

Methodology and specifications guide

Asia Pacific and Middle East refined oil products

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Introduction	2	Part VI: Requests for clarifications of data and complaints	12
How this methodology statement is organized	2		
Part I: Input data	2	Part VII: Definitions of the trading locations for which Platts publishes daily indexes or assessments	13
Reporting data to Platts	3	Straits terminals	13
What to report	3	LPG	18
How to report	3	Gasoline	21
MOC data publishing principles	3	Naphtha	24
		Jet fuel	27
Part II: Security and confidentiality	7	Gasoil	29
		FOB Singapore gasoil / diesel specifications	33
Part III: Determining assessments	8	Additives in Singapore and the Middle East 10ppm	34
MOC price assessment principles	8	Fuel oil	36
Normalization price adjustment techniques	8	FSU FOB Singapore	38
Prioritizing data	9	LSWR	40
Assessment Calculations	9		
		Revision history	43
Part IV: Platts editorial standards	12		
Part V: Corrections	12		

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, 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 the times during each trading day in which Platts considers transactions in determining its assessments 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.

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. Methodology is reviewed regularly to ensure it reflects current market reality. Such reviews are carried out by Platts reporters and their managers, supplemented and supported by price methodology specialists who operate separately from the reporting teams. Platts follows a clearly defined process for public consultation on material changes to its methodologies. This process is based on full transparency and communication with industry stakeholders aimed at gaining

market acceptance for any proposed introduction or changes to methodology. For more information on the review and approval procedures, please visit: <https://www.spglobal.com/platts/en/our-methodology/methodology-review-change>

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

How this methodology statement is organized

This description of methodology for 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 assessments, including details on what data market participants are expected to submit, the process for submitting data and criteria for timeliness of market data submissions, as well as the editorial collection of input data from market sources.
- 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 assessments. It includes descriptions of the methods that Platts uses for reviewing data, and the methods used to convert raw data into assessments. This also includes 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. This is 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 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 assessments for a particular 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: INPUT DATA

Platts objective is to ensure that input data 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 input 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 the commodity being assessed.

Reporting data to Platts

Platts assesses a variety of different markets and commodities. In some of these Platts receives information from back office functions. However, in many markets back office functions are not best placed to communicate relevant market data to Platts editors, and in these instances Platts has processes in place to ensure that data is corroborated either through reviews of entities participating in its process, or through source validation and publication of information.

As part of its standard editorial practise, Platts routinely 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. Further details concerning Platts MOC Participation Guidelines can be found online at <https://www.platts.com/market-on-close>.

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.

Platts may consider verifiable data reported and published through the day as provided for publication by individual sources, through established editorial methods.

Platts has developed guidelines for Management of Sources that address source identification, source evaluation, source development, using source information and source dependency. Individual sources are verified as per Platts Source Management Guidelines.

Platts considers several criteria as whether to use source information. These criteria include:

- Company reputation
- Source position within a company
- Source understanding and knowledge of the market in question
- Ability of source to provide relevant, valuable information
- Ability of Platts to verify information with other sources
- Source credibility

What to report

Platts encourages all market participants to submit all data that may be relevant to Platts assessments, including but not limited to:

- 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 any reasonable method of delivery/communication for information provided for publication in real-time, including for bids, offers and transactions. Platts editors typically communicate with market participants through phone, eWindow (if relevant) and/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. Other means of communication, such as emails during the assessment process, are acceptable but are considered to be atypical. If a market participant chooses to communicate with Platts editorial using such atypical means, this needs to be highlighted well ahead of the assessment process.

The following reporting methods are accepted by Platts editorial staff:

- Commonly used Instant Messaging software
- eWindow
- Telephone
- Email

Reporters covering the markets in Asia and the Middle East are contactable from around 09:30 to around 18:30 Singapore time, those covering Europe and Africa from around 09:30 to around 18:30 London time, and those covering the Americas from around 08:30 to around 17:30 Houston time.

MOC data publishing principles

The Platts Market on Close (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. Under Platts MOC guidelines for collecting and publishing data, Platts publishes market information including but not limited to firm bids and offers, 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 services. 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.

Input data may also include fully and partially confirmed bids, offers and trades, notional trading values and other market information as provided for publication by individual sources, through established editorial methods.

Market reporters endeavor to verify all market information they receive, including by testing it within the market through the publishing process. Trades reported as executed are verified as being executed and Platts ensures that any firm bids/offers reported are available to the market as a whole.

Platts uses various techniques to confirm the quality of data it receives, including cross checks with counterparties as well as requests for supporting documentation. Platts eliminates data in the price assessment process that cannot be verified in the market to the extent deemed appropriate.

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.

Platts publishes the most relevant information collected that meets its methodological standards, typically through real-time information services and with as much transparency as possible in order to test information within the market.

MOC data submission process

Platts has specific guidelines around data submissions to ensure high quality of information in the assessment process. This includes detailed guidelines on timings for submissions, which can be found in the specific guide for each commodity process. The purpose of the time cut-offs is primarily to ensure logistical executability and standards of incrementability and repeatability to ensure an orderly assessment process. 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.

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. Platts prioritizes data on the basis of timeliness. This sequence is critical for an orderly assessment process.

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.

All bids and offers are firm from the moment of submission.

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. Acknowledgment may take the form of “yes,” “OK,” “y,” “k,” or any other reasonable forms, including by sending back the published information. 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.

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.

Following any trade, an intention to rebid or reoffer must be received by Platts as soon as is possible and within a reasonable time frame, as per incrementability guidelines.

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 additional 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 \$100/mt during the MOC. Company A can rebid at \$100/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 participant to reach that level should be the first to be traded. Subsequent deals will go to the second, third and fourth participant at the same level. When a participant is traded, any repeat of their bid/offer will move to the back of the bid/offer queue.

Platts will consider the first participant to express their interest in a bid or offer to be the counterparty for the subsequent trade. Platts will monitor time stamps in the event of a dispute to determine who the first buyer or seller was. In the event of a bid or offer being repeated, the queue of participants expressing interest in that position will be reset. 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, while in certain markets volume may be adjusted to be multiples of a minimum volume. The 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 counterparty. If a participant trades another position during the MOC assessment process, they must communicate to Platts if they wish to withdraw their existing position following the trade. Otherwise, it is assumed the participant’s own position remains active.

All participants that have reported bids and offers for publishing in the Platts process are expected to promptly report any transactions stemming from available bids or offers reported to Platts as part of the MOC assessment process.

Platts synchronizes its computer clocks every day precisely, and will compare the time of any submitted bid, offer or transactional interest against this synchronized time. 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 published.

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

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.

Atypical bids, offers, trades

Platts may publish bids, offers and trades with atypical pricing terms, including benchmark bases and timing. Market information with atypical pricing inherently differs in value from the typical and commonly observable information in the market.

Bids and offers which are deemed as atypical relative to the market may not be fully taken into consideration for the assessment process. In the absence of an associated, liquid derivative instrument atypical pricing bases may be difficult or impossible to evaluate on an outright price equivalent.

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 a commodity 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 supporting documentation to ensure the integrity of its assessment process.

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 logistics 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 publishes bids, offers and transactions on the basis that participants will fulfil 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 change, but should include parameters such as backwardation, logistics, and the inconvenience for the buyer in the case of a seller not performing, or contango, logistics and the inconvenience for the seller in the case of a buyer not performing. Compensation should not include consequential costs.

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.

Compensation is subject to editorial review to ensure market practices and overall fairness in the transaction have been followed. Platts review may include an analysis of reasonable compensation. Platts views compensation as a part of full performance due under the parameters of a trade reported in the assessment process.

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 change, but should be to include parameters such as market structure, logistics 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 parcel 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 may track all aspects of performance on trades reported during its MOC assessment process. 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. 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 quality, location, vessel and laycan nominations. MOC trades may be subject to editorial review to ensure market practices and performance in the transaction have been followed.

A failure to meet Platts guidelines for participation and performance in the MOC may lead to an event driven review. Event driven reviews are designed to help ensure that transactional information and other data inputs used as the basis for Platts price assessments are representative of market value on an ongoing basis.

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 reflect typically traded qualities of commodities. Specifications are available in individual specifications guides, published on the Platts website www.platts.com.

Testing of products

Traded commodities are subject to standard testing techniques and protocols 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 commodities that are merchantable. Hence, buyers may assume that offers or transactions are for a commodity that is merchantable. Sellers must ensure their offers or transactions are for merchantable commodities.

PART II: SECURITY AND CONFIDENTIALITY

Data is stored in a secure network, in accordance with Platts policies and procedures. Platts assessments are produced in accordance with Platts Market on Close assessment methodology. This means that all data for use in Platts 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 assessments.

PART III: DETERMINING ASSESSMENTS

The following section describes how Platts uses 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.

Platts seeks to establish and publish the value of markets that prevail at the close of the assessment process. Platts has aligned the timestamps reflected in its assessments with what typically is a period of high activity in the markets that Platts observes. Platts believes that aligning its price assessments to typical periods of greater market activity and liquidity provides a robust basis upon which to derive an assessment of market value. Timestamps for each assessment are included in the specifications guide for that assessment.

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 a commodity, 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 commodity, 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 value.

The clarity established by providing a well-defined timestamp is also important for understanding the relationships between the markets that Platts assesses. By ensuring that all assessments within a region reflect market value at the same moment in time, spreads that exist between commodities are also able to be fully and properly reflected. For example, comparing the value of a raw material to a processed commodity is possible when both values have been determined at the same moment in time. By contrast, comparing the price of raw material in the morning, to processed material in the afternoon, might deeply impair the relationship between the commodities – 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 value 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 markets it assesses and the timestamps reflected in its assessments with standard industry practice. However, physical commodity markets are generally heterogeneous in nature. Key attributes often vary from the base standard reflected in Platts assessments as material is supplied to market.

The quality, delivery location and other specific terms of trade may vary in the physical commodity markets assessed by Platts. This means that simple averages of trades may not produce a representative assessment value of a physically heterogeneous market.

Because of the complex nature of the physical markets, 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 markets with

its standard assessment specifications through a process called normalization.

Normalization is an essential price adjustment technique used to align reported market information to the base standard reflected in Platts price assessments.

Platts establishes the level of normalization by surveying markets and observing the economic impact of variance from the base standard. 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. The 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

Transparency underpins Platts assessment process, just as it does Platts data publishing processes. Platts assessment process considers firm bids, firm offers and arms-length transactions that are transparent and open to sufficient, credible counterparties. Bids, offers or transactions that are not transparent may not be considered in the assessment process; 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.

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, as outlined in part

1 above, 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 between the best firm bid and best firm offer open to the market at the close. This ensures that Platts assessments reflect the transactable value at the close.

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 may 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, firm bids and offers that are available to the entire market take precedence over transactional activity reported to Platts after completion.

The level of each bid or offer must stand firm in the marketplace long enough for any counterparty to transact; 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. Gapping occurs when a bid and an offer are more than one increment apart and a trade occurs. Platts will analyse and evaluate such trades for their representative value. They may not be fully reflected in the final assessment.

Platts assessment guidelines are designed to avoid any distortion of the final price assessment and so inputs that are not verifiable and “one-off” or unrepeatable transactions 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 trade 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 price levels. 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 between the last incremental bid and the transaction at the gapped level.

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. Platts may observe direct market activity as well as the effect of movements in related markets through spread differentials or blending and shipping economics, for example.

Platts takes into account representative transactions executed at arms-length in the open market occurring during the trading day, up to the close, and additionally taking into account bid and offer information submitted during this period. Platts editors may require direct verification from the principals to a reported bid, offer or deal when communicated through a third party, including a broker.

Assessment Calculations

Units of measurement

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

Commodities are generally internationally 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.

Commodities typically trade in volumetric or energy units, and Platts assessments for these markets reflect common practice in each market. The units and unit range considered for each individual Platts assessment of a physical market is described in the specification guide for each commodity.

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 exchange rates published regionally. Conversion factors are described in the specifications guide for each commodity alongside individual assessment codes.

Use of judgment

Judgment guidelines promote consistency and transparency and are systematically applied by Platts. Where 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 reporters follow specific methodology when exercising judgment or discretion during their assessment process. Platts editors apply judgment when determining (1) whether information is suitable for publication, (2) when and how to normalize data and (3) where to assess final value. All such judgment is subject to review by Platts editorial management for adherence to the standards published in Platts methodologies.

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.

To ensure all assessments are as robust as possible, Platts editorial systems are backed by a strong corporate structure

that includes managerial and compliance oversight.

An evaluation process is conducted before publication on every benchmark assessment by a competent peer or manager. The price assessments are reviewed and the exercise of judgment is further discussed and verified during this process. Finally, assessments that are used as benchmarks are supported by assessment rationales. These rationales explain the application of judgment and are published together with the relevant price assessment, offering full transparency to the market.

To ensure the consistent exercise of discretion, Platts ensures that reporters are trained and regularly assessed in their own and each other's markets. Platts manages and maintains internal training guides for each of the different products assessed which aim to ensure Platts price assessments are produced consistently.

Every assessment of a benchmark, including the use of discretion, is reviewed and approved by a competent peer or manager prior to publication.

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 S&P Global, 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 a commodity 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. Platts spot price assessments reflect this value at precisely the close of the assessment 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 reporters may use judgment to normalize bids, offers or transactions with such extraneous elements to the base market standard, or may exclude them altogether. 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, size option tolerances exercisable by the buyer or seller, or quality specifications.

Outright, differential and spread prices

Platts assesses the outright value of a commodity, as well as differentials 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.

Platts physical price assessments use a variety of inputs, including outright price bids/offers, floating price bids/offers, spread price bids/offers (including EFPs, EFSs etc.) and combinations of fixed and floating prices. Platts' objective is to assess the prevailing tradable outright price of the commodity at the close of the market assessment period. In the event of an observed conflict between outright values and differentials or spreads, outright values prevail in Platts final published assessments.

Platts establishes the hedgable, outright value of floating and spread price indications by applying them to the observable, prevailing value of underlying relevant derivatives instruments. In the event of conflicts observed between the outright values derived from floating and spread prices with different underlying references, Platts takes into account considerations that include the relative liquidity of each relevant derivatives market, and the typicality of a given spread or floating price, when exercising judgement around whether to prioritize one particular floating price or spread over another.

Platts may publish bids, offers and trades with atypical pricing terms, including benchmark bases and timing. Market information with atypical pricing inherently differs in value from the typical and commonly observable information in the market.

Bids and offers which are deemed as atypical relative to the market may not be fully taken into consideration for the assessment process. In the absence of an associated, liquid derivative instrument atypical pricing bases may be difficult or impossible to evaluate on an outright price equivalent.

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.

Timing

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

As an example, gasoline has a value, naphtha has a value and the gasoline versus naphtha spread has a value, and all three match when measured at the same time. 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 value. 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

periods are included in the individual specifications guide for each commodity.

Market structure, such as backwardation and contango, is also factored into the Platts assessment process. If a company offers a parcel loading 15 days forward, the offer may provide market information for the Platts assessment for parcels 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.

Market structure

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

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 material causes the front period to be significantly lower in value than material available at the end of the window. In a backwardated market the tightness of supply causes the prompt material to be at a higher price than material 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 period of the window rather than the back period, or vice versa.

The date ranges reflected by Platts reflect the prevailing trading practices in the region. By not taking very prompt days

into consideration, transactions reflecting distressed prices are excluded. The definition of this period varies according to specific markets.

Determination of backwardation or contango

In calculating market structure, the prices of tradable instruments, including derivatives such as futures and swaps, may be used.

Typical calculations include a determination made for the difference in price over a month; a granular value is then calculated from this for each day.

Outright and floating price information

The three main factors used in the commodities markets for price determination are:

- Outright price
- Differentials
- Derivatives

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

Outright price: The ultimate question in the mind of an end-user, producer, 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 iron ore at \$100/mt. Price in turn determines expense, processing margin, profit, loss, etc. The spot market trades actively on an 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.

Differentials: Many transactions are carried out in relation to a benchmark. In this case a differential, also known as a

premium/discount is generated. Differentials can arise if the quality, volumes or loading times for a given transaction differ from the benchmark. In addition, floating price transactions are done in relation to assessments that will be published in the future – for example, a bid for a cargo at \$10/mt above the Platts assessment of that same commodity, as published immediately before, during and after delivery of the cargo. Premiums usually rise when the market's backwardation steepens, and the steeper the curve, the greater the premium. In a contango situation, premiums have a tendency to turn into discounts.

Derivatives: Derivatives are a major determinant in price; they trade frequently and throughout the day. These markets are very reactive and may provide market participants with timely information on market conditions. They can react to arbitrage conditions or movements in overseas markets as well as local conditions. Derivatives may allow companies to adapt their price exposure because they enable market participants to transform floating prices to fixed or fixed to floating.

PART IV: PLATTS EDITORIAL STANDARDS

All Platts employees must adhere to the S&P Global Code of Business Ethics (COBE), which has to be signed annually. The COBE reflects S&P Global'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 Compliance function that is independent of the editorial group. The Compliance team is responsible for ensuring the quality and adherence to Platts policies, standards, processes and procedures. The Compliance team conduct regular assessments of editorial operations, including checks for adherence to published methodologies.

S&P Global Platts appoints an independent, external auditor with appropriate experience and capability to review and report on its adherence to this stated methodology. The annual report is published online at <https://www.platts.com/regulatory-engagement>.

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 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 specifications guide contains the primary specifications and methodologies for Platts refined oil products assessments throughout Asia Pacific and the Middle East. 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 guide. Platts editorial staff and managers will usually be ready to provide guidance when assessment issues require clarification.

STRAITS TERMINALS

Terminal	Location	No. of Berths	Maximum draft (m)	Maximum LOA (m)/vessel type	No. of tanks	Storage capacity (cu m)	Ownership	Platts Gasoline	Platts Jet	Platts Gasoil	Platts HSFO
Helios	Jurong Island	6+1 (VLCC)	18.5/24.5 (VLCC)	280/353 (VLCC)	18	503408	55% Oiltanking GmbH/ 45% Macquarie	No	No	No	Yes
Universal	Jurong Island	6	23	333/VLCC	78	2360000	65% Hin Leong; 35% PetroChina	Yes	Yes	Yes	Yes
Horizon	Jurong Island	7	16.5	333/VLCC	59	1243990	JV between Horizon Terminals Ltd (52%) and four partners SK Corp, Independent Petroleum Group, Boreh International, Martank	Yes	Yes	Yes	Yes
Tankstore	Pulau Busing, Bukom Island	11	17.1	360	107	2000000	100% PB TANKER (Kuo International (Pte) Ltd)	Yes	Yes	Yes	Yes
SRC	Jurong Island	7	15	290/up to 105,000dwt		1904762	50% Chevron; 50% PetroChina (through SPC)	Yes	Yes	Yes	Yes
Oiltanking	Jurong Island	11	15.7	335	80	1305444	55% Oiltanking GmbH/ 45% Oystercatcher	Yes	Yes	Yes	Yes
Shell Bukom	Pulau Bukom	9				3900000	100% Shell	Yes	Yes	Yes	Yes
XOM Jurong	Jurong	5				2310000	100% ExxonMobil	Yes	Yes	Yes	Yes
XOM PAC	Jurong Island	6				1700000	100% ExxonMobil	Yes	Yes	Yes	Yes
Tuas	Jurong	1	10.2 (without tide)	280	1	60000	100% Huaneng Power International	No	No	No	Yes
Vopak Sebarok	Pulau Sebarok	9	17.6	280/Half Laden VLCC	79	1263079	100% Vopak Terminals Singapore (69.5% Vopak; 30.5% PSA Corp)	Yes	Yes	Yes	Yes
Vopak Banyan	Jurong Island	7	15.5	260/Aframax	60	1025339	100% Vopak Terminals Singapore (69.5% Vopak; 30.5% PSA Corp)	Yes	Yes	Yes	Yes
Chevron Penjuru	Jurong	7	14.8	300	40	485600	100% Chevron	Yes	Yes	Yes	Yes
Power Seraya	Jurong Island	4	12.6	275/Suezmax	20	835000	100% YTL PowerSeraya	No	No	Yes	Yes
Senoko Power	Woodlands	1	12	277	7	260000	Senoko	No	No	Yes	No
SPC	Pulau Sebarok	3	17	297/120000 Dwt	13	220000	100% PetroChina	No	Yes	Yes	Yes
Exxon SCP Banyan facility	Jurong Island	3	17	290	2 tanks each for gasoil, jet/ kero	60,000 each for gasoil, jet/ kero	100% ExxonMobil	No	Yes	Yes	No
Tanjung Langsat (TLP, TgL1, Tanjung Langsat, Pasir TgL2)	Pasir Gudang, Johor	7	13.5	430/partially laden VLCC	52 (TLP: 10; LGT-1: 32; LGT-2: 10)	747000 (TLP Oil Terminal: 100,000; LGT-1: 476,000; LGT-2: 171,000)	TLP Oil Terminal: 100% Johor Corp; LgT-1 and LgT-2: 80% Centralized Terminals Sdn Bhd (55% Dialog, 45% MISC Bhd) and 20% Puma Energy (subsidiary of Trafigura)	Yes	Yes	Yes	Yes
Tanjung Bin	Tanjung Bin, Johor	6	17.5	fully-laden Suezmax or partially laden VLCC	41	890,000 and another 250,000 by mid-2015	100% VTTI	Yes	Yes	Yes	Yes
Tanjung Pengerang	Pengerang, Johor	6	24	350 (VLCC)	57	1284000	"90% Pengerang Terminals Sdn Bhd (51% Dialog Group Bhd, 49% Royal Vopak) + 10% SSI* (Johor)	Yes	Yes	Yes	No
Pasir Gudang (Far East Oil Terminal One)	Pasir Gudang, Johor	4	13.5	290 (Aframax)	16	231000	* SSI=State Secretary Inc. " Cosco-Feoso (S) Pte Ltd (JV between Cosco Holdings (S) Pte Ltd and Feoso Investment (S) Pte Ltd)	No	No	No	Yes
Oiltanking Karimun Terminal	Karimun Island, Indonesia	4	23	346/partially laden VLCC	30	730,000	Oiltanking GmbH and Gunvor Group	Yes	Yes	Yes	No

Terminal information provided for reference only and reflects most recent available data.

FOB Straits Nomination Standards

Platts editorial standards for the Market On Close assessment process for FOB Singapore fuel oil, gasoil, gasoline and jet fuel calls for best practices in all aspects of operational performance, including terminal and vessel nominations.

Location basis for bids, offers and trades: Platts FOB Singapore assessments reflect “FOB Straits” bids, offers and transactions wherein sellers should proceed to nominate loading from one of the locations in Singapore and Malaysia that are approved for the Platts Market on Close price assessment process and are listed in the below table.

Platts only publishes bids, offers and expressions of interest to trade for FOB Straits fuel oil, gasoline, gasoil and jet cargoes for which the following standards would apply: sellers must declare a terminal 10 days prior to the first day of the loading window, and buyers should nominate a single performing vessel seven days prior, with the buyer narrowing the loading window to three days, subject to loading terminal acceptance. All nominations should typically be communicated to counterparties by 5pm Singapore time.

If the nomination day falls on a weekend or a public holiday, nominations should be done on the business day prior to the weekend or public holiday. Buyers may submit multiple vessels for terminal vetting prior to nominating a performing vessel, and buyers may substitute the vessel prior to loading, subject to terminal acceptance.

Platts expects parties to be reasonable when exceptional circumstances require buyers to substitute vessels or sellers to substitute terminals after the respective nomination deadlines. Sellers should not unreasonably withhold vessel substitutions or hamper the established loading process. If the substituted vessel tendered the notice of readiness in time for loading, sellers should not put buyers on best endeavor basis.

Nomination of “non-commensurate” vessels should not expose the seller to incur additional costs associated with the large-sized vessels. The buyer has the right to nominate a non-commensurate vessel to load a cargo traded via the Singapore MOC assessment process, while the seller has the obligation to accept a commensurate vessel and try to accommodate a non-commensurate vessel if the terminal scheduling permits. The seller’s exposure to demurrage and laytime should not exceed the normal associated demurrage and laytime, of a commensurate vessel.

For fuel oil loadings, Platts understands that up to Aframax-size tankers are considered commensurate; for middle distillates loadings, up to medium range-size tankers are considered commensurate; for gasoline loadings, small-range tankers are considered commensurate for individual clips and up to medium range tankers for co-loading of cargoes.

Any terminal nominated for performance on an FOB Straits transaction concluded during the Platts assessment process should typically be able to manage at least one co-load of standard-sized cargoes of 20,000 mt to 40,000 mt, for fuel oil, and 100,000 barrels to 250,000 barrels for jet fuel and gasoil.

For instance, a vessel which is already carrying 20,000 mt of fuel oil should be able to load at least another 20,000 mt from a second terminal, without draft restrictions hindering a vessel’s ability to leave the port.

Seller should promptly communicate to buyers when substituting a terminal. The substitute terminal should conform to the nominated vessel and should not harm the buyer or affect any prior agreement between the counterparties regarding physical performance of the trade, unless with mutual consent.

All parties to a transaction are expected to demonstrate reasonability around alternative delivery arrangements. These arrangements include, but are not limited to, co-loading of cargoes or inter tank transfers. Parties to a transaction may

not unilaterally assume that the counterparty is bound to accept the alternative delivery arrangement -- any such request should be clearly communicated and mutually agreed to prior to nomination of the performing vessel seven days prior to loading.

Buyers and sellers should not unreasonably withhold counterparty’s request for alternative loading arrangements. Any direct additional costs incurred by the seller in fulfilling the alternative delivery may be borne in line with standard industry practice by the party requesting the arrangement.

If requested, sellers should demonstrate the additional costs incurred, for example any fees related to inter tank transfers, to their counterparty. Where the laycans for co-loaded cargoes are spread apart, the party requesting alternative loading arrangement may be expected to compensate the counterparty for any difference in cargo value.

From July 3, 2017, Platts began publishing standalone offers of oil product cargoes loading from PT Oiltanking Karimun Terminal, Indonesia, in the Singapore Market on Close assessment process for gasoil, jet fuel and gasoline. Platts publishes such offers on an FOB Indonesia (FOB ID) basis, where the seller must clearly state the loading point as FOB Karimun at the time of communicating their interest to Platts for publication. Platts does not publish FOB Indonesia bids. For trades reported on FOB Straits basis, sellers may not unilaterally nominate Karimun as a delivery point, though it may be agreed by mutual consent, and should deliver from approved terminals in Singapore and Malaysia.

Cost differences between Singapore and Malaysia:

Nominations for loading out of a terminal in Malaysia should not cause undue financial harm to a buyer, relative to receiving a nomination out of a Singapore terminal. Any demonstrable incremental costs incurred by the buyer from a Malaysian terminal nomination, including cabotage for onward deliveries into Malaysia itself, should be costs borne by the seller in the MOC process.

Reviews of MOC terminals and trade data: It is critical for Platts to monitor the quality of the information submitted by companies wishing to participate in Platts MOC processes, including any infrastructure that will form part of the execution of that information.

Platts routinely, and as part of standard editorial practice, reviews the infrastructure reflected 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, 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 such routine reviews.

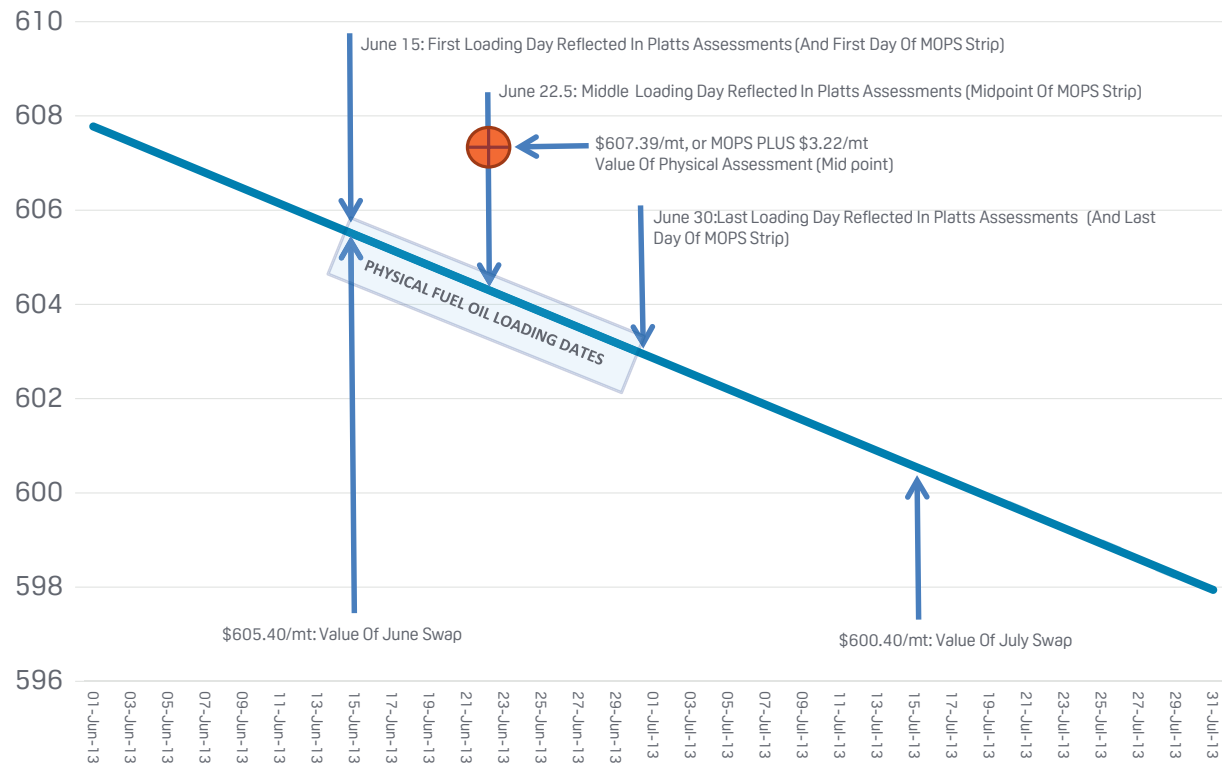
Explanation of the MOPS Strip

This explanation for the MOPS strip describes how it is determined, and its application in Platts' assessment process.

The Platts assessment process determines the value of physical commodities 15-30 days forward for many oil products loading in Singapore. Many of these commodities trade on an outright price basis – where the full price is known at time of trade -- or on a Platts-related, floating-price basis – where much of the value is determined in reference to reference prices that will be published in the future.

When the value of the commodity is clearly defined through outright price bid, offer or trade, such activity can help establish value with a high degree of certainty. When there is a lack of outright price activity in a market, or when the most clearly

ILLUSTRATION OF THE MOPS STRIP



defined market activity is being demonstrated on a floating-price basis, it becomes critical to track the value the market assigns to future, yet-to-be published Platts assessments.

“MOPS” is an acronym that stands for the “Mean of Platts Singapore,” and typically refers to any contract mechanism that derives its value by referencing the average of a set of Singapore-based oil price assessments to be published by Platts in the future – over a week, a month, or any agreed period of time. In derivatives markets, a “strip” is any contiguous date

series in the future. A “Summer Strip” might be April, May, June, July, August and September. An “Annual Strip” would typically be 12 consecutive months.

A “MOPS Strip” is the sequence of 16 days that represent the future loading dates reflected in Platts' Singapore oil product assessments.

The MOPS Strip published by Platts for certain oil markets represents the value the market assigns to future Platts

assessments, through trading in MOPS-related, monthly -derivatives. This value is determined by analyzing the -derivatives market.

A derivative is a financially-settled contract. Sometimes referred to as “paper”, a -derivative is a fixed-price transaction, where the buyer is paid (or pays) the difference between the agreed strike price in the contract, and the actual average value of an underlying reference benchmark price. As an example, MOPS-related December “Singapore 180CST fuel oil derivative” settle their value from the average of assessments for the value of 180 CST fuel oil FOB Singapore, as published by Platts over the month of December.

As financially settled contracts, derivatives derive their value from published benchmark assessments. They do not entail physical delivery of oil. For example, if a 1,000mt June derivative was bought at \$605/mt, the seller would pay the buyer \$10/mt (or \$10,000 in this example) if the underlying benchmark averaged \$615/mt over the month of June; the buyer would pay the seller \$10/mt (or \$10,000 in this example) if the reference price averaged \$595/mt. Derivatives, commonly used to hedge exposure to benchmark prices in the future, are generally traded for full months, and also the balance of the prevailing month.

The final, financial settlement of a derivative can only be completed when all the value that comprise the average are known (ie, after the last publishing day in June, for a swap that references the average of published prices in June).

Just like derivatives, Platts-related physical cargoes that trade on a floating price basis ultimately derive a final value over a pre-determined period of time in the future – usually around loading dates, with a premium or discount applied to reflect market structure, and possible differences in specification, location and trading terms.

The MOPS strip is used as a component in measuring the value of the physical market, when floating price trading is

common. The strip represents an underlying, market-assigned future value for the Platts assessments, and it is an important component in fully analyzing the price determination of physical cargoes when they are regularly traded on a floating price basis. While the value that Platts will publish in its assessments can never be known at the time of trading a cargo that will be delivered and priced in the future, a hedgable, proxy value for the relevant Platts assessments of the future can be extrapolated from derivatives markets, so long as the derivatives analyzed, and the floating price physical contract being valued, use the same Platts reference price for final settlement.

Platts therefore publishes a MOPS Strip in markets where physical cargoes trade at both fixed-price levels, and as premiums or discounts to the Platts assessment itself. It is published when there is a vibrant swaps market to serve as the basis for analysis. In Singapore, Platts publishes a MOPS strip value for jet fuel, naphtha, gasoil and fuel oil. There is no MOPS strip calculated for products where derivatives are not assessed by Platts.

By standing as a hedgable proxy value for the MOPS element of a floating price cargo, the MOPS strip is essential to defining the flat-price equivalent value of a cargo that is traded as a premium or discount to the Platts assessment. The MOPS Strip defines the value of “MOPS” in the assessment formula: “physical value = MOPS plus premium (or discount).”

To fully understand the application of the MOPS strip, it is important to note that Platts’ physical price assessments for most Singapore cargoes are based on cargoes loading 15-30 days from the date of the price assessment itself. Hence, if today is May 31, the assessments will reflect the value of cargoes loading during June 15-30.

MOPS strip is the value of the Singapore derivatives market, effective for the mid-point date of the physical assessment. In this particular example, the mid-point of the assessed period is notionally June 22.5. This is a specific sample calculation for how the MOPS strip would be calculated:

180 CST High Sulfur Fuel Oil on May 31, 2013 (\$/mt)

June (paper): \$605.40

July (paper):\$600.40

June/July spread: +\$5.00 (backwardation)

Physical FOB Singapore 180CST (loading on June15-30): \$607.39

Since there are 30.5 days between mid-June (30 days) and mid-July (31 days) – we calculate the daily backwardation value to be +0.1639 (from 5.00/30.5). Since there are seven and a half days between mid-June (June 15) and the mid-point date for physical assessment (June 22.5), the calculated MOPS strip value is:

$$= \$605.40 + (0.1639 \times -7.5)$$

$$= \$604.17$$

In terms of the application of MOPS strip in the Platts assessment process: the MOPS strip provides the third leg when triangulating the physical value of the market using the formula “physical value = MOPS plus premium (or discount).” The MOPS strip defines the value of “MOPS” in this equation. Again, this MOPS value is what the market has determined the future, yet to be published Platts assessments are able to be hedged at in the derivatives marketplace.

In an example, the difference between the physical value arrived at by the close of the assessment process and the MOPS strip yields either a positive value or a negative value. This is the ‘premium’ or the ‘discount’ at which the physical market is trading versus future Platts assessments. In this case:

$$\text{Physical premium (or discount)} = \text{Physical assessment} - \text{MOPS strip}$$

Physical premium (or discount) = \$607.39 – \$604.17

Physical premium (or discount) = \$3.22

In a second example, the reverse process also generates a value. If Platts assessed the physical market premium as being MOPS plus \$3.22, the following equation could be applied:

Physical assessment = MOPS plus premium (or discount)

Physical assessment = \$604.17 + \$3.22

Physical assessment = \$607.39

MOPAG Strip: Platts publishes assessments for Mean of Platts Arab Gulf or MOPAG Strip for 95 RON Gasoline, Gasoil, Jet Fuel and 380-cst Fuel Oil. The MOPAG strip value is derived from MOPAG swaps using the same broad methodology as shown above for the MOPS strip calculations – although the two strips

reflect derivatives values over different periods. The MOPAG swaps settle on Platts MOPAG netback assessments that reflect cargoes loading 20-40 days from the day of publication. Hence the MOPAG strip represents the derivative value 20-40 days forward. Platts uses Balance Month and Month 1 swaps to calculate the MOPAG strip value until the 10th calendar day of the month, following which Month 1 and Month 2 swaps are used to calculate the strip.

LPG

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Propane Refrigerated CFR Japan 30-45 days	AAVAK00	AAVAK03			CFR	Japan	30-45 days	11,000	44,000	US\$	Metric Tons	
Propane Refrigerated CFR Japan 45-60 days	AAVAL00	AAVAL03			CFR	Japan	45-60 days	11,000	44,000	US\$	Metric Tons	
Propane Refrigerated CFR Japan 60-75 days	AAVAM00	AAVAM03			CFR	Japan	60-75 days	11,000	44,000	US\$	Metric Tons	
Propane Refrigerated CFR Japan 30-60 days cargo	PMAAV00	AAAVR00			CFR	Japan	30-60 days	11,000	44,000	US\$	Metric Tons	
Propane CFR Japan 30-60 days vs Saudi Propane CP strip 20-40 days	PMAAX00	PMUEI03			CFR	Japan	30-60 days	11,000	44,000	US\$	Metric Tons	
Propane CFR Korea 30-60 days vs Saudi Propane CP strip 20-40 days	PMABK00	PMABK03			CFR	South Korea	30-60 days	11,000	44,000	US\$	Metric Tons	
Propane Refrigerated CFR South China 20-35 days cargo	AABAK00	AABAM00			CFR	China	20-35 days	11,000	44,000	US\$	Metric Tons	
Propane CFR South China 20-35 days vs Saudi Propane CP strip 5-15 days	AABAI00	AABAI03			CFR	China	20-35 days	11,000	44,000	US\$	Metric Tons	
Propane Refrigerated CFR Taiwan 20-35 days cargo	AABAN00	AABAQ00			CFR	Taiwan	20-35 days	11,000	44,000	US\$	Metric Tons	
Propane CFR Taiwan 20-35 days vs Saudi Propane CP strip 5-15 days	AABA000	AABA003			CFR	Taiwan	20-35 days	11,000	44,000	US\$	Metric Tons	
Propane Refrigerated CFR North Asia Zone 30-60 days cargo	AAJTQ00	AAJTR00			CFR	Japan/Korea/China/Taiwan	30-60 days	11,000	44,000	US\$	Metric Tons	
Propane FOB AG 20-40 days cargo	PMUDM00	PMUDN03			FOB	Arab Gulf	20-40 days	11,000	44,000	US\$	Metric Tons	
Propane FOB AG 20-40 days cargo Month to Date	PMUD000	PMUDP03			FOB	Arab Gulf	20-40 days	11,000	44,000	US\$	Metric Tons	
Propane FOB AG 20-40 days cargo vs Propane Saudi CP strip 20-40 days	PMABF00	PMUEJ03			FOB	Arab Gulf	20-40 days	11,000	44,000	US\$	Metric Tons	
Propane FOB AG cargo vs Saudi Propane CP M1	AAKZA00	AAKZA03			FOB	Arab Gulf	20-40 days	11,000	44,000	US\$	Metric Tons	
Propane Saudi CP strip 20-40 days AG loading to Japan-Korea	AAKZC00	AAKZC03								US\$	Metric Tons	
Propane Saudi CP strip 5-15 days AG loading to China-Taiwan	AAKZE00	AAKZE03								US\$	Metric Tons	
Propane FOB Saudi Arabia CP	PTAAM10				FOB	Saudi Arabia				US\$	Metric Tons	
Butane Refrigerated CFR Japan 30-45 days	AAVAN00	AAVAN03			CFR	Japan	30-45 days	11,000	44,000	US\$	Metric Tons	
Butane Refrigerated CFR Japan 45-60 days	AAVA000	AAVA003			CFR	Japan	45-60 days	11,000	44,000	US\$	Metric Tons	
Butane Refrigerated CFR Japan 60-75 days	AAVAP00	AAVAP03			CFR	Japan	60-75 days	11,000	44,000	US\$	Metric Tons	
Butane Refrigerated CFR Japan 30-60 days cargo	PMAAF00	AAAVQ00			CFR	Japan	30-60 days	11,000	44,000	US\$	Metric Tons	
Butane CFR Japan 30-60 days vs Saudi Butane CP strip 5-15 days	PMAAH00	PMUEL03			CFR	Japan	30-60 days	11,000	44,000	US\$	Metric Tons	
Butane CFR Korea 30-60 days vs Saudi Butane CP strip 20-40 days	PMABL00	PMABL03			CFR	South Korea	30-60 days	11,000	44,000	US\$	Metric Tons	
Butane Refrigerated CFR South China 20-35 days cargo	AABAU00	AABAS00			CFR	China	20-35 days	11,000	44,000	US\$	Metric Tons	
Butane CFR South China 20-35 days vs Saudi Butane CP strip 5-15 days	AABAT00	AABAT03			CFR	China	20-35 days	11,000	44,000	US\$	Metric Tons	
Butane Refrigerated CFR Taiwan 20-35 days cargo	AABBH00	AABBK00			CFR	Taiwan	20-35 days	11,000	44,000	US\$	Metric Tons	
Butane CFR Taiwan 20-35 days vs Saudi Butane CP strip 5-15 days	AABBI00	AABBJ00			CFR	Taiwan	20-35 days	11,000	44,000	US\$	Metric Tons	
Butane Refrigerated CFR North Asia Zone 30-60 days cargo	AAJTT00	AAJTU00			CFR	Japan/Korea/China/Taiwan	30-60 days	11,000	44,000	US\$	Metric Tons	
Butane FOB AG 20-40 days cargo	PMUDR00	PMUDS03			FOB	Arab Gulf	20-40 days	11,000	44,000	US\$	Metric Tons	
Butane FOB AG 20-40 days cargo Month to Date	PMUDQ00	PMUDT03			FOB	Arab Gulf	20-40 days	11,000	44,000	US\$	Metric Tons	
Butane FOB AG 20-40 days cargo vs Butane Saudi CP strip 20-40 days	PMABG00	PMUEK03				Arab Gulf	20-40 days	11,000	44,000	US\$	Metric Tons	

LPG

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Butane FOB AG cargo vs Saudi Butane CP Mo01	AAKZB00	AAKZB03			FOB	Arab Gulf	20-40 days	11,000	44,000	US\$	Metric Tons	
Butane Saudi CP strip 20-40 days AG loading to Japan-Korea	AAKZD00	AAKZD03								US\$	Metric Tons	
Butane Saudi CP strip 5-15 days AG loading to China-Taiwan	AAKZF00	AAKZF03								US\$	Metric Tons	
Butane FOB Saudi Arabia CP	PTAAF10				FOB	Saudi Arabia				US\$	Metric Tons	
LPG Refrigerated 11:11 CFR Singapore-Japan 30-45 days	AASG000	AASG003			CFR	Singapore/Japan	30-45 days	22,000	44,000	US\$	Metric Tons	
LPG Refrigerated 11:11 CFR Singapore-Japan 45-60 days	AASGP00	AASGP03			CFR	Singapore/Japan	45-60 days	22,000	44,000	US\$	Metric Tons	
LPG Refrigerated 11:11 CFR Singapore-Japan 60-75 days	AASGQ00	AASGQ03			CFR	Singapore/Japan	60-75 days	22,000	44,000	US\$	Metric Tons	
LPG Refrigerated 11:11 CFR Singapore-Japan 30-60 days cargo	AASGN00	AASGN03			CFR	Singapore/Japan	30-60 days	22,000	44,000	US\$	Metric Tons	
LPG Pressurized CFR Philippines 7-15 days	AAWUX00	AAWUX03			CFR	Philippines	7-15 days	1,800	2,500	US\$	Metric Tons	
LPG Pressurized CFR Philippines vs Saudi Propane-Butane CP Mo01	AAWUY00	AAWUY03			CFR	Philippines	7-15 days	1,800	2,500	US\$	Metric Tons	
LPG Pressurized CFR Vietnam 7-15 days	AAWUV00	AAWUV03			CFR	Vietnam	7-15 days	1,800	2,500	US\$	Metric Tons	
LPG Pressurized CFR Vietnam vs Saudi Propane-Butane CP Mo01	AAWUW00	AAWUW03			CFR	Vietnam	7-15 days	1,800	2,500	US\$	Metric Tons	
LPG Pressurized FOB East China 7-15 days	AAWUZ00	AAWUZ03			FOB	China	7-15 days	1,800	2,500	US\$	Metric Tons	
LPG Pressurized FOB East China vs Saudi Propane-Butane CP Mo01	AAWVA00	AAWVA03			FOB	China	7-15 days	1,800	2,500	US\$	Metric Tons	
LPG Pressurized FOB Singapore 7-15 days	AAWVD00	AAWVD03			FOB	Singapore	7-15 days	1,800	2,500	US\$	Metric Tons	
LPG Pressurized FOB Singapore vs Saudi Propane-Butane CP Mo01	AAWVE00	AAWVE03			FOB	Singapore	7-15 days	1,800	2,500	US\$	Metric Tons	
LPG Pressurized FOB South China 7-15 days	AAWVB00	AAWVB03			FOB	China	7-15 days	1,800	2,500	US\$	Metric Tons	
LPG Pressurized FOB South China vs Saudi Propane-Butane CP Mo01	AAWVC00	AAWVC03			FOB	China	7-15 days	1,800	2,500	US\$	Metric Tons	

LPG

Platts assesses the value of large cargoes of propane and butane supplied on refrigerated tankers in both the Middle East and the Asia Pacific regions. Additionally, Platts publishes assessments for the small-cargo LPG market in the Asia Pacific, reflecting the value of mixed LPG cargos carried in pressurized ships.

Platts considers outright prices and floating prices in its assessments. Floating price transactions are most commonly based on a premium or discount to Saudi Aramco's monthly export Contract Prices (CPs) for propane and butane.

Platts Asia and Middle East propane assessments reflect

specifications that conform to typical specifications issued by Saudi Aramco, including: minimum 95% propane content, maximum 4% butane content and maximum 0.1% olefin content. Butane specifications reflected in Platts assessments conform to typical specifications issued by Saudi Aramco, including: maximum 2% propane content, maximum 29% isobutane content, minimum 68% normal butane content and maximum 0.1% olefin content.

Platts assessments reflect standard terms and conditions for FOB spot transactions lifting from the Arab Gulf and CFR spot transactions into Japan, Korea, South China and Taiwan main ports (see locations in table). Cost and Freight are typically defined by Incoterms. Platts' assessments reflect transactions

based on letter of credit as needed with typically 30-day terms.

Refrigerated LPG: In the refrigerated LPG markets, propane and butane are typically supplied on Very Large Gas Carriers (VLGCs), which are typically 44,000 mt, and commonly segregated into four tanks of 11,000 mt each on each ship. Each tank will typically contain either propane or butane. Platts refrigerated assessments reflect the value of refrigerated propane and refrigerated butane as stand-alone, minimum 11,000 mt trade sizes. Multiples of 11,000 mt, up to 44,000 mt, are considered for assessment and normalized for size as needed. Additionally, Platts also assesses the value of combination refrigerated cargoes where propane and butane are both committed for delivery, typically in evenly split, 22,000 mt cargo sizes.

In Asia's delivered markets, Platts assesses cargoes for delivery in three half-month cycles. The cycles generally fall 30-45 days forward, 45-60 days forward and 60-75 days forward on the first day of every roll. Assessments roll forward on the first business day of a new month, and the first business day after the 15th of every month. As an example, from April 1 until April 15, Platts assessments would be for H1 May, H2 May and H1 June. On April 16 (or the first publishing day after the 15th), assessment cycles move forward by a half month to become H2 May, H1 June and H2 June. Platts' headline cargo assessment is produced by averaging the first two half-month assessments.

In the Middle East spot LPG market, Platts assesses the outright value of spot cargoes for loading on an FOB basis, 20-40 days after the date of assessment. Platts also publishes an assessment of the premium or discount for spot cargoes loading 20-40 days forward in the Middle East, and spot premiums for cargoes loading one month forward. These premiums and discounts reflect the value to be applied to the prevailing Saudi Aramco Contract Price during dates of loading.

Refrigerated freight rate assessments: Platts publishes three assessments for the cost of freight along major shipping routes in the refrigerated LPG markets. These assessments are published in dollars per metric ton, and reflect the cost of shipping refrigerated LPG in VLGCs. Platts surveys the market and reflect spot charter fixtures in the assessments, for cargoes loading 20 or more days after the date of assessment. The three routes assessed are Persian Gulf to Japan, Persian Gulf to South China and Persian Gulf to East China. For the purposes of normalization, "Persian Gulf" reflects the port of Ras Tanura, with spot fixtures for nearby loading locations including Qatar and Bahrain normalized where needed. "Japan" deliveries are normalized to Chiba for freight assessments, while "East China" and "South China" are normalized to Shanghai and Guangzhou/Shenzhen respectively.

FOB AG: Export terminals including Ras Tanura and Yanbu in Saudi Arabia, and any safe port in Qatar

CFR Singapore-Japan: Platts' 11:11 refrigerated LPG cargo assessments reflect the value of cargoes delivered to main ports from Singapore to Japan.

CFR Japan: Import terminals at main ports including Kashima, Yokkaichi and Oita

CFR Korea: Import terminals at main ports including Yeosu and Ulsan

CFR South China/Taiwan: Import terminals, and floating storage vessels off China main ports including Shenzhen, Zhuhai, Shantou, Mai Liao and Kaohsiung

CFR North Asia: Average value of CFR Japan and CFR South China assessments

Pressurized LPG: In the pressurized markets, Platts assesses the values of mixed LPG cargoes in Asia, reflecting a typical mix of 30% propane, 70% butane.

Platts assessments reflect the value of mixed, pressurized LPG cargoes for delivery CFR Vietnam (basis CFR Ho Chi Minh City) and CFR Philippines (basis CFR Bataan). Platts also assesses the value of such cargoes loading from East China (basis FOB Shanghai); South China (basis FOB Shenzhen) and FOB Singapore. These pressurized cargo assessments reflect the value of parcels to be delivered 7-15 days forward from the date of publication. These values are published as outright price assessments. Platts also publishes an assessment for the premium or discount for cargoes relative to the Saudi Aramco Contract Price that prevails at the time the cargo is delivered or loaded.

Pressurized freight rate assessments: Platts publishes five assessments for the cost of freight along significant shipping routes in the Asia Pacific region's pressurized LPG markets. These assessments are published in dollars per metric ton, and reflect the cost of shipping pressurized LPG in small tankers typically carrying between 1,000 mt and 3,000 mt of mixed LPG. Platts surveys the market and reflects spot charter fixtures in the assessments, for cargoes loading 7 or more days after the date of assessment. The routes assessed are (1) Thailand to the port of Guangzhou, (2) Thailand to the port of Guangxi, (3) Thailand to the port of Shantou, (4) Japan to the port of Shanghai and (5) Korea to the port of Shanghai. For assessment purposes, "Thailand" loadings are normalized to Map Ta Phut, "Korea" loadings are normalized to Ulsan/Onsan, and "Japan" to the port of Chiba.

Asia Strip: Platts publishes two strip values for the Saudi CP, based on the official CP for the current month and forward CP values derived from the swaps market. These values provide a marker for the value of CP relative to the CFR delivery dates for Japan/Korea and China/Taiwan.

CFR Vietnam: Pressurized LPG storage terminals in Vietnam, normalized to Ho Chi Minh City

CFR Philippines: Pressurized LPG storage terminals in Philippines, normalized to Bataan

FOB East China: Pressurized LPG storage terminals in East China, normalized to Shanghai

FOB South China: Pressurized LPG storage terminals in South China, normalized to Shenzhen

FOB Singapore: Pressurized LPG storage terminals in Singapore

GASOLINE

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Gasoline Unl 90 FOB South China	AAICU00	AAICV00			FOB	China	15-30 days	5,000	20,000	US\$	Metric Tons	8.5
Gasoline Unl 91-92 C+F Japan Cargo	PGACW00	PGACW03			C+F	Japan		50,000	150,000	US\$	Barrels	8.5
Gasoline Unl 92 FOB Spore Cargo	PGAAY00	PGAAY03			FOB	Singapore	15-30 days	50,000	150,000	US\$	Barrels	8.5
Gasoline Unl 92 MOPS strip	AAXEQ00	AAXEQ03				Singapore				US\$	Barrels	8.5
Gasoline Unl 92 FOB Spore Cargo vs Gasoline Unl 92 MOPS strip	AAXER00	AAXER03			FOB	Singapore	15-30 days	50,000	150,000	US\$	Barrels	8.5
Gasoline Unl 92 FOB Spore Cargo vs Naptha MOPS strip	AAPKG00	AAPKG03			FOB	Singapore	15-30 days	50,000	150,000	US\$	Barrels	8.5
Gasoline Unl 92 FOB Spore Cargo \$/mt	AAXNA00	AAXNA03			FOB	Singapore	15-30 days	5,000	20,000	US\$	Metric Tons	8.5
Gasoline 92 RON Unl MOP West India \$/bbl	AARBP00	AARBP03			FOB	India		50,000	150,000	US\$	Barrels	8.5
Gasoline 92 RON Unl MOP West India \$/mt	AARBQ00	AARBQ03			FOB	India		5,000	20,000	US\$	Metric Tons	8.5
Gasoline Unl 92 C+F Australia Cargo	AACZF00	AACZB00			C+F	Australia		50,000	150,000	US\$	Barrels	8.5
Gasoline Unl 93 FOB South China	AAICW00	AAICX00			FOB	China	15-30 days	5,000	20,000	US\$	Metric Tons	8.5
Gasoline Unl 95 FOB Spore Cargo	PGAEZ00	PGAEZ03			FOB	Singapore	15-30 days	50,000	150,000	US\$	Barrels	8.5
Gasoline Unl 95 FOB Spore Cargo vs Naptha MOPS strip	AAPKF00	AAPKF03			FOB	Singapore	15-30 days	50,000	150,000	US\$	Barrels	8.5
Gasoline 95 RON Unl MOP West India \$/bbl	AAQWH00	AAQWH03			FOB	India		50,000	150,000	US\$	Barrels	8.5
Gasoline 95 RON Unl MOP West India \$/mt	AAQWI00	AAQWI03			FOB	India		5,000	20,000	US\$	Metric Tons	8.5
Gasoline Unl 95 C+F Australia Cargo	AACZH00	AACZG00			C+F	Australia		50,000	150,000	US\$	Barrels	8.5
Gasoline Unl 95 C+F Japan Cargo	PGAQQ00	PGAQR03			C+F	Japan		50,000	150,000	US\$	Barrels	8.5
Gasoline Unl 95 FOB Korea Cargo	PGAQO00	PGAQP03			FOB	South Korea	15-30 days	50,000	150,000	US\$	Barrels	8.5
Gasoline 95 RON Unl CFR Arab Gulf vs MOPAG Gasoline	AAWUK00	AAWUK03			CFR	Arab Gulf	20-40 days	200,000	300,000	US\$	Barrels	8.5
Gasoline 92 RON Unl FOB Arab Gulf Cargo	AAGJA00	AAGJA03			FOB	Arab Gulf	20-40 days	200,000	300,000	US\$	Barrels	8.5
Gasoline 95 RON Unl FOB Arab Gulf Cargo	AAICV00	AAICV03			FOB	Arab Gulf	20-40 days	200,000	300,000	US\$	Barrels	8.5
Gasoline 95 RON Unl FOB Arab Gulf vs MOPAG Gasoline	AAWUJ00	AAWUJ03			FOB	Arab Gulf	20-40 days	200,000	300,000	US\$	Barrels	8.5
Gasoline 95 RON FOB Fujairah Cargo	AFUJA00	AFUJA03			FOB	Fujairah	20-40 days	200,000	300,000	US\$	Barrels	8.5
Gasoline 95 RON MOPAG Strip	AFUJB00	AFUJB03				Arab Gulf				US\$	Barrels	8.5
Gasoline Unl 97 FOB Spore Cargo	PGAMS00	PGAMS03			FOB	Singapore	15-30 days	50,000	150,000	US\$	Barrels	8.5
Gasoline Unl 97 FOB Spore Cargo vs Naptha MOPS strip	AAPKE00	AAPKE03			FOB	Singapore	15-30 days	50,000	150,000	US\$	Barrels	8.5
Gasoline Unl 91 Non-oxy FOB Spore Cargo \$/bbl	AAAYNA00	AAAYNA03			FOB	Singapore	15-30 days	50,000	150,000	US\$	Barrels	8.5
Gasoline Unl 91 Non-oxy FOB Spore Cargo vs MOPS Gasoline 92 Strip \$/bbl	AAAYNB00	AAAYNB03			FOB	Singapore	15-30 days	50,000	150,000	US\$	Barrels	8.5
Gasoline 95 RON CFR South Africa Cargo	AAQWV00	AAQWV03			C+F	South Africa	20-40 days	200000	300000	US\$	Barrels	8.5

Gasoline

Singapore gasoline assessments: Platts FOB Singapore assessments reflect “FOB Straits” bids, offers and transactions. For FOB Straits transactions, sellers are required to nominate loading from one of the locations in Singapore and Malaysia that

are approved for the Platts Market on Close assessment process as a delivery point.

Platts FOB Singapore gasoline assessments reflect standard industry specifications, which are summarized in the table in this section. The specifications listed are not comprehensive

on all possible specification elements, and cargoes reflected in Platts assessment processes must at all times be deemed to fall within industry standards, including merchantability of the product. Grades which are not widely merchantable - for instance, gasoline with unusual additives, including MMT and secondary butyl acetate or unusually high quantities of certain

additives or blendstocks which are not typical - will not be reflected in the assessments. Platts is currently considering any addition of SBAC above trace as deeming the gasoline atypical.

Transactions, bids and offers of a minimum of 50,000 barrels are considered for assessment. The maximum cargo size for any one bid or offer is 150,000 barrels. These assessments reflect gasoline for loading 15 to 30 days forward from the date of publication. Market participants should specify loading for a five-day date range at the time of providing a bid or offer for publication in the Platts assessment process.

On April 2, 2018, Platts began assessing 91 RON non-oxygenate gasoline assessment on FOB Singapore basis. The new assessment reflects 50,000-barrel to 150,000-barrel cargoes

FOB AG GASOLINE SPECIFICATIONS

Property	Standard
Research Octane Number	Min 92, Min 95
Motor Octane Number	Min 82, Min 85
Appearance	Clear
Colour	Undyed
Corrosion, Copper Strip (3 Hrs. at 50 °C)	Max 1
Density at 15°C kg/cu-m	0.72-0.78
Distillation	
10% vol recovered at (°C)	Max 65
50% vol recovered at (°C)	Max 120, Min 80
90% vol recovered at (°C)	Max 180
End point (°C)	Max 210
Residue, vol%	Max 2
Doctor Test	Negative
Gum, Existent (mg/100 ml)	Max 4
Induction Period (minutes)	Min 480
Lead Content (g/L)	Max 0.013
Reid Vapour Pressure at 37.8° C	Max 9
Sulfur, wt%	Max 100 ppm
Allowed Oxygenate/MTBE (If added) MTBE content of 10.0)	Max 15 (of which maximum)
Alcohol	No additions of any alcohol
Aromatics, vol%	Max 35
Benzene, vol%	Max 1
Olefins, vol%	Max 18
Odor	Marketable
Additives	No metal additives; no metal octane boosters

loading from any of the approved Platts FOB Straits terminals 15-30 days ahead of the date of publication. Platts publishes the assessment as both an outright value and as a differential against the FOB Singapore 92 RON gasoline MOPS Strip. Platts FOB Singapore 91 RON gasoline assessments reflect standard industry specifications, which are summarized in the table in this section.

China gasoline assessments: Platts gasoline assessments reflect cargoes for loading FOB South China. Assessments reflect 25,000-30,000 mt cargoes. This market typically trades at a differential to Singapore 92 RON unleaded assessments. Platts' China assessments are expressed in USD/mt, using a conversion factor of 8.5.

South Korea gasoline assessments: Platts assesses 95 RON unleaded FOB Korea. This market typically trades on a naphtha related basis.

Japan gasoline assessments: Platts 91-92 RON unleaded gasoline, for delivery on a C+F Chiba basis, is assessed as a netforward into Japan, using the FOB Singapore 92 RON unleaded gasoline as a base. A freight rate for 30,000 mt tankers is used. The freight value is divided by 8.5 and added to the Singapore base assessment.

Platts 95 RON unleaded C+F Chiba assessment is determined by assessing the gasoline market delivered into the Chiba region in Japan. Australia gasoline assessments: Platts assesses Australian 92 and 95 RON unleaded on a C+F Melbourne/Sydney basis. These assessments are determined on a netforward basis from FOB Singapore 92 and 95 RON unleaded assessments using a freight rate for 30,000 mt tankers. Freight rates are published daily in Platts Clean Tankerwire. See "Platts Netback Methodology in Asia and the Middle East," at the end of this document, for more information on how these values are calculated. Effective January 2, 2019, Platts uses the Singapore-Australia 35kt clean MR freight assessments to calculate the CFR Australia prices from the previous Singapore-Australia 30kt clean MR freight in its CFR Australia assessments.

FOB SINGAPORE GASOLINE SPECIFICATIONS

Property	Standard
Research Octane Number (RON)	Min 92, Min 95, Min 97
Lead content, gpb/l	Max 0.013
Density@15oC, g/ml	Min 0.72
Reid Vapor Pressure (PSI)	Max 9.5
Distillation, degree C	
Initial Boiling Point	Report
10% evaporated	Max 74
50% evaporated	Max 127, Min 80
90% evaporated	Max 190
Final Boiling Point	Max 225
Residue, %vol	Max 2.0
Loss, % vol	2
Odor	Marketable
Existent gum, mg/100ml	Max 4
Benzene content, %vol	Max 2.5
Sulfur, % wt	Max 0.035
Doctor Test	Negative
or Mercaptan sulfur, ppm	Max 15
Mercaptan sulfur, % wt	Max 0.0015
Copper corrosion (3 hours at 50 deg C)	Max 1
Induction period, minutes	min 240
Oxygenates content, % vol	Max 14.0 (of which maximum Max MTBE content of 10.0)
Aromatics, % vol,	Report
Color Undyed	Undyed, Light Yellow
Alcohol	No additions of any alcohol
Metallic Additives	None added
Acetone	Max 100 ppm

India gasoline assessments: The Mean of Platts West India Netbacks (MOPWIN) assessment for 92 and 95 RON gasoline are derived by deducting freight costs from the assessments for the same products in Singapore. Although West India has a surplus of oil products for export, there remains only a sporadic flow of spot cargoes and insufficient local price formation to support independent spot prices on FOB West India basis. Platts therefore launched direct freight netbacks from the active trading hubs of Singapore and Japan, where daily prices are established from transparent and firm bids, offers and transactions between many active buyers and sellers. West Coast India – Singapore clean freight assessments used for generating the netback values can be found on Platts Global Alert.

Middle East gasoline assessments: Platts' benchmark gasoline netback assessment is for 92 RON and 95 RON unleaded gasoline on an FOB Arab Gulf basis. These assessments are determined on a netback basis from FOB Singapore 92 RON and 95 RON unleaded assessments using a freight rate for 35,000 mt tankers. Freight rates are published daily in Platts Clean Tankerwire. See "Platts Netback Methodology in Asia and the Middle East," at the end of this document, for more information on how these values are calculated.

Middle East gasoline assessments (premiums): Platts assesses spot premiums for FOB and CFR gasoline cargoes. These assessments, which are published as a spot market premium/discount to Platts' existing 95 octane Middle East netback assessment, reflect the value of 95 octane gasoline cargoes, typically 200,000 to 300,000 barrels each, for loading or delivery 20 to 40 days forward from the date of assessment. Platts considers bids, offers, transactions, and reports of transactions when assessing this local spot market differential. Platts also assesses a spot differential for FOB cargoes to its 92 octane Middle East netback assessment. This reflects the value of 92 octane gasoline cargoes typically 200,000 to 300,000 barrels each, for loading 20 to 40 days forward from the date of assessment.

Cargoes loading from the following Gulf ports are considered for inclusion in the assessments: Jubail, Jebel Ali, Mina Al Ahmadi, Quoin Island, Shuaiba, Ras Tanura, Ruwais, Mina Abdulla, Sohar,

Bahrain, Fujairah, Ras Laffan and any safe and sound port within this geographic area. The assessments would be normalized to loadings in Fujairah for all products and in Bandar Abbas for Gasoline 95 CFR.

FOB Fujairah gasoline assessments (outright): The assessment reflects the value of 95 RON gasoline cargoes, typically 200,000 to 300,000 barrels each, for loading 20 to 40 days from the date of assessment. Market participants should specify loading for a five-day date range at the time of submitting a bid or offer for publication. The outright assessment equals the sum of Middle East 95 RON gasoline spot differentials (premium/discount) and the MOPAG 95 RON gasoline strip. The MOPAG strip is calculated using 95 RON gasoline derivatives that settle on Platts Middle East 95 RON gasoline netback assessments. Platts also publishes assessments for MOPAG 95 RON gasoline derivatives for Balance Month, Month 1 and Month 2, as well as the MOPAG 95 RON gasoline strip.

South Africa gasoline assessment: On August 1, 2018, Platts began assessing 95 RON gasoline assessments on CFR South Africa basis. The new assessment reflects 200,000-barrel to 300,000-barrel cargoes on a delivered basis to South Africa. Platts calculates the net forward 95 RON CFR South Africa assessment by applying the Platts daily assessment for AG-South Africa 35,000 mt clean tanker assessment to the FOB Fujairah 95 RON assessments.

FOB SINGAPORE RON 91 NON OXY SPECIFICATIONS

Property	Standard
Research Octane Number (RON)	Min 91
Motor Octane Number (MON)	Min 81
Lead content, gpb/l	Max 0.013
Density@15 deg C, g/ml	Report
Reid Vapor Pressure (PSI)	Max 9
Distillation, degree C	
Initial Boiling Point	Report
10% evaporated	Max 65
50% evaporated	Max 115, Min 74
90% evaporated	Max 183
Final Boiling Point	Max 215
Residue, %vol	Max 2.0
Loss, %vol	2
Odor	Marketable
Existent gum, mg/100ml	Max 4
Benzene content, %vol	Max 1
Sulfur, % wt	Max 0.015
Doctor Test	Negative
or Mercaptan sulfur, ppm	Max 15
Mercaptan sulfur, % wt	Max 0.0015
Copper corrosion (3 hours at 50 deg C)	Max 1
Induction period, minutes	Min 360
Oxygenates as components, % vol	Nil
Oxygenates as contaminants, % vol	Max 1.0
Aromatics, % vol,	17-42
Olefin, % Vol,	Max 18
Color	Undyed
Alcohol	No addition of any alcohol
Metallic Additives	None added
Acetone	Max 100 ppm

NAPHTHA

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Naphtha C+F Japan Cargo 30-45 Days	PAAAE00	PAAAE03			C+F	Japan	30-45 days	25,000		US\$	Metric Tons	9
Naphtha C+F Japan Cargo 45-60 Days	PAAAF00	PAAAF03			C+F	Japan	45-60 days	25,000		US\$	Metric Tons	9
Naphtha C+F Japan Cargo 60-75 Days	AAAAG00	AAAAG03			C+F	Japan	60-75 days	25,000		US\$	Metric Tons	9
Naphtha C+F Japan Cargo	PAAAD00	PAAAD03			C+F	Japan	45-75 days	25,000		US\$	Metric Tons	9
Naphtha MOPJ strip C+F JAPAN (\$/mt)	AAXFH00	AAXFH03				Japan				US\$	Metric Tons	9
Naphtha C+F Japan vs Naphtha MOPJ strip	AAXFI00	AAXFI03			C+F	Japan	45-75 days	25,000		US\$	Metric Tons	9
Naphtha C+F Japan Premium/Discount	PAADI00	PAADJ03			C+F	Japan	30-60 days	25,000		US\$	Metric Tons	9
Naphtha C+F Korea Cargo	PAADE00	PAADF03			C+F	South Korea	30-60 days	25,000		US\$	Metric Tons	9
Naphtha C+F Korea Cargo Premium/Discount	PAADG00	PAADH03			C+F	South Korea	30-60 days	25,000		US\$	Metric Tons	9
Naphtha FOB Arab Gulf Cargo	PAAAA00	PAAAA03			FOB	Arab Gulf				US\$	Metric Tons	9
Naphtha FOB Arab Gulf vs MOPAG Naphtha	AAPKH00	AAPKH03			FOB	Arab Gulf	20-40 days	25,000	75,000	US\$	Metric Tons	9
Naphtha FOB Singapore Cargo	PAAAP00	PAAAP03			FOB	Singapore	15-30 days	100,000	250,000	US\$	Barrels	9
Naphtha MOPS strip	AAPKA00	AAPKA03				Singapore				US\$	Barrels	9
Naphtha CFR Singapore	AAOVF00	AAOVF03			CFR	Singapore	15-30 days	50,000	150,000	US\$	Barrels	9
Naphtha CFR Singapore vs Naphtha MOPS strip	AAOVG00	AAOVG03			CFR	Singapore	15-30 days	50,000	150,000	US\$	Barrels	9
Naphtha LR2 FOB Arab Gulf Cargo	AAIDA00	AAIDB00			FOB	Arab Gulf				US\$	Metric Tons	9
Naphtha MOP West India \$/bbl	AAQWJ00	AAQWJ03			FOB	India				US\$	Barrels	9
Naphtha MOP West India \$/mt	AAQWK00	AAQWK03			FOB	India				US\$	Metric Tons	9

Naphtha

Japan naphtha: Platts assesses the value of naphtha for delivery on a C+F basis into Japan, reflecting three major half-month time cycles, and an additional single “cargo” value reflecting two of these cycles. The three half-month cycles assessed are: 30-45 days forward; 45-60 days forward and 60-75 days forward. Assessments roll forward on the first business day of a new month, and the first business day after the 15th of every month. For example, over April 1-15, Platts assesses H2 May, H1 June and H2 June. These assessments would be rolled on the first business day after April 15 to H1 June, H2 June and H1 July.

The main cargo assessment for Japan (Mean of Platts Japan, or MOPJ) reflects the lows and the highs of the second and third published cycles. This maintains a consistency in the rollovers and sets the benchmark as a 45-75 day market.

Platts also assesses a spot premium or discount to reflect the value of cargoes delivered into Japan. The differential reflects the delivery of 25,000 mt cargoes in the first and second CFR Japan cycles, and is expressed as a differential against MOPJ.

Following industry feedback, S&P Global Platts began reflecting a maximum of 3 ppm carbon disulfide in its assessments for naphtha delivered to Japan for cargoes delivered in the second half of November 2017 onwards. The change was in-line with naphtha market changes in the region in the second half of 2017.

South Korea naphtha: Platts assesses the value of naphtha for delivery on a C+F basis into South Korea (Mean of Platts Korea, or MOPK) as a cash differential against MOPJ, and expressed as an outright price. Platts also assesses a spot premium or discount to reflect the value of cargoes delivered into South Korea. The differential reflects the delivery of 25,000 mt

cargoes in the 30-60 days from the date of assessments, and is expressed as a differential against MOPJ.

Platts amended the minimum paraffin level to a minimum of 70%, from the current 65%, in its assessments of naphtha cargoes delivered to South Korea, effective October 2, 2017. In addition, Platts reflected a maximum of 3 ppm carbon disulfide in its assessments for naphtha cargoes delivered to South Korea.

Middle East naphtha: Platts' benchmark Middle Eastern assessments are established as a freight netback. The FOB Arab Gulf assessments (for both 55,000 mt (Naphtha) and 75,000 mt (Naphtha LR2), are assessed as freight netbacks from MOPJ. Platts uses its daily assessments of the freight market (published in the Platts Clean Tankerwire) to determine the netback. See “Platts Netback Methodology in Asia and the Middle East,” at the end of this document, for more information

PLATTS CFR JAPAN NAPHTHA SPECS

Paraffins	Min 65%
Specific gravity at 60 deg F	0.65-0.74 g/m
RVP	Max 13 psi
Sulfur	Max 650 ppm
Initial boiling point	Min +25 deg C
Final boiling point	Max 204 deg C
Chlorine content	Max 1 ppm
Mercury	Max 1 ppb
Arsenic	Max 20 ppb
Olefins	Max 1%
N-paraffins	Min 30%
Colour	Min +20 saybolt
Lead	Max 150 ppb
Oxygenates	Max 50 ppm TAME, MTBE and/or ETBE
Carbon Disulfide	Max 3 ppm

CFR SINGAPORE NAPHTHA SPECS

Property	Unit	Test Method	Specification
Density	kg/l	ASTM D 4052	Min 0.660
Research Octane	Number	ASTM D 2700	Min 72.0
Total sulfur	wt.ppm	ASTM D 5453	Max 250.0
Benzene content	%v ol	ASTM D 5580	Max 2.5
Distillation 50% evaporated	deg C	ASTM D86	Min 50
Lead	wt.ppb	ICP-MS	13 Max.
Arsenic	wt.ppb	ICP-MS	20 Max
Initial Boiling Point	deg C	ASTM D86	25 min
Final Boiling Point	deg C	ASTM D86	204 Max
Mercury	wt.ppb	UOP 938	Report
Paraffins	%v ol	ASTM D 6839	Report
Olefins	%v ol	ASTM D 6839	Report
Naphthenes	%v ol	ASTM D 6839	Report
Aromatics	%v ol	ASTM D 6839	Report
Oxygenated Compounds	%v ol	ASTM D 6839	0.2 max
Mercaptan sulfur	wt%	ASTM D 3227	Max 0.001
RVP	psi	ASTM D 6378	Max 13.0

on how these values are calculated.

Middle East naphtha (differentials): Platts assesses spot differentials for FOB Arab Gulf naphtha cargoes. These assessments, which are published as a spot market premium/discount to Platts' existing Middle East 55,000 mt naphtha netback assessment, reflect the value of naphtha cargoes, between 25,000 mt and 75,000 mt from the previous 25,000 mt each, for loading 20 to 40 days forward from the date of

PLATTS CFR SOUTH KOREA NAPHTHA SPECS

Paraffins	Min 70%
Specific gravity at 60 deg F	0.65-0.74 g/m
RVP	Max 13 psi
Sulfur	Max 650 ppm
Initial boiling point	Min +25 deg C
Final boiling point	Max 204 deg C
Chlorine content	Max 1 ppm
Mercury	Max 1 ppb
Arsenic Max	Max 20 ppb
Olefins	Max 1%
N-paraffins	Min 30%
Colour	Min +20 saybolt
Lead	Max 150 ppb
Oxygenates Max 50 ppm TAME, MTBE and/or ETBE	Max 50 ppm TAME, MTBE and/or ETBE
Carbon Disulfide	Max 3 ppm

assessment. Platts considers bids, offers, transactions, and reports of transactions when assessing this local spot market differential. On January 7, 2015, Platts announced a series of changes to its Middle East products assessments, following a broad period of industry feedback and discussion. These changes included amending the laycan, volumes and locations reflected in the assessments.

On January 2, 2019, Platts amended the cargo size reflected in its Middle East naphtha spot cargo differential assessment to 25,000-75,000 mt from the current 25,000 mt,

Cargoes loading from the following Gulf ports would be considered for inclusion in the assessments: Jubail, Jebel Ali, Mina Al Ahmadi, Quoin Island, Shuaiba, Ras Tanura, Ruwais, Mina Abdulla, Sohar, Bahrain, Fujairah, Ras Laffan and any safe and sound port within this geographic area. The assessments would be normalized to loadings in Fujairah for naphtha.

India naphtha: The Mean of Platts West India Netback (MOPWIN) assessment for naphtha is derived by deducting freight costs from the assessments for the same product in Japan. Although West India has a surplus of oil products for export, there remains only a sporadic flow of spot cargoes and insufficient local price

formation to support independent spot prices on FOB West India basis. Platts therefore launched direct freight netbacks from the active trading hubs of Singapore and Japan, where daily prices are established from transparent and firm bids, offers and transactions between many active buyers and sellers. West Coast India – Singapore clean freight assessments used for generating the netback values can be found in the Platts Clean Tankerwire.

Naphtha (Singapore): The benchmark FOB Singapore naphtha assessment is established using a freight netback from Japan. Platts converts the naphtha assessed in Japan in dollars per metric ton to dollars per barrel, using a conversion factor of 9. The calculation is as follows:

((First published cycle in Japan minus Singapore-Japan freight)/9) -\$0.05 /barrel

The assessed freight is for a medium range vessel of 30,000 mt. Port charges, otherwise imposed in Japan, are deducted in the FOB Singapore naphtha assessment and are set at 5 cents per barrel.

Please also note that the implicit contango or backwardation between the cycles is also taken into account.

Platts FOB Singapore naphtha assessments are for 15-30 days from publication on a rolling basis.

Thus on April 20, Platts would be assessing May 5 through May 20.

In a typical example:

As for April 15:

Price in Japan: 1349.00-1349.50 (2nd half May)

Less freight: 30.000

FOB Singapore: 1319.25

Barrel basis: 146.58

Less costs: 146.53 or 146.50-146.55

On the day of the rollover of the cycles in Japan, that is, on the 1st and the 16th of the month, the FOB Singapore assessment will absorb the backwardation or contango of the lapsed cycle in Japan for five days inclusive of Saturday and Sunday. For example, on April 16, the contango between second half May and first half June is \$0.25/mt and assuming it remains constant throughout the five days. Platts factors in this contango on declining scale until April 20:

Day of month: 1st 2nd 3rd 4th 5th 6th onwards

Day of month: 16th 17th 18th 19th 20th 21st onwards

100% 80% 60% 40% 20% 0

Spot CFR Singapore Naphtha: This assessment reflects the growth of naphtha imports into Singapore, with a significant volume used for blending into gasoline grades. The assessment reflects cargoes delivering into any approved Platts FOB Straits terminal 15-30 days ahead of the date of publication and of parcel size in the range 50,000 to 150,000 barrels. Platts publishes the assessment as both an outright value and as a differential against the FOB Singapore Naphtha MOPS Strip. Specifications can be found in the table below.

CFR delivery standards: For CFR Singapore assessments, buyers should nominate terminal for delivery 10 days before

the first day of delivery dates agreed at time of trade. The seller should narrow the five-day delivery range to a three-day delivery range seven days before the first day of the narrowed delivery range. Platts also expects the seller to nominate the performing vessel seven days before the first day of the narrowed delivery range.

CFR deviations: A CFR buyer has the right to request a deviation of the ship to another port, provided the shipowner 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.

JET FUEL

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Jet Kero FOB Spore Cargo	PJABF00	PJABF03			FOB	Singapore	15-30 days	100,000	250,000	US \$	Barrels	7.9
Jet Kero MOPS strip	AAPJZ00	AAPJZ03				Singapore				US \$	Barrels	7.9
Jet Kero FOB Spore vs Jet Kero MOPS strip	PJACU00	AAFDB00			FOB	Singapore	15-30 days	100,000	250,000	US \$	Barrels	7.9
Jet Kero MOP West India \$/bbl	AAQWL00	AAQWL03			FOB	India		100,000	250,000	US \$	Barrels	7.9
Jet Kero MOP West India \$/mt	AAQWM00	AAQWM03			FOB	India		10,000	30,000	US \$	Metric Tons	7.9
Jet Kero C+F Australia Cargo	AAFIY00	AAFIZ00			C+F	Australia		100,000	250,000	US \$	Barrels	7.9
Jet Kero C+F Japan Cargo	PJAAN00	PJAAN03			C+F	Japan		100,000	250,000	US \$	Barrels	7.9
Jet Kero C+F Japan Cargo vs Jet Kero MOPS strip	PAADK00	PAADL03			C+F	Japan		100,000	250,000	US \$	Barrels	7.9
Jet Kero FOB Korea Cargo	PJADG00	PJADH03			FOB	South Korea	15-30 days	100,000	250,000	US \$	Barrels	7.9
Jet Kero FOB Korea Cargo vs Jet Kero MOPS strip	PJADI00	PJADJ03			FOB	South Korea	15-30 days	100,000	250,000	US \$	Barrels	7.9
Jet Kero C+F South China Cargo	PJABQ00	PJABQ03			C+F	China		25000	45000	US \$	Metric Tons	7.9
Jet Kero C+F South China Cargo vs Jet Kero MOPS strip	AAWTW00	AAWTW03			C+F	China		25000	45000	US \$	Metric Tons	7.9
Jet Kero FOB Arab Gulf Cargo	PJAAA00	PJAAA03			FOB	Arab Gulf				US \$	Barrels	7.9
Jet Kero FOB ArabGulf vs MOPAG Jet Kero	PJACV00	AAFDF00			FOB	Arab Gulf	20-40 days	200,000	300,000	US \$	Barrels	7.9
Jet Kero LR2 FOB Arab Gulf Cargo	AAKNZ00	AAKOA00			FOB	Arab Gulf				US \$	Barrels	7.9
Jet Kero FOB Fujairah Cargo	AFUJF00	AFUJF03			FOB	Fujairah	20-40 days	200,000	300,000	US \$	Barrels	7.9
Jet Kero MOPAG Strip	AFUJG00	AFUJG03				Arab Gulf				US \$	Barrels	7.9
Jet Kero CFR South Africa Cargo	AAQWT00	AAQWT03			C+F	South Africa	20-40 days	200,000	300,000	US \$	Barrels	7.9

Jet fuel

All Platts Asia and Middle East jet fuel assessments reflect standard commercial Jet-A1 specifications, as defined by UK Ministry of Defence in DEFSTAN 91-091, unless otherwise stated.

Singapore jet fuel: Platts FOB Singapore assessments reflect “FOB Straits” bids, offers and transactions. For FOB Straits transactions, sellers are required nominate loading from one of the locations in Singapore and Malaysia that are approved for the Platts Market on Close assessment process as a delivery point.

Specific gravity is typically 0.8 g/m. Singapore smoke point is typically 19-21, and premiums may be paid for higher smoke point and discounts for lower smoke point. Color specification for FOB Straits cargoes reflects a minimum of 18 Saybolt color guarantee.

The Singapore physical assessment reflects transactions, bids and offers of a minimum of 100,000 barrels, maximum 250,000 barrels, loading 15-30 days from date of publication. Market participants should specify loading for a five-day date range at the time of submitting a bid or offer for publication.

The FOB Singapore premium/discount assessment takes into account physical cargo activities 15 to 30 days from date of publication.

Middle East jet fuel: FOB Arab Gulf is assessed as a netback from the benchmark FOB Singapore assessment using 55,000 mt and 80,000 mt (LR2) ship freight rates. Freight rates reported in the Platts Clean Tankerwire are used. See “Platts Netback Methodology in Asia and the Middle East,” at the end of this document, for more information on how these values are calculated.

Middle East jet fuel (Differentials): Platts assesses spot differentials for FOB Arab Gulf jet fuel cargoes. These assessments, which are published as a spot market premium/discount to Platts' Middle East jet fuel netback assessment, reflect the value of jet fuel cargoes, typically 200,000 to 300,000 barrels each, for loading or delivery 20 to 40 days forward from the date of assessment. Platts considers bids, offers, transactions, and reports of transactions when assessing this local spot market differential.

Cargoes loading from the following Gulf ports would be considered for inclusion in the assessments: Jubail, Jebel Ali, Mina Al Ahmadi, Quoin Island, Shuaiba, Ras Tanura, Ruwais, Mina Abdulla, Sohar, Bahrain, Fujairah, Ras Laffan and any safe and sound port within this geographic area. The assessments are normalized to loadings in Fujairah for jet fuel.

FOB Fujairah jet fuel assessments (outright): From October 3,

2016 Platts began assessing outright values for jet fuel cargoes on an FOB Fujairah basis. The assessment reflects the value of jet fuel cargoes, typically 200,000 to 300,000 barrels each, for loading 20 to 40 days from the date of assessment. Market participants should specify loading for a five-day date range at the time of submitting a bid or offer for publication. The outright assessment equals the sum of Middle East jet fuel spot differentials (premium/discount) and MOPAG jet fuel strip. The MOPAG strip is calculated using jet fuel derivatives that settle on Platts Middle East jet fuel netback assessments. From October 3, Platts also started publishing assessments for MOPAG jet fuel derivatives for Balance Month, Month 1 and Month 2, as well as the MOPAG jet fuel strip.

India jet fuel: The Mean of Platts West India Netback (MOPWIN) assessment for jet fuel is derived by deducting freight costs from the assessments for the same product in Singapore. These assessments are a direct freight netbacks from the active trading hubs of Singapore and Japan, where daily prices are established from transparent and firm bids, offers and transactions between

many active buyers and sellers. West Coast India – Singapore clean freight assessments used for generating the netback values can be found in the Platts Clean Tankerwire.

Japan jet fuel: Jet fuel typically sold into Japan is around 20-21 Saybolt color. Platts surveys the market to determine the tradable levels for delivered medium- ranges vessels with the assessment made for C+F Chiba, Japan. Most cargoes trade on a Mean of Platts Singapore (MOPS) basis plus a differential.

South Korea jet fuel: Korea jet fuel is assessed on a FOB Korea basis, reflecting cargoes for loading 15-30 days forward from the date of publication. Most cargoes trade on a Mean of Platts Singapore (MOPS) basis plus a differential.

China jet fuel: China jet fuel is assessed on a C+F basis main ports including Qing Huang Dao, Shanghai and Huangpu. Assessments reflect medium range vessels ranging from 25,000 to 45,000 mt each. Cargoes reflect saybolt color of minimum 20. Cargoes typically trade based on the mean of Platts Singapore (MOPS.)

Australia jet fuel: Australian jet fuel is assessed on a C+F Sydney/Melbourne basis, for medium-range vessels. The assessments are based on Singapore plus applicable freight. See “Platts Netback Methodology in Asia and the Middle East,” at the end of this document, for more information on how these values are calculated. Effective January 2, 2019 Platts use the Singapore-Australia 35kt clean MR freight assessments to calculate gasoline, gasoil and jet oil products CFR Australia netforward prices.

South Africa jet fuel/kerosene assessment: On August 1, 2018, Platts began assessing jet fuel/kerosene assessments on CFR South Africa basis. The new assessments reflect 200,000-barrel to 300,000-barrel cargoes on a delivered basis to South Africa. Platts calculates the net forward of the jet fuel/kerosene assessments CFR South Africa assessment by applying the Platts daily assessment for AG-South Africa 35,000 mt clean tanker assessment to the FOB Fujairah jet fuel/kerosene assessments.

GASOIL

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Gasoil FOB Spore Cargo	POABC00	POABC03			FOB	Singapore	15-30 days	150,000	250,000	US\$	Barrels	7.45
Gasoil FOB Spore Cargo sulfur ppm	POABCSF				FOB	Singapore				US\$	Barrels	NA
Gasoil MOPS strip	AAPJY00	AAPJY03				Singapore				US\$	Barrels	7.45
Gasoil MOPS strip sulfur ppm	AAPJYSF					Singapore				US\$	Barrels	NA
Gasoil FOB Spore Cargo vs Gasoil MOPS strip	POAIC00	AAFDC00			FOB	Singapore	15-30 days	150,000	250,000	US\$	Barrels	7.45
Gasoil FOB Spore Cargo vs Gasoil MOPS strip sulfur ppm	POAICSF				FOB	Singapore				US\$	Barrels	NA
Gasoil .001% S (10ppm) FOB Spore Cargo	AAOVC00	AAOVC03			FOB	Singapore	15-30 days	150,000	250,000	US\$	Barrels	7.45
Gasoil .001% S (10ppm) FOB Spore vs Gasoil MOPS strip	AAOVD00	AAOVD03			FOB	Singapore	15-30 days	150,000	250,000	US\$	Barrels	7.45
Gasoil .001% (10ppm) MOP West India \$/bbl	AAQWN00	AAQWN03			FOB	India		150,000	250,000	US\$	Barrels	7.45
Gasoil .001% (10ppm) MOP West India \$/mt	AAQW000	AAQW003			FOB	India		150,000	250,000	US\$	Barrels	7.45
Gasoil .001% S (10ppm) CFR Australia Cargo	AAQUD00	AAQUD03			FOB	Australia		150,000	250,000	US\$	Barrels	7.45
Gasoil .005% S (50ppm) FOB Spore Cargo	AAPPF00	AAPPF03			FOB	Singapore	15-30 days	150,000	250,000	US\$	Barrels	7.45
Gasoil .005% S (50ppm) FOB Spore Cargo vs Gasoil MOPS strip	AAPPH00	AAPPH03			FOB	Singapore	15-30 days	150,000	250,000	US\$	Barrels	7.45
Gasoil .001% (10ppm) FOB Arab Gulf Cargo	AAIDT00	AAIDT03			FOB	Arab Gulf				US\$	Barrels	7.45
Gasoil .001% (10ppm) FOB Arab Gulf vs MOPAG Gasoil	AAIDU00	AAIDU03			FOB	Arab Gulf	20-40 days	200,000	300,000	US\$	Barrels	7.45
Gasoil .005% (50ppm) FOB Arab Gulf Cargo	AASGJ00	AASGJ03			FOB	Arab Gulf				US\$	Barrels	7.45
Gasoil .005% (50ppm) FOB Arab Gulf vs MOPAG Gasoil	AASGK00	AASGK03			FOB	Arab Gulf	20-40 days	200,000	300,000	US\$	Barrels	7.45
Gasoil .05% (500ppm) FOB Arab Gulf Cargo	AAFEZ00	AAFFG00			FOB	Arab Gulf				US\$	Barrels	7.45
Gasoil .05% (500ppm) FOB Arab Gulf vs MOPAG Gasoil	AAFFD00	AAFFE00			FOB	Arab Gulf	20-40 days	200,000	300,000	US\$	Barrels	7.45
Gasoil .05% (500ppm) MOP West India \$/bbl	AAQWP00	AAQWP03			FOB	India		150,000	250,000	US\$	Barrels	7.45
Gasoil .05% (500ppm) MOP West India \$/mt	AAQWQ00	AAQWQ03			FOB	India		150,000	250,000	US\$	Barrels	7.45
Gasoil .05% S (500ppm) FOB Spore Cargo	AAFEY00	AAFEY00			FOB	Singapore	15-30 days	150,000	250,000	US\$	Barrels	7.45
Gasoil .05% S (500ppm) FOB Spore Cargo vs Gasoil MOPS strip	AAFFB00	AAFFC00			FOB	Singapore	15-30 days	150,000	250,000	US\$	Barrels	7.45
Gasoil .25% (2500ppm) FOB Arab Gulf Cargo	AACUA00	AACUB00			FOB	Arab Gulf				US\$	Barrels	7.45
Gasoil .25% (2500ppm) FOB Arab Gulf vs MOPAG Gasoil	AACUC00	AACUD00			FOB	Arab Gulf	20-40 days	200,000	300,000	US\$	Barrels	7.45
Gasoil .25% (2500ppm) MOP West India \$/bbl	AAQWR00	AAQWR03			FOB	India		150,000	250,000	US\$	Barrels	7.45
Gasoil .25% (2500ppm) MOP West India \$/mt	AAQWS00	AAQWS03			FOB	India		150,000	250,000	US\$	Barrels	7.45
Gasoil .25% S (2500ppm) FOB Spore Cargo	AACUE00	AACUF00			FOB	Singapore	15-30 days	150,000	250,000	US\$	Barrels	7.45
Gasoil .25% S (2500ppm) FOB Spore Cargo \$/mt	AAXNB00	AAXNB03			FOB	Singapore	15-30 days	150,000	250,000	US\$	Barrels	7.45
Gasoil .25% S (2500ppm) FOB Spore Cargo vs Gasoil MOPS strip	AACQI00	AACTZ00			FOB	Singapore	15-30 days	150,000	250,000	US\$	Barrels	7.45
Gasoil FOB Japan Cargo	POJAP00	POJAP03			FOB	Japan		150000	250000	US\$	Barrels	7.45
Gasoil C+F Japan Cargo vs Gasoil MOPS strip	AAWVG00	AAWVG03			C+F	Japan		150,000	250,000	US\$	Barrels	7.45
Gasoil FOB Arab Gulf Cargo	POAAT00	POAAT03			FOB	Arab Gulf				US\$	Barrels	7.45
Gasoil FOB Arab Gulf Cargo sulfur ppm	POAATSF				FOB	Arab Gulf				US\$	Barrels	NA
Gasoil FOB Arab Gulf vs MOPAG Gasoil	POAID00	AAFDG00			FOB	Arab Gulf	20-40 days	200,000	300,000	US\$	Barrels	7.45
Gasoil FOB Arab Gulf vs MOPAG Gasoil sulfur ppm	POAIDSF				FOB	Arab Gulf				US\$	Barrels	NA
Gasoil LR2 FOB Arab Gulf Cargo	AAKBT00	AAKBU00			FOB	Arab Gulf				US\$	Barrels	7.45
Gasoil LR2 FOB Arab Gulf Cargo sulfur ppm	AAKBTSF				FOB	Arab Gulf				US\$	Barrels	NA

GASOIL

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
Gasoil FOB Fujairah Cargo	AFUJK00	AFUJK03			FOB	Fujairah	20-40 days	200,000	300,000	US\$	Barrels	7.45
Gasoil 10ppm FOB Fujairah Cargo	AFUJP00	AFUJP03			FOB	Fujairah	20-40 days	200,000	300,000	US\$	Barrels	7.45
Gasoil MOPAG Strip	AFUJL00	AFUJL03				Arab Gulf				US\$	Barrels	7.45
Gasoil FOB Korea Cargo	POAIE00	POAIF03			FOB	South Korea	15-30 days	150,000	250,000	US\$	Barrels	7.45
Gasoil FOB Korea Cargo sulfur ppm	POAIESF				FOB	South Korea				US\$	Barrels	NA
Gasoil FOB Korea Cargo vs Gasoil MOPS strip	POAIG00	POAIH03			FOB	South Korea	15-30 days	150,000	250,000	US\$	Barrels	7.45
Gasoil FOB Korea Cargo vs Gasoil MOPS strip sulfur ppm	POAIGSF				FOB	South Korea	15-30 days			US\$	Barrels	NA
Gasoil LP C+F South China Cargo	POAFA00	POAFA03			C+F	China		10,000	30,000	US\$	Metric Tons	7.45
Gasoil LP C+F South China Cargo sulfur ppm	POAFASF				C+F	China				US\$	Metric Tons	NA
Gasoil LP C+F South China Cargo vs Gasoil MOPS strip	AABJZ00	AABKA00			C+F	China		10,000	30,000	US\$	Metric Tons	7.45
Gasoil LP C+F South China Cargo vs Gasoil MOPS strip sulfur ppm	AABJZSF				C+F	China				US\$	Metric Tons	NA
Gasoil 10ppm CFR South Africa Cargo	AAQWU00	AAQWU03			C+F	South Africa	20-40 days	200,000	300,000	US\$	Barrels	7.45
Gasoil 500ppm CFR South Africa Cargo	AAQWV00	AAQWV03			C+F	South Africa	20-40 days	200,000	300,000	US\$	Barrels	7.45

Gasoil

Gasoil (Singapore): Platts FOB Singapore assessments reflect “FOB Straits” bids, offers and transactions. For FOB Straits transactions, sellers are required nominate loading from one of the locations in Singapore and Malaysia that are approved for the Platts Market on Close assessment process as a delivery point.

Platts’ Singapore physical gasoil assessments reflect a minimum of 150,000 barrels, maximum 250,000 barrels, loading 15-30 days from the date of publication. Market participants should specify loading for a five-day date range at the time of submitting a bid or offer for publication in the assessment process.

With effect from January 2, 2018 Platts amended the maximum sulfur content specified for the flagship Singapore Gasoil assessment to 10 ppm from the earlier 0.05% (500 ppm). At the same time, Platts lowered the maximum sulfur specification of its flagship Arab Gulf Gasoil netback assessment to 10 ppm. Grades which are not widely merchantable - for instance, gasoil

with contaminants that are banned in certain major importing countries, including fatty acid methyl esters (FAME) - will not be reflected in the assessments. Platts understands that Indonesia, Australia, Japan and Sri Lanka all restrict FAME content in gasoil imports to “nil”.

On January 22, 2015, Platts concluded a review of the merchantability of additives reflected in its FOB Singapore gasoil assessments. As a result of this review, Platts has published a list of additives that will be reflected in the assessment process. This list follows a study of submissions from market participants, and is intended to provide clarity to market participants regarding which additives are generally considered to be merchantable and accepted for cargoes delivered through the Platts Market on Close assessment process in Singapore. Platts assessments for FOB Singapore ‘Gasoil’ (10 ppm) reflect the inclusion of additives in cargoes that have been historically acceptable for delivery FOB Singapore. Fuel additives that have been broadly delivered and accepted in FOB Singapore trades reported through the Platts MOC assessment process continue to be reflected in the assessments, and are included in this list. Gasoil delivered through the Platts MOC assessment process is

expected to be additive-free, or contain the additives described in this list.

The full list of additives is included in the table below.

Gasoil 10 ppm: Minimum of 150,000 barrels, maximum 250,000 barrels, loading 15-30 days from the date of publication. Specifications as defined in table.

Gasoil 50 ppm: Minimum of 150,000 barrels, maximum 250,000 barrels, loading 15-30 days from the date of publication. Specifications as defined in table.

Gasoil 0.05% sulfur: Minimum of 150,000 barrels, maximum 250,000 barrels, loading 15-30 days from the date of publication. Specifications as defined in table.

Gasoil 0.25% sulfur: Minimum of 150,000 barrels, maximum 250,000 barrels, loading 15-30 days from the date of publication. Specifications as defined in table.

China gasoil: The minimum volume assessed is 100,000 barrels

or 10,000-15,000 mt. The sulfur content of the gasoil cargoes assessed for delivery into China is 10ppm. Ports are South China-Huangpu, Hong Kong, Shenzhen. Deals into other areas are tracked but prices are different. Gasoil into North China may command a higher price due to geographical location. Assessment window is 15-30 days from date of publication. On October 1, 2018, Platts discontinued the publication of its assessments for CFR South China 0.2% sulfur gasoil. The discontinuation stems from a lack of liquidity in the market underlying these physical assessments, as the supply of spot gasoil cargoes from those locational hubs have decreased over the years.

Japan gasoil: On October 1, 2018, Platts discontinued the publication of the FOB Okinawa and C+F Japan gasoil assessments. The discontinuation reflects a lack of spot market activity and

changing patterns in trading underlying these physical assessments. As a result, there has been an absence of physical spot trades concluded on an FOB Okinawa and C+F Japan basis.

On May 7, 2018, Platts launched FOB Japan gasoil assessments, reflecting cargoes with 10 ppm sulfur maximum. The assessment is derived using Platts Japan Domestic Oil Waterborne gasoil assessment, with cost normalized for the export market, including the removal of the implied taxed value. The final assessment is converted from yen per kiloliter to US dollar per barrel based on relevant currency conversion rates. South Korea gasoil: Korea gasoil is assessed on a FOB Korea basis reflecting a 10 ppm sulfur maximum grade. Platts surveys the market to determine the tradable levels for cargoes loading 15-30 days forward.

Middle East gasoil: FOB Arab Gulf gasoil reflects gasoil with a maximum of 10 ppm sulfur, and is assessed as a netback to the Singapore Gasoil assessment, using 55,000 mt and 80,000 mt (LR2) freight rates. Freight rates reported in the Platts Clean Tankerwire are used for this netback. See "Platts

Netback Methodology in Asia and the Middle East," at the end of this document, for more information on how these values are calculated. The FOB Arab Gulf 0.25% sulfur, 0.05% sulfur and 0.005% sulfur assessments are derived by applying assessed spot premiums for those grades to the primary Gasoil assessment, minus the spot premium for standard 10 ppm gasoil itself.

Gasoil 0.005% sulfur (outright): Derived by applying spot differential assessed for 0.005% sulfur to the primary FOB AG Gasoil netback, minus the assessed spot AG differential for Gasoil itself.

Gasoil 0.05% sulfur (outright): Derived by applying spot differential assessed for 0.05% sulfur to the primary FOB AG Gasoil netback, minus the assessed spot AG differential for Gasoil itself.

Gasoil 0.25% sulfur (outright): Derived by applying spot differential assessed for 0.25% sulfur to the primary FOB AG Gasoil netback, minus the assessed spot AG differential for Gasoil itself.

Middle East gasoil spot differentials: Platts assesses spot differentials for gasoil. These assessments, which are published as a spot market premium/discount to Platts' existing Middle East gasoil netback assessment, reflect the value of gasoil cargoes, typically 200,000 to 300,000 barrels each, for loading or delivery 20 to 40 days forward from the date of assessment. Platts considers bids, offers, transactions, and reports of transactions when assessing this local spot market differential.

Cargoes loading from the following Gulf ports would be considered for inclusion in the assessments: Jubail, Jebel Ali, Mina Al Ahmadi, Quoin Island, Shuaiba, Ras Tanura, Ruwais, Mina Abdulla, Sohar, Bahrain, Fujairah, Ras Laffan and any safe and sound port within this geographic area. The assessments would be normalized to loadings in Fujairah for gasoil.

FOB Fujairah Gasoil and Gasoil 0.001% sulfur assessments (outright): From October 3, 2016 Platts began assessing outright values for Gasoil and Gasoil 0.001% sulfur cargoes on an FOB Fujairah basis. The assessments reflect the value of Gasoil and Gasoil 0.001% sulfur, typically 200,000 to 300,000 barrels each, for loading 20 to 40 days from the date of assessment. Market participants should specify loading for a five-day date range at the time of submitting a bid or offer for publication. The outright assessments equal the sum of the Middle East Gasoil or Gasoil 0.001% sulfur spot differentials (premium/discount) and the MOPAG Gasoil strip. The MOPAG Gasoil strip is calculated using Gasoil derivatives that settle on Platts Middle East Gasoil netback assessments. From October 3, Platts also started publishing assessments for MOPAG Gasoil derivatives for Balance Month, Month 1 and Month 2, as well as the MOPAG Gasoil strip.

India gasoil: The Mean of Platts West India Netbacks (MOPWIN) assessments for 10 ppm, 500 ppm and 0.25% sulfur gasoil are derived by deducting freight costs from the assessments for the same product in Singapore. The assessments are direct freight netbacks from the active trading hubs of Singapore and Japan, where daily prices are established from transparent and firm bids, offers and transactions between many active buyers and sellers. West Coast India – Singapore clean freight assessments used for generating the netback values can be found in the Platts Clean Tankerwire.

Australia gasoil: Platts assesses 10 ppm gasoil on a C+F Sydney/Melbourne basis, in US dollars per barrel. The assessment reflects cargoes for medium-range vessels. The assessments are based on Singapore plus applicable freight. See "Platts Netback Methodology in Asia and the Middle East," at the end of this document, for more information on how these values are calculated. Effective January 2, 2019 Platts uses the Singapore-Australia 35kt clean MR freight assessments to calculate gasoline, gasoil and jet oil products CFR Australia netforward prices.

South Africa gasoil assessment: On August 1, 2018, Platts began assessing 10 ppm and 500 ppm gasoil assessments on CFR South Africa basis. The new assessments would reflect 200,000-barrel to 300,000-barrel cargoes on a delivered basis to South Africa. Platts calculates the net forward of the 10 ppm CFR South Africa assessment by applying the Platts daily assessment for AG-South Africa 35,000 mt clean tanker

assessment to the FOB Fujairah oil 10 ppm assessments. The CFR South Africa Gasoil 500 ppm assessment will be calculated by applying the FOB AG Gasoil 500 ppm premium/discount to the MOPAG Gasoil 10 ppm strip. The Platts AG-South Africa 35,000 mt assessment will then be added to this.

FOB SINGAPORE GASOIL / DIESEL SPECIFICATIONS

	Max	Unit mg KOH/g	0.001%S	0.005%S	0.05%S	0.25%S	Test Methods ASTM D664	
			10 ppm	50 ppm	500 ppm	2500 ppm		
Acid Number, Total			0.3	0.5	0.5	0.5		
Appearance @ 25°C	Pass Procedure 1	Visual test	Clear & bright, without undissolved sediment or free water	Clear & bright, without undissolved sediment or free water	Clear & bright, without undissolved sediment or free water		ASTM D4176 Proc 2	
Ash content	Max	% weight	0.01	0.01	0.01	0.01	ASTM D482, EN ISO 6245	
Cetane Index	Min	Range 0-100	46	48	48	48	ASTM D4737, EN ISO 4264	
Cetane Number	Min	Range 0-100	51				ASTM D613, EN ISO 5165	
Conradson Carbon Residue (10% distillation)	Max	% mass	0.2	0.2	0.2	0.1	ASTM D4530, EN ISO 10370	
CFPP (Cold filter plugging point)	Max	°C	Minus 5				EN 116 / IP 309	
Cloud point	Max	°C	Minus 1				ASTM 2500, ISO 3015-92, JIS K 2269-87, EN 23015	
Colour	Max	Grade	2	2	2	2	ASTM D1500 / IP 196	
Conductivity @ 20°C	Min	pS/m	150				ASTM D2624, EN ISO 6297:1997	
Copper corrosion (3 hrs @ 50°C)	Max	Class	1	1	1	1	ASTM D130, EN ISO 2160	
Density @ 15°C	Min-	Max	g/ml	0.820-0.845	0.82-0.86	0.82-0.86	0.82-0.86	ASTM D4052, EN ISO 3675
Distillation T90 (90% recovered)	Max	°C				360	ASTM D86, EN ISO 3405:1998	
Distillation T95 (95% recovered)	Max	°C	360	360	370		ASTM D86, EN ISO 3405:1998	
Distillation volume recovered @ 250°C	Max	%	65				EN ISO 3405:1998	
Distillation volume recovered @ 350°C	Min	%	85				EN ISO 3405:1998	
Filter blocking tendency	Max		2				ASTM D2068, IP 387	
Flash point	Min	°C	66	66	66	66	ASTM D93, EN 22719	
Fatty acid methyl esters (FAME)	Max	%	NIL	NIL	NIL	NIL	ASTM D7371	
Kinematic viscosity @ 40°C	Min-	Max	cSt	2.0-4.5	2.0-4.5	2.0-4.5	2.0-4.5	ASTM D445, EN ISO 3104
Lubricity (HFRR) (WSD 1,4) @ 60°C	Max	microns	460	460	460	460	ASTM D6079, IP 450, ISO 12156-1	
Odour			Merchantable					
Oxidation stability	Max	mg/L	25				ASTM D2274, EN ISO 12205	
Particulate matter	Max	mg/kg	24				EN 12662	
Polyaromatic hydrocarbons (PAHs)	Max	% weight	11	11			IP 391:1995	
Pour point	Max	°C		9	9	9	ASTM D97	
Sulfur content	Max	ppm	10	50	500	2500	ASTM D5453, EN ISO 20846/7 & 20884	
Water content	Max	mg/kg	200				EN ISO 12937	
Water & sediment	Max	% volume	0.05	0.05	0.05	0.05	ASTM D2709	

ADDITIVES IN SINGAPORE AND THE MIDDLE EAST 10PPM

Additive type	Manufacturer	Name
Antioxidant	Lanxess	BAYNOX Solution 20%
Antioxidant	Dorf Ketal	DORF 410C
Antioxidant	Dorf Ketal	SR 1546
Antioxidant	Ondeo Nalco	EC 3053A
Antioxidant	Betz	Spec-Aid 8Q5400
Antioxidant	Lanxess	Vulkanox 4005
Antioxidant; Metal Deactivator	Innospec	DGS-139
Metal Deactivator	Afton	HiTEC 4705E
Antioxidant	Afton	HiTEC 4733
Cetane Improver	Cepro Micet	2-Ethyl Hexyl Nitrate
Cetane Improver	Deepak Nitrite	2-Ethyl Hexyl Nitrate
Cetane Improver	Eurenco	2-Ethyl Hexyl Nitrate
Cetane Improver	Octel/ Innospec	2-Ethyl Hexyl Nitrate
Cetane Improver	Octel	Octel C1-0801
Cetane Improver	Very One	2-Ethylhexyl Nitrate
Cetane Improver	Dorf Ketal	Cepro 100
Cetane Improver	Innospec	CI-0801
Cetane Improver	WRT BV	HFA 3033
Cetane Improver	Afton	HiTEC 4103W
Cetane Improver	Lubrizol	Lubrizol 8090
Cetane Improver	Total	Total RV100
Cetane Improver	Zenteum	Zenteum ZR688
Cetane Improver	Kutch Chemical	2-Ethyl Hexyl Nitrate
Cetane Improver	Nalco	Nalco EC5308A
Cold Flow Improver	Total	7000L
Cold Flow Improver	Total	CP 7134 L
Cold Flow Improver	Dorf Ketal	SR1637
Cold Flow Improver	Dorf Ketal	SR1647
Cold Flow Improver	Dorf Ketal	SR 1609
Cold Flow Improver	Infineum	Infineum R420
Cold Flow Improver	Infineum	Infineum R765
Cold Flow Improver	Total	CP 7000L
Cold Flow Improver	Clariant	Dodiflow 4028
Cold Flow Improver	Clariant	Dodiflow 4032
Cold Flow Improver	Clariant	Dodiflow 4313
Cold Flow Improver	Clariant	Dodiflow 6087
Cold Flow Improver	Clariant	Dodiflow 4985
Cold Flow Improver	Clariant	Dodiflow 5251
Cold Flow Improver	Clariant	Dodiflow 4744
Cold Flow Improver	Clariant	Dodiflow 3905
Cold Flow Improver	Dorf Ketal	SR 1690
Cold Flow Improver	Infineum	Infineum R587
Cold Flow Improver	Infineum	Infineum R590
Cold Flow Improver	Infineum	Infineum R773
Cold Flow Improver	Infineum	R274
Cold Flow Improver	Infineum	R275D
Cold Flow Improver	BASF	Keroflux 6170
Cold Flow improver	BASF	Keroflux 6206
Cold Flow Improver	BASF	Keroflux 6214
Cold Flow Improver	Innospec	OFI 7650
Cold Flow Improver	CHIMEC	CH6835
Cold Flow Improver	Dorf Ketal	SR1651
Conductivity Improver	Dorf Ketal	SR 1795

Additive type	Manufacturer	Name
Conductivity Improver	Innospec (formerly Octel)	Stadis 425
Conductivity Improver	Innospec (formerly Octel)	Stadis 450
Conductivity Improver	Nalco	Nalco EC5580A
Conductivity Improver	Baker Hughes	T3514
Corrosion Inhibitor	Innospec	DCI-4A
Corrosion Inhibitor	Nalco	Nalco 5403
Corrosion Inhibitor	Afton	AvGuardTM CI/LI
Flow Improver	Sanyo Chemicals	Carroyl MD-336K
Flow Improver	Dorf Ketal	SR1649
Flow Improver	Dorf Ketal	SR1651
Flow Improver	Infineum	Infineum R222
Flow Improver	Infineum	Infineum R240
Flow Improver	Infineum	Infineum R241
Flow Improver	Infineum	Infineum R375
Flow Improver	Infineum	Infineum R395
Flow Improver	Infineum	Infineum R396
Flow Improver	Infineum	Infineum R570
Flow Improver	Infineum	Infineum R567K
Flow Improver	Infineum	Infineum R571
Flow Improver	Infineum	Infineum R594
Flow Improver	Infineum	Infineum R747
Flow Improver	Infineum	Infineum R756+R773
Flow Improver	Infineum	Infineum R779
Flow Improver	Infineum	Infineum R575
Flow Improver	Sunhib	Sunhib S-206
Flow Improver / Lubricity	Infineum	Infineum R216
Lubricity Improver	Dorf Ketal	SR2008
Lubricity Improver	Dorf Ketal	SR2010
Lubricity Improver	WRT bv	HFA 7025
Lubricity Improver	Infineum	Infineum R655
Lubricity Improver	Lubrizol	LZ539M
Lubricity Improver	Chevron Texaco	ODA 78010
Lubricity Improver	Octel	OLI 5500
Lubricity Improver	Infineum	Infineum R671
Lubricity Improver	Nalco	Nalco EC5713A
Lubricity Improver	Baker Petrolite	Tolad 5051C
Lubricity Improver	NOF Corporation Japan	LE 772W
Lubricity Improver	Sanyo Chemicals	Sanfric FM-6C
Lubricity Improver	Infineum	Infineum R650
Lubricity Improver	Nalco	Nalco EC5719A
Lubricity Improver	Total	PC 32
Lubricity Improver	Baker Hughes	T9121
Lubricity Improver	Afton	HiTEC 4140A
Lubricity Improver	Infineum	Infineum R650D
Lubricity Improver	Infineum	Infineum R655D
Metal Deactivator	Innospec	DMD-2
WAFI Cold Flow	Infineum	Infineum R705
WAFI Cold Flow	Infineum	Infineum R727
WAFI Cold Flow	Infineum	Infineum R734+R231
WAFI Cold Flow	Infineum	Infineum R734+R344
WAFI Cold Flow	Infineum	Infineum R709
MDFI Cold Flow	Infineum	Infineum R225
WASA Cold Flow	Infineum	Infineum R799

FOB MOPAG GASOIL SPECIFICATIONS

Acid Number, Total		Max	Unit mg KOH/g	0.001%S 10 ppm 0.3	Test Methods ASTM D664
Appearance @ 25°C	Pass Procedure 1		Visual test	Clear & bright, without undissolved sediment or free water	ASTM D4176 Proc 2
Ash content		Max	% weight	0.01	ASTM D482, EN ISO 6245
Cetane Index	Min		Range 0-100	46	ASTM D4737, EN ISO 4264
Cetane Number	Min		Range 0-100	51	ASTM D613, EN ISO 5165
Conradson Carbon Residue (10% distillation)		Max	% mass	0.2	ASTM D4530, EN ISO 10370
CFPP (Cold filter plugging point)		Max	°C	Minus 5	EN 116 / IP 309
Cloud point		Max	°C	Minus 1	ASTM 2500, ISO 3015-92, JIS K 2269-87, EN 23015
Colour		Max	Grade	2	ASTM D1500 / IP 196
Conductivity @ 20°C	Min		pS/m	150	ASTM D2624, EN ISO 6297:1997
Copper corrosion (3 hrs @ 50°C)		Max	Class	1	ASTM D130, EN ISO 2160
Density @ 15°C	Min-	Max	g/ml	0.820-0.845	ASTM D4052, EN ISO 3675
Distillation T90 (90% recovered)		Max	°C		ASTM D86, EN ISO 3405:1998
Distillation T95 (95% recovered)		Max	°C	360	ASTM D86, EN ISO 3405:1998
Distillation volume recovered @ 250°C		Max	%	65	EN ISO 3405:1998
Distillation volume recovered @ 350°C	Min		%	85	EN ISO 3405:1998
Filter blocking tendency		Max		2	ASTM D2068, IP 387
Flash point	Min		°C	66	ASTM D93, EN 22719
Fatty acid methyl esters (FAME)		Max	%	NIL	ASTM D7371
Kinematic viscosity @ 40°C	Min-	Max	cSt	2.0-4.5	ASTM D445, EN ISO 3104
Lubricity (HFRR) (WSD 1,4) @ 60°C		Max	microns	460	ASTM D6079, IP 450, ISO 12156-1
Odour				Merchantable	
Oxidation stability		Max	mg/L	25	ASTM D2274, EN ISO 12205
Particulate matter		Max	mg/kg	24	EN 12662
Polyaromatic hydrocarbons (PAHs)		Max	% weight	11	IP 391:1995
Pour point		Max	°C		ASTM D97
Sulfur content		Max	ppm	10	ASTM D5453, EN ISO 20846/7 & 20884
Water content		Max	mg/kg	200	EN ISO 12937
Water & sediment		Max	% volume	0.05	ASTM D2709

FUEL OIL

Assessment	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
FO 180 CST 3.5% S FOB Spore Cargo	PUADV00	PUADV03			FOB	Singapore	15-30 days	20,000	40,000	US\$	Metric Tons	6.35
FO 180 CST 3.5% S FOB Spore Cargo vs FO 180 CST MOPS strip	AAGZF00	AAGZG00			FOB	Singapore	15-30 days	20,000	40,000	US\$	Metric Tons	6.35
FO 180 CST 2.0% S FOB Spore Cargo	PUAXS00	PUAXS03			FOB	Singapore	15-30 days	20,000	40,000	US\$	Metric Tons	6.35
FO 180 CST 2.0% S FOB Spore Cargo vs FO 180 CST MOPS strip	AAWTT00	AAWTT03			FOB	Singapore	15-30 days	20,000	40,000	US\$	Metric Tons	6.35
FO 180 CST FOB Arab Gulf Cargo	PUABE00	PUABE03			FOB	Arab Gulf		20,000	40,000	US\$	Metric Tons	6.35
FO 180 CST FOB Arab Gulf vs MOPAG 180 CST	AAXJA00	AAXJA03			FOB	Arab Gulf	20-40 days	20,000	40,000	US\$	Metric Tons	6.35
FO 180 CST vs FO 380 CST FOB Arab Gulf	PPXDM00	AAFDI00			FOB	Arab Gulf	15-30 days	20,000	40,000	US\$	Metric Tons	6.35
FO 180 CST 3.5% S C+F Japan Cargo	PUACJ00	PUACJ03			C+F	Japan		20,000	40,000	US\$	Metric Tons	6.35
FO 180 CST 3.5% S FOB Korea Cargo	PUBDP00	PUBDQ03			FOB	South Korea	15-30 days	20,000	40,000	US\$	Metric Tons	6.35
FO 180 CST 3.5% S FOB Korea Cargo vs FO 180 MOPS strip	PUBDR00	PUBDS03			FOB	South Korea	15-30 days	20,000	40,000	US\$	Metric Tons	6.35
FO 180 CST 3.5% S MOPS Strip \$/mt	AAPJX00	AAPJX03				Singapore				US\$	Metric Tons	6.35
FO 380 CST 3.5% S FOB Spore Cargo	PPXDK00	PPXDP03			FOB	Singapore	15-30 days	20,000	40,000	US\$	Metric Tons	6.35
FO 380 CST 3.5% S FOB Spore Cargo sulfur ppm	PPXDKSF				FOB	Singapore		20,000	40,000	US\$	Metric Tons	NA
FO 380 CST MOPS Strip \$/mt	AAPJW00	AAPJW03				Singapore				US\$	Metric Tons	6.35
FO 380 CST 3.5% S FOB Spore Cargo vs FO 380 CST MOPS strip	PPXDL00	AAFDD00			FOB	Singapore	15-30 days	20,000	40,000	US\$	Metric Tons	6.35
FO 380 CST 3.5% FOB Arab Gulf Cargo	AAIDC00	AAIDD00			FOB	Arab Gulf		20,000	40,000	US\$	Metric Tons	6.35
FO 380 CST FOB Arab Gulf vs MOPAG 380 CST	AAXJB00	AAXJB03			FOB	Arab Gulf	20-40 days	20,000	40,000	US\$	Metric Tons	6.35
FO 380 CST FOB Fujairah Cargo	AFUJQ00				FOB	Fujairah	20-40 days	20,000	40,000	US\$	Metric Tons	6.35
FO 380 CST MOPAG Strip	AFUJR00					Arab Gulf				US\$	Metric Tons	6.35
FO 380 CST 3.5% S FOB Korea Cargo	PUBDY00	PUBDZ03			FOB	South Korea	15-30 days	20,000	40,000	US\$	Metric Tons	6.35
FO 380 CST 3.5% S FOB Korea Cargo vs FO 380 MOPS strip	PUBEA00	PUBEB03			FOB	South Korea	15-30 days	20,000	40,000	US\$	Metric Tons	6.35
FO 180 CST MOPAG Strip	AAYBD00	AAYBD03			Ex-wharf	Fujairah	5-15 days			US\$	Metric Tons	6.35
FO 380 CST Ex-wharf Fujairah	AAYBF00	AAYBF03			Ex-wharf	Fujairah	5-15 days	2,000	7,000	US\$	Metric Tons	6.35
Ex-wharf Fujairah 380 CST vs MOPAG 180 CST strip	AAYBG00	AAYBG03			Ex-wharf	Fujairah	5-15 days	2,000	7,000	US\$	Metric Tons	6.35
FOB Spore Marine Fuel 0.5% Cargo	AMFSA00	AMFSA03			FOB	Singapore	15-30 days	20,000	40,000	US\$	Metric Tons	6.35
FOB Fujairah Marine Fuel 0.5% Cargo	AMFFA00	AMFFA03			FOB	Fujairah	20-40 days	20,000	40,000	US\$	Metric Tons	6.35
FOB Spore Marine Fuel 0.5% Cargo vs FO 380 CST MOPS strip	AMOPA00	AMOPA03			FOB	Singapore	15-30 days	20,000	40,000	US\$	Metric Tons	6.35

Fuel oil

Singapore fuel oil: Platts FOB Singapore assessments reflect “FOB Straits” bids, offers and transactions. Effective January 2, 2019, all Platts fuel oil cargo and bunker assessments reflect specifications defined by the International Organization for Standardization in document ISO 8217:2010 Petroleum products - Fuels (class F) - Specifications of marine fuels. For FOB Straits transactions, sellers are required nominate loading from one of the locations in Singapore and Malaysia that are

approved for the Platts Market on Close assessment process as a delivery point.

All fuel oil assessments are typically based on cracked material. In Singapore, the HSFO 180 CST and HSFO 380 CST assessments reflect transactions, bids and offers for parcels of a minimum of 20,000 mt, maximum 40,000 mt per transaction, loading 15-30 days from the date of publication. Market participants should specify loading for a five-day date range when submitting bids and offers for publication.

Any terminal nominated for performance on an FOB Straits fuel oil transaction concluded during the Platts assessment process should be able to receive an Aframax-sized vessel, which typically weighs 80,000 to 120,000 deadweight tons when fully loaded. The terminal should typically be able to manage at least one co-load of standard-sized cargoes of 20,000 mt to 40,000 mt. For instance, a vessel which is already carrying 20,000 mt of fuel oil should be able to load at least another 20,000 mt from a second terminal, without draft restrictions hindering a vessel's ability to leave the port.

SINGAPORE'S STANDARD SPECS FOR 380 CENTISTOKE FUEL OIL

Property	Standard
Kinematic viscosity at 50 deg C, Max	380 CST
Specific gravity at 15 deg C kg/cum Max	991
CCAI	870
Sulfur mass Max	3.50%
Flash point Min	60 deg C
Hydrogen Sulphide	2 mg/kg
Acid Number Max	2.5 mg KOH/g
Total sediment aged	0.10%
Carbon residue: micro method Max	18%
Pour point Max	30 deg C
Water Max	0.50%
Ash Max	0.10%
Vanadium Max	350 mg/kg
Sodium Max	100 mg/kg
Aluminium + Silicone Max	60 mg/kg
ULO	The fuel shall be free from ULO

* Platts fuel oil and bunker assessments reflect specifications defined by the International Organization for Standardization in document ISO 8217:2010 Petroleum products - Fuels (class F) - Specifications of marine fuels

SINGAPORE'S STANDARD SPECS FOR 180 CENTISTOKE FUEL OIL, 3.5% SULFUR

Property	Standard
Kinematic viscosity at 50 deg C, Max	180 CST
Specific gravity at 15 deg C kg/cum Max	991
CCAI	860
Sulfur mass Max	3.50%
Flash point Min	60 deg C
Hydrogen Sulphide	2 mg/kg
Acid Number Max	2.5 mg KOH/g
Total sediment aged	0.10%
Carbon residue: micro method Max	15%
Pour point Max	30 deg C
Water Max	0.50%
Ash Max	0.07%
Vanadium Max	150 mg/kg
Sodium Max	50 mg/kg
Aluminium + Silicon Max	50 mg/kg
ULO	The fuel shall be free from ULO

* Platts fuel oil and bunker assessments reflect specifications defined by the International Organization for Standardization in document ISO 8217:2010 Petroleum products - Fuels (class F) - Specifications of marine fuels

Platts assesses 2.0% and 3.5% sulfur 180 CST, 3.5% sulfur 380 CST FOB Singapore fuel oil and FOB Singapore Marine Fuel 0.5%

Marine Fuel 0.5%: Platts launched daily cargo and barge assessments for Marine Fuel 0.5% reflecting residual marine fuels (RMG fuels as defined by the International Organization for Standardization in document ISO 8217:2010 Petroleum products - Fuels (class F) - Specifications of marine fuels) with a maximum sulfur limit of 0.5% across the globe starting January 2, 2019. Platts assessments take into consideration trading activity reported in Marine Fuel 0.5% and other relevant low-sulfur material within the Asia and Middle East markets.

FOB Singapore Marine Fuel 0.5%: The assessment reflects FOB Straits bids, offers and trades for 20,000-40,000 mt cargoes loading 15 to 30 days from the date of assessment. Market participants should specify loading for a five-day date range when submitting bids and offers for publication.

SINGAPORE'S STANDARD SPECS FOR 180 CENTISTOKE FUEL OIL, 2.0% SULFUR

Property	Standard
Kinematic viscosity at 50 deg C, Max	180 CST
Specific gravity at 15 deg C kg/cum Max	991
CCAI	860
Sulfur mass Max	2.00%
Flash point Min	60 deg C
Hydrogen Sulphide	2 mg/kg
Acid Number Max	2.5 mg KOH/g
Total sediment aged	0.10%
Carbon residue: micro method Max	15%
Pour point Max	30 deg C
Water Max	0.50%
Ash Max	0.07%
Vanadium Max	150 mg/kg
Sodium Max	50 mg/kg
Aluminium + Silicon Max	50 mg/kg
ULO	The fuel shall be free from ULO

* Platts fuel oil and bunker assessments reflect specifications defined by the International Organization for Standardization in document ISO 8217:2010 Petroleum products - Fuels (class F) - Specifications of marine fuels

FOB Fujairah Marine Fuel 0.5%: The assessment reflects bids, offers and trades for cargoes typically 20,000 to 40,000 mt each, for loading 20 to 40 days from the date of assessment. Market participants should specify loading for a five-day date range at the time of submitting a bid or offer for publication. Cargoes loading from any safe and sound port within the region would be considered for the assessment and normalized for loading FOB Fujairah.

Following a detailed review of the market relationship between medium sulfur and low sulfur fuel oil FOB Singapore, Platts amended its methodology for assessing FOB Singapore 180 CST 2% sulfur cargoes. With effect from January 2, 2014, Platts assesses this value by applying a standard quality premium to its benchmark FOB Singapore HSFO 180 CST 3.5% sulfur assessment. Platts established this quality premium at 2.25% of the base value of FOB Singapore HSFO 180 CST 3.5%. For example, if Platts assesses the value of HSFO 180 CST 3.5% at \$600/mt, the quality premium would be \$13.50/mt and the outright price assessment for 180 CST 2% would be \$613.50/mt. Platts made this adjustment to reflect the fact that liquidity in the medium sulfur fuel oil market has diminished to very low levels across Asia. The value reflects the relative premiums for the medium sulfur fuel over the period 2011-2013.

From July 2, 2012, Platts decreased the maximum specified allowable sulfur in its HSFO 180 CST and HSFO 380 CST assessments to 3.5%, lower from the previous ceiling of 4%. Any fuel oil cargo delivered as a result of a transaction completed and reported during the Platts Market on Close assessment process should be merchantable, including 180 CST fuel oil, which regularly moves within the utility and bunker markets. Among other characteristics, fuel oil should not contain Used Lubricants Oil (ULO), which would render fuel oil undeliverable into the bunkering market. Platts does not reflect fuel oil cargoes in its assessment process where ULOs are determined to be present.

South Korea fuel oil: Platts assesses 180 CST and 380 CST cargoes FOB South Korea. The assessments reflect parcels of around 30,000 mt loading 15-30 days forward. These cargoes

typically trade linked to Mean of Platts Singapore, 180 CST 3.5% sulfur assessment. Platts also assesses premiums/discounts to the Mean of Platts Singapore for each grade.

Japan fuel oil: Platts assesses 180 CST cargoes delivered into the Chiba area. The C+F Japan assessment is a netforward from the FOB Singapore HSFO 180 CST assessment using 80,000 mt freight rates published in the Platts Dirty Tankerwire. See “Platts Netback Methodology in Asia and the Middle East,” at the end of this document, for more information on how these values are calculated. The assessments reflect parcels of around 30,000 mt loading 15-30 days forward. These cargoes typically trade linked to Mean of Platts Singapore, 180 CST 3.5% sulfur assessment.

Middle East fuel oil: The Arab Gulf fuel oil HSFO 180 CST assessment is a netback to Singapore using 80,000 mt freight rates. Freight rates reported in the Platts Dirty Tankerwire are used to derive the FOB Arab Gulf fuel oil assessment. Density in the Arab Gulf varies and assessments include 0.96-0.975 kg/l. See “Platts Netback Methodology in Asia and the Middle East,” at the end of this document, for more information on how these values are calculated.

The Arab Gulf fuel oil HSFO 380 CST value is assessed as a netback to Singapore using 80,000 mt freight rates. Freight rates reported in the Platts Dirty Tankerwire are used to derive the FOB Arab Gulf fuel oil assessment. See “Platts Netback Methodology in Asia and the Middle East,” at the end of this document, for more information on how these values are calculated.

Middle East fuel oil spot premiums: Platts assesses spot premiums for fuel oil. These assessments, which are published as a spot market premium/discount to Platts’ existing Middle East fuel oil netback assessments, reflect the value of fuel oil cargoes, typically 20,000 to 40,000 mt each, for loading or delivery 20 to 40 days forward from the date of assessment. Platts considers bids, offers, transactions, and reports of transactions when assessing this local spot market differential. Platts assesses premiums for the following grades: HSFO 180

FSU FOB SINGAPORE

Vessel name	Vessel's operator	Vessel's delivered date	Imo number	Flag	Vessels anchored location	Type of hull	Summer Deadweight
Energy Star *	BP Singapore Pte Ltd and Gunvor Singapore Pte Ltd	31-Mar-97	9118393	Thailand	Tanjung Pelepas, Johor province of southern Malaysia	Double Hull	309,966
Fortune Star *	Mercuria Energy Trading Pte Ltd	31-Mar-99	9183374	Thailand	Tanjung Pelepas, Johor province of southern Malaysia	Double Hull	298,023
Jubilee Star	Nathalin Shipping Pte Ltd	14-Nov-96	9118381	Thailand	Tanjung Pelepas, Johor province of southern Malaysia	Double Hull	309,892
CS Prosperity	CSHA Shipping Co Ltd	05-Jan-99	9169691	Marshall Islands	Tanjung Pelepas, Johor province of southern Malaysia	Double Hull	311224
Grace Star	Nathalin Shipping Pte Ltd	29-Jun-01	9205093	Thailand	Tanjung Pelepas, Johor province of southern Malaysia	Double Hull	312,638
Marine Star	Southernpec (Singapore) Shipping Pte Ltd.	01-Jan-94	9002623	Marshall Islands	Tanjung Pelepas, Johor province of southern Malaysia	Double Hull	299,700

*with effect from February 15, 2016

CST (premium to HSFO 180 CST netback) and HSFO 380 CST (premium to HSFO 380 CST netback). Cargoes loading from the following Gulf ports would be considered for inclusion in the assessments: Jubail, Jebel Ali, Mina Al Ahmadi, Quoin Island, Shuaiba, Ras Tanura, Ruwais, Mina Abdulla, Sohar, Bahrain, Fujairah, Ras Laffan and any safe and sound port within this geographic area. The assessments are normalized to loadings in Fujairah for fuel oil.

FOB Fujairah 380 CST Fuel Oil assessment (outright): From October 3, 2016 Platts began assessing outright value for 380 CST Fuel Oil cargoes on an FOB Fujairah basis. The assessment reflects the value of 380 CST fuel oil cargoes, typically 20,000 to 40,000 mt each, for loading 20 to 40 days from the date of assessment. Market participants should specify loading for a five-day date range at the time of submitting a bid or offer for publication. The outright assessment equals the sum of Middle East 380 CST Fuel Oil spot differentials (premium/discount) and MOPAG 380 CST strip. The MOPAG strip is calculated using 380 CST Fuel Oil derivatives that settle on Platts Middle East 380 CST Fuel Oil netback assessments. From October 3, Platts also started publishing assessments for MOPAG 380 CST Fuel Oil

derivatives for Balance Month, Month 1 and Month 2, as well as the MOPAG 380 CST Fuel Oil strip.

FOB Fujairah 380 CST Fuel Oil ex-wharf: From April 3, 2017 Platts began assessing Fujairah ex-wharf 380 CST fuel oil on an outright basis and a floating price basis. The assessment reflects spot trading activity in 5,000 mt parcels of 380 CST fuel oil for lifting five to 15 days from the date of publication. Platts considers bids, offers and trades for volumes between 2,000 mt and up to a maximum of 7,000 mt, with values normalized to 5,000 mt where needed. Market participants should specify loading for a three-day date range at the time of submitting a bid or offer for publication. The outright assessment equals the sum of Ex-wharf Fujairah 380 CST Fuel Oil spot differentials (premium/discount) and the MOPAG 180 CST strip. Platts also publishes assessments for MOPAG 180 CST Fuel Oil derivatives for Balance Month, Month 1 and Month 2, at 4:30 pm and 5:30 pm Singapore time as well as a forward strip value for five-15 days at 5:30 pm Singapore time.

From August 1, 2017 Platts amended the timestamp for the Fujairah ex-wharf fuel oil assessments to 5:30 pm Singapore

time or 01:30 pm Fujairah time, to more closely reflect peak trading activity.

Parcels may be delivered via inter-tank transfers where possible, or to the buyer's nominated vessel/barge from an onshore terminal or offshore vessel within the port limits of Fujairah. The buyer should nominate the barge/vessel between two to five working days in advance of the load date as per current industry practices at the various load terminals. The seller should notify the buyer of barge acceptance promptly and within a reasonable time. But the acceptance is subjected to terminal availability. Seller should supply material that is merchantable.

Floating Storage Units: Platts included the tankers CS Prosperity, Grace Star, Marine Star as additional delivery points in the FOB Singapore fuel oil MOC process from August 2018. The full list of vessels approved as delivery points in the FOB Singapore fuel oil MOC can be found in the below table. The standards applicable to approved floating storage units require that sellers specifically name the vessel used as delivery point at the time of providing an offer for publication in the Platts MOC assessment process. Any vessel accredited for the FOB Singapore fuel oil assessment process would be on a FOB FSU basis only, and cannot be nominated into a FOB Straits transaction reported during the MOC process except by mutual agreement between counterparties.

LSWR

Assessment

	CODE	Mavg	Pavg	Wavg	CONTRACT BASIS	LOCATION	DELIVERY PERIOD	MIN SIZE	MAX SIZE	CURRENCY	UOM	CONV
LSWR FOB Indonesia Cargo	AAUGR00	AAUGR03			FOB	Indonesia	15-30 days	100,000	300,000	US\$	Barrels	6.5
LSWR FOB Indonesia Cargo vs FO 180 MOPS strip	AAWTX00	AAWTX03			FOB	Indonesia	15-30 days	100,000	300,000	US\$	Barrels	6.5
LSWR Mixed/Cracked FOB Indonesia Cargo	PPAPU00	PPAPU03			FOB	Indonesia	15-30 days	100,000	300,000	US\$	Barrels	6.8
LSWR Mixed/Cracked FOB Indonesia Cargo vs FO 180 CST MOPS strip \$/bbl	AAHXR00	AAHXS00			FOB	Indonesia	15-30 days	100,000	300,000	US\$	Barrels	6.8

LSWR

Platts assesses LSWR Mixed/Cracked and V-1250 (currently named simply "LSWR" in Platts publications) grades of Low Sulfur Waxy Residue, on an FOB Indonesia basis. Platts observes activity in the V-1250 market, and applies normalization procedures where necessary for assessment purposes. Effective August 1, 2018 Platts amended the specifications reflected in its LSWR assessments following changes in the product's typical quality in the region. From August 1, 2018 Platts V-1250 specifications reflect maximum sulfur content of 0.45%, maximum viscosity of 321 CST at 140 degrees Fahrenheit, and maximum pour point of 130 degrees Fahrenheit and a density of 0.97 kg/l.

LSWR Mixed/Cracked: Liquidity in traditional LSWR Mixed/Cracked is very low, owing to refinery upgrades across the region, which have minimized production of LSWR other than V-1250 quality. As a result of low liquidity, Platts' LSWR Mixed/Cracked assessment is established by applying a steady,

quality-based premium to the tradable V-1250 grade of LSWR. Following an amendment to the LSWR specification August 1, 2018 Platts uses a premium of \$4.50/b for LSWR Mixed/Cracked assessment over LSWR V-1250.

The mixed-cracked assessment reflects a maximum sulfur content of 0.2%; API gravity of 20.5-29.5; maximum pour point 120; and viscosity 36-150 CST maximum at 50 degrees Celsius.

Market participants should specify a five-day loading date range in bids and offers provided for publication in the assessment process, although bids for a wider date range may be permitted owing to developments in loading programs, where the seller has the option to choose five days upon expression of interest to trade. At least 10 days prior to loading, the seller must declare the terminal, when no load port is stated at the point of sale. The buyer must nominate a vessel at least seven days prior to loading, at which time the buyer also narrows the loading window to three days, subject to terminal acceptance. In cases where the load terminal is stated at point of sale, the buyer must

LSWR V-1250 TYPICAL SPECIFICATIONS

	Unit	Limit		Test method ASTM / IP / ISO
		Min	Max	
Specific Gravity at 60/60 deg F			0.97	D 1298
Kinematic Viscosity at 140 deg F CST			321	D 445
Viscosity Redwood at 1/140 deg F second			1300	IP 70
Sulfur Content	% Wt	0.45		D 2622/1552/4294
Carbon Conradson Residue	% Wt	10		D 189/524
Water Content	% Vol	0.5		D 95
Ash Content	% Wt	0.1		D 482
Flash Point PMCC	deg F	160		D 93
Pour Point	deg F		130	D 97

still nominate the vessel at least seven days prior to loading.

Platts uses a barrels to metric ton conversion rate of 6.8 for LSWR Mixed-Cracked, and effective August 1, 2018 a conversion rate of 6.5 for LSWR V-1250. Quality tests show cargoes of mixed/cracked LSWR loading FOB Indonesia typically show an API gravity of 21.4, which derives a barrels/mt conversion factor of 6.8.

Platts netback methodology in Asia and the Middle East (2019 rates)

The following document contains the methodology for product netbacks and netforwards used in Asia-Pacific.

Please note that the flat rates are changed once a year on the first working day of the new year and are applicable till the last working day of the year.

Platts publishes freight spot assessments for dirty and clean tankers. The freight assessments are published primarily as percentages against a Worldscale (WS) rate.

In the following examples, the base rate is multiplied against the spot market multiplier to obtain the actual freight cost. For example, a Worldscale rate of 200 implies a freight rate that is twice the base rate.

This document outlines Platts' freight methodology for gasoline, naphtha, fuel oil, gasoil/jet kero and Australian netback assessments.

Gasoline freight methodology

Singapore to Jebel Ali at 12.63

(Quoin Island to Singapore + Jebel Ali to Quoin Island)

FOB AG 95 RON:

Jebel Ali to Quoin Is	= 0.77
Quoin Is to Singapore	= 10.77
Jebel Ali port charges	= 1.09
	—
TOTAL	= 12.63
	—

Formula: Freight = Spot WS x 12.63/ 8.5

TO CONVERT BETWEEN METRIC TONS AND BARRELS use 8.5.

Naphtha freight methodology

1. Singapore netback

Freight rate methodology for Singapore to Japan:

Base rate from Singapore to Chiba, Japan equals \$10.80/mt

Formula: Freight = Spot WS x 30 / 26.25 x 10.80

2. Arab Gulf netback

Quoin Island to Chiba/Yokohama base rate equals \$20.78/mt

Jubail/Mina Al Ahmadi to Quoin Island	2.33+ 0.27 = 2.60
Mina Al Ahmadi /Ras Tanura to Quoin Island	2.30+0.27= 2.57
Ruwais/Mina Abdulla to Quoin Island	2.71

	7.88/ 3 = 2.63

AG to Chiba = Base rate Quoin Island to Chiba/Yokohama 20.78

plus average of 6 ports to Quoin Island 2.63

Total: \$23.41/mt

Formula: Freight = Spot WS x 55 / 52.50 x 23.41

For Naphtha LR2 netback:

Spot 75,000 mt: Freight = Spot WS x 23.41

Fuel Oil freight methodology

1. Japan netback

Singapore to Chiba/Yokohama, Japan: The freight rate is \$ 11.87/mt. This amount is multiplied by the Worldscale rate between Singapore and Japan. The amount is then added to the Singapore fuel oil assessment.

Formula: Freight = Spot WS x 11.87

2. Arab Gulf netback

Quoin Island to Singapore: \$ 10.77/mt plus \$1.93/mt for the additional expense to the loading port (In this case, Mina al Ahmadi is used as a typical port). This yields a net freight cost of \$12.70/mt. This amount of \$/mt should be used for the AG freight netback calculation.

Formula: Freight = Spot WS x \$12.70/mt

Gasoil/Jet/Kerosene freight methodology

Singapore - Arab Gulf netback calculations:

Quoin Island to Singapore base rate: \$10.77/mt

Jubail to Quoin Island base rate (+port charges)	1.23+ 0.27 = 1.50
Bahrain to Quoin Island base rate:	1.57
Ras Tanura to Quoin Island base rate:	1.14+0.27=1.41
Mina al-Ahmadi to Quoin Island base rate:	1.93

	6.41/ 4 = 1.60

AG to Singapore = Base rate Quoin Island to Singapore 10.77 Plus average of four-port discharge 1.60

Total: \$12.37/mt

Formula: Freight = Spot WS x12.37

For Gasoil LR2 netback:

Formula: Freight = Spot 75,000 mt WS x12.37

The final calculation is divided by 7.45 for gasoil and 7.9 for jet kero to convert \$/mt into \$/b.

Australian netback assessments

Base freight rate from Singapore to Melbourne/Sydney, Australia is \$17.48/mt.

To obtain the actual freight Platts will determine the spot rate from Singapore to Australia times 17.48 and then the result will be divided by the conversion rate to convert \$/mt into \$/b.

1) C+F Australian Mogas:

Freight = Spot WS x 17.48 / 8.5

2) C+F Australia Gasoil:

Freight = Spot WS x 17.48 / 7.45

3) C+F Australia Jet:

Freight = Spot WS x 17.48 / 7.9

REVISION HISTORY

January 2019: Platts updated this guide to incorporate the 2019 freight netback calculations for all refined products, including the removal of the Shuaiba reference from the annual flat rate basket used for calculating the Arab Gulf to Japan naphtha netback assessments as well as an updated list of floating storage units reflected in its FOB Singapore fuel oil assessment process. Platts discontinued CFR South China 0.2% sulfur gasoil FOB Okinawa and C+F Japan gasoil assessments with effect from October 1, 2018. Effective January 2, 2019 Platts uses the Singapore-Australia 35kt clean MR freight assessments to calculate gasoline, gasoil and jet oil products CFR Australia netforward prices. Platts amended the cargo size reflected in its Middle East naphtha spot cargo differential assessment to 25,000–75,000 mt from the previous 25,000 mt, as of January 2, 2019. Platts added references to Marine Fuel 0.5% assessments launched on January 2, 2019. Platts amended fuel oil specifications to align them with ISO 8217:2010 standards reflected in Platts fuel oil assessments from January 2, 2019. Removed the tanker Speranza (now known as Hercules 1) (IMO:9002609) from the list of additional delivery points, as Platts no longer reflects loading from the vessel in FOB Singapore fuel oil assessments effective Jan 14, 2019.

September 2018: Platts completed an annual review of this methodology guide in September 2018, and made the following changes: Platts updated the nomination standards related to FOB Straits transactions after clarifying additional guidelines in a Subscriber Note published September 4, 2018; In the LPG section Platts removed references to previously discontinued assessments and also corrected an error in normalization basis for FOB East China assessment. In gasoline section, Platts added references to FOB Singapore 91 RON gasoline assessments that were launched in April 2018. In gasoil section, Platts added references to FOB Japan gasoil assessments launched in May, 2018. Platts also updated the guide to reflect changes in the specifications of its LSWR (V-1250) assessments and differentials for LSWR Mixed/Cracked assessments. Platts

added references to the tankers CS Prosperity, Grace Star, Marine Star that were included as additional delivery points in the FOB Singapore fuel oil MOC from August 2018; Removed reference to the tanker Amity Star from the list of additional delivery point, as Platts no longer reflects loading from the vessels in FOB Singapore fuel oil assessments effective May 27, 2018; Platts also added references to CFR South Africa assessments for clean products launched in August 2018. Platts has also revised Part I to Part VI of this guide. Following this revision Platts has moved the explanation of the MOPS and MOPAG Strips to Part VII of the guide. The revision also clarified that Platts no longer accepts Fax as a mode of communication for MOC participation. Platts also added a new section I to VI, and moved the explanation of the MOPS Strip to Section VII.

March 2018: Platts updated the guide to remove reference to FSU Jade Palms as Platts no longer reflects deliveries from the tanker in its FOB Singapore fuel oil assessments effective Feb 21, 2018. Platts also added new gasoil 10 ppm additives to the list of approved additives. Platts removed references to certain Taiwanese and Saudi Arabian posted bunker prices whose publication was discontinued March 1, 2018. CFR South Korea naphtha specifications were updated to reflect changes effective Oct 2, 2017 that raised the minimum paraffin level to 70% from the earlier 65%. Platts also removed guidance on bunkers from the guide as it has been moved to the Global Bunkers Guide.

January 2018: Platts updated this guide to reflect changes in the sulfur specification reflected in its Singapore, Arab Gulf, Korea and China gasoil assessments to a maximum of 10 ppm, effective January 2, 2018. Platts updated the 2018 freight netback calculations for all products. Platts also added reference to SCP Banyan facility's inclusion in the FOB Straits MOC process for gasoil and jet/kero assessments from November 1, 2017. Platts updated the list of additives reflected in 10ppm assessments to reflect two Baker Hughes additives. The update also removes reference to Hong Kong marine gasoil delivered bunker assessments that were discontinued November 1, 2017.

October 2017: Platts completed an annual update to the Asia & Middle East Refined Oil Products Guide in September 2017: Platts updated the guide to added methodology descriptions for new delivered LSMGO and LSMDO assessments launched at Asian ports starting June 1, 2017. Platts updated the base freight rates for its Middle East product netback assessments to reflect a flat rate change for AG-Singapore naphtha and gasoil product routes. These updated rates were effective for netbacks published from May 3, 2017 onwards. The revision also added Platts decision to begin publishing offers of oil products from PT Oiltanking Karimun Terminal in Indonesia from July 3, 2017, and made edits for style and increased brevity to the FOB Straits section of this guide. Platts added a new gasoil 10 ppm additive to the list of approved additives. Platts added methodology descriptions for new MOPAG 92 RON cash differentials assessments launched on August 1, 2017. Platts clarified the maximum cargo size reflected in bids and offers for gasoline. Platts also updated the gasoline specifications reflected in its 92 RON and 95 RON cargoes loading in the Middle East. The update also reflects change in timestamp for Fujairah ex-wharf fuel oil assessments. Further, the update adds Jubilee Star to the list of approved FSUs reflected as additional delivery points in the Platts FOB Singapore fuel oil assessments. The update also reflects change to the CFR Japan naphtha and CFR South Korea naphtha specification. Platts updated jet fuel references to reflect Defence Standard 91-091 as defined by the UK Ministry of Defence and the Joint Fueling System Checklist, following an update to the numbering system used by UK Ministry of Defence and the Joint Fueling System Checklist.

March 2017: Platts updated this guide to add the newly launched FOB Fujairah 380 CST Fuel Oil ex-wharf assessment, and the discontinuation of Taiwan CPC's posted term prices for bunker fuels and publication of daily spot bunker prices by CPC. Platts also updated the unit of measurement for MOPS Strip naphtha from metric tons to barrels. Platts also updated the size of vessel for under its Middle East gasoline assessments from 30,000 mt to 35,000 mt.

January 2017: Platts added a new gasoil 10 ppm additive to the list of approved additives - Infineum R567K. Platts also updated the base freight rates for its Asian and Middle East product netback assessments to reflect published 2017 rates.

October 2016: Platts completed an annual update to the Asia & Middle East Refined Oil Products Guide in October 2016: Platts updated the guide to added methodology descriptions for new assessments launched on October 3, 2016, reflecting independent outright values for gasoline, jet fuel, gasoil and fuel oil on a FOB Fujairah basis. Platts also added explanations for related MOPAG derivatives and MOPAG strips for these products. Platts updated the Worldscale flat basis rate used to calculate FOB Arab Gulf assessments for gasoil and jet/kerosene, following an announcement from the Worldscale Association on a Bahrain port tariffs increase. Platts updated the grade to add previously published clarifications that fuel oil delivered through the MOC assessment process should not include ULO. The guide was also updated to include FSUs that were approved as additional delivery points for fuel oil cargoes, and new bunker assessments for delivered bunker fuel at Busan, India and Sri Lanka. Platts added one new gasoil 10 ppm additive to the list of approved additives. Platts updated the gasoline specification to reflect Reid Vapor Pressure specification to a maximum of 9.5 PSI, from the current 10 PSI. Platts reduced the maximum benzene content from 5% currently to 2.5% volume and moved all three gasoline grades down to a maximum of 350 parts per million (0.035%), from 500 ppm (0.05%) previously. Platts also discontinued the assessments of FOB Singapore spot naphtha (under the code AAOVE00), FOB Singapore naphtha premium (under the code PAADC00), Monthly Average FOB Singapore spot naphtha (under the code AAOVE03) and Monthly average FOB Singapore naphtha premium (under the code AAFDE00).

March 2016: Platts updated a typographical error on naphtha Arab Gulf netback calculation. Platts also added four new gasoil 10 ppm additives to the list of approved additives.

January 2016: Platts updated this guide to incorporate the

2016 freight netback calculations for all products, as well as an updated list of floating storage units reflected in its FOB Singapore fuel oil assessment process.

December 2015: Platts updated this guide to incorporate new CFR Singapore naphtha assessments, which included a specification table contained in this methodology guide. Platts also added new additives to the Platts approved gasoil additives list. Platts updated this guide to reflect approval of gasoil loadings from Power Seraya for inclusion in the FOB Straits. Platts completed reviews to include the Speranza and Jade Palms tankers as additional delivery points in its FOB Singapore fuel oil assessment process, Platts confirmed it would include the FSUs in its Market on Close assessment process with effect from September 25, 2015. Platts also updated its description of its MOC trade review process.

July 2015: Platts completed an annual update to the Asia & Middle East Refined Oil Products 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. In the specifications section of the guide, Platts updated this guide to reflect changes to its Singapore assessments for gasoline, jet fuel, gasoil and fuel oil through the FOB Straits price discovery process. Platts also updated the description of CFR Japan LPG and naphtha assessment cycles. Platts clarified its description of Aframax vessels in its fuel oil assessments. Platts clarified the language around post-deal tracking and “gapping.” Platts also made minor typographical edits throughout.

May 2015: Platts updated this guide to reflect changes to Middle East premium assessments, the launch of Gasoil 10 ppm Middle East assessments, clarification around additives in Gasoil 10 ppm assessments and clarification around the Taiwan CPC posted bunker prices. This methodology guide was also updated to include further description of Platts' processes and practices in survey assessment environments. The guide was also updated

to reflect changes to the Worldscale flat basis rate used to calculate FOB Arab Gulf assessments. Platts also made minor edits throughout.

December 2014: Platts updated this guide to incorporate changes to nomination procedures for terminals for FOB Singapore trades reflected in the MOC process. Platts also amended an error in the listing of volumes reflected by Singapore ex-wharf assessments. Platts updated the guide to include guidelines around trade of non-competitive bids and offers. And Platts updated the base freight rates for its Asian netback assessments to reflect published 2015 Worldscale rates.

November 2014: Platts updated this guide to incorporate standards for compensation expectations for late performance. Similar guidance had been present in methodologies published before August 2013.

September 2014: Platts updated this guide to reflect the discontinuation of spot premiums for second month loading for butane and propane FOB Middle East, and to reflect the amendment of the C+F Japan gasoil assessment to a specification of maximum 10 ppm sulfur. Platts removed an erroneous reference to a Singapore ex-wharf marine gasoil, which Platts does not assess.

June 2014: Platts completed an annual update to the Asia & Middle East Refined Oil Products Guide in June 2014. In this update, Platts reviewed all content. The guide was updated to rename “Asia Proxy” as “Asia Strip” for LPG strip values; further clarify and differentiate Singapore's naphtha netback and spot naphtha assessment; incorporate published guidance around contaminants and FAME in Singapore gasoil assessments; break out definitions for gasoil assessments and netbacks in the Middle East; remove references to previously discontinued fuel oil assessments for China; indicate discontinued fuel oil assessments for South Korea and Japan; remove a reference to discontinued bunker fuel postings from Chimbusco; and remove

a reference to Pasir Gudang in the bunker fuel assessment section. 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 made minor typographical edits throughout.

January 2014: Platts updated this guide to note changes to its bunker fuel assessment publication schedule; add 500CST bunker fuel specifications; note changes to Singapore gasoline specifications for distillation and density; changes to its Singapore 2% sulfur fuel oil assessment methodology; discontinuation of China fuel oil assessments; and the 2014 freight netback calculations for all products.

December 2013: Platts updated the units of measurement reflected for West India and the Middle East in the gasoline assessment definitions table contained in this methodology guide.

November 2013: Platts updated this guide, making minor edits through the text. Platts also noted plans to update its methodology for 2% sulfur fuel oil in Singapore with effect from January 2014. Platts also noted plans to discontinue all China fuel oil assessments from January 2014. This update also notes a planned change to specifications reflected in Platts Singapore gasoline assessments from January 2014.

August 2013: Platts revamped all Oil Methodology And Specifications Guides, including its Asia Pacific & Middle East Refined Oil Products 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.