forties. Platts continues to review the situation to ensure its assessments reflect normal and standard grades.

As of July 2, 2007, Platts considered Forties in its assessments of Dated Brent and related North Sea instruments with a quality de-escalator applied for deliveries above the base standard of 0.60%

sulfur. Platts now considers in its assessments bids, offers and deals where a de-escalator for every 0.10 per cent of sulfur above the 0.6% standard is specified.

The de-escalator value applies to all Forties crude oil delivered after the date stated. Prevailing rates are as published in the Platts Crude Oil Marketwire. When reviewing the value of the de-escalator, Platts studies evidence of significant and sustained changes in the crude market, as affected by refined products and other relevant factors that affect the economics of Forties.

Between 2007 and late 2012, Platts updated the value of the de-escalator as and when such changes were observed. Platts announced in November 2012 that it would state the sulfur de-escalator applied to the North Sea's Forties crude oil every month at 3 pm London time, on the 25th of the month prior to the month of implementation. In cases where the 25th of the month is a non-working day in the UK, the de-escalator is announced on the closest business day prior to the 25th. As an example, the de-escalator for December 2012 would be announced on the 23rd of November, at 3 pm London time.

Under this approach, Platts publishes the value of the de-escalator to be reflected in its price assessments for Forties blend for the month ahead, whether or not the value of the de-escalator is being changed. Platts publishes the editorial basis for the determination of the de-escalator level on its website platts.com.

Platts uses three significant figures for determination of sulfur-related payment. The test reflecting this figure should be the ASTM-D2622. Forties cargoes and all related instruments, including cash BFOE cash forwards, bid or offered through the Platts system must adhere to this standard.

Platts will consider in its assessments bids, offers and deals where a de-escalator for every 0.1% of sulfur is specified. Under a de-escalator of 20 cents/barrel, for example, the seller would pay the buyer this compensatory amount for every 0.1% of sulfur over 0.6% on a pro-rata basis, as follows:

- 0.6% No payment to buyer
- 0.625% Seller pays 5 cents/barrel to buyer (*0.25)
- 0.65% Seller pays 10 cents/ barrel to buyer (*0.5)
- 0.7% Seller pays 20 cents/ barrel to buyer (1)
- 0.8% Seller pays 40 cents/ barrel to buyer (*2.0)
- 0.9% Seller pays 60 cents/ barrel to buyer (*3.0)

Oseberg, Ekofisk and other North Sea grades

Oseberg: The assessment is based on FOB Sture, Norway. STS offers and resulting transactions are also reflected in the assessment.

Ekofisk: The assessment is based on FOB Teesside, UK. STS offers and resulting transactions are also reflected in the assessment.

Quality Premiums: Platts introduced Quality Premiums for Oseberg and Ekofisk crude oil in its North Sea Dated Brent, cash Brent (BFOE) and related assessment processes for cargoes loading from June 2013 onwards. Quality Premiums are to be paid by buyer to seller for the nomination and delivery of Oseberg or Ekofisk into a physical BFOE transaction concluded during the Platts Market on Close assessment process. These escalators are also considered in the Platts assessment process for Dated Brent, and related instruments.

Platts publishes Quality Premiums for Oseberg and Ekofisk crude oil. "Current Month" QPs apply for cargoes loading on the date that the current month QP is published. "Month 01" QPs apply for cargoes that load the month forward from the date of publication. For example, on June 1, "Current Month" QPs would reflect the value to be applied for June-loading cargoes. On the same date, Month 01" QPs would reflect the value to be applied for July-loading cargoes.

Platts does not reflect any QP for Brent or Forties crude oils in its assessment processes. QPs are intended to increase the relevance of higher quality crudes to Brent, the basis crude, while instruments like de-escalators are similarly intended to heighten the relevance of lower quality crudes to Brent.

Platts announces QPs on the first publishing day of each month, a month prior to the escalators coming into effect. As an example, Platts would announce Oseberg and Ekofisk escalators on the first business day of May, for cargoes loading in June. This calendar aligns with typical trading practices, where June cargoes are primarily traded in the month of May.

Platts reflects one month of data in its published QPs. QPs are published at 60% of the net price differences between Oseberg and Ekofisk and the most competitive grade of crude among Brent, Forties, Oseberg and Ekofisk during the full month prior to announcement. For example, the QP announced on May 1 will reflect assessments conducted between April 1 and April 30, inclusive. Platts believes that this will make QPs more responsive to, and more reflective of, current price trends in the physical markets. Platts notes that a full month of assessment data typically embraces more than 40 loading days in the North Sea dated cargo crude oil market. A month of data, coupled with a calculation ratio, should therefore continue to appropriately mitigate the potential impact of maintenance programs, while preserving Platts core aim of ensuring that QPs appropriately represent a prevailing value of crude for prompt physical delivery.

A QP of zero would be announced if 60% of the observed price difference between the grades is less than 25 cents/barrel. Platts has published a Question & Answer document that further elaborates on commonly raised questions regarding QPs on its website at http://platts.com/price-assessments/oil/dated-brent

Other North Sea grades

Statfjord: Platts assesses Statfjord crude oil on an FOB-platform and a CIF Rotterdam basis. Platts launched the CIF Rotterdam based assessment on January 4, 2010.

Gullfaks: On January 4, 2010, Platts launched an assessment based CIF Rotterdam.

Flotta Gold: The price is for barrels loading FOB at the Flotta terminal in the North Sea. Prior to January 2015, this assessment was called Flotta.

Troll: Platts launched daily assessments for Troll on March 1, 2012. The assessment reflects cargoes loading FOB Mongstad.

Duc: Platts launched daily assessments for Duc on March 1, 2012. The assessment reflects cargoes loading FOB Fredericia.

North Sea Basket: This is a straight average of the assessed value of Dated Brent/Ninian Blend, Forties, Oseberg and Ekofisk.

Brent CFDs

Brent CFDs (Contract For Difference) are relatively short–term swaps, assessed by Platts for each of eight weeks ahead of the current date at any one time. They also are traded for bi-monthly and monthly periods in the marketplace. They represent the market differential in price between the Dated Brent assessment and a forward month BFOE cash assessment, i.e. forward month "BFOE" (Brent-Forties-Oseberg-Ekofisk) cash contract, over the period of the swap.

The first weekly balance is on a forward week basis on Thursday and Friday, and becomes a balance week assessment between Monday and Wednesday. It is rolled forward every Thursday. Second week onward assessments are all forward week assessments. Assessments are expressed as a differential to the second relative BFOE cash contract month. For example, on July 23, assessments would be against September cash BFOE. The relevant cash month rolls on the first day of the month of each month e.g. June becomes the basis month for published CFDs on April 1.

CFDs are a means for holders of long or short BFOE cash positions to hedge or speculate in movements in the Dated Brent market relative to the cash BFOE market. The CFD swap is between the uncertain or "floating" price of the dated Brent differential and a certain or "fixed" differential price, which generally is Platts' daily Dated Brent crude assessment. CFDs are settled using averages of a particular week's worth of daily price assessments as assessed by Platts.

Each trade is an exchange of a fixed for a floating risk in the Dated to BFOE cash differential.

CFDs are generally traded in clips of 100 lots, i.e. 100,000 barrels.

Brent-related crudes and the forward curve

Crude cargoes are traded in the spot market for loading in the near future. Some cargoes are traded using a benchmark as a reference for the base price, plus or minus an agreed differential. Many such cargoes typically use Dated Brent as the benchmark for the base pricing. The base is typically an average over specific dates related to the time when the cargo will load.

For instance, a cargo of Urals can trade on Jan 2 for loading Jan 15. The Urals cargo can be traded at Dated Brent around bill of lading time minus $1.00/b. To determine the value for such a cargo, it is key to determine the market value of the Dated Brent assessments around the bill of lading.

As an example, Platts on Jan 2 would need to determine the value of Dated Brent, on a forward basis, around the future bill of lading dates. There is a market for the forward Dated Brent assessments, informally known as the CFD market. Platts regularly assesses the value of CFDs on a weekly basis for 8 weeks ahead of the date of publication. This gives it a solid base for producing assessments on Brent-basis cargoes by taking into account the forward pricing curve.

The assessment methodology used since late 2002 for North Sea grades, and early 2003 for West African and Mediterranean grades, takes into account the contango or backwardation in the marketplace. As an example, if the Bonny Light traded at Dated Brent plus $1.00/barrel and the cargo was due to price on the assessments published by Platts from April 3-14, the assessment would be calculated on the following basis: current Brent forward prices, plus the CFD differential for the April 3-14 time frame, plus the $1 premium traded for Bonny Light.

Platts will use observed, tradable forward Dated Brent values applicable to and typical for each grade. In the case of some Mediterranean and Urals grades, Platts reflects in its assessments cargoes loading 10-25 days forward. These cargoes typically settle their value between one and five days after the cargo loads. The average valuation time is therefore three days after bill of lading. In this case, Platts takes into consideration the market value for the historic Dated Brent assessments of 10-25 days plus an additional 3 days. This results in a Dated Brent strip of 13-28 days forward.

For West African grades, the loading period reflected in assessments is 25-55 days forward, with cargoes pricing five days after the Bill of Lading. Therefore the Dated Brent strip Platts needs to take into account is 30-60 days forward. For Canadian cargo-grades, the assessment window is 28-42 days forward, but typically cargoes price in the period of 1-5 days from the date of loading. Thus the applicable dated strip for Canadian cargo-grades is 31-45 days forward.

WEST AFRICA

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Bonny Light	PCAIC00	PCAIF03			FOB	Bonny Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Bonny Light vs WAF Dated Brent Strip	AAGXL00	AAGXM00			FOB	Bonny Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Qua Iboe	PCAID00	PCAIG03			FOB	Qua Iboe Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Qua Iboe vs WAF Dated Brent Strip	AAGXN00	AAGXO00			FOB	Qua Iboe Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Brass River	AAEJB00	AAEJC00			FOB	Brass River Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Brass River vs WAF Dated Brent Strip	AAGXV00	AAGXW00			FOB	Brass River Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Escravos	AAEIZ00	AAEJA00			FOB	Escravos Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Escravos vs WAF Dated Brent Strip	AAGXR00	AAGXS00			FOB	Escravos Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Forcados	PCABC00	PCABC03			FOB	Forcados Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Forcados vs WAF Dated Brent Strip	AAGXP00	AAGXQ00			FOB	Forcados Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Agbami	AAQZB00	AAQZB03			FOB	FPSO Agbami	25-55 days	Part cargo	975,000	US $	Barrels	
Agbami vs WAF Dated Brent Strip	AAQZC00	AAQZC03			FOB	FPSO Agbami	25-55 days	Part cargo	975,000	US $	Barrels	
Akpo	PCNGA00	PCNGA03			FOB	FPSO Akpo	25-55 days	Part cargo	975,000	US $	Barrels	
Akpo vs WAF Dated Brent Strip	PCNGB00	PCNGB03			FOB	FPSO Akpo	25-55 days	Part cargo	975,000	US $	Barrels	
Bonga	PCNGC00	PCNGC03			FOB	FPSO Bonga	25-55 days	Part cargo	975,000	US $	Barrels	
Bonga vs WAF Dated Brent Strip	PCNGD00	PCNGD03			FOB	FPSO Bonga	25-55 days	Part cargo	975,000	US $	Barrels	
Cabinda	PCAFD00	PCAFD03			FOB	Malongo Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Cabinda vs Angola Dated Brent Strip	AAGXT00	AAGXU00			FOB	Malongo Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Nemba	AAQYZ00	AAQYZ03			FOB	Malongo Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Nemba vs Angola Dated Brent Strip	AAQZA00	AAQZA03			FOB	Malongo Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Girassol	AASNL00	AASNL03			FOB	Offshore Angola	25-55 days	Part cargo	1,000,000	US $	Barrels	
Girassol vs Angola Dated Brent Strip	AASJD00	AASJD03			FOB	Offshore Angola	25-55 days	Part cargo	1,000,000	US $	Barrels	
Hungo	AASLJ00	AASLJ03			FOB	FPSO Kizomba A	25-55 days	Part cargo	1,000,000	US $	Barrels	
Hungo vs Angola Dated Brent Strip	AASJF00	AASJF03			FOB	FPSO Kizomba A	25-55 days	Part cargo	1,000,000	US $	Barrels	
Kissanje	AASLK00	AASLK03			FOB	FPSO Kizomba B	25-55 days	Part cargo	1,000,000	US $	Barrels	
Kissanje vs Angola Dated Brent Strip	AASJE00	AASJE03			FOB	FPSO Kizomba B	25-55 days	Part cargo	1,000,000	US $	Barrels	
Dalia	AAQYX00	AAQYX03			FOB	FPSO Dalia	25-55 days	Part cargo	950,000	US $	Barrels	
Dalia vs Angola Dated Brent Strip	AAQYY00	AAQYY03			FOB	FPSO Dalia	25-55 days	Part cargo	950,000	US $	Barrels	
Pazflor	PCNGG00	PCNGG03			FOB	FPSO Pazflor	25-55 days	Part cargo	950,000	US $	Barrels	
Pazflor vs Angola Dated Brent Strip	PCNGH00	PCNGH03			FOB	FPSO Pazflor	25-55 days	Part cargo	950,000	US $	Barrels	
Plutonio	PCNGI00	PCNGI03			FOB	FPSO Greater Plutonio	25-55 days	Part cargo	950,000	US $	Barrels	
Plutonio vs Angola Dated Brent Strip	PCNGJ00	PCNGJ03			FOB	FPSO Greater Plutonio	25-55 days	Part cargo	950,000	US $	Barrels	
Djeno	PCNGE00	PCNGE03			FOB	Djeno Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Djeno vs WAF Dated Brent Strip	PCNGF00	PCNGF03			FOB	Djeno Terminal	25-55 days	Part cargo	950,000	US $	Barrels	
Palanca/Soyo (Weekly Feeder Crude)	AAIJC00	AAISS00			FOB	Palanca Terminal	25-55 days	Part cargo	985,000	US $	Barrels	
Kole (Weekly Feeder Crude)	PCADA00	AAIRQ00			FOB	Serepca Terminal	25-55 days	Part cargo	900,000	US $	Barrels	
Rabi Light (Weekly Feeder Crude)	AAIJB00	AAIST00			FOB	Cap Lopez Terminal	25-55 days	Part cargo	950,000	US $	Barrels	

WEST AFRICA

Assessments
West African grades are assessed for cargoes loading 25-55 days after date of publication. While a cargo size of 950,000 barrel is the standard in the daily-assessed grades, part-cargoes are occasionally traded and may be factored into the assessment process. Underlying market dynamics may also play a role in determining the value of grades. Market backwardation and contango within the 25-55 day loading period will be taken into account for assessment purposes in all West African grades, with pricing reflecting the value of Dated Brent 30-60 days forward, the equivalent of pricing five days after the Bill of Lading, commensurate with typical market practices. All West African assessments are on an FOB basis, for loading at each grade's specific location of origin.

Bonny Light: This crude oil is produced in Nigeria from ChevronTexaco and Shell concessions. ChevronTexaco's exports are throughput and loaded from the Shell-operated Bonny Terminal, which can accommodate Very Large Crude Carrier (VLCC) loading. The typical cargo size is 950 thousand barrels.

Qua Iboe: The crude oil is produced from numerous offshore fields in the Bight of Biafra in south-eastern Nigeria, east of the Oso field. The crude, from fields, 20 to 40 miles offshore from Nigeria's South Eastern region, are brought to shore via a seabed pipeline system to the Qua Iboe terminal (QIT). Production currently averages around 400kbd. ExxonMobil, as field operator, holds 40% interest in the field production mix with the Nigerian National Petroleum Corporation (NNPC) having the remaining 60%.

Brass River: The crude is a typical Nigerian high-quality West African gasoline and gasoil - oriented crude. Its gravity has become heavier over the past few years. Average production: 180,000 bpd. The loading terminal is Brass River.

Escravos: The crude is produced in Nigeria and loaded from the ChevronTexaco-operated Escravos Terminal, which can accommodate Very Large Crude Carrier (VLCC) loading. The typical cargo size is 950 thousand barrels but alternate cargo sizes can be arranged with advance planning.

Forcados: Forcados is a Nigerian crude with a low sulfur and low metals content. It is rich in distillates and has low fuel content. This crude has a larger distillate refining profile.

Agbami: The grade is produced 70 miles offshore Nigeria and loads from the Agbami FPSO. Agbami is classified as a light, sweet crude with low acid content.

Akpo: Platts launched an assessment for Nigeria's Akpo crude oil on August 1, 2013. Akpo is a light, sweet crude, similar in specification to Nigeria's Agbami.

Bonga: Platts launched an assessment for Nigeria's Bonga crude oil on August 1, 2013. Bonga is a medium, sweet crude, with a similar production portfolio to Akpo.

Cabinda: The crude oil is produced in Angola. It is loaded from the ChevronTexaco-operated Malongo Terminal, which can accommodate Very Large Crude Carrier (VLCC) loading.

Nemba also loads at Malongo, and combined cargoes of Cabinda and Nemba on VLCC's are possible. The typical cargo size is 950 thousand barrels, but alternate cargo sizes can be arranged with advance planning. The minimum cargo size is 600 thousand barrels. This medium sweet Angolan crude represents commingled material from the Takula and Malongo systems.

Nemba: The grade is produced offshore Angola and loads at the Malongo terminal, where Cabinda also loads. Nemba is categorized as a low density, low sulfur crude.

Girassol: The crude is produced from the Girassol and Jasmim offshore fields in Angola. The standard cargo size is 1 million barrels (with the option to increase/decrease). Girassol is classified as a medium density, low sulfur crude.

Hungo: The crude is produced from the Hungo and Chocalho fields. The standard cargo size is 1 million barrel (with the option to increase/decrease). Hungo Blend was formerly known as Kizomba A.

Kissanje: The grade is produced from the Kissanje and Dikanza fields. Standard cargo size is 1 million barrel. Kissanje Blend is classified as a medium density, medium sulfur, medium acidic crude.

Dalia: The grade is produced from Block 17 offshore Angola and the operator is Total. The loading port is the FPSO Dalia offshore Angola. Standard cargo size is 950,000 barrels. Daila is classified as a medium density, low sulfur, medium acidic crude.

Pazflor: Platts launched an assessment for Angola's Pazflor crude oil on August 1, 2013. Pazflor is a heavy, sweet crude.

Plutonio: Platts launched an assessment for Angola's Plutonio crude oil on August 1, 2013 Plutonio is a medium, sweet crude.

Djeno: Platts launched an assessment for Republic of Congo's Djeno crude oil on August 1, 2013. Djeno is a heavy-sweet crude.

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Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Urals (Rotterdam)	PCAFW00	PCAFW03			CIF	Rotterdam	10-25 days	100 kt	100 kt	US $	Barrels	
Urals (Rotterdam) vs Med Dated Brent Strip	AAGXJ00	AAGXK00			CIF	Rotterdam	10-25 days	100 kt	100 kt	US $	Barrels	
Urals (Mediterranean)	PCACE00	PCACE03			CIF	Augusta	10-25 days	80 kt	140 kt	US $	Barrels	
Urals (Mediterranean) vs Med Dated Brent Strip	AAGXX00				CIF	Augusta	10-25 days	80 kt	140 kt	US $	Barrels	
Urals (ex-Novorossiysk)	AAGZS00	AAJHV00			FOB	Novorossiisk	10-25 days	80 kt	140 kt	US $	Barrels	
Urals (ex-Novorossiysk) vs Med Dated Brent Strip	AAHPH00	AAJIC00			FOB	Novorossiisk	10-25 days	80 kt	140 kt	US $	Barrels	
Urals (ex-Novo) FOB 80kt	AAOTH00	AAOTH03			FOB	Novorossiisk	10-25 days	80 kt	140 kt	US $	Barrels	
Urals (ex-Novo) FOB 80kt vs Med Dated Brent Strip	AAOTI00	AAOTI03			FOB	Novorossiisk	10-25 days	80 kt	140 kt	US $	Barrels	
Urals (ex-Baltic)	AAGZT00	AAJHX00			FOB	Baltic Ports (not Primorsk)	10-25 days	100 kt	100 kt	US $	Barrels	
Urals (ex-Baltic) vs Med Dated Brent Strip	AAHPI00	AAJID00			FOB	Baltic Ports (not Primorsk)	10-25 days	100 kt	100 kt	US $	Barrels	
Urals (Primorsk)	AAWVH00	AAWVH03			FOB	Primorsk	10-25 days	100 kt	100 kt	US $	Barrels	
Urals (Primorsk) vs Med Dated Brent Strip	AAWVI00	AAWVI03			FOB	Primorsk	10-25 days	100 kt	100 kt	US $	Barrels	
Urals RCMB (Recombined)	AALIN00	AALIO00			CIF	Augusta	10-25 days	80 kt	140 kt	US $	Barrels	
Urals CIF Augusta (Euro/barrel)	AAPYS00	AAPYS03			CIF	Augusta	10-25 days	80 kt	140 kt	Euro	Barrels	
ESPO (FOB Kozmino) London Close	AARWD00	AARWD03			FOB	Kozmino	15-45 days	80 kt	140 kt	US $	Barrels	
ESPO (FOB Kozmino) London Close vs Dated Brent Strip	AARWE00	AARWE03			FOB	Kozmino	15-45 days	80 kt	140 kt	US $	Barrels	
ESPO (FOB Kozmino) London Close (Euro/barrel)	ABWGE00	ABWGE03			FOB	Kozmino	15-45 days	80 kt	140 kt	US $	Barrels	
Sweet/Sour Diff Med	AAGZZ00				FOB	Med Basket	10-25 days			US $	Barrels	
Sweet/Sour Diff NWE	AAGZV00				CIF	Rotterdam	10-25 days			US $	Barrels	
Siberian Light CIF	AAGZW00	AAJHZ00			CIF	Augusta	10-25 days	50 kt	140 kt	US $	Barrels	
Siberian Light CIF vs Med Dated Brent Strip	AAHPK00	AAJIE00			CIF	Augusta	10-25 days	50 kt	140 kt	US $	Barrels	
Azeri Light CIF	AAGZX00	AAJIA00			CIF	Augusta	10-30 days	135 kt	135 kt	US $	Barrels	
Azeri Light CIF vs BTC Dated Brent Strip	AAHPM00	AAJIG00			CIF	Augusta	10-30 days	135 kt	135 kt	US $	Barrels	
Azeri Light FOB	AALWD00	AALWE00			FOB	Supsa	10-30 days	135 kt	135 kt	US $	Barrels	
Azeri Light FOB vs BTC Dated Brent Strip	AALWF00	AALWG00			FOB	Supsa	10-30 days	135 kt	135 kt	US $	Barrels	
Azeri Light FOB 80KT	AATHM00	AATHM03			FOB	Supsa	10-30 days	80 kt	80 kt	US $	Barrels	
Azeri Light FOB 80KT vs BTC Dated Brent Strip	AATHN00	AATHN03			FOB	Supsa	10-30 days	80 kt	80 kt	US $	Barrels	
Azeri Light BTC FOB Ceyhan	AAUFM00	AAUFM03			FOB	Ceyhan	10-30 days	1,000,000	1,000,000	US $	Barrels	
Azeri Light BTC FOB Ceyhan vs BTC Dated Brent Strip	AAUFN00	AAUFN03			FOB	Ceyhan	10-30 days	1,000,000	1,000,000	US $	Barrels	
Azeri Light BTC FOB Ceyhan 80KT	AAUFK00	AAUFK03			FOB	Ceyhan	10-30 days	600,000	600,000	US $	Barrels	
Azeri Light BTC FOB Ceyhan 80KT vs BTC Dated Brent Strip	AAUFL00	AAUFL03			FOB	Ceyhan	10-30 days	600,000	600,000	US $	Barrels	
BTC FOB Ceyhan	AAUFH00	AAUFH03			FOB	Ceyhan	10-30 days	80 kt	135 kt	US $	Barrels	
BTC FOB Ceyhan vs BTC Dated Brent Strip	AAUFJ00	AAUFJ03			FOB	Ceyhan	10-30 days	80 kt	135 kt	US $	Barrels	
CPC Blend CIF	AAGZU00	AAJHY00			CIF	Augusta	10-25 days	80 kt	140 kt	US $	Barrels	
CPC Blend CIF vs Med Dated Brent Strip	AAHPL00	AAJIF00			CIF	Augusta	10-25 days	80 kt	140 kt	US $	Barrels	
CPC Blend FOB	AALVX00	AALVY00			FOB	CPC Terminal	10-25 days	80 kt	140 kt	US $	Barrels	

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Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
CPC Blend FOB vs Med Dated Brent Strip	AALVZ00	AALWC00			FOB	CPC Terminal	10-25 days	80 kt	140 kt	US $	Barrels	
CPC FOB 80kt	AAOFV00	AAOFV03			FOB	CPC Terminal	10-25 days	80 kt	140 kt	US $	Barrels	
CPC FOB 80kt vs Med Dated Brent Strip	AAOFW00	AAOFW03			FOB	CPC Terminal	10-25 days	80 kt	140 kt	US $	Barrels	
Suez Blend	PCACA00	PCACA03			FOB	Ras Sukheir	10-25 days	600,000	600,000	US $	Barrels	
Suez Blend vs Med Dated Brent Strip	AAGYD00	AAGYE00			FOB	Ras Sukheir	10-25 days	600,000	600,000	US $	Barrels	
Es Sider	PCACO00	PCACO03			FOB	Es Sider	10-25 days	80 kt	80 kt	US $	Barrels	
Es Sider vs Med Dated Brent Strip	AAGYH00	AAGYI00			FOB	Es Sider	10-25 days	80 kt	80 kt	US $	Barrels	
Kirkuk	AAEJD00	AAEJG00		AAIIX00	FOB	Ceyhan	10-25 days	80 kt	140 kt	US $	Barrels	
Kirkuk vs Med Dated Brent Strip	AAGYF00	AAGYG00			FOB	Ceyhan	10-25 days	80 kt	140 kt	US $	Barrels	
Iranian Light (Sidi Kerir)	PCABI00	PCABI03			FOB	Sidi Kerir	10-25 days	600,000	600,000	US $	Barrels	
Iranian Light (Sidi Kerir) vs Med Dated Brent Strip	AAGXZ00	AAGYA00			FOB	Sidi Kerir	10-25 days	600,000	600,000	US $	Barrels	
Iranian Heavy (Sidi Kerir)	PCABH00	PCABH03			FOB	Sidi Kerir	10-25 days	600,000	600,000	US $	Barrels	
Iranian Heavy (Sidi Kerir) vs Med Dated Brent Strip	AAGYB00	AAGYC00			FOB	Sidi Kerir	10-25 days	600,000	600,000	US $	Barrels	
Saharan Blend	AAGZY00	AAJIB00			FOB	Algeria	10-25 days	80 kt	140 kt	US $	Barrels	
Saharan Blend vs Med Dated Brent Strip	AAHPN00	AAJIH00			FOB	Algeria	10-25 days	80 kt	140 kt	US $	Barrels	
Zarzaitine	AAHMO00	AAJJM00			FOB	La Skhirra	10-25 days	60 kt	140 kt	US $	Barrels	
Zarzaitine vs Med Dated Brent Strip	AALOY00	AAJJE00			FOB	La Skhirra	10-25 days	60 kt	140 kt	US $	Barrels	
Kumkol	AAHMP00	AAHMP03			CIF	Augusta	10-25 days	30 kt	100 kt	US $	Barrels	
Kumkol vs Med Dated Brent Strip	AALOW00	AALOW03			CIF	Augusta	10-25 days	30 kt	100 kt	US $	Barrels	
Syrian Light FOB	AAHMM00	AAJJK00			FOB	Banias	10-25 days	600,000	1,000,000	US $	Barrels	
Syrian Light FOB vs Med Dated Brent Strip	AALOU00	AAJJG00			FOB	Banias	10-25 days	600,000	1,000,000	US $	Barrels	
Syrian Heavy FOB	AAHMN00	AAJJJ00			FOB	Tartous	10-25 days	600,000	1,000,000	US $	Barrels	
Syrian Heavy FOB vs Med Dated Brent Strip	AALOV00	AAJJF00			FOB	Tartous	10-25 days	600,000	1,000,000	US $	Barrels	
Urals Med CFD 1st Mth	AAMDU00							100,000	100,000	US $	Barrels	
Urals Med CFD 2nd Mth	AAMEA00							100,000	100,000	US $	Barrels	
Urals Med CFD 3rd Mth	UMCM003							100,000	100,000	US $	Barrels	
Urals Med Swap 1st Mth	AAMDR00							100,000	100,000	US $	Barrels	
Urals Med Swap 2nd Mth	AAMDX00							100,000	100,000	US $	Barrels	
Urals Med Swap 3rd Mth	UMSM003							100,000	100,000	US $	Barrels	
Urals NWE CFD 1st Mth	UNCM001							100,000	100,000	US $	Barrels	
Urals NWE CFD 2nd Mth	UNCM002							100,000	100,000	US $	Barrels	
Urals NWE CFD 3rd Mth	UNCM003							100,000	100,000	US $	Barrels	
Urals NWE Swap 1st Mth	UNSM001							100,000	100,000	US $	Barrels	
Urals NWE Swap 2nd Mth	UNSM002							100,000	100,000	US $	Barrels	
Urals NWE Swap 3rd Mth	UNSM003							100,000	100,000	US $	Barrels	

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Assessments

Mediterranean crude grades are assessed 10 to 25 days out, and the forward pricing period applied for the Mediterranean crude oil market by means of the forward Med strip is 13 to 28 days out. Azeri Light, the crude coming out of the BTC pipeline, is assessed 10-30 days out, and the forward pricing period applied by means of the forward BTC strip is 13-33 days out.

Platts considers in its Urals assessment process cargo bids and offers loading 10-25 days from date of publication. Platts considers bids made on a minimum five day loading window where buyer grants the right to narrow the two day laycan to the seller. Seller, however, must nominate the actual two day loading laycan at least 7 calendar days in advance of the first day of the five day loading range. Seller must also specify at least 7 days in advance the name of the ship and the loading port.

Platts reflects bids and offers for Urals and Mediterranean crude in the Platts Market On Close assessment process that can be supplied with cargoes whose two-day laycan meets at least one day of the five-day loading range, provided the seller bears any extra demurrage/shipping costs resulting from the early or later loading. In the case of Azeri crude, which reflects three day loading ranges, Platts reflects bids and offers that can be supplied with cargoes whose three-day laycan meets at least two days of the five-day loading range. This amendment to the methodology pertains, but is not limited, to Urals, CPC, Azeri and Siberian Light crude oil. Prior to this, Platts methodology allowed 'slippage days' in just Northwest European and Mediterranean Urals crude MOC deals. For example, if a bid for a cargo loading 16-20 July is received, a seller would be allowed to sell into the bid with a cargo loading 15-16 July or 20-21 July on condition the seller paid any extra shipping costs resulting from the early/later day loading. The seller, in exercising the option, would bear any additional costs resulting from the early or later loading. If the cargo is loaded fully within the five-day range then there are obviously no extra demurrage/shipping costs borne by the seller.

If the buyer bids for more than five days loading range, the seller should specify a five day laycan at the time of the trade.

Platts considers bids and offers for Urals CIF Rotterdam crude cargoes which can include provisions for short options within the Platts Market on Close assessment process. Platts recognizes that a proportion of Urals cargoes loaded within the Baltic Sea are delivered to ports within the Baltic area. These include, but are not limited to, Brofjorden, Butinge, Gdansk, Gothenburg, Porvoo and Rostock. Platts will publish bids and offers that include short option delivery. Platts continues to reflect CIF Rotterdam as the basis for the Northwest European Urals assessment, and may normalize bids, offers and trades including short options back to this standard as appropriate. Platts considers bids that specify a minimum five-day date range (for example, January 21-25). Offers that specify a maximum five-day date range will be considered for the assessment, based on FOB loading dates but with CIF pricing terms.

Platts reflects bids, offers and transactions in its Urals assessments using an inclusive process. If for instance, there are bids or offers stating Novorossiisk as a loading basis, Platts will also consider bids and offers from other ports including Yuzhny and Odessa in the normalization process leading to the CIF Med Urals assessment.

Platts reflects typical loading sizes in its Mediterranean crude oil assessments, which may vary from one grade to another. Typical loading sizes may also change over time, and Platts may review and if necessary change the cargo sizes reflected in its assessments when this occurs. In such cases, Platts will advise the industry accordingly.

Bids: For the cargo assessment processes bids may be expressed with a specific location. Bids with excessive limitations – whether expressed or implied – may be deemed atypical and not considered for assessment purposes.

The name of the buyer and location chosen as the basis set the condition for any potential counterparty considering trading. The implied set conditions for a CIF bid include:

Up front conditions	Conditions to be met
Name of the buyer	Ship must meet vetting conditions of a reasonable buyer.
Volume	Volume delivered must match volume requested +/- normal tolerances.
Port	Ship must meet physical limitations of port, eg. Draft, beam etc. Ship must also meet conditions set by country of destination.

Offers: Offers may be made into a specific location or to meet a broad area. CIF offers may be made with a named or unnamed ship.

Up front conditions	Conditions to be met
Name of Ship	Buyer to determine if ship is acceptable to its vetting department. For assessment purposes, editors will review quality of vessel to determine if it should be considered in the assessment process.
Unnamed ship	Seller has the responsibility to meet the reasonable vetting requirements of a typical market participant in that region. The seller is entitled to substitute the vessel with another meeting the same vettings at any reasonable time before delivery of the cargo.

If seller offers with named vessel, then buyer can buy subject to vetting approval and if rejected then the deal is not finalized. For assessment purposes, editors will review quality of vessel to determine if it should be considered in the assessment process.

Urals Rotterdam (CIF Rotterdam): The Platts CIF Rotterdam Urals assessment reflects cargoes of typical Primorsk quality. The daily spot assessment takes in to account cargoes loading from the Baltic Sea ports of Primorsk and -- since April 2012 -- Ust-Luga for delivery in to Rotterdam/Netherlands. Any cargoes loading from the Baltic Sea port of Butinge, the Barents Sea port of Murmansk, and Poland's Gdansk are also taken in to account on a CIF Rotterdam/Netherlands basis. The assessment basis is CIF Rotterdam/Netherlands. Bids and offers stating exclusive Baltic delivery are not considered. Typically 100,000 mt cargoes are taken into account. Cargoes delivered into other ports in North-West Europe can be considered with freight costs taken into account. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account.

Urals Mediterranean (CIF Augusta): This daily spot price assessment takes into account cargoes loading from typical Black Sea ports with the assessment reflecting normalization to the quality coming out of Novorossiisk. The most significant volumes originate from the Black Sea port of Novorossiisk, though Platts will consider any Urals volumes exported out of Odessa, Yuzhny, Theodossia, Kavkaz and Kerch. The assessment is basis CIF Augusta/Sicily/Italy, though cargoes delivered into other ports in the Mediterranean may also be considered with freight costs taken in to account. The assessment basis is CIF Augusta, Sicily/Italy. Cargoes delivered to other ports in the Mediterranean can also be considered, with freight costs taken into account. Bids and offers stating exclusive Black Sea delivery are not considered. Cargoes of approximately 80-140,000mt are used for the assessment, however, Platts Urals CIF Med assessment currently represents the value of 80,000 mt cargoes, with cargoes of 140,000 mt normalized to this standard. The typical pricing period for cargoes is either three days after bill of lading or five days after bill of lading. Cargoes pricing on a different basis can be included in the assessment after an adjustment.

Urals ex-Novorossiisk (FOB): This daily spot assessment takes into account cargoes traded FOB at the Black Sea port of Novorossiisk. Both small and large cargoes are used for the assessment (approximately 80-140,000mt). The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. Delivered prices may be used in the assessment once adjusted for freight costs. In periods of spot market illiquidity in both the delivered and the FOB markets, Platts typically uses freight rates of a 135,000mt-loader (standard 1-mil barrel ship) to provide a guide for the FOB level, using Platts spot freight assessments in Dirty Tankerwire report, as well as the relevant days of delays and demurrage cost for the Turkish straits, which are also published in the Dirty Tankerwire.

Urals ex-Novo (FOB) 80 kt: This daily spot assessment takes into account cargoes traded FOB at the Black Sea port of Novorossiisk. Both small and large cargoes are used for the assessment (approximately 80-140,000mt). The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. Delivered prices may be used in the assessment once adjusted for freight costs. In periods of spot market illiquidity in both the delivered and the FOB markets, Platts uses freight rates of an 80,000mt-loader (standard 600,000 barrel ship) to provide a guide for the FOB level, using Platts spot freight assessments in Dirty Tankerwire report, as well as the relevant days of delays and demurrage cost for the Turkish straits, which are also published in the Dirty Tankerwire.

Urals ex-Baltic Sea (FOB): Effective December 16, 2002 Platts widened the range of Baltic sea load ports reflected in its FOB assessment in the north to include Ventpils, Butinge and Tallinn. Despite a sharp increase of the number of cargoes loading from Primorsk, the steep climb of Worldscale rates in the winter season for cargoes loading from Primorsk has necessitated the exclusion of Primorsk in this context. Typical daily assessment is based on the 100kt cargo size. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. Delivered prices may be used in the assessment once adjusted for freight costs.

Urals ex-Primorsk (FOB): Effective January 15, 2007 Platts is publishing a FOB assessment in Northwest Europe for cargoes loading Urals from the Russian Baltic port of Primorsk. The typical daily spot assessment is based on the 100kt cargo size. The assessment reflects the Urals CIF Rotterdam adjusted for freight rates on the day. In winter, the ice class premium will be included in the assessment when ship-owners add those premiums to their freight rates. . Urals "Recombined" (RCMB) CIF Augusta: This daily spot price is an outright price for Urals CIF Augusta and does not take into account backwardation or contango. This price is produced by adding or subtracting the prevailing market differential for CIF August Urals against the daily Dated Brent assessment. No further adjustments are made. This assessment is published as an outright price only. The differential is assessed according to the methodology in the paragraph above.

ESPO (FOB Kozmino): Platts daily spot assessment of Eastern Siberian Pacific Oil (ESPO) crude oil takes into account cargoes loaded from the Russia's Far East port of Kozmino. Prices are assessed on an FOB basis and reflect cargoes from 80,000 mt to 140,000 mt normalized to 100,000 mt. Platts assessment reflects cargoes loading 15 to 45 days ahead from date of publication. The assessment is published as a high and a low and reflects the transactable value at 16:30 London time. The published assessments reflect flat price as well as a differential versus Dated Brent. This assessment is published in addition to Platts' assessment at the Singapore close.

Med sweet/sour index: As an addition to Platts daily crude oil assessments in the Mediterranean, Platts calculates and publishes the Med crude sweet/sour index. In the calculation, Platts uses the following formula: the mean of CPC Blend FOB CPC Terminal vs Med Dtd strip, BTC FOB Ceyhan vs BTC Dtd strip, Saharan Blend FOB Algeria vs Med Dtd strip and Es Sider FOB Es Sider vs Med Dtd strip minus Urals FOB Novorossiisk vs Med Dtd strip.

Siberian Light (CIF Augusta): This daily spot assessment takes into account cargoes loading from Black Sea ports for delivery into the Mediterranean. The assessment basis is CIF Augusta, Sicily/Italy. Both small and large cargoes are used for the assessment (approximately 50-140,000mt). Cargoes delivered to other ports in the Mediterranean can also be considered, with freight costs taken into account. Cargoes for delivery within the Black Sea are not taken into account, but may be considered as a guide in periods of spot market illiquidity. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account.

Azeri Light (BTC CIF Augusta): This daily spot assessment takes into account cargoes of Azeri Light loading in Ceyhan into the Mediterranean on a CIF August basis. Cargoes delivered to other ports in the Mediterranean will also be considered with freight costs taken into account. Cargoes for delivery within the Black Sea are not taken into account. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account.

Azeri Light FOB Supsa: This daily spot assessment takes into account cargoes loading from the Black Sea port of Supsa. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. Delivered prices may be used in the assessment once adjusted for freight costs. Platts uses freight rates of a 135,000mt cargo (standard Suezmax) to provide a guide for the FOB level, using Platts spot freight assessments in the Dirty Tankerwire report. After the introduction of the so-called "Bosporus clause" in November, 2002, restricting passage for crude oil tankers to the day hours and thereby creating occasional waiting time at the Turkish Straits, the estimated demurrage is taken into consideration.

Azeri Light FOB Supsa 80kt: This daily spot assessment takes into account cargoes loading from the Black Sea port of Supsa. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. Delivered prices may be used in the assessment once adjusted for freight costs. Platts typically uses freight rates of a 80,000mt cargo (standard Aframax) to provide a guide for the FOB level, using Platts spot freight assessments in the Dirty Tankerwire report. After the introduction of the so-called "Bosporus clause" in November, 2002, restricting passage for crude oil tankers to the day hours and thereby creating occasional waiting time at the Turkish Straits, the estimated demurrage is taken into consideration.

Azeri Light BTC FOB Ceyhan: This daily spot assessment takes into account cargoes loading from the Turkish port of Ceyhan. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. Delivered prices may be used in the assessment once adjusted for freight costs. Platts uses freight rates of a 135,000mt cargo (standard Suezmax) to provide a guide for the FOB level, using Platts spot freight assessments in the Dirty Tankerwire report. The assessment was first published January 2, 2014.

Azeri Light BTC FOB Ceyhan 80kt: This daily spot assessment takes into account cargoes loading from the Turkish port of Ceyhan. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. Delivered prices may be used in the assessment once adjusted for freight costs. Platts typically uses freight rates of a 80,000mt cargo (standard Aframax) to provide a guide for the FOB level, using Platts spot freight assessments in the Dirty Tankerwire report. The assessment was first published January 2, 2014.

BTC (Azeri) crude FOB Ceyhan basis: This daily spot assessment reflects typical export grade from the BTC pipeline at Ceyhan. Typical export grade currently reflects Azeri Light crude. The typical volume is seen at 80,000 mt but export volumes may change depending on market conditions. Assessments are based on spot trading activity for cargoes loading 10-30 days ahead of date of publication. Delivered prices may be used in the assessment once adjusted for freight costs. Platts uses the average of freight rates of an 80,000 mt cargo (standard Aframax) and a 135,000 mt cargo (standard Suezmax) to provide a guide for the FOB level, using Platts spot freight assessments in the Dirty Tankerwire report.

CPC Blend (CIF Augusta): This daily spot assessment takes into account cargoes loading from Black Sea port CPC Terminal for delivery into the Mediterranean. The assessment basis is CIF Augusta, Sicily/Italy. Both small and large cargoes are used for the assessment (approximately 80-140,000mt). Cargoes delivered to other ports in the Mediterranean can also be considered with freight costs taken into account. Cargoes for delivery within the Black Sea are not taken into account. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account.

CPC Blend FOB (CPC Terminal): This daily spot assessment takes into account cargoes loading from the CPC terminal on the Black Sea. Both small and large cargoes are used for the assessment (approximately 80-140,000mt). The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. Platts typically uses freight rates of a 135,000mt cargo (standard Suezmax) to provide a guide for the FOB level, using Platts spot freight assessments in the Dirty Tankerwire. After the introduction of the so-called "Bosporus clause" in November, 2002, restricting passage for crude oil tankers to the day hours and thereby creating occasional waiting time at the Turkish Straits, the estimated demurrage is taken into consideration. The port charges applicable to Novorossiisk are deducted and the CPC terminal charges are added in freight calculations.

CPC Blend FOB (CPC Terminal) 80kt: This daily spot assessment takes into account cargoes loading from the CPC terminal on the Black Sea. Both small and large cargoes are used for the assessment (approximately 80-140,000mt). The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. Platts typically uses freight rates of an 80,000mt cargo (standard Aframax) to provide a guide for the FOB level, using Platts spot freight assessments in the Dirty Tankerwire. After the introduction of the so-called "Bosporus clause" in November, 2002, restricting passage for crude oil tankers to the day hours and thereby creating occasional waiting time at the Turkish Straits, the estimated demurrage is taken into consideration. The port charges applicable to Novorossiisk are deducted and the CPC terminal charges are added in freight calculations.

Suez Blend (FOB Ras Sukheir): The spot assessment of this Egyptian crude is made on a daily basis. Spot cargoes of Suez Blend may be sold Brent-related FOB Ras Sukheir. In periods of spot market illiquidity the price assessment for Suez Blend will be valued as a differential to Mediterranean sour crude benchmark Urals CIF Med, taking into account the freight and quality difference between the two crudes.

Es Sider (FOB Es Sider): This daily spot assessment takes into account cargoes loading from the Libyan port of Es Sider for delivery into the Mediterranean. In periods of spot market illiquidity, Es Sider is valued as a premium to Mediterranean sour crude benchmark Urals CIF Augusta, netbacked from Augusta to Es Sider using the freight rates for the 80,000mt cargo size as published in Platts Dirty Tankerwire.

Kirkuk ex-Ceyhan (FOB): This daily spot assessment takes into account Iraqi Kirkuk crude loading at Ceyhan in Turkey. Prices are assessed on an FOB basis. The typical cargo size is 140,000mt, but both small and large cargoes are used for the assessment (approximately 80-140,000mt). The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. In periods of spot market illiquidity, Kirkuk is valued as a differential or occasionally a premium to Mediterranean sour crude benchmark Urals CIF Augusta, netbacked from Augusta to Ceyhan using the freight rates for the 135,000mt cargo size as published in Platts Dirty Tankerwire.

Iran Light (FOB Sidi Kerir): This daily spot assessment is daily and takes into account cargoes loading from the Egyptian port of Sidi Kerir for delivery into the Mediterranean. Since Mar 15, 2001, in the absence of any spot market information, Platts has assessed Iranian crudes in relation to their Official Selling Prices (OSPs). Iranian OSPs, set monthly by the National Iranian Oil Company, NIOC, are related to the ICE's Brent weighted average (BWAVE) and Platts uses Dated to Frontline (DFL) swaps in order to obtain a conversion value between BWAVE and Dated Brent.

Iran Heavy (FOB Sidi Kerir): This daily spot assessment takes into account cargoes loading from the Egyptian port of Sidi Kerir for delivery into the Mediterranean. Since Mar 15, 2001, in the absence of any spot market information, Platts has assessed Iranian crudes in relation to their Official Selling Prices (OSPs). Iranian OSPs, set monthly by the National Iranian Oil Company, NIOC, are related to the ICE's Brent weighted average (BWAVE) and Platts uses dated to frontline (DFL) swaps in order to obtain a conversion value between BWAVE and Dated Brent.

Saharan Blend (FOB): This daily spot assessment takes into account cargoes loading from Algerian ports Skikda and Arzew. Prices are assessed on an FOB basis. Both small and large cargoes are used for the assessment (approximately 80-140,000mt). The typical pricing period for cargoes is either three of five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account

Zarzaitine: This daily spot assessment takes into account cargoes loading from La Skhirra in Tunisia, though the origin of the crude itself is Algerian. Prices are assessed on an FOB basis. Both small and large cargoes are used for the assessment (approximately 60-140,000mt). The pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. In periods of spot market illiquidity the price assessment for Zarzaitine will be valued as a premium to Algeria's Saharan Blend, taking into account the quality difference between the two crudes. Platts plans to discontinue this assessment with effect from October 1, 2015.

Syrian Light: This daily spot assessment takes into account cargoes loading from Banias in Syria. Prices are assessed on an FOB basis. Both small and large cargoes are used for the assessment (approximately 80-140,000mt). The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. In April 2003, Syria cut exports by approximately 40 percent, which has made the market less liquid. So in periods of spot market illiquidity the price assessment for Syrian Light will be valued as a differential to Mediterranean sour crude benchmark, Urals CIF Med, taking into account the quality difference between the two crudes.

Syrian Heavy (Souedie): This daily spot assessment takes into account cargoes loading from Tartous in Syria. Prices are assessed on an FOB basis. Both small and large cargoes are used for the assessment (approximately 80-140,000mt). The typical pricing period for cargoes is either three of five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. In April 2003, Syria cut exports by approximately 40 percent, which has made the market less liquid. So in periods of spot market illiquidity the price assessment for Syrian Heavy will be valued as a differential to Mediterranean sour crude benchmark, Urals CIF Med, taking into account the quality difference between the two crudes.

Urals and Mediterranean Crude Netback Calculations : Effective January 2, 2015, Platts uses the following Worldscale flat rates per metric ton for crude oil FOB Mediterranean and Northwest Europe spot assessments. Rates from Augusta to: Novorossiisk CPC terminal $9.76, Novorossiisk $9.76, Supsa $8.95, Batumi $10.38, Es Sider $4.95, Skikda $6.25, Ceyhan $8.20, Banias $7.04, Tartous $7.06, Sidi Kerir $5.94. Rotterdam to Primorsk $9.21. Rotterdam to Baltics ports (basket of Butinge $8.06, Ventspils $8.43 and Tallinn $9.82) $8.77. The Rotterdam port charge used will be $0.15/barrel.

Urals CFDs and Swaps

Urals CFDs (Contract for Difference) are swaps traded for monthly periods, assessed by Platts for each of three full calendar months ahead of the current date of publication for each Urals Northwest Europe and Urals Mediterranean. For Northwest Europe, they represent market the differential in price between the Mediterranean Dated Strip assessment and Urals CIF Rotterdam assessments through the contractual period of the swap. For the Mediterranean, they represent the market differential in price between the Dated Brent assessment and Urals Recombined (RCMB) assessments through the contractual period of the swap.

Assessments are expressed as a differential.

EUROPE

	Sulfur (%)	API	Production (b/d)	Conversion Factor (barrels to mt)	Country	Location	Operator
North Sea Crude							
Brent	0.40	37.5	120,000	7.52	UK	Sullom Voe	Shell
Forties	0.79	38.7	370,000	7.57	UK	Hound Point	BP
Oseberg	0.25	37.8	140,000	7.53	Norway	Sture	Statoil
Ekofisk	0.19	38.5	310,000	7.56	Norway	Teesside	ConocoPhillips
Statfjord	0.25	39.3	130,000	7.60	Norway	North Sea	Statoil
Gullfaks	0.26	37.5	200,000	7.52	Norway	North Sea	Statoil
Flotta	0.98	36.2	20,000	7.46	Norway	North Sea	Talsiman
Troll	0.14	35.9	235,000	7.44	Norway	Mongstad	Statoil
DUC	0.25	33.5	80,000	7.34	Denmark	Fredericia	Maersk
West African Crude							
Bonny Light	0.15	35.09	540,000	7.41	Nigeria	Nigeria	Shell
Qua Iboe	0.12	36	400,000	7.45	Nigeria	Offshore	ExxonMobil
Forcados	0.28	30.42	420,000	7.20	Nigeria	Nigeria	Shell
Escravos	0.17	33.51	400,000	7.34	Nigeria	Nigeria	Chevron
Brass River	0.11	37.4	180,000	7.51	Nigeria	Nigeria	Eni
Agbami	0.04	47.88	270,000	7.98	Nigeria	Offshore	Chevron
Akpo	0.06	45.98	170,000	7.89	Nigeria	Offshore	Total
Bonga	0.24	30.6	225,000	7.21	Nigeria	Offshore	Shell
Djeno	0.42	27.27	190,000	7.06	Republic of Congo	Republic of Congo	Total
Cabinda	0.15	32.2	200,000	7.28	Angola	Angola	Chevron
Girassol	0.34	29.81	250,000	7.17	Angola	Offshore	Total
Kissanje	0.38	30.8	160,000	7.22	Angola	Kizomba B FPSO	ExxonMobil
Hungo	0.62	28.7	160,000	7.12	Angola	Kizomba A FPSO	ExxonMobil
Nemba	0.21	39.79	230,000	7.62	Angola	Offshore	Chevron
Dalia	0.51	23.14	200,000	6.88	Angola	Offshore	Total
Pazflor	0.43	25.6	240,000	6.99	Angola	Offshore	Total
Plutonio	0.37	33.2	160,000	7.32	Angola	Offshore	BP
Urals/Mediterranean Crude							
Urals (ex-Novo)	1.36	31.3	610,000	7.24	Russia	Black Sea (Novorssiisk terminal)	Transneft
Urals (ex-Baltics)	1.44	31.5	1,350,000	7.25	Russia	Baltic Sea (Ventspils, Butinge, Tallinn basket)	Transneft
Kirkuk	2.26	33.9	400,000	7.36	Iraq	Iraq	SOMO
Suez Blend	1.41	31.3	-	7.24	Egypt	Egypt	BP/EGPC
Siberian Light	0.57	35.1	50,000	7.41	Russia	Black Sea	Transneft
Syrian Heavy	4.19	23.12	-	6.88	Syria	Syria	SNOC
Syrian Light	0.68	38	-	7.54	Syria	Syria	SNOC
Es Sider	0.37	36.71	340,000	7.48	Libya	Libya	NOC
Iranian Heavy	1.99	29.5	-	7.16	Iran	Egypt	NIOC
Iranian Light	1.36	33.4	-	7.33	Iran	Egypt	NIOC
Saharan Blend	0.1	45	450,000	7.85	Algeria	Algeria	Sonatrach
Zarzaitine	0.1	42.5	20,000	7.74	Algeria	Tunisia	Sonatrach
CPC	0.56	45.3	830,000	7.86	Kazakhstan	Black Sea	TCO/KPO/KMG
Azeri Light (FOB Supsa/Batumi)	0.16	34.75	100,000	7.39	Azerbaijan	Black Sea	SOCAR (Downstream)
Azeri Light (FOB Ceyhan)	0.15	36.55	750,000	7.47	Azerbaijan	Turkey	SOCAR (Downstream)
ESPO	0.5	34.7	475,000	7.39	Russia	East Russia, Kozmino	Transneft

PERSIAN GULF

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
DUBAI, OMAN AND UPPER ZAKUM												
Dubai M1	PCAAT00	PCAAT03			FOB	Fateh	M+2	25,000	500,000	US $	Barrels	
Dubai M2	PCAAU00	PCAAU03			FOB	Fateh	M+3	25,000	500,000	US $	Barrels	
Dubai M3	PCAAV00	PCAAV03			FOB	Fateh	M+4	25,000	500,000	US $	Barrels	
MEC M1	AAWSA00	AAWSA03			FOB	Fateh	M+2	25,000	500,000	US $	Barrels	
MEC M2	AAWSB00	AAWSB03			FOB	Fateh	M+3	25,000	500,000	US $	Barrels	
MEC M3	AAWSC00	AAWSC03			FOB	Fateh	M+4	25,000	500,000	US $	Barrels	
Upper Zakum	AAOUQ00	AAOUQ03			FOB		M+2	25,000	500,000	US $	Barrels	
Upper Zakum vs OSP	AAOUR00	AAOUR03			FOB		M+2	25,000	500,000	US $	Barrels	
Brent/Dubai	AAJMS00									US $	Barrels	
Oman M1	PCABS00				FOB	Mina Al Fahal	M+2	25,000	500,000	US $	Barrels	
Oman M2	AAHZF00				FOB	Mina Al Fahal	M+3	25,000	500,000	US $	Barrels	
Oman M3	AAHZH00				FOB	Mina Al Fahal	M+4	25,000	500,000	US $	Barrels	
Oman M1 vs OSP	PCABT00				FOB	Mina Al Fahal	M+2	25,000	500,000	US $	Barrels	
Murban	AAKNL00	AAKNM00			FOB	Abu Dhabi	M+2	25,000	500,000	US $	Barrels	
Murban vs OSP	AAKUB00	AAKUC00			FOB	Abu Dhabi	M+2	25,000	500,000	US $	Barrels	
Al Shaheen	AAPEV00	AAPEV03			FOB	Qatar	M+2	25,000	500,000	US $	Barrels	
Al Shaheen vs Dubai	AAPEW00	AAPEW03			FOB	Qatar	M+2	25,000	500,000	US $	Barrels	
OTHER PERSIAN GULF CRUDES												
Das Blend	AAXOF00	AAXPF00			FOB	Abu Dhabi	M+2	500,000	500,000	US $	Barrels	
Das Blend vs OSP	AAXPH00	AAXPL00			FOB	Abu Dhabi	M+2	500,000	500,000	US $	Barrels	
Qatar Land	AAKNP00	AAKNQ00			FOB	Qatar	M+2	500,000	500,000	US $	Barrels	
Qatar Land vs OSP	AAKUJ00	AAKUK00			FOB	Qatar	M+2	500,000	500,000	US $	Barrels	
Qatar Marine	AAKNR00	AAKNS00			FOB	Qatar	M+2	500,000	500,000	US $	Barrels	
Qatar Marine vs OSP	AAKUH00	AAKUI00			FOB	Qatar	M+2	500,000	500,000	US $	Barrels	
Banoco	AAKNT00	AAKNU00			FOB	Bahrain	M+2	500,000	500,000	US $	Barrels	
Banoco vs OSP	AAKUD00	AAKUE00			FOB	Bahrain	M+2	500,000	500,000	US $	Barrels	
DFC (Asia close)	ADFCA00	ADFCA03			FOB	Qatar	M+2	500,000	500,000	US $	Barrels	
DFC (London close)	ADFCD00	ADFCD03			FOB	Qatar	M+2	500,000	500,000	US $	Barrels	
DFC vs. Dated Brent	ADFCC00	ADFCC03			FOB	Qatar	M+2	500,000	500,000	US $	Barrels	
DFC vs. Dubai	ADFCB00	ADFCB03			FOB	Qatar	M+2	500,000	500,000	US $	Barrels	
Qatar LSC (Asia close)	AARBB00	AARBB03			FOB	Ras Laffan	M+2	500,000	500,000	US $	Barrels	
Qatar LSC (London close)	AARBA00	AARBA03			FOB	Ras Laffan	M+2	500,000	500,000	US $	Barrels	
Qatar LSC vs Dated Brent	AARBC00	AARBC03			FOB	Ras Laffan	M+2	500,000	500,000	US $	Barrels	
Qatar LSC vs Dubai	AARBD00	AARBD03			FOB	Ras Laffan	M+2	500,000	500,000	US $	Barrels	

PERSIAN GULF

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
South Pars (Asia close)	AARAV00	AARAV03			FOB	Assaluyeh	M+2	500,000	500,000	US $	Barrels	
South Pars (London close)	AARAU00	AARAU03			FOB	Assaluyeh	M+2	500,000	500,000	US $	Barrels	
South Pars vs Dated Brent	AARAW00	AARAW03			FOB	Assaluyeh	M+2	500,000	500,000	US $	Barrels	
South Pars vs Dubai	AARAX00	AARAX03			FOB	Assaluyeh	M+2	500,000	500,000	US $	Barrels	

PERSIAN GULF

Dubai, Oman, Upper Zakum, Al Shaheen and Murban

Platts assesses physical Dubai and Oman, for three forward months, starting two months forward from the date of assessment. For instance, in April, Platts assesses June, July and August liftings for both Dubai and Oman. The rollover of assessment coverage occurs on the first working day of the month. For example, Platts would assess June as front-month Dubai and Oman on April 30, and roll the coverage of front-month Dubai and Oman from June to July on May 1. In May, Platts publishes assessments for July, August and September Dubai and Oman.

Platts added Qatar's Al Shaheen crude and Abu Dhabi's Murban crude to the Middle East crude benchmark basket with effect from January 4, 2016. From January 4, 2016, Al Shaheen is included in the Dubai basket and destination-free Murban is included in the Dubai and Oman baskets. Platts will also reflect the value of Al Shaheen crude, and Murban crude, as expressed through bids, offers and trading activity in partial cargo sizes of 25,000 barrels each, with a full cargo of 500,000 barrels to be delivered when the same buyer and seller have traded 20 partials.

Dubai: Platts Dubai assessments reflect market activity in which the Dubai buyer will accept delivery of Dubai crude oil itself, or alternative delivery of Upper Zakum, Oman, Al Shaheen or Murban. Platts reflects the value of crude as expressed through bids, offers and trading activity in partial cargo sizes of 25,000 barrels each, with a full cargo of 500,000 barrels to be delivered when the same buyer and seller have traded 20 partials together. Activity reported from any Dubai crude oil market participant will be taken into account only if the participant is willing to accept an Upper Zakum, Oman, Al Shaheen or Murban cargo delivery in lieu of Dubai. Likewise, activity reported by any Dubai crude seller will be taken into account only if the seller is willing to declare the grade (Dubai or Upper Zakum or Oman or Al Shaheen or Murban) to be lifted by the buyer at the time a cargo is traded. Such declaration of grade must be made at the point of executing the transaction (on physical convergence). The Platts Dubai assessment will reflect the most competitive crude in the group.

Platts amended the full cargo size reflected in its Dubai, Oman and Upper Zakum crude oil spot price assessment process to 500,000 barrels with effect from November 1, 2013. The change in cargo size took effect for cargoes loading from January 2014 onwards. Under Platts' updated methodology, a 500,000-barrel cargo would require 20 partials to be traded between the same buyer and seller for physical delivery, instead of the previous 19-partial system. Previously, the cargo size of Dubai, Oman or Upper Zakum used in Platts assessment process was typically 475,000 barrels, and partial cargoes, trading in lots of 25,000 barrels each, converged into a full physical cargo when a 19th partial cargo was traded between a single buyer and a single seller.

Size: Platts Dubai, Oman, Upper Zakum, Al Shaheen and Murban assessments reflect 25,000 barrel parcels, with a full cargo to be delivered upon convergence between a buyer and seller. Spot premiums for full 500,000 barrel cargoes may be considered or factored into the assessment, particularly in the event of a wide bid/offer range.

Oman: Platts Oman assessments reflect market activity in which the Oman buyer will accept delivery of Oman crude oil itself, or alternative delivery of Murban. Platts reflects the value of crude as expressed through bids, offers and trading activity in partial cargo sizes of 25,000 barrels each, with a full cargo of 500,000 barrels to be delivered when the same buyer and seller have traded 20 partials together. Activity reported from any Oman crude oil market participant will be taken into account only if the participant is willing to accept a Murban cargo delivery in lieu of Oman. Likewise, activity reported by any Oman crude seller will be taken into account only if the seller is willing to declare the grade (Oman or Murban) to be lifted by the buyer at the time a cargo is traded. Such declaration of grade must be made at the point of executing the transaction (on physical convergence). Platts will evaluate all market relevant data to arrive at its Oman assessments. Oman may trade on a flat price basis, at a differential versus Dubai, or versus its Official Selling Price set by the Ministry of Oil and Gas (MOG). The spot market value for Oman may be assessed using any of these inputs, or by tracking Brent/Oman spreads. A value shown relative to Oman's OSP may be measured in reference to Oman swaps or futures. The assessment for Oman MOG represents a differential between the spot value of Oman crude oil and the anticipated Oman Official Selling Price.

MOG/Dubai spread: The MOG/Dubai spread is a derivative instrument and is settled by measuring the differential between Oman's official selling price and Dubai for the month concerned. This spread is traded in the "over-the-counter" market and has no physical delivery.

Upper Zakum: Platts Upper Zakum assessments reflect market activity in which the Upper Zakum buyer will accept delivery of Upper

Zakum crude oil itself, or alternative delivery of Murban. Platts reflects the value of crude as expressed through bids, offers and trading activity in partial cargo sizes of 25,000 barrels each, with a full cargo of 500,000 barrels to be delivered when the same buyer and seller have traded 20 partials together. Activity reported from any Upper Zakum crude oil market participant will be taken into account only if the participant is willing to accept a Murban cargo delivery in lieu of Upper Zakum. Likewise, activity reported by any Upper Zakum crude seller will be taken into account only if the seller is willing to declare the grade (Upper Zakum or Murban) to be lifted by the buyer at the time a cargo is traded. Such declaration of grade must be made at the point of executing the transaction (on physical convergence). In the event of partials trading activity in the market for Upper Zakum, the same terms and conditions will apply as for Dubai and Oman. Dubai cannot be nominated against Upper Zakum. In May 2006, a spot market for Upper Zakum started up with ExxonMobil taking a 28% stake in Upper Zakum production and selling non destination restricted cargoes on a term basis. Typically, ADNOC has sold Upper Zakum as destination-restricted cargoes. Destination restricted cargoes cannot be nominated in the event of physical convergence in the partials market. Platts will monitor future Upper Zakum trading patterns and make any necessary adjustments to methodologies.

Al Shaheen: Platts Al Shaheen assessments reflect market activity in which the Al Shaheen buyer will accept delivery of Al Shaheen crude oil itself, or alternative delivery of Al Shaheen. Platts reflects the value of crude as expressed through bids, offers and trading activity in partial cargo sizes of 25,000 barrels each, with a full cargo of 500,000 barrels to be delivered when the same buyer and seller have traded 20 partials together. Activity reported from any Al Shaheen crude oil market participant will be taken into account only if the participant is willing to accept a Murban cargo delivery in lieu of Al Shaheen. Likewise, activity reported by any Al Shaheen crude seller will be taken into account only if the seller is willing to declare the grade (Al Shaheen or Murban) to be lifted by the buyer at the time a cargo is traded. Such declaration of grade must be made at the point of executing the transaction (on physical convergence). Sellers of cargoes of Al Shaheen in the Market on Close process should inform buyers of the dates of the specific nominated cargo as soon as possible, and at the latest before the end of the last trading day of the month of trade execution.

Murban: Platts Murban assessments reflect bids, offers and expressions of interest to trade in Murban partials where the buyer is willing to take delivery of destination-free Murban crude oil. Bids, offers and expressions of interest to trade for all other partials in the MOC -- Dubai, Upper Zakum, and Murban itself -- would all also be considered for publication only where the buyer is willing to take delivery of destination-free Murban crude oil upon convergence.

Persian Gulf Market on Close publishing principles: Offers for Al Shaheen, Murban, Oman and Upper Zakum crudes submitted for publication in the Market on Close assessment process should not be lower than an existing bid for Dubai crude. Similarly, bids for Dubai, Oman, Upper Zakum and Al Shaheen crude oils should not be higher than an existing offer for Murban crude in the MOC process. When a bid for Dubai is equal to or higher than any bids for Murban, Oman, Al Shaheen or Upper Zakum, the Dubai bid must be taken out first under current Platts guidelines. When an offer for Dubai is equal to or higher than any offers for Murban, Oman, Al Shaheen or Upper Zakum, the offers for Murban, Oman, Al Shaheen or Upper Zakum must be taken out first under current Platts guidelines. When a Murban offer is equal to or lower than offers for Dubai, Oman, Al Shaheen or Upper Zakum, then the Murban offer must be taken out first under current Platts guidelines. When a Murban bid is equal to or lower than any bids for Dubai, Oman, Al Shaheen or Upper Zakum, the bids for Dubai, Oman, Al Shaheen or Upper Zakum must be taken out first under current Platts guidelines.

Derivatives/swaps: Platts assesses three forward months for Dubai swaps. The swaps price out on the Platts Dubai front-month cash assessments. Dubai swaps typically trade on a monthly calendar basis, but unlike physical assessments, the swaps are assessed from one month forward. In January, for example, the first month swap assessed is February, followed by March and April. The rollover date for the Dubai swaps is the 1st of every calendar month. These swaps are used for hedging and speculative purposes. The Dubai swaps contract has no physical delivery. The Dubai swap typically prices out against Platts Dubai assessments. Effective December 1, 2015, Platts started assessing Dubai and Oman derivatives independently of physical assessments. From December 1, 2015, Platts will give clear priority in those assessments to the value of Dubai derivatives that are fully demonstrated in the derivatives market.

Platts will take into consideration transparently reported bids, offers and trades in flat price Dubai derivatives, time spreads from the Dubai derivatives market, and other financial instruments, including the Brent-Dubai EFS, or Exchange of Futures for Swaps. Platts will collect this information from all participants during the Market on Close assessment process, and through observation of derivatives trading in electronic exchanges and over-the-counter markets. Platts will make no change to the way it assesses physical delivery months through this proposal.

Convergence of partials to a full cargo: Trading volumes assessed: Platts assessments for Dubai, Oman, Upper Zakum, Al Shaheen and Murban are based on a minimum of 25,000 barrel partial cargo bid/offered or traded, with the market price derived from increments of 25,000 barrel. The value of 25,000 barrel parcels will take precedence over larger parcel sizes in the assessment process. In addition, a trader bidding/offering, for example, 100,000 barrels must be willing to trade in 25,000 barrel clips with any counterparty.

Once a principal acquires 20, 25,000 barrel parcels of the same grade (Dubai, Oman, Upper Zakum, Al Shaheen or Murban) from a single seller within the calendar month, the partials automatically converge into a physical cargo of 500,000 barrel. Neither the seller nor the buyer has the right to deny delivery or to refuse lifting. However, both parties may mutually agree to book out of the contract on the basis of the Dubai, Oman, Upper Zakum, Al Shaheen or Murban assessment published on the last working day of the calendar month.

Cash settlement: Any position amounting to less than 500,000 barrel by the calendar month's end is understood to be cash settled, unless both counterparties mutually agree to deliver/take delivery of a smaller top-up cargo. Partial contracts will be settled based on Platts assessments published on the last working day of each calendar month.

Pricing of terminal operational tolerance: The deviation of up to 1,000 barrel in operational tolerance, which is subject to terminal performance for cargoes delivered FOB Fateh terminal, Dubai will be priced on Dubai assessments published on the last working day of each calendar month. For example, the operational tolerance for cargoes loading in July will be priced off the assessment of May 31. The deviation of up to 1,000 barrel in operational tolerance for cargoes delivered FOB Mina Al Fahal terminal, Oman will be priced on Oman assessments published on the last working day of each calendar month.

Terms and conditions: Terms and conditions must be declared at seller's option upon transaction of the twentieth partial. Only Oman's MOG GT&C or Shell's General Terms and Conditions (GT&C) may be declared for Oman cargoes, as is standard practice in the physical cargo market. ConocoPhillips' GT&C are required for Dubai cargoes. For Al Shaheen cargoes, Maersk's GT&C are required while ADNOC's GT&C may be declared for Murban crude. Any of these terms and conditions, however, should not allow for further optionality over cargo size. A physical cargo created by 20 partial cargoes would be 500,000 barrel min/max (excluding 1,000 barrel in operational tolerance).

STS for Upper Zakum crude deliveries: With effect from August 3, 2015, Platts reflects the Abu Dhabi-III as an alternative delivery point in the Dubai partials crude oil assessment process for loading of Upper Zakum cargoes. For STS deliveries, the operational tolerance would remain at up to 1,000 barrels, as for standard terminal loadings. For deviations, volumes would be priced on Upper Zakum assessments published on the last working day of the month of trade. For example, for cargoes loading in October, operational tolerance would price against the Platts Upper Zakum assessment published on August 31. The Aframax Abu Dhabi-III, IMO number 9489027, is operated by Abu Dhabi National Tanker Company. Platts has been notified that ship-to-ship operations from the vessel would be completed within port limits at Zirku, the current load point for Upper Zakum cargoes. Platts understands that IRSHAD (Petroleum Ports Operating Company) arranges STS services.

Loading date nominations: Buyers should nominate loading dates for Dubai, Upper Zakum, Al Shaheen, Oman or Murban cargoes prior to the last three days of the calendar month of loading, unless both parties mutually agree otherwise. This is to avoid B/L slippage (the risk that end-month loading dates of a cargo will spill over into the next month with different pricing implications.) Partials contracts leading to a full cargo delivery should contain an assurance of delivery for the month originally specified. Buyers of 20 partials retain the flexibility to negotiate with a seller for differing volumes for loading in part-cargoes, or to request a book-out of some or the entire volume, subject to mutual agreement.

Trading counterparties: Affiliates or closely-related trading parties will be deemed part of the same parent company for partials trading considerations. If subsidiaries/offshore entities of parent company "A" trade with company "B", those partials will be added and considered as part of the total partials trading position of parent company "A".

Price assessment: To arrive at its Persian Gulf crude assessments, Platts will take into account fixed-price bid/offers for partial and full cargoes where applicable; inter-month spreads; Dubai or Oman swaps; differentials to the monthly official selling prices set by producers of a grade; spot premia/discounts; EFPs or spreads to crude grades such as Brent; and spreads to published benchmarks. In the event of a wide bid/offer spread, Platts will not average the bid and offer. Platts will evaluate market conditions and establish an assessment that in its editorial judgment reflects the transactable level of crude. Unusually high or low price deals will be scrutinized by Platts to discern whether the deal is fit for assessment purposes.

Bids and offers with unusual terms and conditions will typically not be taken into account. Platts should be informed prior to the assessment process of any counterparty with which a principal cannot trade for financial or legal reasons. Bids and offers made by counterparties unable to trade with each other may cross, allowing other traders to arbitrage the difference. Platts should be informed by the principal prior to the assessment window if a broking house is submitting a bid or offer on the principal's behalf. Representative broking houses will have similar execution responsibilities and bear similar exposures as their principals for non-performance of trading instruments, whether cash settled or physically delivered.

Other Persian Gulf crudes

Platts publishes spot assessments for other Persian Gulf crudes in addition to Dubai, Upper Zakum, Al Shaheen, Oman and Murban: Das Blend, Qatar Land, Qatar Marine and Banoco Arab Medium crudes.

Front-month assessments for the Persian/Arab Gulf grades reflect cargoes loading two calendar months from date of publication. For example, in March, the front-month assessments reflect barrels loading in May. On the first working day of April, the front-month assessments will rollover to reflect barrels loading in June.

The assessments in the Persian/Arab Gulf reflect 500,000 barrel parcels. Spot premiums for partial cargoes may be considered or factored into the assessment concerned. Platts assessments for all Persian/Arab Gulf grades are based on a market on close principle at 1630 Singapore time or 0830 GMT.

Das Blend: This is a crude from Abu Dhabi of the United Arab Emirates. The grade typically trades at a differential to Abu Dhabi National Oil Co's official selling price for the month concerned. May loading cargoes would trade at a differential to ADNOC's May OSP, which is calculated as a differential to Dubai. The equation used to arrive at a Das Blend assessment for May barrels is as follows: May Dubai swaps + Existing Murban OSP/Dubai spread + May spot Murban differentials + expected ADNOC adjustments. Platts began assessing Das Blend on May 2, 2014, to reflect ADNOC's blending together of the Lower Zakum and Umm Shaif crude streams into Das Blend. Platts discontinued the Lower Zakum and Umm Shaif assessments on August 1, 2014.

Qatar Land and Qatar Marine: These crudes typically trade at a differential to Qatar Petroleum's official selling price. Qatar's OSP is announced on a retroactive basis and is based on a differential to Oman's OSP. For example, the June OSP would be published early July. The equation to derive Qatar Land and Qatar Marine's assessment for barrels lifting in May is as follows: May Oman MOG swaps + existing OSP/Oman OSP spread + spot differentials + expected OSP adjustments.

Banoco (Bahrain National Oil Co) Arab Medium: This crude comes from Bahrain and is similar in quality to Saudi Arab Medium. Saudi crudes typically do not trade on a spot basis but Banoco Arab Medium can trade spot, priced as a differential to Saudi Aramco's Arabian Medium official selling price for Asia. Aramco's OSP is announced one month forward and is based on the average of front-month Dubai/ Oman assessments plus a differential. Therefore, the July OSP is announced early June. The equation used to derive Banoco Arab Medium's assessment for barrels loading in May is as follows: Average of May Oman & Dubai swaps + existing OSP differential + spot differentials + expected OSP adjustments.

Deodorized Field Condensate (Ras Gas condensate) crude: Spot assessments reflect barrels loading two calendar months from the date of publication. For example, on January 3, barrels loading in March are assessed. These assessments roll over on the first working day of the month. Spot assessments of DFC consist of a fixed-price assessment and an assessment of the spot market differential against Platts' Dubai assessments. Assessments take into consideration DFC traded in typical 500,000 barrel cargoes. On May 4, Platts began publishing a DFC assessment alongside the existing Ras Gas condensate to ensure Platts' assessments and terminology conformed to current market conventions. Platts understands Qatar International Petroleum Marketing Co. no longer sells condensate under the Ras Gas name. The DFC assessment is identical to the existing Ras Gas assessment and will carry the historical data for Ras Gas once Platts discontinues the Ras Gas assessment on January 2, 2016.

South Pars condensate: Iran's South Pars condensate is produced from gas fields and exported from the Persian Gulf port of Assaluyeh. After several new fields come online, production by end-2009 is estimated at around 412,000 b/d. South Pars has gravity of 54.4 API and a sulfur content of 0.22%. South Pars condensate is evaluated at Asian close (0830 GMT) as a fixed price, as a differential to Platts Middle Eastern crude oil benchmark Dubai, and as a differential to Dated Brent which is assessed at London close (1630 hours local time).

Qatar LSC condensate: Qatar LSC (previously known as Dolphin condensate) is exported from Ras Laffan port in cargoes of 500,000 barrels, and typically marketed at a differential to Platts Middle Eastern crude oil benchmark Dubai, or as a differential to a basket of Platts FOB AG naphtha, kerosene and gasoil assessments. Four cargoes of Dolphin condensate are typically sold each month by Tasweeq (The Qatar International Petroleum Marketing Co.). Dolphin condensate has gravity of 56.9 API, and a sulfur content of 0.19%. This condensate is assessed at Asian close (0830 GMT) as a fixed price, as a differential to Platts Middle Eastern crude oil benchmark Dubai, and as a differential to Dated Brent which is assessed at London close (1630 hours local time).

ASIA PACIFIC

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Asian Dated Brent	AAXPG00	AAXPG03			FOB	North Sea	10-25 days	600,000	600,000	US $	Barrels	
Ardjuna (Asia close)	PCACQ00	AAFZM00			FOB	Ardjuna Terminal	M+2 (roll on the 9th)			US $	Barrels	
Ardjuna (London close)	AAPBF00	AAPBF03			FOB	Ardjuna Terminal	M+2 (roll on the 9th)			US $	Barrels	
Ardjuna vs Dated Brent	AAPBG00	AAPBG03			FOB	Ardjuna Terminal	M+2 (roll on the 9th)			US $	Barrels	
Ardjuna vs ICP	PCACR00	PCACR03			FOB	Ardjuna Terminal	M+2 (roll on the 9th)			US $	Barrels	
Attaka (Asia close)	PCAAJ00	AAFZB00			FOB	Santan (Balikpapan)	M+2 (roll on the 9th)			US $	Barrels	
Attaka (London close)	AAPBB00	AAPBB03			FOB	Santan (Balikpapan)	M+2 (roll on the 9th)			US $	Barrels	
Attaka vs Dated Brent	AAPBC00	AAPBC03			FOB	Santan (Balikpapan)	M+2 (roll on the 9th)			US $	Barrels	
Attaka vs ICP	PCAAK00	PCAAK03			FOB	Santan (Balikpapan)	M+2 (roll on the 9th)			US $	Barrels	
Bach Ho (Asia close)	PCAHY00	PCAHZ03			FOB	Bach Ho Terminal	M+2 (roll on the 9th)	600,000	650,000	US $	Barrels	
Bach Ho (London close)	AAPAJ00	AAPAJ03			FOB	Bach Ho Terminal	M+2 (roll on the 9th)	600,000	650,000	US $	Barrels	
Bach Ho vs Dated Brent	AAPAK00	AAPAK03			FOB	Bach Ho Terminal	M+2 (roll on the 9th)	600,000	650,000	US $	Barrels	
Bach Ho vs OSP	AAPEY00	AAPEY03			FOB	Bach Ho Terminal	M+2 (roll on the 9th)	600,000	650,000	US $	Barrels	
Belida (Asia close)	PCAFL00	PCAFL03			FOB	Belida Terminal	M+2 (roll on the 9th)			US $	Barrels	
Belida (London close)	AAPBP00	AAPBP03			FOB	Belida Terminal	M+2 (roll on the 9th)			US $	Barrels	
Belida vs Dated Brent	AAPBQ00	AAPBQ03			FOB	Belida Terminal	M+2 (roll on the 9th)			US $	Barrels	
Belida vs ICP	PCAFM00	PCAFM03			FOB	Belida Terminal	M+2 (roll on the 9th)			US $	Barrels	
Cinta (Asia close)	PCAAX00	AAFZC00			FOB	Cinta Terminal	M+2 (roll on the 9th)			US $	Barrels	
Cinta (London close)	AAPBJ00	AAPBJ03			FOB	Cinta Terminal	M+2 (roll on the 9th)			US $	Barrels	
Cinta vs Dated Brent	AAPBK00	AAPBK03			FOB	Cinta Terminal	M+2 (roll on the 9th)			US $	Barrels	
Cinta vs ICP	PCAAY00	PCAAY03			FOB	Cinta Terminal	M+2 (roll on the 9th)			US $	Barrels	
Cossack (Asia close)	PCAGZ00	PCAGZ03			FOB	NW Australia	M+2 (roll on the 9th)			US $	Barrels	
Cossack (London close)	AAPAB00	AAPAB03			FOB	NW Australia	M+2 (roll on the 9th)			US $	Barrels	
Cossack vs Dated Brent	AAPAC00	AAPAC03			FOB	NW Australia	M+2 (roll on the 9th)			US $	Barrels	
Daqing (Asia close)	PCAAZ00	AAFZD00			FOB	Luda/Dalian	M+2 (roll on the 9th)			US $	Barrels	
Daqing (London close)	AAPAV00	AAPAV03			FOB	Luda/Dalian	M+2 (roll on the 9th)			US $	Barrels	
Daqing vs Dated Brent	AAPAW00	AAPAW03			FOB	Luda/Dalian	M+2 (roll on the 9th)			US $	Barrels	
Dar Blend (Asia close)	AARAB00	AARAB03			FOB	Sudan	M+2 (roll on the 9th)	600,000	1,000,000	US $	Barrels	
Dar Blend (London close)	AARAA00	AARAA03			FOB	Sudan	M+2 (roll on the 9th)	600,000	1,000,000	US $	Barrels	
Dar Blend vs Dated Brent	AARAC00	AARAC03			FOB	Sudan	M+2 (roll on the 9th)	600,000	1,000,000	US $	Barrels	
Duri (Asia close)	PCABA00	AAFZE00			FOB	Dumai	M+2 (roll on the 9th)			US $	Barrels	
Duri (London close)	AAPBL00	AAPBL03			FOB	Dumai	M+2 (roll on the 9th)			US $	Barrels	
Duri vs Dated Brent	AAPBM00	AAPBM03			FOB	Dumai	M+2 (roll on the 9th)			US $	Barrels	
Duri vs ICP	PCABB00	PCABB03			FOB	Dumai	M+2 (roll on the 9th)			US $	Barrels	
Enfield (Asia close)	AARAE00	AARAE03			FOB	Australia	M+2 (roll on the 9th)			US $	Barrels	
Enfield vs Dated Brent	AARAF00	AARAF03			FOB	Australia	M+2 (roll on the 9th)			US $	Barrels	
ESPO M1	AARWF00	AARWF03			FOB	Kozmino	M+2 (roll on the 9th)	80 kt	140 kt	US $	Barrels	

ASIA PACIFIC

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
ESPO M1 vs Dubai	AASEU00	AASEU03			FOB	Kozmino	M+2 (roll on the 9th)	80 kt	140 kt	US $	Barrels	
ESPO M2	AAWFE00	AAWFE03			FOB	Kozmino	M+2 (roll on the 9th)	80 kt	140 kt	US $	Barrels	
ESPO M2 vs Dubai	AAWFG00	AAWFG03			FOB	Kozmino	M+2 (roll on the 9th)	80 kt	140 kt	US $	Barrels	
Gippsland (Asia close)	PCACP00	AAFZL00			FOB	Westernport	M+2 (roll on the 9th)			US $	Barrels	
Gippsland (London close)	AAPAT00	AAPAT03			FOB	Westernport	M+2 (roll on the 9th)			US $	Barrels	
Gippsland vs Dated Brent	AAPAU00	AAPAU03			FOB	Westernport	M+2 (roll on the 9th)			US $	Barrels	
Handil Mix (Asia close)	PCABE00	AAFZF00			FOB	Senipah (Balikpapan)	M+2 (roll on the 9th)			US $	Barrels	
Handil Mix (London close)	AAPBH00	AAPBH03			FOB	Senipah (Balikpapan)	M+2 (roll on the 9th)			US $	Barrels	
Handil Mix vs Dated Brent	AAPBI00	AAPBI03			FOB	Senipah (Balikpapan)	M+2 (roll on the 9th)			US $	Barrels	
Handil Mix vs ICP	PCABF00	PCABF03			FOB	Senipah (Balikpapan)	M+2 (roll on the 9th)			US $	Barrels	
Kikeh (Asia close)	AAWUH00	AAWUH03			FOB	Sabah	M+2 (roll on the 9th)	300,000	600,000	US $	Barrels	
Kikeh (London close)	AAOZX00	AAOZX03			FOB	Sabah	M+2 (roll on the 9th)	300,000	600,000	US $	Barrels	
Kikeh vs Dated Brent	AAOZY00	AAOZY03			FOB	Sabah	M+2 (roll on the 9th)	300,000	600,000	US $	Barrels	
Kutubu (Asia close)	PCAFJ00	PCAFJ03			FOB	Kumul Terminal	M+2 (roll on the 9th)			US $	Barrels	
Kutubu (London close)	AAPAD00	AAPAD03			FOB	Kumul Terminal	M+2 (roll on the 9th)			US $	Barrels	
Kutubu vs Dated Brent	AAPAE00	AAPAE03			FOB	Kumul Terminal	M+2 (roll on the 9th)			US $	Barrels	
Labuan (Asia close)	PCABL00	AAFZG00			FOB	Sabah	M+2 (roll on the 9th)			US $	Barrels	
Labuan (London close)	AAPAP00	AAPAP03			FOB	Sabah	M+2 (roll on the 9th)			US $	Barrels	
Labuan vs Dated Brent	AAPAQ00	AAPAQ03			FOB	Sabah	M+2 (roll on the 9th)			US $	Barrels	
Minas (Asia close)	PCABO00	AAFZH00			FOB	Dumai	M+2 (roll on the 9th)	100,000		US $	Barrels	
Minas (London close)	AAPAZ00	AAPAZ03			FOB	Dumai	M+2 (roll on the 9th)	100,000		US $	Barrels	
Minas vs Dated Brent	AAPBA00	AAPBA03			FOB	Dumai	M+2 (roll on the 9th)	100,000		US $	Barrels	
Minas vs ICP	PCABP00	PCABP03			FOB	Dumai	M+2 (roll on the 9th)	100,000		US $	Barrels	
Miri Light (Asia close)	PCABQ00	AAFZI00			FOB	Lutong	M+2 (roll on the 9th)			US $	Barrels	
Miri Light (London close)	AAPAR00	AAPAR03			FOB	Lutong	M+2 (roll on the 9th)			US $	Barrels	
Miri Light vs Dated Brent	AAPAS00	AAPAS03			FOB	Lutong	M+2 (roll on the 9th)			US $	Barrels	
Nanhai (Asia close)	PCAFR00	PCAFR03			FOB	Huizhou	M+2 (roll on the 9th)			US $	Barrels	
Nanhai (London close)	AAPAF00	AAPAF03			FOB	Huizhou	M+2 (roll on the 9th)			US $	Barrels	
Nanhai vs Dated Brent	AAPAG00	AAPAG03			FOB	Huizhou	M+2 (roll on the 9th)			US $	Barrels	
Nile Blend (Asia close)	AAPLC00	AAPLC03			FOB	Sudan	M+2 (roll on the 9th)	600,000	650,000	US $	Barrels	
Nile Blend (London close)	AAPAL00	AAPAL03			FOB	Sudan	M+2 (roll on the 9th)	600,000	650,000	US $	Barrels	
Nile Blend vs Dated Brent	AAPAM00	AAPAM03			FOB	Sudan	M+2 (roll on the 9th)	600,000	650,000	US $	Barrels	
Nile Blend vs ICP	AAPEX00	AAPEX03			FOB	Sudan	M+2 (roll on the 9th)	600,000	650,000	US $	Barrels	
NW Shelf (Asia close)	PCAGX00	PCAGX03			FOB	Dampier	M+2 (roll on the 9th)			US $	Barrels	
NW Shelf (London close)	AAPAH00	AAPAH03			FOB	Dampier	M+2 (roll on the 9th)			US $	Barrels	
NW Shelf vs Dated Brent	AAPAI00	AAPAI03			FOB	Dampier	M+2 (roll on the 9th)			US $	Barrels	
Senipah (Asia close)	AAEOE00	AAEOF00			FOB	Blanglancang	M+2 (roll on the 9th)			US $	Barrels	

ASIA PACIFIC

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Senipah (London close)	AAPBD00	AAPBD03			FOB	Blanglancang	M+2 (roll on the 9th)			US $	Barrels	
Senipah vs Dated Brent	AAPBE00	AAPBE03			FOB	Blanglancang	M+2 (roll on the 9th)			US $	Barrels	
Senipah vs ICP	AAEOK00	AAEOL00			FOB	Indonesia	M+2 (roll on the 9th)			US $	Barrels	
Shengli (Asia close)	PCABY00	AAFZJ00			FOB	Qingdao	M+2 (roll on the 9th)			US $	Barrels	
Shengli (London close)	AAPAX00	AAPAX03			FOB	Qingdao	M+2 (roll on the 9th)			US $	Barrels	
Shengli vs Dated Brent	AAPAY00	AAPAY03			FOB	Qingdao	M+2 (roll on the 9th)			US $	Barrels	
Sakhalin Blend (Asia Close)	AARBN00	AARBN03			CFR	Japan/Korea	M+2 (roll on the 9th)	700,000	750,000	US $	Barrels	
Sakhalin Blend (London Close)	AAREN00	AAREN03			CFR	Japan/Korea	M+2 (roll on the 9th)	700,000	750,000	US $	Barrels	
Sakhalin Blend vs Dated Brent	AARDN00	AARDN03			CFR	Japan/Korea	M+2 (roll on the 9th)	700,000	750,000	US $	Barrels	
Sakhalin Blend vs Dubai	AARCN00	AARCN03			CFR	Japan/Korea	M+2 (roll on the 9th)	700,000	750,000	US $	Barrels	
Sokol (Asia close)	AASCJ00	AASCJ03			CFR	Japan/Korea	M+2 (roll on the 9th)	700,000	750,000	US $	Barrels	
Sokol (London close)	AAPAN00	AAPAN03			CFR	Japan/Korea	M+2 (roll on the 9th)	700,000	750,000	US $	Barrels	
Sokol vs Dated Brent	AAPAO00	AAPAO03			CFR	Japan/Korea	M+2 (roll on the 9th)	700,000	750,000	US $	Barrels	
Sokol vs Dubai/Oman	AASCK00	AASCK03			CFR	Japan/Korea	M+2 (roll on the 9th)	700,000	750,000	US $	Barrels	
Su Tu Den (Asia close)	AARAR00	AARAR03			FOB	Vietnam	M+2 (roll on the 9th)	450,000	600,000	US $	Barrels	
Su Tu Den (London close)	AARAQ00	AARAQ03			FOB	Vietnam	M+2 (roll on the 9th)	450,000	600,000	US $	Barrels	
Su Tu Den vs Dated Brent	AARAS00	AARAS03			FOB	Vietnam	M+2 (roll on the 9th)	450,000	600,000	US $	Barrels	
Su Tu Den vs OSP	AARAT00	AARAT03			FOB	Vietnam	M+2 (roll on the 9th)	450,000	600,000	US $	Barrels	
Tapis (Asia close)	PCACB00	AAFZK00			FOB	Kerteh (Trengganu)	M+2 (roll on the 9th)	300,000		US $	Barrels	
Tapis (London close)	AAOZV00	AAOZV03			FOB	Kerteh (Trengganu)	M+2 (roll on the 9th)	300,000		US $	Barrels	
Tapis vs Dated Brent	AAOZW00	AAOZW03			FOB	Kerteh (Trengganu)	M+2 (roll on the 9th)	300,000		US $	Barrels	
Vincent (Asia close)	AARAK00	AARAK03			FOB	Australia	M+2 (roll on the 9th)			US $	Barrels	
Vincent (London close)	AARAJ00	AARAJ03			FOB	Australia	M+2 (roll on the 9th)			US $	Barrels	
Vincent vs Dated Brent	AARAL00	AARAL03			FOB	Australia	M+2 (roll on the 9th)			US $	Barrels	
Widuri (Asia close)	PCAFE00	PCAFE03			FOB	Indonesia	M+2 (roll on the 9th)			US $	Barrels	
Widuri (London close)	AAPBN00	AAPBN03			FOB	Indonesia	M+2 (roll on the 9th)			US $	Barrels	
Widuri vs Dated Brent	AAPBO00	AAPBO03			FOB	Indonesia	M+2 (roll on the 9th)			US $	Barrels	
Widuri vs ICP	PCAFF00	PCAFF03			FOB	Indonesia	M+2 (roll on the 9th)			US $	Barrels	
THE PLATTS ASIAN CRUDE OIL INDEX												
Asian Crude Index (ACX)	AAXIL00									US $	Barrels	

ASIA PACIFIC

Asian Dated Brent

Platts launched effective October 2, 2008 an Asian Dated Brent (ADB) assessment published on a daily basis, reflecting the value of Dated Brent at Asian market close (0830 GMT). The ADB reflects the price prevailing during the close of market in Asia taking into account the rise or fall in the movement in the cash BFOE instrument, from the time of assessment of Dated Brent at the prior trading day's European market close at 1630 hours London time, until Asian close. This movement is determined by valuation of Brent cash and futures markets by the close in Asia. Dated Brent reflects loading for cargoes 10 days to a month-ahead of the day of publication. The Asian Dated Brent is therefore a dated instrument. The price is underpinned by instruments such as BFOE and futures which are cyclical in nature and therefore roll either at the end of the calendar month for BFOE or mid-month for futures.

Published differentials to Dated Brent for Asia Pacific grades are measured against the underlying Dated Brent price for the corresponding month, or the Asian Dated Brent Strip. The underlying Dated Brent Strip is calculated using the Brent Frontline Swap minus the Brent Dated to Frontline Swaps, or DFL.

In line with the Asian Dated Brent (ADB) assessment, the value of the strip is time adjusted to reflect 1630 hours Singapore time. This methodology for calculating differentials against Brent is effective from September 2, 2013. Prior to this date, the differential was measured against the prevailing Asian Dated Brent.

Asia Pacific crudes

Platts assesses all of its regional crude oil assessments on a monthly basis, two months ahead, with a roll-over date of the 9th day of the month, or the first business day after. For example, on June 8, Platts would assess cargoes loading in July, but on June 9, the assessments would roll to crude loading in August. The specific crudes covered are: Tapis, Minas, Labuan, Miri, Gippsland, Daqing, Shengli, Cossack, Kutubu, Nanhai, Bach Ho, Nile Blend, Ardjuna, Handil Mix, Senipah, NW Shelf, Cinta, Duri, Widuri and Belida.

Assessments also consider bids/offers, and differentials to other actively traded crudes, related paper markets and, in the case of Indonesian crudes, official crude prices (ICPs). Crude markets are assessed at 1630 Singapore time. The following are details of the specifications for the crudes reported including loading ports. Sulfur content and API gravity may vary over time.

Methodology: Platts assesses crude grades on a fixed price basis, and also where appropriate, the spread to the crude grades' respective benchmarks. Most trade in the Asia Pacific region is conducted on a floating rather than fixed price basis. The fixed price assessment reflects the equivalent in fixed price terms of a floating price transaction. Platts will determine the relevant benchmark and determine the underlying value of the benchmark for the loading dates. In a typical example, a Tapis physical cargo may trade at a premium of 25 cents/barrel over its own benchmark. Platts will then add the premium transacted to the forward value of the benchmark.

The same approach is used for Indonesian crude grades where they trade in relation to their own ICP, which is only released after the cargo has loaded. Amid dwindling liquidity, these cargoes are now commonly traded against prevailing Brent values. Therefore, the fixed price equivalent of the transaction can be determined through values relative to the more liquid crude grades.

In a typical example, a Minas cargo loading in April may trade at Brent futures plus $2.00/barrel. If the prevailing Brent futures value is at $60/b, then the fixed price equivalent of Minas is $62.00/barrel. Platts will also take all bids, offers and trades that occur during its MOC process for Minas into account when assessing the value.

Spreads versus ICP: Platts assesses differentials to the Indonesian Contractual Prices (ICPs) for the following crudes: Minas, Attaka, Ardjuna, Handil, Cinta, Duri, Widuri and Belida. The premium/discounts versus the ICP reflect cargoes loading two months forward from the date of publication.

Minas and Tapis: Since December 1, 2014 Platts has based its assessments for Malaysia's Tapis crude oil and Indonesia's Minas crude oil on full cargoes. Platts had previously reflected partial cargoes. At the same time, Platts updated the size of full cargoes to 100,000 barrels for Minas (down from 200,000 barrels currently) and 300,000 barrels for Tapis (down from 450,000 barrels currently), in line with existing trade in these grades.

Spreads versus Asia Dated Brent: Platts presently assesses market premiums or discounts for several Asian and Australian crudes against Asia Dated Brent. The premiums/discounts assessed are for the following crudes: Cossack, Kutubu and Nanhai. The premium/discounts reflect cargoes loading two months forward from the date of publication. Platts also publishes fixed price assessments and Asia Dated Brent-related differentials for Tapis, Kikeh, Cossack, Kutubu, Nanhai Light and NWS grades.

Northwest Shelf Condensate: Northwest Shelf condensate is assessed on a flat price basis, and as a differential against Dated Brent. Spreads (premium or discounts) are assessments based on spot transactions and market information on cargoes and part cargoes loading two months forward from date of publication.

Sokol: Platts' assessment of Sokol crude oil reflects cargoes loading out of the DeKastri terminal on eastern Russia's Sakhalin Island. The value published reflects the value of cargoes loading in the month that falls two months from the date of assessment. So on April 1, Platts would assess cargoes for loading in the month of June. In accordance with typical market practice, the price assessed is a CFR value, for cargoes being delivered to main ports in Japan and South Korea. Cargoes being delivered elsewhere, including eastern China, are included in the assessment process through price normalization. Sokol crude oil is produced at Russia's Sakhalin I oil field, and currently has an API gravity of 39.7 degrees; a sulfur content of 0.18% and a TAN rating of 0.12. The standard cargo size for Sokol is 700,000 barrels. Sokol is assessed at the Asian close (0830 GMT) as a fixed price, as a differential to the average of Platts Middle Eastern crude oil benchmarks Dubai and Oman, and as a differential to Dated Brent.

Sakhalin Blend (Vityaz Blend): On May 4, Platts began publishing a Sakhalin Blend assessment alongside the existing Vityaz Blend assessment to conform to current market conventions. Platts understands that Sakhalin Energy has replaced the Vityaz crude grade with Sakhalin Blend starting in December 2014. The Sakhalin Blend assessment is identical to the existing Vityaz assessment and will carry the historical data for Vityaz when the Vityaz assessment is discontinued on January 2, 2016. Sakhalin Blend is a mixture of low-sulfur crude and gas condensate from the Kirinskoye field. Sakhalin Blend is produced from the Molikpaq production platform off the northeast of Sakhalin Island in Russia's Far East and sold by Sakhalin Energy in cargoes of up to 750,000 barrels. In accordance with typical market practice, the price assessed is a CFR value, for cargoes being delivered to main ports in Japan and South Korea. Cargoes being delivered elsewhere, including eastern China, are included in the assessment process through price normalization. Sakhalin Blend is assessed at the Asian close (0830 GMT) as a fixed price, as a differential to Platts Middle Eastern crude oil benchmark Dubai and as a differential to Dated Brent.

ESPO (Asia): Platts publishes two assessments for East Siberian Pacific Oil (ESPO) crude oil exported from the Russian Far East port of Kozmino at the Singapore close: ESPO M1 and ESPO M2. ESPO M1 reflects cargoes loading 15 to 45 days ahead from the date of publication. The second assessment, ESPO M2, reflects the value of cargoes loading 45 to 75 days ahead from the date of publication. In both cases, prices are assessed on a FOB basis and reflect cargoes from 80,000 mt to 140,000 mt normalized to 100,000 mt. The API gravity for ESPO is approximately 34-35 degrees with a sulfur content of 0.58-0.65%. The published assessments reflect flat price as well as a differential versus Dubai. These assessments are published in addition to Platts' European ESPO assessment, which is published at the London close.

ASIA-PACIFIC CRUDES

Crude	API	Sulfur (%)	Country	Location
Cossack	49	0.04	Australia	North West Australia
Gippsland	48	0.1	Australia	Westernport
Griffin	55	0.03	Australia	Denture, Griffin
North West Shelf	60	0.01	Australia	Dampier
Daqing	32.7	0.1	China	Luda/Dalian in Yellow Sea
Nanhai Light	39.5	0.05	China	Hui Zhou
Shengli	24	0.9	China	Qingdao on Yellow Sea
Ardjuna	35.1	0.13	Indonesia	Ardjuna
Senipah	53.9	0.02	Indonesia	Blanglancang
Attaka	44.7	0.04	Indonesia	Santan, off Balikpapan
Belida	46.2	0.02	Indonesia	Belida
Cinta	32.7	0.11	Indonesia	Cinta
Duri	21.5	0.14	Indonesia	Dumai, Sumatra
Handil	33.8	0.07	Indonesia	Senipah, off Balikpapan
Minas	36	0.08	Indonesia	Dumai, Sumatra
Widuri	33.3	0.07	Indonesia	Widuri
Labuan	31.5	0.08	Malaysia	Labuan Island, off Sabah
Miri	31.9	0.08	Malaysia	Lutong in Sarawak, near Miri
Tapis	46	0.03	Malaysia	Kerteh, off Trengganu
Kutubu	44	0.04	New Guinea	Kumul terminal
Bach Ho	38.6	0.04	Vietnam	Bach Ho terminal

Kikeh crude: The assessment reflects cargoes for lifting on a FOB basis from Sabah, Malaysia. The loading dates reflected by the Kikeh assessment follow the typical methodology for Asia Pacific crudes. Cargoes are therefore typically for loading two months ahead, with a roll-over date on the 9th day of the month, or the first business day after. So on July 9, Platts would assess cargoes for loading in September. From August 9, Platts would roll the assessment forward to reflect cargoes for loading in October. Kikeh crude oil is produced at the Kikeh oil field off East Malaysia's state of Sabah, and currently has an API gravity rating of 34.91 degrees; a sulfur content of 0.105% and a Total Acid Number of 0.08. The standard cargo size for Kikeh is 300,000-600,000 barrels.

Bach Ho & Nile Blend: The FOB Bach Ho spot differential is a spread to Dated Brent, while FOB Nile Blend's spot differential is a spread to ICP Minas. FOB Nile Blend will also have a fixed-price assessment. Both these assessments are for barrels lifting two months forward from date of publication and take into account typical cargo sizes Bach Ho (600,000- 650,000 barrel) and Nile Blend (600,000-650,000 barrel).

Dar Blend: Sudan's sweet, acidic Dar Blend crude from the Melut basin is exported in cargoes of 600,000 up to 1 million barrels, typically marketed at a differential to Dated Brent by state oil firms Sudapet, China National Petroleum Corp (CNPC) and Malaysia's Petronas. Dar Blend has gravity of 26.4 API, a sulfur content of 0.12%, and TAN of 2.4 mgKOH/g. This crude is evaluated at Asian close (0830 GMT) as a fixed price and as a differential to Dated Brent, which is assessed at London close (1630 hours local time).

Su Tu Den: Vietnam's Su Tu Den (Black Lion) crude is blended with Su Tu Vang (Golden Lion) and exported in cargoes of 450,000 to 600,000 barrels from a floating, production and storage terminal in the South China Sea. Su Tu Den has gravity of 36 API and a sulfur content of 0.04%. This crude is evaluated at Asian close (0830 GMT) as a fixed price, as a differential to Su Tu Den OSP, and as a differential to Dated Brent which is assessed at London close (1630 hours local time).

Australia Basin: Platts has been assessing the value of heavy sweet crude grades Enfield, and Vincent, which are all produced from fields in the Australian Basin, since February 16, 2009. These two grades are evaluated at Asian close (0830 GMT) as fixed prices and as differentials to Dated Brent, which is assessed at London close (1630 hours local time). Enfield has gravity of 22 API, a sulfur content of 0.12% and TAN of 0.43 mgKOH/g.. Vincent has gravity of 18.3 API, a sulfur content of 0.55% and TAN of 1.53 mgKOH/g.

The Platts Asian Crude Oil Index

The Platts Asian Crude Oil Index (ACX) represents the pricing exposure of a typical Asian refiner. The ACX is an independently calculated index, used for settlement purposes of futures and options contracts. The ACX uses data generated by Platts and meeting Platts' strict standards for transparency, accuracy, precision and verifiability. The ACX is published on real-time news service Platts Global Alert (PGA), in Platts Crude Oil Marketwire and other related Platts publications.

Index composition of represented crude oil benchmarks as of July 2, 2012: Middle East sour crude represented by Dubai (16%), Oman (16%), Upper Zakum (16%) and Murban (6%); Asia-Pacific sweet crude represented by Tapis (10%), Minas (8%) and Duri (2%); West African sweet crude represented by Bonny Light (5%), Forcados (4%) and Cabinda (3%); Russian crude represented by ESPO M2 (3%) as well as Asian Dated Brent (11%).

Time-zone normalization: Regional and ESPO crude market assessment time (0830 GMT, equivalent to 4:30 PM local Singapore time). West African crude oil grades assessed at European market close at 1630 hours London time on the previous trading day are adjusted to Asian close timing using Platts Asian Dated Brent (ADB) assessment.

Accuracy of publication: Rounded to three decimal places.

Index availability: The ACX will be available on every Platts Asian publishing day. On scheduled European holidays when Platts does not publish West African assessments, the ACX index will normalize West African assessments from the previous London publishing day using Asian Dated Brent equivalent values on the day of index publication in Asia.

Annual index composition adjustment: The overall index composition is reviewed at least once every calendar year. In the event of any adjustment, Platts will re-weigh the index components to ensure that an addition or deletion is price-neutral and only reflective of a daily change in the overall price. Platts will give subscribers due notice of any adjustment on Platts Global Alert (PGA) and in Platts Crude Oil Marketwire.

Annual review of crude oil benchmarks for inclusion/exclusion: Each crude oil benchmark will be considered for retention or exclusion from the index, on at least an annual basis. Reasons for exclusion of a particular crude grade include a decline in production below a given threshold, or the absence of verifiable spot cargo data. Other crude grades may be considered for inclusion, based on new production and/or changes in Asian crude slate consumption. Platts will give subscribers due notice of such changes.

UNITED STATES

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
WTI M1 (US close)	PCACG00	PCACG03	AAFCV00		ex-tank	Cushing	M+1	25,000	25,000	US $	Barrels	
WTI M1 (Asia close)	AAFFU00	AAFFV00			ex-tank	Cushing	M+1	25,000	25,000	US $	Barrels	
WTI M2 (US close)	PCACH00	PCACH03	AAFCX00		ex-tank	Cushing	M+2	25,000	25,000	US $	Barrels	
WTI M2 (Asia close)	AAFFW00	AAFFX00			ex-tank	Cushing	M+2	25,000	25,000	US $	Barrels	
WTI M3 (US close)	AAGIT00	AAGIT03	AAGIU00		ex-tank	Cushing	M+3	25,000	25,000	US $	Barrels	
WTI M3 (Asia close)	AAFFY00	AAFFZ00			ex-tank	Cushing	M+3	25,000	25,000	US $	Barrels	
WTI EFP M1 (US close)	AAGVT00	AAGVT03	AAGVT02		ex-tank	Cushing	M+1	25,000	25,000	US $	Barrels	
WTI EFP M2 (US close)	AAGVU00	AAGVU03	AAGVU02		ex-tank	Cushing	M+2	25,000	25,000	US $	Barrels	
WTI EFP M3 (US close)	AAGVV00	AAGVV03	AAGVV02		ex-tank	Cushing	M+3	25,000	25,000	US $	Barrels	
Light Houston Sweet (LHS)	AAXEW00	AAXEW03			FIP	Houston	M+1	25,000	25,000	US $	Barrels	
Light Houston Sweet (LHS) M2	AAYRY00		AAYRY02		FIP	Houston, Texas	M+2	25,000	25,000	US $	Barrels	
WTI MEH	AAYRG00	AAYRG03			FIP	Houston	M+1	25,000	25,000	US $	Barrels	
WTI MEH vs 1st Line WTI	AAYRH00	AAYRH03			FIP	Houston	M+1	25,000	25,000	US $	Barrels	
WTI MEH M2	AAXXE00	AAXXE03			FIP	Houston, Texas	M+2	25,000	25,000	US $	Barrels	
WTI MEH M2 vs 2nd Line WTI	AAYYA00	AAYYA03			FIP	Houston, Texas	M+2	25,000	25,000	US $	Barrels	
WTI Houston	AAYBA00	AAYBA03			FOB	Houston	M+1	600,000	600,000	US $	Barrels	
WTI Houston vs forward WTI	AAYAZ00	AAYAZ03			FOB	Houston	M+1	600,000	600,000	US $	Barrels	
Mars M1 (US close)	AAMBR00	AAMBS00	AAMBS02	AAIIM00	Delivered	Clovelly, Louisiana	M+1	25,000	25,000	US $	Barrels	
Mars M1 vs WTI (US close)	AAGWH00	AAGWK00	AAGWK02		Delivered	Clovelly, Louisiana	M+1	25,000	25,000	US $	Barrels	
Mars M2 (US close)	AAMBU00	AAMBV00	AAMBV02		Delivered	Clovelly, Louisiana	M+2	25,000	25,000	US $	Barrels	
Mars M2 vs WTI (US close)	AAKTH00	AAKTI00	AAKTI02		Delivered	Clovelly, Louisiana	M+2	25,000	25,000	US $	Barrels	
Mars M3	AAMBX00	AAMBY00	AAMBY02		Delivered	Clovelly, Louisiana	M+3	25,000	25,000	US $	Barrels	
Mars M3 vs WTI (US close)	AAMBO00	AAMBP00	AAMBP02		Delivered	Clovelly, Louisiana	M+3	25,000	25,000	US $	Barrels	
Mars M2 vs Dubai M2	MVDM021				Delivered	Clovelly, Louisiana	M+2	25,000	25,000	US $	Barrels	
Mars M3 vs Dubai M2	MVDM032				Delivered	Clovelly, Louisiana	M+3	25,000	25,000	US $	Barrels	
Mars M1 vs Mars M2 Spread	AAWFC00				Delivered	Clovelly, Louisiana	M+1	25,000	25,000	US $	Barrels	
Mars M2 vs Mars M3 Spread	AAWFD00				Delivered	Clovelly, Louisiana	M+2	25,000	25,000	US $	Barrels	
P-Plus WTI	PCACI00	PCACI03	AAFCT00		ex-tank	Cushing	M+1	25,000	25,000	US $	Barrels	
WTI-Delta	AAEJK00	AAEJL00	AAEJK03		ex-tank	Cushing	M+1	25,000	25,000	US $	Barrels	
P-5 WTI	AAFEN00	AAFEO00	AAFEO02		ex-tank	Cushing	M+1	25,000	25,000	US $	Barrels	
WTI (Midland)	PCACJ00	PCACJ03	AAFCY00		Delivered	Midland, Texas	M+1	25,000	25,000	US $	Barrels	
WTI (Midland) vs 1st Line WTI	AAGVZ00	AAGWA00	AAGWA02		Delivered	Midland, Texas	M+1	25,000	25,000	US $	Barrels	
WTI (Midland) M2	AAYZA00	AAYZA03	AAYZA02		Delivered	Midland, Texas	M+2	25,000	25,000	US $	Barrels	
WTI (Midland) M2 vs 2nd Line WTI	AAXXF00	AAXXF03	AAXXF02		Delivered	Midland, Texas	M+2	25,000	25,000	US $	Barrels	
WTS Midland M1	PCACK00	PCACK03	AAFCS00		Delivered	Midland, Texas	M+1	25,000	25,000	US $	Barrels	
WTS Midland M1 vs 1st Line WTI	AAGWB00	AAGWC00	AAGWC02		Delivered	Midland, Texas	M+1	25,000	25,000	US $	Barrels	
WTS Midland M2	AAURG00	AAURG13	AAURG03		Delivered	Midland, Texas	M+2	25,000	25,000	US $	Barrels	
WTS Midland M2 vs 2nd Line WTI	AAURH00	AAURH13	AAURH03		Delivered	Midland, Texas	M+2	25,000	25,000	US $	Barrels	
Eugene	PCAFC00	PCAFC03	AAFCJ00		Delivered	St. James, Louisiana	M+1	25,000	25,000	US $	Barrels	
Eugene vs 1st Line WTI	AAGWD00	AAGWE00	AAGWE02		Delivered	St. James, Louisiana	M+1	25,000	25,000	US $	Barrels	
Bonito	PCAIE00	PCAIH03	AAFCI00		Delivered	St. James, Louisiana	M+1	25,000	25,000	US $	Barrels	
Bonito vs 1st Line WTI	AAGWF00	AAGWG00	AAGWG02		Delivered	St. James, Louisiana	M+1	25,000	25,000	US $	Barrels	

UNITED STATES

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
SGC	AASOI00	AASOI03	AASOI02		Delivered	Nederland, Texas	M+1	25,000	25,000	US $	Barrels	
SGC vs 1st Line WTI	AASOJ00	AASOJ03	AASOJ02		Delivered	Nederland, Texas	M+1	25,000	25,000	US $	Barrels	
Poseidon	AABHK00	AABHL00	AAFCQ00		Delivered	Houma, Louisiana	M+1	25,000	25,000	US $	Barrels	
Poseidon vs 1st Line WTI	AAGWL00	AAGWM00	AAGWM02		Delivered	Houma, Louisiana	M+1	25,000	25,000	US $	Barrels	
LLS (1st month) (US close)	PCABN00	PCABN03	AAFCO00	AAIIQ00	Delivered	St. James, Louisiana	M+1	25,000	25,000	US $	Barrels	
LLS (2nd month) (US close)	AAURC00	AAURC13	AAURC03		Delivered	St. James, Louisiana	M+2	25,000	25,000	US $	Barrels	
LLS (1st month) vs 1st Line WTI (US close)	AAGWN00	AAGWO00	AAGWO02		Delivered	St. James, Louisiana	M+1	25,000	25,000	US $	Barrels	
LLS (2nd month) vs 2nd Line WTI (US close)	AAURD00	AAURD13	AAURD03		Delivered	St. James, Louisiana	M+2	25,000	25,000	US $	Barrels	
HLS (1st month)	PCABD00	PCABD03	AAFCK00		Delivered	Empire, Louisiana	M+1	25,000	25,000	US $	Barrels	
HLS (2nd month)	AAURE00	AAURE13	AAURE03		Delivered	Empire, Louisiana	M+2	25,000	25,000	US $	Barrels	
HLS (1st month) vs 1st Line WTI	AAGWP00	AAGWQ00	AAGWQ02		Delivered	Empire, Louisiana	M+1	25,000	25,000	US $	Barrels	
HLS (2nd month) vs 2nd Line WTI	AAURF00	AAURF13	AAURF03		Delivered	Empire, Louisiana	M+2	25,000	25,000	US $	Barrels	
Wyoming Sweet	PCACM00	PCACM03	PCACL03		Delivered	Guernsey, Wyoming	M+1	25,000	25,000	US $	Barrels	
Wyoming Sweet vs 1st Line WTI	AAGWR00	AAGWS00	AAGWS02		Delivered	Guernsey, Wyoming	M+1	25,000	25,000	US $	Barrels	
Thunder Horse	AAWZK00	AAWZK03	AAWZK02		Delivered	Clovelly, Louisiana	M+1	25,000	25,000	US $	Barrels	
Thunder Horse vs 1st Line WTI	AAWZL00	AAWZL03	AAWZL02		Delivered	Clovelly, Louisiana	M+1	25,000	25,000	US $	Barrels	
WCS Ex-Cushing	AAWTY00	AAWTY03			ex-tank	Cushing	M+1	25,000	25,000	US $	Barrels	
WCS Ex-Cushing (C$/CM)	AAWUA00	AAWUA03			ex-tank	Cushing	M+1	25,000	25,000	C $	cm	
WCS Ex-Cushing vs 1st Line WTI CMA	AAWTZ00	AAWTZ03			ex-tank	Cushing	M+1	25,000	25,000	US $	Barrels	
WCS Ex-Nederland	AAYAY00	AAYAY03			FIP	Nederland, Texas	M+1	25,000	25,000	US $	Barrels	
WCS Ex-Nederland vs 1st Line WTI CMA	AAYAX00	AAYAX03			FIP	Nederland, Texas	M+1	25,000	25,000	US $	Barrels	
Basrah Light	AAEJH00	AAEJI00	AAEJI02		Delivered	US Gulf Coast	M+1	500,000	500,000	US $	Barrels	
Basrah Light vs 2nd Line WTI	AAGWV00	AAGWW00	AAGWW02		Delivered	US Gulf Coast	M+1	500,000	500,000	US $	Barrels	
Line 63/Hynes	PCABM00	PCABM03	AAFCM00		Delivered	Hynes Station, California	M+1	25,000	25,000	US $	Barrels	
Thums/Long Beach	PCACD00	PCACD03	AAFCR00	AAIIU00	Delivered	Long Beach, California	M+1	25,000	25,000	US $	Barrels	
Kern River	PCABJ00	PCABJ03	AAFCL00	AAIIR00	Delivered	Kern County, California	M+1	25,000	25,000	US $	Barrels	
P-Plus Line 63	PCAFV00	PCAFV03	AAFCN00		Delivered	Hynes Station, California	M+1	25,000	25,000	US $	Barrels	
ANS/Long Beach	PCAAD00	PCAAD03	AAFFL02		Delivered	Long Beach, California	M+1	300,000	300,000	US $	Barrels	
ANS/Long Beach vs cash WTI	AAGWX00	AAGWY00	AAGWY02		Delivered	Long Beach, California	M+1	300,000	300,000	US $	Barrels	

US SHALE CRUDE OILS

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Bakken	AAXPP00	AAXPP03	AAXPP02		Delivered	N Dakota Terminal	M+1	25,000	25,000	US $	Barrels	
Bakken vs WTI CMA	AASRX00	AASRX03			Delivered	N Dakota Terminal	M+1	25,000	25,000	US $	Barrels	
Bakken Blend (ex-Clearbrook)	AASRU00	AASRU13	AASRU03		Delivered	Clearbrook, Minnesota	M+1	25,000	25,000	US $	Barrels	
Bakken Blend (ex-Clearbrook) vs 1st Line WTI CMA	AASRW00	AASRW13	AASRW03		Delivered	Clearbrook, Minnesota	M+1	25,000	25,000	US $	Barrels	
Bakken Blend (ex-Guernsey)	AASRR00	AASRR13	AASRR03		Delivered	Guernsey, Wyoming	M+1	25,000	25,000	US $	Barrels	
Bakken Blend (ex-Guernsey) vs 1st Line WTI CMA	AASRV00	AASRV13	AASRV03		Delivered	Guernsey, Wyoming	M+1	25,000	25,000	US $	Barrels	
Eagle Ford Crude (ex-Corpus Christi)	AAYAT00	AAYAT03			FOB	Corpus Christi, Texas	M+1	600,000	600,000	US $	Barrels	
Eagle Ford Crude (ex-Corpus Christi) vs forward WTI	AAYAU00	AAYAU03			FOB	Corpus Christi, Texas	M+1	600,000	600,000	US $	Barrels	
Eagle Ford Condensate (ex-Corpus Christi)	AAYAR00	AAYAR03			FOB	Corpus Christi, Texas	M+1	600,000	600,000	US $	Barrels	
Eagle Ford Condensate (ex-Corpus Christi) vs forward WTI	AAYAS00	AAYAS03			FOB	Corpus Christi, Texas	M+1	600,000	600,000	US $	Barrels	
Eagle Ford Crude (ex-Houston)	AAYAV00	AAYAV03			FOB	Houston, Texas	M+1	600,000	600,000	US $	Barrels	

UNITED STATES

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Eagle Ford Crude (ex-Houston) vs forward WTI	AAYAW00	AAYAW03			FOB	Houston, Texas	M+1	600,000	600,000	US $	Barrels	
Eagle Ford Condensate (ex-Houston)	AAYBB00	AAYBB03			FOB	Houston, Texas	M+1	600,000	600,000	US $	Barrels	
Eagle Ford Condensate (ex-Houston) vs forward WTI	AAYBC00	AAYBC03			FOB	Houston, Texas	M+1	600,000	600,000	US $	Barrels	
Eagle Ford Marker	AAYAJ00	AAYAJ03	AAYAJ02				M+1			US $	Barrels	
Eagle Ford Postings Average	AAYAH00	AAYAH03	AAYAH02							US $	Barrels	
Eagle Ford Postings Average vs Eagle Ford Marker	AAYAI00	AAYAI03	AAYAI02							US $	Barrels	

AMERICAS DATED BRENT

Americas Dated Brent	AAQBF00	AAQBF03	AAQBF02					600,000	600,000	US $	Barrels	

US CRUDE ASSESSMENTS AT LONDON CLOSE

WTI M1 (London close)	AAQAR00	AAQAR13	AAQAR03		ex-tank	Cushing	M+1	25,000	25,000	US $	Barrels	
WTI M1 (London close) (Euro)	AAPYT00	AAPYT03			ex-tank	Cushing	M+1	25,000	25,000	Euro	Barrels	
WTI M2 (London close)	AAQAT00	AAQAT13	AAQAT03		ex-tank	Cushing	M+2	25,000	25,000	US $	Barrels	
WTI M2 (London close) (Euro)	AAWFJ00	AAWFJ03			ex-tank	Cushing	M+2	25,000	25,000	Euro	Barrels	
WTI M3 (London close)	AAQAV00	AAQAV13	AAQAV03		ex-tank	Cushing	M+3	25,000	25,000	US $	Barrels	
WTI M3 (London close) (Euro)	AAWFK00	AAWFK03			ex-tank	Cushing	M+3	25,000	25,000	Euro	Barrels	
WTI EFP M1 (London close)	AAQAS00	AAQAS13	AAQAS03		ex-tank	Cushing	M+1	25,000	25,000	US $	Barrels	
WTI EFP M2 (London close)	AAQAU00	AAQAU13	AAQAU03		ex-tank	Cushing	M+2	25,000	25,000	US $	Barrels	
WTI EFP M3 (London close)	AAQAW00	AAQAW13	AAQAW03		ex-tank	Cushing	M+3	25,000	25,000	US $	Barrels	
WTI MEH M1 (London close)	AAYRZ00	AAYRZ03			FIP	Houston, Texas	M+1	25,000	25,000	US $	Barrels	
WTI MEH M1 (London close) (Euro)	AAYSA00	AAYSA03			FIP	Houston, Texas	M+1	25,000	25,000	US $	Barrels	
WTI MEH M2 (London close)	AAXYD00	AAXYD03			FIP	Houston, Texas	M+1	25,000	25,000	US $	Barrels	
WTI MEH M2 (London close) (Euro)	AAYVA00	AAYVA03			FIP	Houston, Texas	M+1	25,000	25,000	US $	Barrels	
Mars M1 (London close)	AAQAX00	AAQAX13	AAQAX03		Delivered	Clovelly, Louisiana	M+1	25,000	25,000	US $	Barrels	
Mars M1 vs WTI (London close)	AAQAY00	AAQAY13	AAQAY03		Delivered	Clovelly, Louisiana	M+1	25,000	25,000	US $	Barrels	
Mars M1 (London close) (Euro)	AAPYU00	AAPYU03			Delivered	Clovelly, Louisiana	M+1	25,000	25,000	US $	Barrels	
Mars M2 (London close)	AAQAZ00	AAQAZ13	AAQAZ03		Delivered	Clovelly, Louisiana	M+2	25,000	25,000	US $	Barrels	
Mars M2 vs WTI (London close)	AAQBA00	AAQBA13	AAQBA03		Delivered	Clovelly, Louisiana	M+2	25,000	25,000	US $	Barrels	
Mars M2 (London close) (Euro)	AAWFI00	AAWFI03			Delivered	Clovelly, Louisiana	M+2	25,000	25,000	US $	Barrels	
LLS (1st month) (London close)	AAQBB00	AAQBB13	AAQBB03		Delivered	St. James, Louisiana	M+1	25,000	25,000	US $	Barrels	
LLS (1st month) (London close) (Euro)	AAWEP00	AAWEP03			Delivered	St. James, Louisiana	M+1	25,000	25,000	US $	Barrels	
LLS (2nd month) (London close)	AAQBD00	AAQBD13	AAQBD03		Delivered	St. James, Louisiana	M+2	25,000	25,000	US $	Barrels	
LLS (2nd month) (London close) (Euro)	AAWFH00	AAWFH03			Delivered	St. James, Louisiana	M+2	25,000	25,000	US $	Barrels	
LLS (1st month) vs 1st Line WTI (London close)	AAQBC00	AAQBC13	AAQBC03		Delivered	St. James, Louisiana	M+1	25,000	25,000	US $	Barrels	
LLS (2nd month) vs 2nd Line WTI (London close)	AAQBE00	AAQBE13	AAQBE03		Delivered	St. James, Louisiana	M+2	25,000	25,000	US $	Barrels	

AMERICAS CRUDE MARKER

ACM M1	AAQHN00	AAQHN13	AAQHN03		Delivered	US Gulf Coast	M+1	25,000	25,000	US $	Barrels	
ACM M2	AAQHO00	AAQHO13	AAQHO03		Delivered	US Gulf Coast	M+2	25,000	25,000	US $	Barrels	
ACM M3	AAQHP00	AAQHP13	AAQHP03		Delivered	US Gulf Coast	M+3	25,000	25,000	US $	Barrels	

UNITED STATES

US pipeline crude assessments

Platts assesses the value of a variety of crudes in the US, on both a flat price basis and as a differential against futures contracts, including NYMEX light, sweet crude oil futures. Market participants can also express positions on a flat price basis, and Platts will consider both flat prices and EFP differential positions in its assessment processes.

The spot month for all US domestic pipeline barrels changes on the first business day after the 25th of the calendar month unless otherwise specified.,.. The spot month does not roll with the expiration of the front month of light sweet crude on the New York Mercantile Exchange. After the expiry of the related front-month WTI futures contract, Platts continues to assess the prompt cash month in relation to WTI values that factor in inter-month spreads in the cash WTI market.

For US domestic pipeline barrels, unless otherwise specified the roll-over date coincides with the date US crude oil pipelines require scheduling to be completed for deliveries in the following month. For instance, from January 26 through February 25, the front-month out for all US domestic pipeline barrels is March. On February 26, the front-month out for all US domestic pipeline barrels switches to April. If the 26th falls on a weekend or holiday, the next business day marks the beginning of the new scheduling month. This practice also is followed for California pipeline crudes.

The roll date for ANS crude is the first publishing day of the month. In February, an ANS assessment reflects March values. On March 1, the assessment will roll to April barrels.

In those markets where commodities trade at differentials to futures, the prevailing futures' value as assessed by Platts at 3:15 pm ET are used in the assessment process. Market participants submitting bids and offers on a differential exchange for physical (EFP) basis to futures during the Platts Americas oil Market on Close assessment process should be explicit in their positions, including month of reference for the EFP. For any positions submitted as an EFP versus a futures contract (i.e. July +1.00/barrel), Platts will use the prevailing futures value at 3:15 pm ET to calculate the flat price for the assessment.

If parties wish to express positions as an EFP to the 2:30 pm ET same-day (or forward) settlement value of a futures contract (i.e. today's July settle +1.00/barrel), Platts will publish this information. The usage of a differential in this fashion will result in a flat price equivalent, which would be normalized to a 3:15 pm ET value.

In the event that the Chicago Mercantile Exchange / New York Mercantile Exchange is closed unexpectedly, all US, Canadian and Latin American crude assessments will be produced. Platts believes there will be adequate OTC trade in the Brent/WTI market and the market for grade differentials to produce an accurate assessment.

The minimum volume for US domestic pipeline grades is 25,000 barrels.

West Texas Intermediate (WTI): Platts has two separate WTI assessments: one at Cushing, Oklahoma, and the other at Midland, Texas. Platts assesses three months of WTI-Cushing barrels; Cushing assessments note the delivery month, such as WTI (Dec). Midland prices are noted as WTI (Mid). The delivery month assessed for WTI-Midland is the same as the first month assessed for WTI-Cushing. API gravity is typically 38-40 degrees with sulfur content approximately 0.3%.

WTI Calendar Delta: The assessment reflects the price of WTI crude oil sold into Cushing/Oklahoma on the basis of a delta versus a monthly WTI average. WTI Calendar Delta deals are invoiced at a later date: For instance, March WTI calendar delta transactions would be based on the average of the NYMEX WTI front-month during March, plus or minus a delta, and then versus cash front-month WTI after the NYMEX WTI front-month expiry. The delta fluctuates with first/second and first/third month WTI spreads, and with bids/offers in the market. The Platts WTI Calendar Delta assessment reflects where the delta is traded and/or talked in the market. The WTI calendar delta rolls to the next month after the 25th of the month, like other pipeline grades.

P-Plus WTI: The assessment reflects the price of WTI sold into Cushing on the basis of "postings plus." P-plus deals are invoiced at a later date on the basis of a differential to an average of one or more crude oil postings. For example, a deal done at P-plus 75 cents would be invoiced at 75 cents more than the previously agreed-upon postings basis. Effective May 26, 2006, Platts began considering market activity for its WTI P-Plus crude oil spot price assessment that is based on any of the following standard company WTI crude oil postings: Plains, Sunoco, Shell, Murphy and ConocoPhillips. In addition, Platts will consider transactions based on the Platts P-5 WTI postings index which incorporates postings data from Plains, Sunoco, Shell, Murphy and ConocoPhillips. Previously, WTI P-Plus deals were based on Koch WTI crude oil postings, but Koch discontinued these in 2006.

WCS ex-Cushing: This assessment reflects crude on an FOB Cushing, Oklahoma basis. Platts publishes WCS ex-Cushing as an outright price, and as a differential to the calendar month average (CMA) of the NYMEX WTI contract and reflect barrels to be lifted/injected about one month out and follows the Canadian pipeline rollover schedule. WCS has an API gravity of 19-22 and a sulfur content of 2.8-3.5%.

WCS ex-Nederland: This assessment reflects crude on a Free-In-Pipe (FIP) Port Arthur/Nederland, Texas area basis. Platts publishes WCS ex-Nederland as an outright price, and as a differential to the calendar month average (CMA) of the NYMEX WTI contract and reflect barrels to be lifted/injected about one month out and follows the Canadian pipeline rollover schedule. The quality reflects Western Canadian Select (WCS) typical specifications.

Light Houston Sweet (LHS): Platts launched a new assessment for crude oil trading in Houston on July 26, 2013. The new assessment, called Light Houston Sweet (LHS), reflects the value of light sweet crude flowing into Houston, Texas, from the Permian Basin, Eagle Ford and Cushing, Oklahoma. The assessment reflects 1,000 b/d of ratable crude, for a minimum of 25,000 barrels in total, delivered over the course of the prompt pipeline month on a Free In Pipe (FIP) basis. The assessment is for crude delivered out of three Houston terminals: Magellan East Houston Terminal, Enterprise Houston Crude Oil (EHCO) Terminal, and the Oil Tanking Houston Terminal. As Houston crude transportation infrastructure develops, Platts may consider additional terminals for inclusion in its LHS assessment basis.

Platts reflects WTI Midland specifications at East Houston in its LHS assessment, and may normalize Domestic Light Sweet and Eagle Ford bids, offers, and transactions at Houston to a WTI Midland specification basis. The quality specification basis for WTI Midland at Houston is: 42 degrees max API; 0.45% max sulfur; Micro Carbon Residue, 1.1% wt typical; Vanadium, 4ppm typical; Nickel, 2ppm typical; Total Acid Number (TAN) 0.1 mg KOH/g typical.

WTI MEH: Platts launched a new assessment on February 26, 2015, for West Texas Intermediate Midland Crude Oil delivered out of the Magellan East Houston Terminal. This new assessment reflects 1,000 b/d of ratable crude, for a minimum of 25,000 barrels in total, delivered over the course of the prompt pipeline month on a Free In Pipe (FIP) basis. Platts reflects Midland WTI quality as delivered to the Magellan East Houston Terminal. The new assessment will be published as a flat price and as a spread. The spread will reflect the difference in value for physical WTI MEH versus physical WTI in Cushing, Oklahoma, both for delivery in the prompt pipeline month.

Mars: This assessment reflects barrels for delivery into Clovelly, Louisiana, for three months forward. API gravity was 28.96 and sulfur content is 1.82% as of March 2012. The minimum trading volume recognized for assessment purposes is 25,000 barrels. Both flat-priced and differential-based positions are considered for assessment purposes, as the latter can be converted into a fixed and flat price equivalent.

West Texas Sour (WTS): The assessment is for barrels delivered to Midland, Texas, with an API gravity of 32.8 degrees and a sulfur content of 1.98%.

Light Louisiana Sweet (LLS): The assessment is for barrels delivered to St. James, Louisiana. API gravity is 34-41 and sulfur content is 0.4%.

Heavy Louisiana Sweet (HLS): The assessment is for barrels delivered to Empire, Louisiana. API gravity is 32-33 and sulfur content is 0.3%.

Eugene Island: The assessment is for barrels delivered to St. James, Louisiana. The API gravity is 34-36 and the sulfur content is 0.90-1.20%.

Southern Green Canyon: The assessment is for barrels delivered into Nederland, Texas. As of May 1, 2014, Cameron Highway Oil Pipeline Company stated that SGC's API gravity is 28.56 API and sulfur content at 2.142%. Southern Green Canyon's' reported API & sulfur content changes on a monthly basis.

Wyoming Sweet: The assessment is for barrels delivered to Guernsey, Wyoming, with an API gravity of 32 and a sulfur content of 0.9%.

Bonito: The assessment is for barrels delivered to St James, Louisiana. API gravity is 35-37 and sulfur content is 0.7-0.9%.

Poseidon: The assessment is for barrels delivered to Houma, Louisiana. As of May 1, 2014, Poseidon Oil Pipeline Company stated that Poseidon's API gravity was 30.61 and sulfur content was 1.70%. Poseidon's reported API & sulfur content changes on a monthly basis.

Thunder Horse: The assessment is for barrels delivered to Clovelly, Louisiana. API gravity is typically 33.75 and sulfur content is typically 0.73%. Thunder Horse's API & sulfur content changes on a monthly basis.

Line 63: The assessment is for a blend of crude at 28 degrees API gravity and sulfur content of 1.02%, delivered at Hynes station, California on Four Corners' pipeline line 63.

P-Plus Line 63: The assessment reflects the price of Line 63 sold into Hynes Station on Four Corners' pipeline on the basis of "Posting Plus." P-Plus deals are invoiced at a later date on the basis of a differential to an average of one or more crude postings for Buena Vista crude.

Thums: The assessment is for barrels delivered to Long Beach, California at 17 degrees API and a sulfur content of 1.5%.

Kern River: The assessment is for barrels delivered commonly to Texaco's station 31 in Kern County, California, at 13 degrees API gravity with sulfur content of 1.1%. The crude is synonymous with San Joaquin Valley (SJV) heavy.

US cargo assessments

Basrah Light: The assessment is for waterborne barrels of Iraqi Basrah Light delivered into the US Gulf. The minimum volume is 500,000 barrel. Typical API gravity is 29.5 and maximum sulfur content is 3%. Basrah Light barrels are priced off the second month cash WTI assessment.

Alaska North Slope (ANS): This assessment reflects a minimum volume of 300,000 barrels basis delivered Long Beach, California, for the prompt month. API gravity is 29-31 and sulfur content is 1.1%. The pricing basis for ANS is a calendar month average of front month Platts cash WTI assessments in the delivery month. Platts rolls its assessment forward to reflect deliveries in the second month calendar month forward from the first publishing day on or after the 10th of each month. For example, Platts' ANS assessment will reflect crude delivered in June from April 11 onwards, and until May 9; from May 10, the assessment will reflect crude delivered in July.

WTI Houston (FOB): This assessment reflects a typical volume of 600,000 barrels basis loading FOB from terminals in the greater Houston, Texas area. The quality reflects the typical specifications of WTI crude at Midland, Texas. This assessment reflects the value of WTI crude loading over the course of a full calendar month. During the first 14 days of any month, the assessment reflects the next month. This rolls with effect from the 15th of the month to the second month forward, For example, from March 1-14, the assessment will reflect cargoes loading in April, while from March 15-April 14 the assessment reflect May-loading cargoes.

US shale crude oils

Bakken Blend: Platts assesses the value of Bakken Blend at three locations: injected at Guernsey, Wyoming, injected at Clearbrook, Minnesota, and close to the wellhead at North Dakota terminals with the operational capability to move crude by rail or by rail/pipeline. Platts rolls these assessments to the next front month on the date pipeline nominations are due. Platts follows the nomination due dates published by the Crude Oil Logistics Committee on its website. Platts Bakken assessments are published as a flat price and as a differential to the calendar month average of front-month NYMEX crude futures for the month of injection at 3:15 pm Eastern Time.

Bakken: This assessment reflects crude from the Bakken shale with a maximum sulfur content of 0.2% and a maximum API of 42, close to the wellhead at North Dakota terminals with the operational capability to move crude by rail or by rail/pipeline. The assessment reflects the value of crude oil on a delivered North Dakota terminal basis in a delivery month. Title of the oil is transferred at the manifold flange into the terminal. The delivery method for this oil can be either by truck or via a pipeline gathering system. In this process, the buyer nominates the terminal, and the seller determines when the barrels will flow during the specified delivery month. This assessment reflects volume of 1,000 b/d, or 25,000 barrels.

Bakken Blend Ex-Guernsey: This assessment reflects crude from the Bakken shale formation in the North Dakota/Montana/Saskatchewan/Manitoba with a maximum sulfur content of 0.2% and an API gravity of 38-40 degrees, injected at Guernsey, Wyoming. The assessment reflects trades with a minimum 1,000 b/d quantity. Smaller volumes are normalized to this volume basis. Platts rolls this pipeline assessments to the next front month on the date pipeline nominations are due. Platts follows the nomination due dates published by the Crude Oil Logistics Committee on its website.

Bakken Blend Ex-Clearbrook: This assessment reflects crude from the Bakken shale formation in the North Dakota/Montana/Saskatchewan/Manitoba with a maximum sulfur content of 0.2% and an API gravity of 38-40 degrees, injected at Clearbrook, Minnesota. The assessment reflects trades with a minimum 1,000 b/d quantity. Smaller volumes are normalized to this volume basis. Platts rolls this pipeline assessments to the next front month on the date pipeline nominations are due. Platts follows the nomination due dates published by the Crude Oil Logistics Committee on its website.

Eagle Ford Crude and Condensate: Platts assesses the value of crude oil and condensate produced in the Eagle Ford formation in Southern Texas for loading at two locations. This assessment reflects the value of crude and condensate loading over the course of a full calendar month. During the first 14 days of any month, the assessment reflects crude loading for the next month. This rolls with effect from the 15th of the month to the second month forward. For example, from March 1-14, the assessment will reflect cargoes loading in April, while from March 15-April 14 the assessment reflect May-loading cargoes.

Eagle Ford Crude Houston (FOB): The assessment is for Eagle Ford crude barrels loading at greater Houston-area terminals. Typical API gravity is 45 degree and sulfur content is max 0.2%.

Eagle Ford Condensate Houston (FOB): The assessment is for Eagle Ford condensate barrels loading at greater Houston-area terminals. Typical API gravity is 55 degree and sulfur content is max 0.1%.

Eagle Ford Crude Corpus Christi (FOB): The assessment is for Eagle Ford crude barrels loading at Corpus Christi-area terminals. Typical API gravity is 45 degree and sulfur content is max 0.2%.

Eagle Ford Condensate Corpus Christi (FOB): The assessment is for Eagle Ford condensate barrels loading at Corpus Christi-area terminals. Typical API gravity is 55 degree and sulfur content is max 0.1%.

Eagle Ford Marker: Due to variability inherent to Eagle Ford, the Platts Eagle Ford Marker (EFM) represents the value of a 47 degree API barrel of Eagle Ford crude oil, based on its product yields. To determine these yields, Platts has gathered a variety of Eagle Ford crude assays ranging from 40 degrees API to 62 degrees API from many sources. Platts analyzed the relative yields to extrapolate median yield percentages by volume for LPGs, light naphtha, heavy naphtha, kerosene, middle distillates, gasoil, and residual fuel oil.

The base of the Eagle Ford Marker, called Eagle Ford Yield, is calculated by applying these median yields for a 47 degree API crude to Platts US Gulf Coast LPG and refined product assessments. This yield is calculated using Platts assessments for propane, isobutane, normal butane, non-Targa natural gasoline, standard naphtha barge, jet fuel, ULSD, VGO 0.5%S and high sulfur fuel oil.

Platts uses its prompt refined oil product price assessments as the basis for the Eagle Ford Yield, with exceptions being the diesel (ULSD Colonial Pipeline) and jet fuel (Jet 54 Colonial Pipeline). Due to the prompt nature of the front pipeline cycle product assessments into the Colonial Pipeline as they approach scheduling day, Platts uses the second cycle assessments for the Eagle Ford Yield and the LLS Yield.

A simple yield approach may result in relatively high calculated values in times of healthy refining margins, and the opposite in times of relative weakness in the value of refined products. To account for this, Platts compares the relative value of the Eagle Ford gross product worth to the gross product worth of a competing crude, and applies this relationship to the actual spot price of the competing crude in the observable spot market. This alternative spot crude creates a “safety net” for the Eagle Ford Marker value, to ensure that the published value is not overstated in times of strong refining margins, and understated in times of weak refining margins.

Platts has selected Light Louisiana Sweet, the local US Gulf Coast sweet crude benchmark, as the comparative variable for the Eagle Ford Marker. Most spot Eagle Ford trades use LLS as the basis, and the spot price of LLS provides a better reflection of US Gulf Coast supply and demand fundamentals for light, sweet crude than light, sweet crude oil delivered from West and North Africa. LLS’ gross product worth is calculated using the same product prices as the Eagle Ford Yield. This LLS yield calculation is subtracted from the Eagle Ford Yield value to establish a price relationship. This relationship is applied to the spot price of LLS to arrive at the Eagle Ford Marker assessment.

The relationship of the Eagle Ford Marker base yield and the LLS yield is calculated, and then applied to the outright spot price of LLS front-month as assessed by Platts. For example, the Eagle Ford Yield is $100 and the LLS Yield is $105. The relationship between Eagle Ford and LLS based on these yield calculations is -$5/b. The LLS front-month price is assessed at $100/b. Based on this spot price for LLS and the -$5/b relationship between the yield calculations of Eagle Ford and LLS, the Eagle Ford Marker would be $95/b.

Eagle Ford Postings Average: In addition to the Eagle Ford Marker¸ Platts also publishes a daily average of Eagle Ford postings from four companies: Sunoco, Plains, Flint Hills, and Enterprise. This daily average is called Eagle Ford Postings Average, and provides a basis for comparison to the Eagle Ford Marker. Platts is also publishing the differential between the Eagle Ford Postings Average and the Eagle Ford Marker.

Americas Dated Brent

This assessment reflects the value of Dated Brent at the Americas market close at 3:15 pm Eastern Time, taking into account the rise or fall in the movement in the cash BFOE instrument, from the time of assessment of Dated Brent at the European market close at 1630 hours London time, until the Americas close. This movement is determined by valuation of Brent cash and futures markets by the close in the Americas at 3:15 pm ET. Dated Brent reflects loading for cargoes 10 days to a month-ahead of the day of publication.

US crude assessments at London close

These assessments line up with the close of the Dated Brent assessment process in London and are an addition to the existing set of assessments published in the US reflecting values at 3:15 pm Eastern Time.

Platts publishes the prompt month and next forward month for LLS and Mars, and the three most prompt months for WTI in the set of assessments. Platts publishes an outright price as well as a differential for each of the three crudes — an EFP in the case of cash WTI relative to NYMEX light sweet crude futures, and a differential to same-month cash WTI in the case of Mars and LLS.

Americas Crude Marker

The Americas Crude Marker (ACM) reflects tradable sour crude values in the US Gulf Coast. The ACM assessment is composed of Mars, Southern Green Canyon (SGC), Poseidon and Thunder Horse. These four sour grades are produced offshore US Gulf Coast and are transported via pipeline to US Gulf Coast refineries, where the streams can be delivered readily into Texas/Louisiana refining centers.

The ACM reflects the most competitive grade (i.e. price at the margin). This methodology enables each of the four grades to operate as relief valves, with those crude oils forming the assessment at times when any particular grade is tight or subject to supply constraints. Thunder Horse crude oil is of lower sulfur content than the other grades, and is therefore most likely to play a significant role in times of supply distress. This grade acts in a similar manner to the potential check that Ekofisk plays as a component of the Brent-Forties-Oseberg-Ekofisk mechanism (BFOE).

As stated, most grades produced, imported, and refined in the US Gulf Coast are medium in API gravity and high in sulfur. The latest assays for the four grades are as follows:

	Sulfur (%)	Gravity (API)
Mars:	1.82	28.96
Thunder Horse:	0.73	33.75
SGC:	2.14	28.56
Poseidon:	1.70	30.61

This relief valve concept is a critical component of pricing as it prevents unusual conditions from creating a distorting impact on broader economics in the US Gulf Coast. For example, SGC traded at a premium to Mars in September 2006 on declining production volumes, which were attributed to field maintenance and supply from SGC-producing fields delivering into the Poseidon blend pool via the Caesar Pipeline's link to the Poseidon pipeline. As heavier crude was diverted into the Poseidon pool at this time, the quality for SGC improved, also supporting the grade's value relative to other US pipeline sour crudes. Had the ACM assessment mechanism been in place at that time, the ACM assessment would have been set by Mars rather than SGC.

Three grades in the ACM basket – Mars, Poseidon, and Thunder Horse, are produced offshore Louisiana and arrive onshore via pipeline. Mars and Thunder Horse are delivered into Clovelly, Louisiana. Poseidon is delivered into Houma, Louisiana. SGC is produced offshore Texas, and arrives onshore via pipeline at Nederland, Texas. The diversity of the producing locations in the ACM prevents local supply disruptions from distorting the price of the ACM. At the same time, the majority of US Gulf Coast refiners have access to all four of the grades either via pipeline (Mars, Poseidon, SGC and Thunder Horse) or via barge (SGC to Louisiana). The likelihood of weather conditions such as a hurricane impacting or simultaneously shutting down for an extensive period of time all the platforms and all the pipelines appears remote.

Timing: The timing structure for the ACM mirrors the US domestic pipeline market, and Platts publishes three months of the ACM – first, second, and third month. The spot month for all US domestic pipeline barrels changes on the first business day after the 25th of the calendar month. The ACM does not roll with the expiration of the front month of light sweet crude on the New York Mercantile Exchange. ACM is a physical assessment and therefore rolls in line with the physical pipeline calendar.

For example, starting March 16, Platts will publish the ACM for April, May and June. On March 26, Platts will roll the ACM along with the rest of the US domestic market to May as the prompt month.

Basis and Location: The basis for the ACM is comprised of the basis and location for the four grades.

Volume: The minimum volume for ACM basket grades (Mars, Poseidon, SGC, and Thunder Horse) is 25,000 barrel, the same minimum for all US domestic grades.

US crude oil postings

Platts publishes US Gulf Coast crude oil posted prices on Platts Global Alert, and in Platts North American Crude and Products Scan, posted by the following companies: Chevron, ConocoPhilips, Valero, Link, Shell, ExxonMobil, Koch, Murphy, Plains, and Sunoco. Published prices reflect postings as of 5:30 p.m. local New York time.

Platts publishes daily US West Coast crude oil posted prices on Platts Global Alert, posted by the following companies: Chevron, ExxonMobil, Shell, and Union76. Published prices reflect postings as of 3:15 p.m. local New York time.

CANADA

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
SPOT MARKET ASSESSMENTS												
Terra Nova	AAJUH00	AAJUI00			FOB	Whiffenhead		675,000	675,000	US $	Barrels	
Terra Nova vs Canada Dated Brent Strip	AAJUJ00	AAJUK00			FOB	Whiffenhead		675,000	675,000	US $	Barrels	
Terra Nova (C$/CM)	AALSP00	AALSQ00			FOB	Whiffenhead		675,000	675,000	C $	cm	
Hibernia	AAJKK00	AAJKL00			FOB	Whiffenhead		675,000	675,000	US $	Barrels	
Hibernia vs Canada Dated Brent Strip	AAJKM00	AAJKN00			FOB	Whiffenhead		675,000	675,000	US $	Barrels	
Hibernia (C$/CM)	AALSN00	AALSO00			FOB	Whiffenhead		675,000	675,000	C $	cm	
White Rose	AAVJX00	AAVJX03			FOB	Sea Rose Terminal		900,000	900,000	US $	Barrels	
White Rose vs Canada Dated Brent Strip	AAVJY00	AAVJY03			FOB	Sea Rose Terminal		900,000	900,000	US $	Barrels	
White Rose (C$/CM)	AAVPI00	AAVPI03			FOB	Sea Rose Terminal		900,000	900,000	C $	cm	
Lloyd Blend	AALRK00	AALRL00			Delivered	Hardisty, Alberta	M+1	25,000	25,000	US $	Barrels	
Lloyd Blend vs WTI CMA	AALRP00	AALRQ00			Delivered	Hardisty, Alberta	M+1	25,000	25,000	US $	Barrels	
Lloyd Blend (C$/CM)	AALRM00	AALRO00			Delivered	Hardisty, Alberta	M+1	25,000	25,000	C $	cm	
Mixed Sweet	AALRR00	AALRS00			Delivered	Edmonton, Alberta	M+1	25,000	25,000	US $	Barrels	
Mixed Sweet vs WTI CMA	AALRV00	AALRW00			Delivered	Edmonton, Alberta	M+1	25,000	25,000	US $	Barrels	
Mixed Sweet (C$/CM)	AALRT00	AALRU00			Delivered	Edmonton, Alberta	M+1	25,000	25,000	C $	cm	
Light Sour Blend	AALRX00	AALRY00			Delivered	Cromer, Manitoba	M+1	25,000	25,000	US $	Barrels	
Light Sour Blend vs WTI CMA	AALSD00	AALSE00			Delivered	Cromer, Manitoba	M+1	25,000	25,000	US $	Barrels	
Light Sour Blend (C$/CM)	AALRZ00	AALSA00			Delivered	Cromer, Manitoba	M+1	25,000	25,000	C $	cm	
Midale	AAUCC00	AAUCC03			Delivered	Cromer, Manitoba	M+1	25,000	25,000	US $	Barrels	
Midale vs WTI CMA	AAUCE00	AAUCE03			Delivered	Cromer, Manitoba	M+1	25,000	25,000	US $	Barrels	
Midale (C$/CM)	AAUCD00	AAUCD03			Delivered	Cromer, Manitoba	M+1	25,000	25,000	C $	cm	
Condensates	AALSF00	AALSG00			Delivered	Edmonton, Alberta	M+1	25,000	25,000	US $	Barrels	
Condensates vs WTI CMA	AALSJ00	AALSK00			Delivered	Edmonton, Alberta	M+1	25,000	25,000	US $	Barrels	
Condensates (C$/CM)	AALSH00	AALSI00			Delivered	Edmonton, Alberta	M+1	25,000	25,000	C $	cm	
Syncrude Sweet Premium	AASOK00	AASOK03			Delivered	Edmonton, Alberta	M+1	25,000	25,000	US $	Barrels	
Syncrude Sweet Premium vs WTI CMA	AASOM00	AASOM03			Delivered	Edmonton, Alberta	M+1	25,000	25,000	US $	Barrels	
Syncrude Sweet Premium (C$/CM)	AASOL00	AASOL03			Delivered	Edmonton, Alberta	M+1	25,000	25,000	C $	cm	
WCS Hardisty	AAPPN00	AAPPN03			Delivered	Hardisty, Alberta	M+1	25,000	25,000	US $	Barrels	
WCS Hardisty vs WTI CMA	AAPPP00	AAPPP03			Delivered	Hardisty, Alberta	M+1	25,000	25,000	US $	Barrels	
WCS Hardisty (C$/CM)	AAPPO00	AAPPO03			Delivered	Hardisty, Alberta	M+1	25,000	25,000	C $	cm	
Cold Lake Hardisty	AASZX00	AASZX03			Delivered	Hardisty, Alberta	M+1	25,000	25,000	US $	Barrels	
Cold Lake Hardisty vs WTI CMA	AASZZ00	AASZZ03			Delivered	Hardisty, Alberta	M+1	25,000	25,000	US $	Barrels	
Cold Lake Hardisty (C$/CM)	AASZY00	AASZY03			Delivered	Hardisty, Alberta	M+1	25,000	25,000	C $	cm	
POSTINGS-BASED ASSESSMENTS												
Par Crude ($/b)	PCAEJ00	PCAEJ03		AAIIS00	Delivered	Edmonton, Alberta				US $	Barrels	
Par Crude (C$/CM)	PCAEZ00	PCAEK03			Delivered	Edmonton, Alberta				C $	cm	

CANADA

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Bow River/Hardisty ($/b)	PCAFB00	AAFDJ00	PCAFB03	AAIIV00	Delivered	Hardisty, Alberta				US $	Barrels	
Bow River/Hardisty (C$/CM)	PCAEY00	AAFZP00			Delivered	Hardisty, Alberta				C $	cm	
Light/Sour Cromer ($/b)	PCAIK00	PCAIL03			Delivered	Cromer, Manitoba				US $	Barrels	
Light/Sour Cromer (C$/CM)	PCAII00	PCAIJ03			Delivered	Cromer, Manitoba				C $	cm	
Sour - Edmonton, Alberta ($/b)	PCAIO00	PCAIP03			Delivered	Edmonton, Alberta				US $	Barrels	
Sour - Edmonton, Alberta (C$/CM)	PCAIM00	PCAIN03			Delivered	Edmonton, Alberta				C $	cm	
Midale Cromer ($/b)	PCAIS00	PCAIT03			Delivered	Cromer, Manitoba				US $	Barrels	
Midale Cromer (C$/CM)	PCAIQ00	PCAIR03			Delivered	Cromer, Manitoba				C $	cm	

CANADA

Canadian pipeline assessments

The following spot assessments are published using a NYMEX crude oil calendar-month average (CMA) basis. Crudes are assessed for injection in the first forward month. The WTI CMA is the average of the front-month NYMEX light crude values (at 3:15 pm Eastern Time) for the month of injection. Platts outright assessments reflect the WTI CMA plus or minus prevailing spot differentials in the physical markets.

WTI CMA: The Calendar Month Average of NYMEX light sweet crude is currently used as the basis for Platts Canadian pipeline crude assessments, Bakken Blend crude assessments and WCS ex-Cushing crude assessments. This calculation is labelled WTI CMA (1st month), and reflects a time-weighted value for the second and third months forward in the futures market on the date of publication. These two months represent the front-month futures contracts that apply for the month of injection in the physical market.

All Canadian crude oil pipeline assessments reflect market-on-close (MOC) values at 3:15 PM Eastern Time. Trades with a minimum 1,000 b/d quantity will be taken into account for assessment of Canadian pipeline crudes. Smaller volumes will be normalized to this volume basis.

Platts rolls its Canadian pipeline assessments to the next front month on the date pipeline nominations are due. Platts follows the nomination due dates published by Crude Oil Logistics Committee on its website.

Lloyd Blend: The assessment is for barrels injected at Hardisty, Alberta. API gravity is 21.8 and sulfur content is 3.36%.

Mixed Sweet: Injection at Edmonton. API gravity is 38.8 and sulfur content is 0.47%.

Light Sour Blend: Injection at Cromer. API gravity is 34-36 and sulfur content is 1.2-1.4%

Midale: Injected at Cromer, Manitoba. API gravity is 30 and sulfur content is maximum 2.35%.

Condensates: Injection at Edmonton. API gravity is 50.0 and sulfur content is 0.20%.

Syncrude Sweet Premium: Injection at Edmonton. API gravity is 31-33 and sulfur content is 0.1-0.2%.

Western Canadian Select (WCS): Injection at Hardisty. API gravity is 19-22 and sulfur content is 2.8-3.2%.

Cold Lake: Injection at Hardisty. API gravity is 19.9 and sulfur content is 3.25%.

Canadian cargo assessments

The following Canadian cargo assessments are based on spot transactions for cargoes loading six to eight weeks forward from the date of publication. The outright price is derived from the forward value of Dated Brent with pricing typically 1-5 days after loading. The Canadian cargo markets are assessed at 4:30 pm London Time.

Hibernia: The assessment is for barrels loading FOB terminal basis Whiffenhead, Newfoundland, Canada. The API gravity is 36.0 and the sulfur content is 0.4%. The typical cargo size is about 675,000 barrels.

Terra Nova: The assessment is for barrels loading FOB terminal basis Whiffenhead, Newfoundland, Canada. The API gravity is 32.9-33.4 and the sulfur content is 0.48%. The typical cargo size is about 675,000 barrels.

White Rose: This assessment reflects barrels loading FOB terminal basis Sea Rose, Newfoundland, Canada. The API gravity is 30.56 and sulfur content of 0.28%. The typical cargo size is about 900,000 barrels.

LATIN AMERICA

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Escalante	PCAGC00	PCAGC03		AAIIN00	FOB	Caleta Cordoba	30-60 days	1 million	1 million	US $	Barrels	
Escalante vs Latin America Dated Brent Strip	AAXAX00	AAXAX03			FOB	Caleta Cordoba	30-60 days	1 million	1 million	US $	Barrels	
Escalante vs Latin America Brent Futures Strip	AAXBS00	AAXBS03			FOB	Caleta Cordoba	30-60 days	1 million	1 million	US $	Barrels	
Escalante vs Latin America WTI Strip	PCAGO00	AAJJN00			FOB	Caleta Cordoba	30-60 days	1 million	1 million	US $	Barrels	
Roncador	AAQTL00	AAQTL03			FOB	Angra dos Reis	30-60 days	750,000	750,000	US $	Barrels	
Roncador vs Latin America Dated Brent Strip	AAXAY00	AAXAY03			FOB	Angra dos Reis	30-60 days	750,000	750,000	US $	Barrels	
Roncador vs Latin America Brent Futures Strip	AAXBT00	AAXBT03			FOB	Angra dos Reis	30-60 days	750,000	750,000	US $	Barrels	
Roncador vs Latin America WTI Strip	AAQTK00	AAQTK03			FOB	Angra dos Reis	30-60 days	750,000	750,000	US $	Barrels	
Santa Barbara	AAITD00	AAITE00			FOB	Venezuela	30-60 days	350,000	350,000	US $	Barrels	
Santa Barbara vs Latin America Dated Brent Strip	AAXAZ00	AAXAZ03			FOB	Venezuela	30-60 days	350,000	350,000	US $	Barrels	
Santa Barbara vs Latin America Brent Futures Strip	AAXBU00	AAXBU03			FOB	Venezuela	30-60 days	350,000	350,000	US $	Barrels	
Santa Barbara vs Latin America WTI Strip	AAITJ00	AAITK00			FOB	Venezuela	30-60 days	350,000	350,000	US $	Barrels	
Loreto	PCAGH00	PCAGH03			FOB	Puerto Bayovar	30-60 days	400,000	400,000	US $	Barrels	
Loreto vs Latin America Dated Brent Strip	AAXBG00	AAXBG03			FOB	Puerto Bayovar	30-60 days	400,000	400,000	US $	Barrels	
Loreto vs Latin America Brent Futures Strip	AAXBV00	AAXBV03			FOB	Puerto Bayovar	30-60 days	400,000	400,000	US $	Barrels	
Loreto vs Latin America WTI Strip	PCAGQ00	AAJJR00			FOB	Puerto Bayovar	30-60 days	400,000	400,000	US $	Barrels	
Oriente	PCADE00	PCADE03			FOB	Esmeraldas	30-60 days	360,000	360,000	US $	Barrels	
Oriente vs Latin America Dated Brent Strip	AAXBH00	AAXBH03			FOB	Esmeraldas	30-60 days	360,000	360,000	US $	Barrels	
Oriente vs Latin America Brent Futures Strip	AAXBW00	AAXBW03			FOB	Esmeraldas	30-60 days	360,000	360,000	US $	Barrels	
Oriente vs Latin America WTI Strip	PCAGU00	AAJJP00			FOB	Esmeraldas	30-60 days	360,000	360,000	US $	Barrels	
Napo	AAMCA00	AAMCC00			FOB	Esmeraldas	30-60 days	720,000	720,000	US $	Barrels	
Napo vs Latin America Dated Brent Strip	AAXBI00	AAXBI03			FOB	Esmeraldas	30-60 days	720,000	720,000	US $	Barrels	
Napo vs Latin America Brent Futures Strip	AAXBX00	AAXBX03			FOB	Esmeraldas	30-60 days	720,000	720,000	US $	Barrels	
Napo vs Latin America WTI Strip	AAMCD00	AAMCE00			FOB	Esmeraldas	30-60 days	720,000	720,000	US $	Barrels	
Marlim	AAITF00	AAITG00			FOB	Sao Sabastiao	30-60 days	750,000	750,000	US $	Barrels	
Marlim vs Latin America Dated Brent Strip	AAXBJ00	AAXBJ03			FOB	Sao Sabastiao	30-60 days	750,000	750,000	US $	Barrels	
Marlim vs Latin America Brent Futures Strip	AAXBY00	AAXBY03			FOB	Sao Sabastiao	30-60 days	750,000	750,000	US $	Barrels	
Marlim vs Latin America WTI Strip	AAITL00	AAITM00			FOB	Sao Sabastiao	30-60 days	750,000	750,000	US $	Barrels	
Castilla Blend	AAVEQ00	AAVEQ03			FOB	Covenas	30-60 days	1 million	1 million	US $	Barrels	
Castilla Blend vs Latin America Dated Brent Strip	AAXBK00	AAXBK03			FOB	Covenas	30-60 days	1 million	1 million	US $	Barrels	
Castilla Blend vs Latin America Brent Futures Strip	AAXBZ00	AAXBZ03			FOB	Covenas	30-60 days	1 million	1 million	US $	Barrels	
Castilla Blend vs Latin America WTI Strip	AAVEQ01	AAVEQ05			FOB	Covenas	30-60 days	1 million	1 million	US $	Barrels	
Magdalena	AAWFR00	AAWFR03			FOB	Covenas	30-60 days	300,000	300,000	US $	Barrels	
Magdalena vs Latin America Dated Brent Strip	AAXBL00	AAXBL03			FOB	Covenas	30-60 days	300,000	300,000	US $	Barrels	
Magdalena vs Latin America Brent Futures Strip	AAXCA00	AAXCA03			FOB	Covenas	30-60 days	300,000	300,000	US $	Barrels	
Magdalena vs Latin America WTI Strip	AAWFS00	AAWFS03			FOB	Covenas	30-60 days	300,000	300,000	US $	Barrels	

LATIN AMERICA

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Mesa 30	AAITB00	AAITC00		AAIZY00	FOB	Venezuela	30-60 days	350,000	350,000	US $	Barrels	
Mesa 30 vs Latin America Dated Brent Strip	AAXBO00	AAXBO03			FOB	Venezuela	30-60 days	350,000	350,000	US $	Barrels	
Mesa 30 vs Latin America Brent Futures Strip	AAXCC00	AAXCC03			FOB	Venezuela	30-60 days	350,000	350,000	US $	Barrels	
Mesa 30 vs Latin America WTI Strip	AAITH00	AAITI00			FOB	Venezuela	30-60 days	350,000	350,000	US $	Barrels	
Vasconia	PCAGI00	PCAGI03			FOB	Covenas	30-60 days	500,000	500,000	US $	Barrels	
Vasconia vs Latin America Brent Futures Strip	AAXCB00	AAXCB03			FOB	Covenas	30-60 days	500,000	500,000	US $	Barrels	
Vasconia vs Latin America Dated Brent Strip	AAXBN00	AAXBN03			FOB	Covenas	30-60 days	500,000	500,000	US $	Barrels	
Vasconia vs Latin America WTI Strip	PCAGR00	AAJJO00			FOB	Covenas	30-60 days	500,000	500,000	US $	Barrels	

LATIN AMERICA

Assessments

Platts assesses Latin American crude grades on a flat price basis, and publishes the differentials to their benchmarks. Most transactions are concluded on a differential to WTI, Dated Brent or Brent futures.

Platts Latin American crude assessments reflect bids, offers, and deals 30-60 days forward from date of publication.

Latin America WTI strip: WTI-related assessments reflect values relative to the prevailing contract month at the time of loading. For example, on June 1, Platts would typically be assessing the value of Latin American crudes loading in the month of July. Therefore, the WTI-related basis for Platts Latin American crude assessments on June 1 reflects the average of prevailing front month cash WTI for July 1-31: which would be August cash WTI for July 1-25, and September cash WTI for July 26-31. Platts publishes this Latin America WTI strip on a daily basis.

Latin America Futures Brent strip: Brent futures-related assessments reflect values relative to the prevailing contract month at the time of loading. As with the example above, on June 1, Platts would typically be assessing the value of Latin American crudes loading in the month of July. Therefore, the Brent futures-related basis for Platts Latin American crude assessments on June 1 reflects the average of prevailing front month Brent futures for July 1-31: which would be August Brent futures for July 1-15, and September Brent futures for July 16-31. Platts publishes this Latin America Futures Brent strip on a daily basis.

Latin America Dated Brent strip: Dated Brent-related differentials for all Latin American crudes reflect values relative to the value of Dated Brent that prevails at the time of loading. As an example, on June 1, Platts would typically be assessing the value of Latin American crudes loading in the month of July. Therefore, the Dated Brent-related basis for Platts Latin American crude assessments on June 1 reflects the average of prevailing Dated Brent values achievable in the derivatives market for July 1-31. This strip reflects the value of DFLs that prevail at 3:15pm Eastern Time for the loading period reflected in the Latin American crude market. Platts publishes this Latin America Dated Brent strip on a daily basis.

Price assessments for Latin crudes are basis FOB the loading terminal. Starting April 1, 2016, Platts updated the typical volume of Latin American crude oil cargoes as specified below.

Escalante: The assessment is for barrels commonly sold FOB Caleta Cordova, Argentina with API gravity of 24.1 and sulfur content of 0.25%. Typical volume of 1 million barrels.

Roncador: The assessment is for barrels commonly sold basis FOB Angra dos Reis, with API gravity of 19.8 sulfur content of 0.935%. Typical volume of 750,000 barrels.

Santa Barbara: The assessment is for barrels commonly sold FOB Venezuela with API gravity of 36 and sulfur content of 0.95%. Typical volume of 350,000 barrels.

Loreto: The assessment is for barrels commonly sold FOB Puerto Bayovar, Peru with API gravity of 18.1 and sulfur content of 1.3%. Typical volume of 400,000 barrels.

Oriente: The assessment is for barrels commonly sold FOB Esmeraldas, Ecuador with API gravity of 24.0 and sulfur content of 1.4%. Typical volume of 360,000 barrels.

Napo: The assessment is for barrels commonly sold FOB Esmeraldas, Ecuador with API gravity of 19 and sulfur content of 2.01%. Typical volume of 720,000 barrels.

Marlim: The assessment is for barrels commonly sold FOB Sao Sabastiao, Brazil with API gravity of 19.2 and sulfur content of 0.78%. Typical volume of 750,000 barrels.

Castilla Blend: The assessment is for barrels commonly sold FOB Covenas, Colombia, with API gravity of 18.8 and sulfur content of 1.96%. Typical volume of 1 million barrels.

Magdalena: The assessment is for barrels commonly sold FOB Covenas, Colombia, with API gravity of 20 and 1.6% sulfur content. Typical volume of 300,000 barrels.

Mesa 30: The assessment is for barrels commonly sold FOB Venezuela, with API gravity of 30 and sulfur content of 0.9% sulfur. Typical volume of 350,000 barrels.

Vasconia: The assessment is for barrels commonly sold FOB Covenas, Colombia with API gravity of 24.5 and sulfur content of 0.9%. Typical volume of 500,000 barrels.

Mexican Crude Assessments
Platts Mexican crude oil assessments are FOB and based on the following contract pricing formulas:

To US Gulf Coast:

Maya: 0.4(WTS + USGC No. 6 3%S) + 0.1(LLS+Dated Brent) +/- constant

Isthmus: 0.4(WTS+LLS) + 0.2(Dated Brent) +/- constant

Olmeca: 0.333(WTS+LLS + Dated Brent) +/- constant

To US West Coast:

Isthmus: 0.4(WTS+LLS) + 0.2(Dated Brent) +/- constant

To Europe:

Maya: 0.527(Dated Brent)+0.467(No.6 3.5%)-0.25(No.6.1%-No.6 3.5%) +/- constant

Isthmus: 0.887(Dated Brent)+0.113(No.6 3.5%)-0.16(No.6.1%-No.6 3.5%) +/- constant

Olmeca: Dated Brent +/- constant

To Asia:

Maya: (Oman+Dubai)/2 +/- constant

Isthmus: (Oman+Dubai)/2 +/- constant

Maya: The assessment is for barrels commonly sold FOB Dos Bocas and FOB Cayo Arcas with API gravity of 22 and sulfur content of 3.3%.

Isthmus: The assessment is for barrels commonly sold FOB Dos Bocas with API gravity of 33.6 and sulfur content of 1.3%.

Olmeca: The assessment is for barrels commonly sold FOB Dos Bocas and FOB Pajaritos with API gravity of 39.3 and sulfur content of 0.8%.

FUTURES ASSESSMENTS

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
ICE Brent M1 (US close)	AAQBG00									US $	Barrels	
ICE Brent M2 (US close)	AAQBH00									US $	Barrels	
ICE Brent M3 (US close)	AAXZZ00									US $	Barrels	
ICE Brent M4 (US close)	AAYAL00									US $	Barrels	
NYMEX WTI M1 (US close)	NYCRM01									US $	Barrels	
NYMEX WTI M2 (US close)	NYCRM02									US $	Barrels	
NYMEX WTI M3 (US close)	NYCRM03									US $	Barrels	
NYMEX WTI M4 (US close)	NYCRM04									US $	Barrels	
ICE Brent M1 (London close)	AAYES00									US $	Barrels	
ICE Brent M2 (London close)	AAYET00									US $	Barrels	
ICE Brent M3 (London close)	AAXZY00									US $	Barrels	
ICE Brent M4 (London close)	AAYAM00									US $	Barrels	
ICE Brent NX M1 (London close)	AAXZL00									US $	Barrels	
ICE Brent NX M2 (London close)	AAXZM00									US $	Barrels	
ICE Brent NX M3 (London close)	AAXZN00									US $	Barrels	
ICE Brent NX M4 (London close)	AAYAP00									US $	Barrels	
NYMEX WTI M1 (London close)	AASCR00									US $	Barrels	
NYMEX WTI M2 (London close)	AASCS00									US $	Barrels	
ICE Brent M1 (Asia close)	XILLA01									US $	Barrels	
ICE Brent M2 (Asia close)	XILLA02									US $	Barrels	
NYMEX WTI M1 (Asia close)	XNCLA01									US $	Barrels	
NYMEX WTI M2 (Asia close)	XNCLA02									US $	Barrels	

FUTURES ASSESSMENTS

Assessments

Platts assesses the prevailing market value for several futures contracts on CME/NYMEX, ICE and DME. These assessments reflect the value of these contracts at the close of Platts' assessment processes around the world.

Platts examines traded levels, bid and offer levels prior to 3:15:00 pm ET, and employs the same methodological principles used in its physical assessment systems — repeatability and incrementability -- when assessing the prevailing value of futures at 3:15:00 pm ET. Platts tracks the movements in the bids and the offers, the spread between the bids and the offers, and the execution of those trades.

Platts' 3:15 pm ET futures assessments for light sweet futures expire one business day before the expiration of the front-month NYMEX contract. NYMEX futures contracts settle at 2:30 pm ET, and on day of expiry, NYMEX rolls the expired front-month contract off at settlement, and the next month contract becomes the front-month immediately following the settlement.

As an example, July NYMEX crude futures typically expire on June 19, at 2:30 pm ET. The last day for the Platts July NYMEX crude futures assessment at 3:15 pm ET would be one business day prior, or June 18. At 3:15 pm ET on June 18, the Platts front-month assessment of NYMEX crude futures would roll to August, the second-month assessment would roll to September, and the third-month assessment would roll to October.

The underlying methodology for the 3:15 pm ET futures assessments mirrors that of the Asian and Europe "16:30s," where Platts assesses the prevailing value of NYMEX and ICE futures at the Market on Close — 4:30 pm Singapore time and 4:30 pm London Time, respectively.

Platts applies the same methodology in the US for assessing the value of NYMEX futures at precisely 3:15 pm ET as it does in the assessment of spot crude oil and products markets. The assessment does not simply represent the value of the last trade at 3:15 pm, Eastern Time. It reflects demonstrable and representative value at the close.

Platts analyzes the sequence of trades, bids, and offers on each of the relevant futures contracts leading into the transactable value at 3:15 pm ET. Platts examines traded levels, bid and offer levels prior to 3:15 pm ET, and employs the same methodological principles used in its physical assessment systems — repeatability and incrementability -- when assessing the prevailing value of futures at 3:15 pm ET.

Platts tracks the movements in the bids and the offers, the spread between the bids and the offers, and the execution of those trades.

Critically, high values where there are no relevant bids or low values when there are no relevant offers would be and are excluded from the assessments. The objective is to determine the level at which a typical market participant would be able execute transactions at 3:15 pm ET. The 3:15 pm futures value is not be a snapshot at 3:15 pm ET, but reflects demonstrable, repeatable and representative value at that moment in time.

Furthermore, Platts analyzes the price trend leading to the assessment time at 3:15 pm ET, and considers only normal market activity in the assessment process. This is to ensure that the Platts assessment reflects a prevailing and representative value at 3:15 pm ET, rather than an unusual trade occurring at that time, earlier or later.

For example, there may be a situation where liquidity in the third forward month is poor. In that situation, due to lack of trade in the time leading to 3:15 pm ET, the value then may need to be inferred from a spread relationship in the absence of representative outright traded values. The values published are editorial assessments of what the market value is at 3:15 pm ET. The assessment may not be a specific transaction as it may have been an unusual and not representative event.

Here is an example of the assessment process for front-month NYMEX crude futures at 3:15 pm ET.

Time (ET)	Trades	Bid	Ask
3:14	80.00	80.00	80.05
	80.00	80.01	80.04
	80.01	80.01	80.03
	80.01	80.01	80.03
	80.01	80.01	80.03
	80.01	80.02	80.03
	80.02	80.01	80.03
	80.01	80.00	80.03
3:15	80.03		

In this example, repeatable value for NYMEX crude was $80.01, and that was the most recent and representative deal immediately prior to 3:15 pm ET. The $80.03 deal at 3:15 came in right after the 3:15:00 pm ET MOC timestamp, and would not be considered in the assessment process.

The Platts assessment for front-month NYMEX crude futures value would be $80.01.

Here is another example of the assessment process for front-month NYMEX crude futures at 3:15 pm ET.

Time (ET)	Trades	Bid	Ask
3:14	80.00	80.00	80.05
	80.00	80.01	80.04
	80.04	80.01	80.05
	80.05	80.01	80.05
	80.01	80.01	80.04
	80.01	80.02	80.03
	80.02	80.01	80.03
	80.01	80.00	80.03
3:15	80.03		

In this example, the repeatable value for NYMEX crude again was $80.01, and that was the most recent deal immediately prior to 3:15 pm ET. The two deals at $80.04 and $80.05 created gaps and did not meet the repeatability standard.

The Platts assessment for front-month NYMEX crude futures value would be $80.01.

REVISION HISTORY

May 2016: Platts updated the Crude Oil Methodology Guide to include new assessments for WTI 2nd month and at the London close including: WTI MEH M2, WTI Midland M2, Light Houston Sweet M2, WTI MEH M1 (London), and WTI MEH M2 (London).

April 2016: Platts updated the Crude Oil Methodology Guide to reflect typical volumes for Latin American crude oil cargoes to: Escalante (1 million barrels), Roncador (750,000 barrels), Loreto (400,000 barrels), Oriente (360,000 barrels), Napo (720,000 barrels), Marlim (750,000 barrels), Castilla Blend (1 million barrels), and Vasconia (500,000 barrels). Prior to April 2016, Platts reflected typical volume sizes of 350,000 barrels with the exception of Santa Barbara (350,000 barrels), Mesa 30 (350,000 barrels), Castilla Blend (500,000 barrels) and Magdalena (300,000 barrels). Additionally, Platts has updated the assessment period for Alaska North Slope (ANS) crude delivered into the US West Coast. Under the updated ANS methodology, Platts will roll its assessments forward to reflect deliveries in the second calendar month forward from the first publishing day on or after the 10th of each month. Platts also updated the Crude Oil Methodology Guide to reflect updated specifications of Basrah Light delivered into the US Gulf Coast. The updated specifications reflect a typical API gravity 29.5 and a maximum sulfur content of 3%. Prior to March 2016, Platts Basrah Light reflected an API gravity of 31-35.5 and sulfur content of 2%. Platts also corrected minor typographical errors.

February 2016: Platts updated the Crude Oil Methodology Guide to reflect the addition of US crude export cargo assessments for Eagle Ford crude and condensate from Houston and Corpus Christi, Texas terminals as well as WTI Houston. Platts also added a new crude oil pipeline assessment for Western Canadian Select (WCS) ex-Nederland. Platts also removed references to Canadian crude oil postings that were discontinued effective July 31, 2015.

January 2016: Platts updated the Crude Oil Methodology Guide to reflect the inclusion of Al Shaheen and Murban in its Dubai and Oman crude oil benchmarks. Platts removed references to Stybarrow crude, which is no longer assessed. Platts started to assess Dubai and Oman derivatives independently of physical assessments with effect from December 1, 2015.

November 2015: Platts updated the Crude Oil Methodology Guide to reflect Brazilian Roncador crude oil with a typical gravity of 19.8 API, sulfur content of 0.935%. Platts assessments for Roncador have reflected crude of this general quality since 2013, when Roncador exports began to reflect a heavier, more sulfurous specification than had previously been typical for the crude. Prior to 2013, Roncador exports and Platts Roncador assessments had reflected crude with a lighter gravity of approximately 28.3 API, and a lower sulfur of generally 0.58%. Platts removed references to Kumkol crude, which is no longer assessed.

August 2015: Platts completed an annual update to the Crude Oil Methodology Guide in July 2015. In this update, Platts reviewed all content. Platts updated guidance around how to report information and expectations for contactability. Platts also consolidated guidance regarding review of reported trades and incorporated information regarding how Platts accounts for market structure in its crude oil assessments. In the specifications section of the guide, Platts reflected the renaming of Flotta Gold assessment, in line with the change in name by the terminal operator, Talisman Sinopec Energy UK Ltd (TSEUK). Platts added the planned discontinuation dates of its existing Kumkol and Zarzaitine assessments. Platts incorporated netback calculations for Urals and Mediterranean assessments. Platts added its Baltic Urals crude short option methodology. Language has been clarified in the US pipeline crude assessments, US shale crude oils and Americas dated Brent and US crude assessments at London close. Latin America crude has added clarification around the monthly cash WTI assessments along with language to the Mexican crude contract pricing formulas. Language around Latin America assessments FOB has also been clarified. Platts updated this guide to include guidance regarding the inclusion of STS as a delivery option for Upper Zakum.

May 2015: Platts removed a number of European, Russian and West African crude oil specifications from the guide and replaced them with a table format. Previously, the crude oil specifications had appeared next to the crude oil's description. Now, the specifications appear separately in one table and are designed as a reference. Platts updated the description of its Dated Brent and North Sea crude assessment methodology to reflect North Sea cargoes loading a full month-ahead. This change to Platts Dated Brent and North Sea crude methodology also incorporated changes to Platts Cash BFOE; under Platts new methodology, full cargo date nominations are declared one month in advance. This change also impacted Platts Asian and American Dated Brent assessments, which also reflect loadings 10 days to a month-ahead. Platts further clarified the convergence and settlement expectations for BFOE partials published for assessment under its methodology. Platts updated the description of its West African assessment range to reflect the value of all West African crude assessments loading 25-55 days forward. Platts noted the addition of the Deodorized Field Condensate assessment and the Sakhalin Blend assessment. DFC will run alongside the existing Ras Gas assessment and will carry the historical data for Ras Gas when the Ras Gas assessment is discontinued on January 2, 2016. The Sakhalin Blend assessment will run alongside the existing Vityaz Blend assessment and will carry the historical data for Vityaz when the Vityaz assessment is discontinued on January 2, 2016. Platts removed references to discontinued assessments for Lower Zakum and Umm Shaif following the launch of the Das Blend assessment and the removal of the codes associated with those assessments. Platts added information about its new WTI MEH assessment reflecting Midland grade WTI crude oil trading at the Magellean East Houston terminal. Platts also amended the guide to reflect the renaming of its Canadian Syncrude Sweet assessment to Syncrude Sweet Premium. This methodology guide was also updated to include further description of Platts' processes and practices in survey assessment environments. Platts made other minor edits throughout.

December 2014: Platts updated this guide making some minor edits. Platts also updated the methodology to reflect the use of full cargoes to assess Tapis and Minas crude oil markets from December 2014. As part of the change, Platts discontinued the use of the partials mechanism to assess Minas and Tapis. Platts updated the tables for Asia-Pacific crude to amend the cargo size of Minas to

100,000 barrels and Tapis to 300,000 barrels. Platts also updated the description of Angolan Dated Brent Strip codes AALGM00 and AALGN00 to their new description, the "15-45 Day Dated Strip". In North Sea crude, Platts added assessment codes for M4 cash BFOE at the London and Asia closes, M4 BFOE EFPs, and spreads with WTI.

July 2014: Platts completed an annual update to the Crude Oil Methodology Guide in July 2014. In this update, Platts reviewed all content. Platts consolidated guidelines around publishing information during the MOC assessment process into the MOC Data Publishing Principles section, and incorporated clarification guidance about how to express interest in bids and offers that were published in January 2014 and May 2014. Platts also incorporated clarifications around book-outs, circle-outs, and editorial review of reported trades. The guide was updated to add details regarding new assessments for Das Blend crude; correct the implementation date for valuing Asian crudes versus the ADB Strip to September 2013; remove a reference to Oman quality specifications; add details regarding Minas and Tapis partials; update Platts QP calculations formula; remove references to Palanca/Soyo, Kole, and Rabi Light, which are no longer assessed; update descriptions of Urals CIF Rotterdam and CIF Augusta; incorporate additional Azeri Light descriptions; revise Urals CFD descriptions; clarify language describing the US and Canadian pipeline rolls; update latest available API and sulfur specifications for SGC and Poseidon; create separate sections for US and Canada cargo assessments for more clarity; include descriptions of its new Bakken basin assessment; remove certain background commentary around US shale markets that was not strictly relevant to methodology itself; remove references to Canadian crude postings that are no longer published; add explanations of Latin strips; add definitions for Isthmus to USWC and Olmeca to Europe; and incorporate descriptions of Platts' 3:15 futures assessments. Platts also made minor typographical edits throughout the text for clarity.

November 2013: Platts updated this guide, making minor edits through the text. Platts also updated its methodology for Middle Eastern crude oil, noting a change where full cargos converge on the 20th partial between a buyer and seller, forming cargos of 500,000 barrels each. Platts added information regarding its new Light Houston Sweet (LHS) assessment, which had previously been published in a separate document. Platts also added details regarding assessments for Akpo, Bonga. Pazflor, Plutonio and Djeno crude oils.

August 2013: Platts revamped all Oil Methodology And Specifications Guides, including its Crude Oil guide, in August 2013. This revamp was completed to enhance the clarity and usefulness of all guides, and to introduce greater consistency of layout and structure across all published methodology guides. Methodologies for market coverage were not changed through this revamp, unless specifically noted in the methodology guide itself.