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PETROLEUM METHODOLOGY AND SPECIFICATIONS GUIDE

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Methodology and Specifications Guide

Crude Oil

LATEST UPDATE: FEBRUARY 2006

INTRODUCTION

The following crude specifications guide for 2005 contains the primary specifications and methodologies for Platts crude oil cargo and pipeline assessments throughout the world. The various components of this guide are designed to give Platts subscribers as much information as possible about a wide range of methodology and specification issues. Platts is committed to providing as much help as possible to its subscribers. Should you need any additional editorial information please feel free to contact our editorial or sales offices by phone or by using the free "Ask Us" editorial questions email service that can be found on our web site at www.platts.com. You can also reach our sales team by email at info@platts.com.

NORTH SEA

The window of assessment for North Sea crude grades, is 10-21/23 days from date of publication (10-21 days Monday-Thursday, and 10-23 days on Friday). Most North Sea crude grades are traded as a differential to dated Brent or as a differential to cash BFO.

BRENT

Physical Brent crude oil represents commingled crude from the Brent and Ninian systems, slated to load at the Sullom Voe terminal. The API gravity is estimated at 38.5 degrees with a sulfur content of 0.36% sulfur.

Platts no longer assesses a Brent-only price, due to problems created by its overlapping role as a key benchmark crude as its output declined. Beginning in mid-2002, Platts substituted for straight Brent a combination of Brent/Forties/Oseberg known as BFO. However, the nomenclature for Brent did not change, and Platts still refers to its key wet assessment as Dated Brent, and its key paper assessment as Brent.

Platts makes three forward assessments for 21-day cash BFO, which represent Platts forward Brent assessments. 21-day cash BFO is also commonly known as cash BFO or paper BFO and the assessment reflects the value of a cargo with physical delivery within the month specified in the contract. The name 21-day Brent name stems from the practice of notifying buyers of the loading dates for their cargoes 21 days in advance of the delivery. The assessed level reflects the tradeable value for full and partial cargoes on the 21-day BFO market.

The Platts assessment for the front-line 21-day BFO assessment expires on the last business day of the calendar month. For example, July 21-day BFO will last be assessed on June 30. On July 1, August BFO becomes the first month, September BFO becomes the second month, and October BFO is added as the third month. The process will repeat itself on July 31.

For more information on the Market on Close methodology used to assess BFO, please see the section below.

DATED BRENT

A rolling assessment that reflects the price of physical, wet Brent-Forties-Oseberg cargoes loading no less than ten days forward. Specifically, dated Brent cargoes loading 10-21 days forward will be taken into account Monday through Thursday. On Friday, dated Brent cargoes loading 10-23 days forward will be taken into account. Deals done, as well as bids and offers, may be taken into account for assessment purposes. Changes in spread trade may also be considered. The cargoes are loaded FOB terminal and may include stored material at each location. Since January 2001, Platts may also consider ship-to-ship transfers at Scapa Flow of Brent crude oil that has been recently loaded at Sullom Voe and remains in its original condition.

PLATTS CASH BFO ASSESSMENT METHODOLOGY

In July 2002, Platts broadened its definition of Brent crude oil and included market activity in Forties and Oseberg crude markets in the Platts Dated Brent assessment and the Platts forward cash Brent assessment. Platts daily spot price assessments for forward cash Brent months include activity in all three North Sea grades, Brent, Forties and Oseberg (BFO). All aspects of the BFO assessment methodology were developed by Platts and are proprietary to Platts.

Platts continues to assess separate spot values for Oseberg and Forties.

Rationale for the BFO combination: The production of Brent has been falling, and combined with its role as a key benchmark, its price increasingly has become disconnected from that of other similar grades. Platts conducted extensive consultations with the industry, and came to the conclusion that its Brent assessment will be more reflective of market fundamentals in the North Sea if the assessment was broadened to include Oseberg and Forties crude oil.

Platts' Brent assessments incorporate the values of Brent, Oseberg and Forties with the most competitive grade setting the price at the margin. If Brent is the most competitive grade then Brent will be the most important factor setting the assessment. Brent has historically been the most competitive grade, with Oseberg and Forties typically trading above Brent on a flat price basis. The methodology operates as a relief valve, with the other grades, Oseberg and Forties, influencing the assessment only if the price of Brent disconnects from those of other North Sea grades.

Most grades in the North Sea are light and low in sulfur, with Oseberg and Forties fairly close in quality, price and geographical location to Brent. Platts felt that merging more crude grades into

its assessments, such as Ekofisk, could make the resulting market unnecessarily complex. Oseberg and Forties are considered the closest grades, will add substantial volume, can load in VLCC tankers, and historically have been worth more than Brent. This will allow them to act as a "price cap" on upward squeezes in the Brent market without causing any flat price distortions in Brent.

Methodology: The most competitive grade at the margin will under typical circumstances be the grade reflected in the assessment. Under normal market conditions, the most competitive grade has been Brent. Therefore the inclusion of Forties and Oseberg should not alter the prevailing price of Brent. Platts' change in methodology neither adds nor subtracts barrels from the crude oil marketplace. Supply and demand remain unchanged.

Platts does not average the price of Brent, Oseberg and Forties to set its Dated Brent assessment. The most competitive grade at the margin will have the greatest degree of influence in the assessment.

Timing: Backwardation and contango will still be captured in the range. If a company offers a cheap cargo loading 10 days forward, the offer would only influence at the most the Platts assessment for cargoes loading 10 days forward. Platts would still need to assess days 11 through 21 and publish an assessment that is inclusive of market value from 10-21 days forward. The range stretches to 23 days for Friday assessments.

Platts previously had a 7-15 day range. But most other North Sea grades trade with loading dates further into the future than Brent. Platts' objective was to bring its Dated Brent assessments more in line with market practice in the North Sea. Hence, Platts implemented a change to reflect cargoes with loading dates up to 21 days forward, Monday to Thursday. Platts' research with industry players indicates that cargoes loading too prompt, e.g. 7 days forward, no longer reflect typical demand and trading patterns for North Sea grades. A cargo loading 7 days forward would almost be considered distressed under typical market conditions. Hence, Platts only reflects cargoes loading not earlier than 10 days forward.

Operational tolerance: Platts reflects in its assessments cargoes loading 'within' 1% plus or minus operational tolerance. In the event that Platts would encounter transactions with a 1% plus or minus commercial tolerance defined before the cargo loads and transactions with a 1% plus or minus operational tolerance due to normal terminal operations, Platts would reflect the latter. Platts believes that cargoes trading with pre- known tolerances ahead of the actual cargo loading include an option value that distorts the true value of the assessed commodity.

An example:

- *Forties loading 16-18 July sold at Dated Brent plus 0.10*
- *Brent loading 16-18 July sold at August Brent plus $0.10/bbl*

In order to assess these transactions Platts would need to determine the value of August Brent and the value of the underlying Brent swap, also known as the CFD, covering the loading period for the Forties cargo. (For more information on CFDs, see the section entitled Brent CFDs). If as an example, the value of August Brent is $25.00, then the Brent loading 16-18 July would be assessed at $25.10/bbl. For the Forties assessment Platts would then determine the flat price value of the dated Brent CFD covering the loading/pricing.

In this example, the dated Brent CFD for the pricing period (week of July 15-19) was valued at August Brent minus 10 cts/bbl to an equivalent of $24.90/bbl. Platts would then add/subtract the differential at which the Forties cargo was sold. In this case Forties was sold at a positive differential of $0.10/bbl, leading to a fixed price equivalent of $25.00/bbl. The most competitive grade in this example is Forties and the assessed value for Platts dated Brent would be $25.00/bbl for cargoes loading around July 17. Platts would still need to assess all the other days in the 10-21 day range used for the assessment.

Terms & Conditions: Offers/bids/transactions for forward Brent, Oseberg, Forties or BFO, as previously announced, are used for assessment purposes in the forward daily Brent monthly Platts assessments. The bids/offers and transactions are recognised for assessment purposes provided they meet the following conditions:

- Cargo date nominations are declared 21 days in advance.
- Cargoes load under normal terms and conditions. Normally, Forties cargoes are loaded under BP's terms and conditions, Brent is loaded under Shell's terms and conditions, Oseberg is loaded under Statoil's terms and conditions.
- Any partials that are not fully and satisfactorily recombined into full cargoes of 500,000 bbl for Brent and 600,000 bbl for Oseberg and Forties would need to be booked out under normal terms and conditions currently prevailing for a Brent book out. If a partial is not commercially booked out, then the partial would need to be priced out on the Brent assessments on the same basis as Brent partials are booked out.
- If Brent, Oseberg or Forties is delivered under a BFO basis, each cargo size shall be 600,000 bbl.

BRENT CFDS

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

The first weekly balance is on a forward week basis on Thursday and Friday, and becomes a balance week quotation between Monday and Wednesday. It is rolled forward every Thursday. Second week onward assessments are all forward week assessments. Assessments are quoted as a differential to the second BFO cash contract month, e.g on July 23rd, the assessment would be against September cash BFO. The relevant cash month rolls on the first day of the month of each month e.g. June will become the basis month on April 1.

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

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

CFDs are generally traded in clips of 50 to 100 lots, i.e. 50,000 or 100,000/bbl. In addition to Dated Brent (BFO), CFDs are also used to price crudes which are sold at a differential to Dated Brent e.g. Norwegian Ekofisk, Iranian Heavy and Russian Urals.

OTHER NORTH SEA GRADES

Forties: API gravity is 45 degrees. The sulfur content is 0.18%. It is priced FOB Hound Point, UK. The assessment reflects values for cargoes loading 10-21 days forward.

Oseberg: The price is for barrels loading FOB Sture, Norway. The API gravity is 37.7, and the sulfur is 0.24%. The assessment reflects values for cargoes loading 10-21 days forward.

North Sea Basket: This is a straight average of the price of Dated Brent, Forties and Oseberg.

Ekofisk: The assessment is based FOB Teesside, UK. The API is 37.8, and the sulfur content is 0.25%. The assessment reflects values for cargoes loading 10-21 days forward.

Statfjord: The assessment is FOB platform based with a fixed freight element. The API is 38.3, and the sulfur content is 0.25%. Assessments reflect values for cargoes loading 10-21 days forward.

Flotta: The price is for barrels loading FOB at the Flotta terminal in the North Sea. API gravity is 37 degrees, and the sulfur content is 1%. The assessment reflects values for cargoes loading 10-21 days forward.

BRENT-RELATED CRUDES, AND THE FORWARD CURVE

Before 2002, Platts assessed Brent-related crudes from the North Sea, Africa and the Mediterranean at a differential to the assessment published for dated Brent on the day. As an example, if Bonny Light was assessed at dated Brent plus $1.00/bbl on a particular day, then the assessment for the grade that day would reflect that day's dated Brent assessment plus $1. If the dated price was $30, Bonny Light would have been $31. However, this assessment system does not take into account the timing structure of the market, i.e., the contango or backwardation in the market.

Crude cargoes are traded in the spot market for loading sometime in the near future. Some of the cargoes are traded using a benchmark as a reference for the base price plus or minus a differential. The cargoes typically use Dated Brent as the benchmark for the base pricing. The base is typically an average over specific dates related to the time when the cargo will load in the future. For instance, a cargo of Urals can trade on Jan 2 for loading Jan 15. The Urals cargo can be traded at dated Brent around bill of lading time minus $1.00. Hence, to determine the correct price for Urals it is key to determine the market value of the dated Brent assessments around the bill of lading. As an example, Platts on Jan 2 would need to determine the value of dated Brent, on a forward basis, around the future bill of lading dates. There is a market for the forward Dated Brent assessments, informally known as the CFD market. Platts regularly assesses the value of CFDs on a weekly basis for 8 weeks ahead of the date of publication. This gives it a solid base for producing assessments on Brent-basis cargoes by taking into account the forward pricing curve.

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

Platts will use the future dated Brent value applicable to and typical for each grade. In the case of Mediterranean grades, Platts reflects in its assessments cargoes loading 10-25 days forward. The cargoes typically price 1-5 days after the cargo loads. The average pricing time is therefore 3 days after bill of lading. In this case therefore Platts will need to take into consideration the market value for the dated Brent assessments for days 10-25 plus an additional 3 days. This results in a dated Brent strip of 13-28 days forward. For Angolan grades, the window of assessments is 15-45 days forward with the cargoes pricing 5 days around bill of lading. Therefore the dated Brent strip Platts needs to take into account is 15-45 days forward. For Nigerian grades, the assessment window is 15-45 days forward, but typically cargoes price in the period 1-5 days from date of loading. Thus the

applicable dated strip for Nigerian grades is 18-48 days forward. For Canadian cargo-grades, the assessment window is 28-42 days forward, but typically cargoes price in the period of 1-5 days from the date of loading. Thus the applicable dated strip for Canadian cargo-grades is 31-45 days forward.

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

Platts assesses three forward months of Brent/WTI cash spreads. The assessments are based on the London market close at 5:30 p.m. local London time.

MARKET ON CLOSE

In establishing its daily assessment for 21-day cash BFO and cash West Texas Intermediate (WTI), Platts utilizes a system commonly known as Market on Close (MOC).

The MOC system seeks to reflect transactable values prevailing at the respective market close on a normal working day: 5:30 PM local London time for 21-day cash BFO, and 3:15 PM local NY time for cash WTI. Platts derives these values by tracking market evolution during the respective assessment window and by making assessments that reflect the value at which a deal could or did take place at the close of the market.

To do this, Platts takes into account representative, arms-length, openly negotiated transactions occurring during the assessment window and additionally taking into account the evolution of the bid-offer spread during this period. Platts, prior to January 2001, produced its assessment from an arithmetic weighted average of deals done during this period. Instead it is using the deals, at whatever time they occur within the window, as a basis for extrapolation to the market-on-close (MOC) assessment.

In order to enhance further transparency and orderliness in the European crude oil pricing window, Platts has established the following timing standards for North Sea physical crude and associated derivatives, such as cash BFO, dated Brent and other crude oil instruments:

- Initial physical North Sea cargo bid/offers should be submitted no later than 17:10:00 local London time. Platts will consider incremental price changes made to physical bids and offers up to, but no later than, 17:25:00 local London time. Changes to bid/offers should typically not exceed 5 cts/bbl per adjustment.

- Initial BFO cash spread and CFD positions should be submitted no later than 17:15:00 local London time. Platts will consider incremental price changes made to BFO cash spreads and CFDs up to 17:30:00 local London time.

- Initial outright BFO positions should be submitted no later than 17:20:00 local London time. Platts will consider incremental price changes made to BFO cash positions up to 17:30:00 local London time.

Separately, the following editorial clarifications were published since the Market-On-Close roll out:

- Clarification in regard to Platts Global Alert PGA 3 & 5 trading positions: In the event that a principal is bidding/offering a parcel and starts communication with a counterparty with the aim of executing a transaction, the initial buyer or seller should either 1) communicate that the parcel is no longer available, or 2) make it clear that the parcel is still available to the entire market. If the parcel is still available, any other principal can execute the transaction with the original buyer/seller, despite discussions a seller may have had previously with another potential buyer. Furthermore, any transaction originating from a bid or offer posted transparently must be disclosed.

- North Sea cargo offers made with wide loading ranges where seller holds the option on the actual loading dates are not used in the assessment process. The standard for cargoes loading in the North Sea is a three day loading range. Offers of dated cargoes made for wide loading date ranges should specify clearly if option resides on seller. Bids on same basis are typically presumed to grant the optionality to the seller.

- Platts assessments consider bids, offers and transactions that are transparent and executable by any creditworthy counterparty. Bids, offers or transactions that are not transparent will not be considered in the assessment process. Naturally, bids above transparent offers or offers below transparent bids are not considered in the assessment process. Platts considers changes to bids or offers when those changes are done transparently and in normal increments. The level of each bid or offer must stand firm in the marketplace long enough for any counterparty to hit the bid or lift the offer, otherwise the bid or offer may be deemed inexecutable. Platts does not consider bids, offers or transactions that are the result of market gapping, i.e. changes that are in excess of normal market practice.

Previously, Platts guidelines called for players to “freeze” their numbers in the last 5 minutes of the window. However, following industry consultation, that rule has been withdrawn. However, Platts’ guidelines still require a company whose bid or offer is accepted by a counterparty to complete the transaction.

The minimum volume that Platts takes into consideration for cash BFO assessment is 50,000 bbl with a maximum of 600,000 bbl per transaction. For WTI the minimum is 25,000 bbl with a maximum of 600,000 bbl per transaction. These minimums and maximums are a reflection of standard market practices and may be subject to review if market conditions change.

Platts will assess the market as per the respective London and

New York close, and would use in its assessments any information deemed reliable and provided on a transparent basis. In the absence of trade, Platts can use several other indicators, including bids and offers or spread relationships versus other crudes such as WTI.

Platts will use in its assessments any transaction concluded between parties that have expressed their intention to buy or sell on a transparent basis. Typically, the later a player signals their intention to buy or sell, the greater is the possibility that any eventual transaction they engage in is not open or transparent. Platts' confidence in trades evolving from buy-sell intentions signaled before the start of the assessment window will be much greater than its confidence in trades concluded abruptly from late arriving bids and offers, and late signals will therefore be evaluated on a case-by-case basis.

The philosophy behind MOC is that market values can change dramatically in a span of 15 minutes. Platts came to the conclusion that an averaging system for price determination could result in assessments that lag actual market levels, as deals done early in an assessment period, at a level that is not repeatable, could mathematically drag prices down or up.

With an MOC procedure, Platts can reflect market conditions up to the minute. A methodology that works well in a period of low or high volatility, and in periods of high or low contango or backwardation, is a good methodology. A market on close methodology helps achieve those goals.

The prior practice in the Brent and WTI markets of averaging can lead to distortions when the price of one commodity is compared with the price of another, or a price for one month is compared with that for other months.

As an example, Brent/BFO crude oil has a value, WTI has a value and the Brent/BFO versus WTI spread has a value, and all three make sense when measured on a same-time basis. By contrast, a system of averages can lead to distortions in the Brent/BFO versus WTI spread if the distribution of deals done for WTI and Brent/BFO differs over the averaging period. Thus if WTI trades actively at the beginning of the assessment window and Brent trades actively at the end of the window in a rising market, the assessed spread value resulting from an averaging process will not be reflective of actual market values.

In a falling market, the averaging would result in a widening of the apparent spread. This distortion can arise even if the value of spread trades in their own right has remained constant. The market on close approach drastically reduces the possibility of such distortions.

Platts follows several other basic price-reporting principles in its MOC system:

- If a deal is done on a non-transparent basis or in circumstances where questions may arise as to why a buyer/seller did not deal in an open environment, where counterparties had enough time to react, or where questions may have arisen as to the time of execution, Platts believes it must take precautions generally to not take such a deal into account. But Platts does recognize that there may be market circumstances in which a player that did not originally intend to trade during the Platts window finds that rapidly changing market conditions make it advisable, or even necessary, to enter the market after the start of the window.

- Platts editors always seek direct verification from the principals to a bid/offer/deal, and will not disintermediate the actual market-maker, whether a deal is done on- or off-line.

- If only one player is active in the market, Platts would only use information from that player if the intention to bid or offer was made on a transparent basis and within the timing guidelines. Under these circumstances, such a player's bids or offers would clearly be available for execution by any other potential trading counter party.

- Platts is always concerned about the potential effects of "one-off" deals on the market's perception of transactable value. It is common practice among some traders to effect non-repeatable deals at below- or above-market levels in the hope that such deals will influence others' perceptions of value and ultimately in the hope that these deals will affect Platts assessments. A variant on this action is the practice by supposed sellers of "gapping down" their offer to a point well below where a trade might be expected to occur, or of supposed buyers "gapping up" their bids. The test that Platts uses is a process of inquiry to find whether, for example, an unusually high buyer is willing to pay the same amount again and again until all the supply created by his high bid is exhausted. On the reverse side, a seller would need to supply more barrels until he satisfies all the demand generated by a low offer. If buyer or seller fails to satisfy the demand or supply generated in the entire market place, the transaction could be considered non-market and would not be used for the assessment.

- A player can move its bids/offers by any increments it believes fits their trading objectives. However, Platts can only take into consideration those changes in bids and offers, which occur sequentially and with increments that are in line with current market practices. In markets with low volatility, players typically move prices at increments ranging from 1-5 cts/bbl per step, with the increments typically growing as the volatility increases. A market participant can withdraw at any time. However, if a market participant withdraws after a trading counter party has indicated that it has interest to buy or sell into the bid/offer, it would become evident that the original buyer/seller actually had no interest to trade. Platts views spurious bids and offers of this kind with concern, and it takes seriously its responsibility to publish information only from sources deemed credible.

WEST AFRICA

Beginning in 2003, Platts began taking into account backwardation/contango in the underlying Dated Brent market. Prior to the change, Platts West African and Mediterranean grade price assessments were established by adding/subtracting the prevailing market differential against the daily Dated Brent assessment and did not take into account backwardation or contango. Platts incorporated the market structure into all its Dated Brent related spot price assessments by correlating respective loading dates with the corresponding Dated Brent value. The corresponding Dated Brent value is established through trading activity in the Brent/BFO swap market.

West African grades are assessed for cargoes loading 15-45 days after date of publication. While a cargo size of 950,000 bbl is the standard in the daily-assessed grades, part-cargoes are occasionally traded and may be factored into the assessment process. Underlying market dynamics may also play a role in determining the value of grades. Market backwardation and contango within the 15-45 day window will be taken into account for assessment purposes in Angolan grades and within a 15-48 day window for Nigerian crude. All West African assessments are on an FOB basis, for loading at each grade's specific terminal.

GRADES

Bonny Light: The API gravity for Bonny Light is 35 degrees and the sulfur content is 0.2%. The typical cargo size for this FOB assessment is 950,000 bbl and the grade loads at the Shell-operated Bonny Terminal. The current bbl/mt conversion factor for Bonny Light crude oil is 7.526 and typical output is around 540,000 barrels per day.

Qua Iboe: The API gravity for Qua Ibo is 36 degrees and the sulfur content is 0.1%. The Qua Iboe terminal is operated by ExxonMobil and output is typically around 520,000 b/d. The current bbl/mt conversion factor for Qua Iboe crude oil is 7.45.

Brass River: The API gravity for Brass River is 43.0-43.5 degrees and the sulfur content is 0.08%. This gasoline-rich grade loads at the Brass terminal, operated by Agip. The current bbl/mt conversion factor for Brass River crude oil is 7.753

Escravos: API gravity of 33.0-33.5 degrees and a sulfur content of 0.17-0.18%. The Escravos terminal is operated by ChevronTexaco and the standard output is 475,000 b/d. The current bbl/mt conversion factor for Escravos crude oil is 7.471.

Forcados: This crude has a larger distillate refining profile. Its API gravity is 30 degrees and has a sulfur content of 0.2% and it loads at the Shell-operated Forcados Terminal on the Niger Delta. The current bbl/mt conversion factor for Forcados crude oil is 7.223. Standard output is around 425,000 b/d but have often led the level to be nearer 290,000 b/d.

Cabinda: This medium sweet Angolan crude represents commingled material from the Takula and Malongo systems. Its API gravity is 32.0 with a sulfur content of 0.2%. Cargoes load from the ChevronTexaco Malongo terminal, which also delivers Nemba, a weekly-assessed grade. The typical Cabinda output from Malongo is approximately 350,000 b/d. The current bbl/mt conversion factor for Cabinda crude oil is 7.28.

MEDITERRANEAN

TIMING

Beginning in 2003, Platts' Mediterranean crude assessments began taking into account backwardation/contango in the underlying Dated Brent market. Platts incorporated the market structure into all its Dated Brent related spot price assessments by correlating respective loading dates with the corresponding Dated Brent value. The corresponding Dated Brent value is established through trading activity in the Brent/BFO swap market. Mediterranean crude grades are assessed 10 to 25 days out, and the forward pricing period applied for Mediterranean market by means of the forward Med strip is 13 to 28 days out. (Please refer to the section on "Strips" for detailed description of the strips for the Mediterranean.) Prior to the change, Platts West African and Mediterranean grade price assessments were established by adding/subtracting the prevailing market differential against the daily Dated Brent assessment and did not take into account backwardation or contango.

GRADES

Urals Med (CIF Augusta): This daily spot price assessment takes into account cargoes loading from Black Sea ports of Novorossiisk, Odessa, Theodosia, Kavkaz, Yuzhny and Kerch for delivery into the Mediterranean. The assessment basis is CIF Augusta, Sicily/Italy. Cargoes delivered to other ports in the Mediterranean can also be considered, with freight costs taken into account. Cargoes for delivery within the Black Sea are not considered. Cargoes of approximately 80-140,000mt are used for the assessment. The typical pricing period for cargoes is either three days after bill of lading or five days after bill of lading. Cargoes pricing on a different basis can be included in the assessment after an adjustment. Gravity is approximately 31-33 degrees, with a sulfur content of 1.3%. The current bbl/mt conversion factor for Urals crude oil is 7.240-7.329.

Urals "Recombined" (RCMB) CIF Augusta: This daily spot price is an outright price for Urals CIF Augusta and does not take into account backwardation or contango. This price is produced by adding or subtracting the prevailing market differential for CIF August Urals against the daily Dated Brent assessment. No further adjustments are made. This assessment is published as an outright price only. The differential is assessed according to the

methodology in the paragraph above. This quotation for Urals CIF Augusta Recombined was first published March 1, 2003.

Urals ex-Novorossiisk (FOB): This daily spot assessment takes into account cargoes traded on a FOB basis at the Black Sea port of Novorossiisk. Both small and large cargoes are used for the assessment (approximately 80-140,000mt). The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. Delivered prices may be used in the assessment once adjusted for freight costs. In periods of spot market illiquidity in both the delivered and the FOB markets, Platts typically uses freight rates of a 135,000mt cargo (standard Suezmax) to provide a guide for the FOB level, using Platts spot freight assessments in Dirty Tankerwire report. After the introduction of the so-called "Bosporus clause" in November, 2002, restricting passage for crude oil tankers to the daytime hours and thereby creating waiting time at the Bosporus and Dardanellas Straits, the estimated extra demurrage cost is taken into consideration. The API gravity is approximately 31-33 degrees, with a sulfur content of 1.3%. The current bbl/mt conversion factor for Urals crude oil is 7.240-7.329.

Urals Rotterdam (CIF Rotterdam): This daily spot assessment takes into account cargoes loading from Baltic Sea ports of Ventspils and Butinge, Russia's Primorsk, Estonia's Tallinn, Germany's Rostock and Poland's Gdansk. Cargoes loading in Russia's Barents Sea port of Murmansk may be taken into account adjusting for the freight difference. The assessment basis is CIF Rotterdam/Netherlands. The typical cargo size is 100,000mt, but both small and large cargoes are taken into account (approximately 80-140,000mt). Cargoes delivered into other ports in North-West Europe or the East Coast of North America can be considered with freight costs taken into account. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. The API gravity is approximately 31-33 degrees, with a sulfur content of 1.3%. The current bbl/mt conversion assessment is expressed as a high and a low.

Urals ex-Baltic Sea (FOB): Effective December 16, 2002 Platts widened the range of Baltic Sea load ports reflected in its FOB assessment in the north to include Ventspils, Butinge and Tallinn. The changes were introduced because of a steep decline in the numbers of crude oil cargoes lifting from Ventspils. Despite a similar sharp increase of cargoes loading from the Russian port Primorsk, the steep climb of Worldscale rates in the winter season for cargoes loading from Primorsk has necessitated the exclusion of Primorsk in this context. This daily assessment is based on the 100kt cargo size. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. Delivered prices may be used in the assessment once adjusted for freight costs. In periods of spot market illiquidity in both the delivered market and the FOB markets, Platts typically uses freight rates of an 100,000mt-loader to provide a guide for FOB level, using Platts spot freight assessments in Dirty Tankerwire report. The API is approximately 31-33 degrees, with a sulfur content of 1.3%. The current bbl/mt conversion factor for Urals crude oil is 7.240-7.329.

Kirkuk ex-Ceyhan (FOB): This daily spot assessment takes into account Iraqi Kirkuk crude loading at Ceyhan in Turkey. Prices are assessed on an FOB basis. The typical cargo size is 140,000mt, but both small and large cargoes are used for the assessment (approximately 80-140,000mt). The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. In periods of spot market illiquidity, Kirkuk is valued as a differential or occasionally a premium to Mediterranean sour crude benchmark Urals CIF Augusta, netbacked from Augusta to Ceyhan using the freight rates for the 135,000mt cargo size as published in *Platts Dirty Tankerwire*. The API gravity for Kirkuk is 35-36 degrees and the sulfur content is 2.0%. The bbl/mt conversion factor is 7.418-7.463.

Es Sider (FOB Es Sider): This daily spot assessment takes into account cargoes loading from the Libyan port of Es Sider for delivery into the Mediterranean. Since March 2000, in the absence of any spot market information, Platts has assessed this crude in relation to its Official Selling Price as set by Libya's National Oil Company. Libyan official selling prices are set as a differential to Dated Brent. This Libyan crude has an API gravity of 36-37 degrees and a sulfur content of 0.40-0.42%. The bbl/mt conversion factor is 7.463-7.507.

Iran Heavy (FOB Sidi Kerir: This daily spot assessment takes into account cargoes loading from the Egyptian port of Sidi Kerir for delivery into the Mediterranean. Since Mar 15, 2001, in the absence of any spot market information, Platts has assessed Iranian crudes in relation to their Official Selling Prices (OSPs). Iranian OSPs, set monthly by the National Iranian Oil Company, NIOC, are related to the IPE's Brent weighted average (BWAVE) and Platts uses dated to frontline (DFL) swaps in order to obtain a conversion value between BWAVE and Dated Brent. The API is 31-32 and the sulfur content is 1.8%. The bbl/mt conversion factor is 7.240-7.284.

Iran Light (FOB Sidi Kerir): This daily spot assessment is daily and takes into account cargoes loading from the Egyptian port of Sidi Kerir for delivery into the Mediterranean. Since Mar 15, 2001, in the absence of any spot market information, Platts has assessed Iranian crudes in relation to their Official Selling Prices (OSPs). Iranian OSPs, set monthly by the National Iranian Oil Company, NIOC, are related to the IPE's Brent weighted average (BWAVE) and Platts uses dated to frontline (DFL) swaps in order to obtain a conversion value between BWAVE and dated Brent. The API is 33.5-34.0 and the sulfur content is 1.4%. The bbl/mt conversion factor is 7.351-7.374.

Suez Blend (FOB Ras Sukheir): The spot assessment of this Egyptian crude is made on a daily basis. Spot cargoes of Suez Blend may be sold Brent-related FOB Ras Sukheir. The API is 32-33 degrees and the sulfur content is 1.7%. In periods of spot market illiquidity the price assessment for Suez Blend will be valued as a

differential to Mediterranean sour crude benchmark Urals CIF Med, taking into account the freight and quality difference between the two crudes. The bbl/mt conversion factor is 7.284-7.329.

Siberian Light (CIF Augusta): This daily spot assessment takes into account cargoes loading from Black Sea ports for delivery into the Mediterranean. The assessment basis is CIF Augusta, Sicily/Italy. Both small and large cargoes are used for the assessment (approximately 50-140,000mt). Cargoes delivered to other ports in the Mediterranean can also be considered, with freight costs taken into account. Cargoes for delivery within the Black Sea are not taken into account, but may be considered as a guide in periods of spot market illiquidity. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. The API gravity for Siberian Light is 35-36 degrees and the sulfur content is 0.6%. The bbl/mt conversion factor is 7.418-7.463.

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

After other crude grades were led into the CPC pipeline system in July, 2003 the quality of CPC Blend changed and was expected to change further in course of the following six months after the Karachaganak oil field in Northern Kazakhstan was hooked onto the pipeline system August 1. The gravity was expected to decrease probably down to around 42 API from the initial 46 API, while the sulfur content was expected to increase slightly up from the initial 0.45%. As off early August, the API gravity for CPC Blend is 45 degrees and the sulfur content is 0.6%. The bbl/mt conversion factor is 7.864.

CPC Blend FOB (CPC Terminal): This daily spot assessment takes into account cargoes loading from the CPC terminal on the Black Sea. Both small and large cargoes are used for the assessment (approximately 80-140,000mt). The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. Delivered prices may be used in the assessment once adjusted for freight costs. In periods of spot market illiquidity in both the delivered and the FOB markets, Platts typically uses freight rates of a 135,000mt cargo (standard Suezmax) to provide a guide for the FOB level, using Platts spot freight assessments in the Dirty Tankerwire. After the introduction of the so-called "Bosporus clause" in November, 2002, restricting passage for crude oil tankers to the day hours and thereby creating occasional waiting time at the Bosporus and Dardanellas Straits, the estimated demurrage is taken into consideration. Port charges are incurred in the pipeline charge. The assessment was first published August 1, 2003.

Azeri Light (CIF Augusta): This daily spot assessment of Azerbaijan's Azeri Light akes into account cargoes of Azeri Light sold from the Black Sea port of Supsa into the Mediterranean on a CIF Augusta basis. Cargoes delivered to other ports in the Mediterranean will also be considered with freight costs taken into account. Cargoes for delivery within the Black Sea are not taken into account. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. The API for Azeri Light is 34-34.5 degrees and the sulfur content is 0.143-0.15%. The bbl/mt conversion factor is 7.374-7.395.

Azeri Light FOB Supsa: This daily spot assessment takes into account cargoes loading from the Black Sea port of Supsa. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. Delivered prices may be used in the assessment once adjusted for freight costs. In periods of spot market illiquidity in both the delivered and the FOB markets, Platts typically uses freight rates of a 135,000mt cargo (standard Suezmax) to provide a guide for the FOB level, using Platts spot freight assessments in the Dirty Tankerwire report. After the introduction of the so-called "Bosporus clause" in November, 2002, restricting passage for crude oil tankers to the day hours and thereby creating occasional waiting time at the Bosporus and Dardanellas Straits, the estimated demurrage is taken into consideration. The assessment was first published August 1, 2003. The API for Azeri Light is 34-34.5 degrees and the sulfur content is 0.143-0.15%. The bbl/mt conversion factor is 7.374-7.395. The assessment is expressed as a high and a low.

Saharan Blend (FOB): This daily spot assessment takes into account cargoes loading from Algerian ports Skikda and Arzew. Prices are assessed on an FOB basis. Both small and large cargoes are used for the assessment (approximately 80-140,000mt). The typical pricing period for cargoes is either three of five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. The API gravity for Saharan Blend is 45-46 degrees and the sulfur content is 0.1%. The bbl/mt conversion factor is 7.864-7.909.

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

of February 2002 Syria's state oil company Sytrol changed the API baseline from 35.70-36.30 to 37.40- 38.0 degrees, with sulfur content of 0.8%. The bbl/mt conversion factor is 7.525-7.552.

Syrian Heavy (Souedie): This daily spot assessment takes into account cargoes loading from Tartous in Syria. Prices are assessed on an FOB basis. Both small and large cargoes are used for the assessment (approximately 80-140,000mt). The typical pricing period for cargoes is either three of five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. In April 2003, Syria cut exports by approximately 40 percent, which has made the market less liquid. So in periods of spot market illiquidity the price assessment for Syrian Heavy will be valued as a differential to Mediterranean sour crude benchmark, Urals CIF Med, taking into account the quality difference between the two crudes. The API gravity for Souedie is 23-24 degrees and the sulfur content is 4.2%. The bbl/mt conversion factor is 6.883-6.927.

Zarzaitine: This daily spot assessment takes into account cargoes loading from La Skhirra in Tunisia, though the origin of the crude itself is Algerian. Prices are assessed on an FOB basis. Both small and large cargoes are used for the assessment (approximately 60-140,000mt). The pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. In periods of spot market illiquidity the price assessment for Zarzaitine will be valued as a premium to Algeria's Saharan Blend, taking into account the quality difference between the two crudes. The API gravity for this grade is 42-43 degrees and the sulfur content is 0.1%. The bbl/mt conversion factor is 7.730-7.775.

Kumkol: This daily spot assessment takes into account cargoes of Kumkol delivered into the Mediterranean on a CIF Augusta basis. Both small and large cargoes are taken into account (approximately 30-100,000 mt). Cargoes delivered to other ports in the Mediterranean will also be considered with freight costs taken into account. Cargoes for delivery within the Black Sea are not typically taken into account, but may be considered as a guide in periods of spot market illiquidity. The typical pricing period for cargoes is either three or five days after bill of lading. Cargoes pricing on a different basis can be included with the pricing period taken into account. The API is 40-41 degrees and the sulfur content is 0.1-0.2%. The bbl/mt conversion factor is 7.641-7.686.

PERSIAN GULF

DUBAI AND OMAN

Dubai and Oman assessments, as well as all other Platts daily Persian Gulf crude assessments, are established following the completion of a half-hour pricing window conducted out of Singapore between 5 p.m. and 5:30 p.m. local Singapore time.

For a discussion of how Platts assesses markets in a half-hour Market on Close window, please see the section in this document entitled Market on Close.

Platts assesses physical Dubai and Oman for three forward months. For instance, in April, Platts will assess June, July and August liftings for both Dubai and Oman. In May, Platts assessed July, August and September Dubai and Oman. The rollover of the assessment coverage occurs on the first working day of the month. For instance, Platts would assess June Dubai and Oman on April 30, but would roll the coverage of Dubai and Oman from June to July on May 1.

Oman accepted for delivery: Platts Dubai assessments reflect market activity in which the Dubai buyer will accept alternative delivery of an Oman cargo. Hence, the activity of any Dubai market player will be taken into account only if such trader is willing to accept an Oman cargo delivery in lieu of Dubai. The activity of any Dubai/Oman seller will be taken into account only if the seller is willing to declare the grade (Dubai or Oman) to be lifted by the buyer. Such declaration of grade must be made at the point of executing the transaction.

Size: The Dubai assessments reflect 500,000 bbl parcels. Spot premiums for partial cargoes may be considered or factored into the assessment concerned. Platts is in the process of evaluating the merits of reducing the parcel for Dubai from 500,000 to increments of 50,000 bbls but has not reached a final decision on the issue.

Oman specifications: Platts will evaluate all market relevant data to arrive at its Oman assessments. Oman may trade at a differential versus Dubai or more commonly versus its official selling price set by the Ministry of Oil and Gas (MOG). Platts assesses spot Oman two months forward. For example, during March, Oman loading in May will be assessed through March 31. On April 1, Oman loading in June will be assessed. The spot price differential versus the MOG official price and its relationship to Dubai may be taken into account to determine the spot price of Oman. Oman can be assessed by tracking Brent/Oman spreads, MOG swaps plus the spot MOG premium or discount. The API gravity is 37 degrees and the sulfur content is 1.08%.

The assessment for Oman MOG represents a differential to Oman's retroactive monthly official selling price. Cargoes will sell on a differential to the expected assessment two to three months before the price is actually released. Platts' Oman MOG assessment represents the differential as quoted in the spot market. Deals may take place MOG-related (Ministry of Oil & Gas official selling price), fixed price, or related to any other basis. All these deals will be related to a fixed price equivalent. Oman's value reflects the market on close value at 1730 Singapore local time or 0930 GMT.

Example: In trade on March 1, the front-month spot Oman trading month was for barrels loading in May. Spot Oman was trading at around flat to the May MOG official selling price. The spot fixed price front-month Oman assessment is derived

as follows: MAY DUBAI SWAPS + MAY MOG/DUBAI SWAPS SPREAD + MAY SPOT MOG DIFFERENTIAL

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

Derivatives/swaps: Platts assesses three forward months for Dubai swaps. The swaps price out on the Platts Dubai front-month cash assessments. Dubai swaps typically trade on a monthly calendar basis, but unlike physical assessments, the swaps are assessed only one month forward. In January, for example, the first month swap assessed is February, but the first month physical assessed is March. The rollover date for the Dubai swaps is the 1st of every calendar month. These swaps are used for hedging and speculative purposes. The Dubai swaps contract has no physical delivery. The Dubai swap fully prices out versus the Platts Dubai assessments.

DUBAI/OMAN PARTIALS ASSESSMENT METHODOLOGY

Trading volumes assessed: Platts assessments for Dubai and Oman will be based on a minimum of 25,000 bbl partial cargo bid/offered or traded, with the market price derived from increments of 25,000 bbl. Smaller parcels bid/offered will be considered for assessment over larger parcel sizes.

Trading periods assessed: Platts will continue to assess Dubai and Oman two months forward from date of publication, with the roll-over date for assessment on the first working day of each calendar month. For example, the last day that April 2004 Dubai and Oman partials will be taken into consideration for the April assessment will be Friday, February 27. Assessments are made at the close of the Singapore day at 1730 local time (0930 GMT).

Cash settlement: Any position amounting to less than 475,000 bbl by the calendar month's end is understood to be cash settled, unless both counterparties mutually agree to deliver/take delivery of a smaller top-up cargo. Partial contracts will be settled based on Platts assessments published on the last working day of each calendar month.

Convergence of partials to a full cargo: Once a principal acquires nineteen 25,000 bbl parcels of the same grade (Dubai or Oman) from a single seller within the calendar month, the partials automatically converge into a physical cargo of 475,000 bbl. This is equivalent to a full cargo of 500,000 bbl with commercial tolerance of minus 5%. Neither the seller nor the buyer have the right to deny delivery or refuse lifting. However, both parties may mutually agree to book out of the contract on the basis of the Dubai or Oman assessment published on the last working day of the calendar month.

Pricing of terminal operational tolerance: The deviation of up to 1,000 bbl in operational tolerance, which is subject to terminal performance for cargoes delivered FOB Fateh terminal, Dubai will be priced on Dubai assessments published on the last working day of each calendar month. For example, the operational tolerance for cargoes loading in April will be priced off the assessment of Feb 27. The deviation of up to 1,000 bbl in operational tolerance for cargoes delivered FOB Mina Al Fahal terminal, Oman will be priced on Oman assessments published on the last working day of each calendar month.

Optionality of Oman delivery: Platts Dubai assessments reflect market activity in which the Dubai buyer will accept alternative delivery of an Oman cargo. The existing optionality to deliver Oman into a Dubai bid is unchanged for partials trading. The seller must declare the grade (Dubai or Oman) at the time of each partial transaction.

Terms and conditions: Terms and conditions must be declared at seller's option upon transaction of the nineteenth partial. Only Oman's MOG GT&C or Shell's General Terms and Conditions (GT&C) may be declared for Oman cargoes, as is standard practice in the physical cargo market. ConocoPhillips' GT&C are required for Dubai cargoes. Any of these terms and conditions, however, should not allow for further optionality over cargo size. A physical cargo created by nineteen partial cargoes would be 475,000 bbl min/max (excluding 1,000 bbl in operational tolerance).

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

Trading counterparties: Closely-related trading parties will be deemed part of the same parent company for partials trading considerations. Platts will apply its editorial judgement to determine whether a transaction is suitably arms-length. If subsidiaries/offshore entities of parent company "A" trade with company "B", those partials will be added and considered as part of the total partials trading position of parent company "A".

Price assessment: To arrive at its Dubai and Oman assessments, Platts will take into account fixed-price bid/offers for partial and full cargoes where applicable; inter-month Dubai or Oman spreads; Dubai or Oman swaps; MOG/Dubai spreads (differentials to the retroactive monthly official selling price set by Oman's Ministry of Oil and Gas); spot Dubai and MOG premia/discounts; EFPs or spreads to crude grades such as Brent; and spreads to published benchmarks.

In the event of a wide bid/offer spread, Platts will not average the bid and offer. Platts will evaluate market conditions and

establish an assessment that in its editorial judgment reflects the transactable level of Dubai and Oman. Unusually high or low price deals will be scrutinized by Platts to discern whether the deal is fit for assessment purposes.

Editorial guidelines for assessments of partials in the Singapore trading window:

Platts assessments take into consideration bids and offers made up to no later than 1700 hours Singapore time (0900 GMT). Bids and offers with unusual terms and conditions will not be taken into account. Platts should be informed prior to the assessment window of any counterparty with which a principal cannot trade for financial or legal reasons. Bids and offers made by counterparties unable to trade with each other may cross, allowing other traders to arbitrage the difference. Platts should be informed by the principal prior to the assessment window if a broking house is submitting a bid or offer on the principal's behalf. Representative broking houses will have similar execution responsibilities and bear similar exposures as their principals for non-performance of trading instruments, whether cash settled or physically delivered.

Platts will take into account changes in price, but not changes to volume/date/terms & conditions, made to bids and offers up to 1725 hours Singapore time (0925 GMT). Platts' assessment guidelines governing the incrementability of price changes for bids and offers, and the repeatability of deals, will continue to apply as for all market-on-close assessments (see <www.platts.com>oil>specifications> for more details on MOC methodology). Platts does not take into consideration deals done between company affiliates or between companies with close working trading relationships.

Platts will only consider for assessment bids and offers that are firm until 1730 hours Singapore time (0930 GMT) and that are executable by any creditworthy counterparty. Players can withdraw their bid/offer at any time, provided no prior interest has been expressed for this bid or offer. Any such intention to execute expressed to the counterparty or to Platts before 1730 hours would be seen as a valid intention to transact even if the deal was fully finalized after 1730. The deal would be used for assessment purposes.

Further Questions: In Singapore, you can contact Tom Enger at +65 6530 6504, Tom_Enger@platts.com, or Esa Ramasamy at +65 6530 6556, Esa_Ramasamy@platts.com

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OTHER PERSIAN GULF CRUDES

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

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

The assessments in the Persian/Arab Gulf reflect 500,000 bbl parcels. Spot premiums for partial cargoes may be considered or factored into the assessment concerned. Platts assessments for all Persian/Arab Gulf grades are based on a market on close principle at 17:30:00 Singapore time or 0930 GMT.

Platts does not take into consideration "deals" done between company affiliates or between companies with close working trading relationships.

Murban and Lower Zakum: These are crudes from Abu Dhabi of the United Arab Emirates. These two crudes, typically, trade at a differential to Abu Dhabi National Oil Co's official selling price for the month concerned. That is a May loading Murban or Lower Zakum parcel would trade at a differential to ADNOC's May OSP.

ADNOC's OSP for Murban and Lower Zakum, however, are based on a differential to Dubai.

The equation used to arrive at a Murban or Lower Zakum assessment for May barrels is as follows: May Dubai swaps + Existing Murban OSP/Dubai spread + May spot Murban differentials + expected ADNOC adjustments.

This principle also applies to Lower Zakum.

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

Banoco Arab Medium: This crude comes from Bahrain, but is identical in structure to Saudi Arab Medium. None of the Saudi crudes trade on the spot market, but Arab Medium from Bahrain does, marketed by the Bahrain National Oil Co (Banoco).

Banoco Arab Medium trades at a differential to Saudi Aramco's Arabian Medium official selling price. Aramco's Arabian Medium OSP is announced one month forward and is based on the average of front-month Dubai/Oman assessements plus a

differential. The Aramco's May OSP is announced in early April. The equation used to derive Banoco Arab Medium's assessment for barrels loading in May is as follows: Average of May Oman & Dubai swaps + existing OSP differential + spot differentials + expected OSP adjustments.

Asia-Pacific crudes

Crude	API	Sulfur (%)	Country	Location
Cossack	49	0.04	Australia	North West Australia
Gippsland	48	0.1	Australia	Westernport
Griffin	55	0.03	Australia	Denture, Griffin
Jabiru	42	0.05	Australia	Jabiru Venture, in Timor Sea
North West Shelf	60	0.01	Australia	Dampier
Thevenard	36	0.05	Australia	Thevenard Island
Daqing	32.7	0.1	China	Luda/Dalian in Yellow Sea
Nanhai Light	39.5	0.05	China	Hui Zhou
Shengli	24	0.9	China	Qingdao on Yellow Sea
Ardjuna	35.1	0.13	Indonesia	Ardjuna
Senipah	53.9	0.02	Indonesia	Blanglancang
Attaka	44.7	0.04	Indonesia	Santan, off Balikpapan
Belida	46.2	0.02	Indonesia	Belida
Cinta	32.7	0.11	Indonesia	Cinta
Duri	21.5	0.14	Indonesia	Dumai, Sumatra
Handil	33.8	0.07	Indonesia	Senipah, off Balikpapan
Minas	36	0.08	Indonesia	Dumai, Sumatra
Widuri	33.3	0.07	Indonesia	Widuri
Lalang	39.7	00.5	Indonesia	Lalang
Labuan	31.5	0.08	Malaysia	Labuan Island, off Sabah
Miri	31.9	0.08	Malaysia	Lutong in Sarawak, near Miri
Tapis	46	0.03	Malaysia	Kerteh, off Trengganu
Kutubu	44	0.04	New Guinea	Kumul terminal
Bach Ho	38.6	0.04	Vietnam	Bach Ho terminal

ASIA-PACIFIC

Prices published are assessments based on spot transactions and market information on cargoes and part-cargoes loading 15-45 days from date of publication. But for paper Tapis, the rollover date is the first day of the month.

Assessments also consider bids/offers, and differentials to other actively traded crudes, related paper markets and, in the case of Indonesian crudes, official crude prices (ICPs). Crude markets are assessed at 1730 Singapore time. The following are details of the specifications for the crudes reported including loading ports. Sulfur content and API gravity may vary over time.

Methodology: Platts assesses crude grades on a fixed price basis, and also where appropriate, the spread to the crude grades' respective benchmarks. Most trade in the Asia Pacific region is conducted on a floating rather than fixed price basis. The fixed price assessment reflects the equivalent in fixed price terms of a floating price transaction. Platts will determine the relevant benchmark and determine the underlying value of the benchmark for the loading dates. In a typical example, a Tapis physical cargo may trade at a premium of 25 cts/bbl over its own benchmark. Platts will then determine in the swaps market what is the hedgeable level of the benchmark for the pricing dates and add the premium transacted. If the paper market around the bill of lading is $25.00/bbl then the fixed price equivalent is $25.25/bbl.

The same approach is used for Indonesian crude grades where they trade in relation to their own ICP, which is only released after the cargo has loaded. However, the fixed price equivalent of the transaction can be determined through the swap market for the ICPs or through values relative to the more liquid crude grades. In a typical example, a Minas cargo loading in April may trade at its own ICP plus 50 cts/bbl. If swap market for April Minas ICPs is at $25.00/bbl, then the fixed price equivalent of Minas is $25.50/bbl.

Spreads versus ICP: Platts assesses differentials to the Indonesian Contractual Prices (ICPs) for the following crudes: Minas, Attaka, Ardjuna, Handil, Cinta, Duri, Widuri, Belida and Lalang. The premium/discounts versus the ICP reflect cargoes loading 15-45 days from the date of publication.

Spreads versus Tapis: Platts assesses market premiums or discounts for several Asian and Australian crudes against Malaysian Tapis. The premiums/discounts assessed are for the following crudes: Thevenard, Griffin, Cossack, Kutubu and Nanhai. The premium/discounts reflect cargoes loading 15-45 days from the date of publication.

Northwest Shelf Condensate: The Northwest Shelf condensate spread is assessed against its own assessment. The spreads (premium or discounts) are assessments based on spot transactions and market information on cargoes and part cargoes loading 15-45 days from date of publication.

Ras Gas condensate & Al Shaheen crude: Platts will assess Qatar's Ras Gas condensate and Al Shaheen crude beginning Jan 3, 2005. Spot assessments will reflect barrels loading two calendar months from the date of publication. For example, on Jan 3, barrels loading in March will be assessed. These assessments will roll over on the first working day of the month. Spot assessments of Ras Gas and Al Shaheen will consist of a fixed-price assessment and an assessment of the spot market differential againsT Platts Dubai quotes. Assessments will take into consideration Ras Gas traded in typical 500,000 bbl cargoes, and Al Shaheen traded in typical 600,000 bbl cargoes. The Ras Gas and Al-Shaheen assessments will be published on Platts Global Alert page 440, Platts Crude Oil Marketwire and Platts Oilgram Price Report.

***Bach Ho & Nile Blend*:** Platts will publish premium/discount assessments for Vietnam's Bach Ho crude and Sudan's Nile Blend crude beginning Jan 3, 2005. The FOB Bach Ho spot differential is a spread to its official selling price while FOB Nile Blend's spot differential is a spread to ICP Minas. FOB Nile Blend will also have a fixed-price assessment. Both these assessments will be for barrels lifting 15-45 days from date of publication and would take into account typical cargo sizes Bach Ho (600- 650,000 bbl) and Nile Blend (600-650,000 bbl). These assessments will be published on Platts Global Alert page 165, Platts Crude Oil Marketwire and Platts Oilgram Price Report.

UNITED STATES

TIMING

The spot month for all US domestic pipeline barrels changes on the first business day after the 25th of the calendar month except for Alaska North Slope, a US West Coast cargo market, and except for WTI Calendar Delta. It does not roll with the expiration of the front month of light sweet crude on the New York Mercantile Exchange. Rather, it continues for the three trading days in which the just-expired month continues to trade in the cash WTI market.

For US domestic pipeline barrels, the roll-over date coincides with the date US crude oil pipelines require scheduling to be completed for deliveries in the following month. For instance, from Jan 26 through Feb 25, the front-month out for all US domestic pipeline barrels is March. On Feb 26, the front-month out for all US domestic pipeline barrels switches to April. If the 26th falls on a weekend or holiday, the next business day marks the beginning of the new scheduling month. But if the 25th is a Saturday or Sunday, scheduling is not extended; it closes on the last business day prior to the 25th. This practice also is followed for California pipeline crudes.

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

GRADES

West Texas Intermediate (WTI): Platts has two separate WTI assessments: one at Cushing, Oklahoma, and the other at Midland, Texas. Platts assesses three months of WTI-Cushing barrels; Cushing assessments note the delivery month, such as WTI (Dec). Midland prices are noted as WTI (Mid). The delivery month assessed for WTI-Midland is the same as the first month assessed for WTI-Cushing.

API gravity is typically 38-40 degrees with sulfur content approximately 0.3%. The assessment for WTI-Cushing reflects market on close values at 3:15 PM EST. The rollover is the 1st business day after the 25th of every calendar month.

WTI-Cushing is assessed on a Market on Close basis. An explanation of MOC methodology can be found elsewhere in this document. Please check the table of contents.

Other WTI grades are assessed as a weighted average of the market differentials done during the day, until the end of the cash WTI window. That weighted average is then applied against the WTI-Cushing assessment.

Mars MOC and Mars: Platts assesses two sets of Mars quotes based on different sets of methodology.

Mars MOC, launched on September 26, 2003, is assessed on a Market-On-Close basis, reflecting the value of the grade at 3:15 PM EST, taking into account information received/observed during a 30-minute assessment window. The assessment reflects barrels for delivery into Clovelly, Louisiana, for three months forward. API gravity is typically 29, and the sulfur content is 2.00%. The minimum trading volume recognized for assessment purposes is 25,000 barrels. Both flat-priced and differential-based positions are considered for assessment purposes, as the latter can be converted into a fixed and flat price equivalent.

The long-established regular Mars assessment reflects the trade-weighted average of deals done throughout the day until the close of business at 3:15 PM EST. The assessment reflects barrels for delivery into Clovelly, Louisiana, for three months forward. The minimum trading volume recognized for assessment purposes is 100 barrels/day.

P-Plus WTI: The assessment reflects the price of WTI sold into Cushing on the basis of "postings plus." P-plus deals are invoiced at a later date on the basis of a differential to an average of one or more crude oil postings. For example, a deal done at P-plus 75 cts would be invoiced at 75 cts more than the previously agreed-upon postings basis.

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

West Texas Sour (WTS): The assessment is for barrels delivered to Midland, Texas, with an API gravity of 33 degrees and a sulfur content of 1.6%.

Light Louisiana Sweet (LLS): The assessment is for barrels delivered to St. James, Louisiana. API gravity is 37 and sulfur content is 0.3%.

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

Eugene Island: The assessment is for barrels delivered to St. James, Louisiana. The API gravity is 34 and the sulfur content is 1.00%.

Wyoming Sweet: The assessment is for barrels delivered to Guernsey, Wyoming, with an API gravity of 39 and a sulfur content of 0.25%.

Bonito: The assessment is for barrels delivered to St James, Louisiana. API gravity is 35.3 and sulfur content is 0.8%.

Mars: The assessment is for barrels delivered to Clovelly, Louisiana. API gravity is 29 and sulfur content is 2.00%.

Poseidon: The assessment is for barrels delivered to Houma, Louisiana. API gravity is 30 and sulfur content is 1.7%.

Basrah Light: The assessment is for waterborne barrels of Iraqi Basrah Light delivered into the US Gulf. API gravity is 31-35.5 and sulfur content is 2%. Basrah Light barrels are priced off the second month cash WTI assessment.

Alaska North Slope (ANS): California barrels are for delivery to Long Beach, California. API gravity is 29-29.5 and sulfur content is 1.1%.

***Line 63*:** The assessment is for a blend of crude at 28-30 degrees API gravity and sulfur content of 1.02%, delivered at Hynes station, California on Four Corners' pipeline line 63.

Mexican Crude Assessments

Isthmus	0.4(WTS + LLS)	+ 0.2(Dated Brent)	- constant
Maya	0.4(WTS + US Gulf No 6 3%S)	+ 0.10 (LLS + Dtd Brent)	- constant
Olmeca	0.333(WTS+LLS+Dated Brent)		+ constant

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

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

Kern River: The assessment is for barrels delivered commonly to Texaco's station 31 in Kern County, California, at 13.4 degrees API gravity with sulfur content of 1.1%. The crude is synonymous with San Joaquin Valley (SJV) heavy.

US CRUDE OIL POSTINGS

Platts publishes daily ***US Gulf Coast*** crude oil posted prices on Platts Global Alert (PGA) pages 172 and 179, and in Platts North American CrudeWire, posted by the following companies: ChevronTexaco, ConocoPhilips, Valero, Link, Shell, ExxonMobil, Koch, Murphy, Plains, and Sunoco. Published prices reflect postings as of 5:30 p.m. local New York time.

Platts publishes daily ***US West Coast*** crude oil posted prices on Platts Global Alert (PGA) pages 159 and 446, posted by the following companies: ChevronTexaco, ExxonMobil, Shell, and Union76. Published prices reflect postings as of 3:15 p.m. local New York time.

LATIN AMERICA

Platts assesses Latin American crude grades and publishes the differentials to their benchmark. Most transactions are concluded on a differential to WTI.

The rollover of the WTI benchmark is done on the first day after the 25th day of every month. Platts uses WTI 2nd line for all Latin crude assessments.

Price assessments for Latin crudes are FOB the loading terminal, and do not include top-off charges. Cargo volumes are 350,000 bbl and up. The assessment window for all Latin American crudes is 15-45 days forward.

Canadon Seco: The assessment is for barrels commonly sold FOB Caleta Olivia, Argentina with API gravity of 26 API and 0.3% sulfur.

Cano Limon: The assessment is for barrels commonly sold FOB Covenas, Colombia with API gravity of 29.5 and 0.5% sulfur.

Cusiana: The assessment is for barrels commonly sold FOB Covenas, Colombia with API gravity of 39.5 and 0.17% sulfur.

Escalante: The assessment is for barrels commonly sold FOB Caleta Cordoba, Argentina with API gravity of 24.1 and 0.2% sulfur.

***Loreto*:** The assessment is for barrels commonly sold FOB Puerto Bayovar, Peru with API gravity of 20.0 and 1.2% sulfur.

Medanito: The assessment is for barrels commonly sold FOB Puerto Rosales, Argentina with API gravity of 35.1 and 0.4% sulfur.

Oriente: The assessment is for barrels commonly sold FOB Esmeraldas, Ecuador with API gravity of 25.0 and 1.3% sulfur.

Vasconia: The assessment is for barrels commonly sold FOB Covenas, Colombia with API gravity of 26.5 and 0.9% sulfur.

Santa Barbara: The assessment is for barrels commonly sold FOB Venezuela with API gravity of 26 and 0.95% sulfur.

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

Marlim: The assessment is for barrels commonly sold FOB Sao Sabastiao, Brazil with API gravity of 20 and 0.9% sulfur.

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

Mexican Crude Assessments: Mexican crude oil term prices to Western destinations are FOB and based on the following formulas:

A calculation of each day's prices can be found on *Platts Global Alert* and in *Platts Latin American Wire*.

CANADA

POSTINGS-BASED

The following Canadian assessments are based on an average of two or more posted prices. These assessments are quoted in both Canadian dollars per cubic meters, and an equivalent price in US dollars per barrel.

Par Crude: The assessment is for sweet crude delivered at Edmonton, Alberta with 40.02 API gravity and 0.3% sulfur. Posted prices from Esso (Imperial), Suncor, Petrocanada and Shell are totaled and averaged for the assessed value of Par crude.

Mixed Light Sour: The assessment is for mixed light sour delivered at Edmonton, Alberta. The posted price for Suncor-with 29.3 API gravity and 1.6% sulfur — and the posted price for Petrocanada-with 31.0 API gravity and 1.0% sulfur — are totaled and averaged for the assessed value of Mixed Light Sour.

Bow River/Hardisty: The assessment is for medium sour crude delivered at Hardisty, Alberta. The posted prices for Petrocanada, Esso, and Flint Hills (formerly Koch) are averaged for the value of Bow River/Hardisty.

Cromer Light Sour: The assessment is for light sour delivered at Cromer. The posted prices for Sunoco, Petrocanada, Esso, Koch and Shell – with an average posted API gravity of 35.05 and an average sulfur rating of 1.2% – are averaged for the assessed value of Cromer Light Sour.

Sour at Edmonton: The assessment is for Koch light sour delivered at Edmonton, Alberta. The posted prices for Petrocanada, Esso, Koch and Shell – with an average posted API gravity of 32.51 and an average sulfur rating of 1.0% – are averaged for the assessed value of Sour at Edmonton.

Cromer – Midale: The assessment is for medium, sour delivered at Cromer. The posted price for Sunoco, Esso, Koch and Shell – with an average posted API gravity of 29.30 and an average sulfur rating of 2.0% – are averaged for the assessed value of Cromer Midale.

SPOT-BASED

The following assessments are calculated on a NYMEX crude oil settlement basis. Crudes will be assessed for injection in the first forward month. The outright assessments will be derived on the basis of the daily NYMEX second-month crude oil settlement plus the daily NYMEX third-month crude oil settlement. Assessments are quoted in US dollars per barrel and Canadian dollars per cubic metre. Platts considers parcels for more than 100 b/d for injection.

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

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

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

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

The following ***Canadian cargo*** assessments are based on spot transactions for cargoes loading 28 to 42 days forward from the date of publication. The outright price is derived from the forward value of Dated Brent with pricing typically 1-5 days after loading. Each cargo is about 675,000 bbl:

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

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

CANADIAN CRUDE OIL POSTINGS

Platts publishes daily crude oil posted prices on Platts Global Alert (PGA) pages 149 and 435, and in Platts North American CrudeWire, posted by the following companies: Esso (Imperial), Suncor, PetroCanada, Shell, and Flint Hills. Published prices reflect postings as of 3:15 p.m. local New York time. Platts daily Canadian Postings Derived Crude Assessments are derived from the averages of all postings for each crude assessed as of 3:15 p.m. local New York time.

UNSCHEDULED NYMEX CLOSURES

In the event that the New York Mercantile Exchange is closed unexpectedly, all US crude assessments will be produced. Platts believes there will be adequate OTC trade in the Brent/WTI market and the market for grade differentials to produce an accurate assessment. That policy also will apply to Latin American crudes. Based on past history, Platts does not believe there will be adequate flat price OTC trade in the markets for light ends in the US Gulf Coast, US Atlantic Coast and the US Midcontinent to serve as a substitute for an outright NYMEX settlement.

Instead, those markets will be assessed by adjusting the prior day's NYMEX settlement up or down by an amount equivalent to the equalized per gallon price of the $/bbl movement in the Platts' WTI assessment for Gulf Coast and Midcontinent, and its 15-day Brent assessment for the US Atlantic Coast. New assessments of market differentials will then be applied against those prices to determine the final assessment. West Coast light ends, residual fuel, bunker fuel, LPG, MTBE and other blendstocks will be produced as normal.

Platts also reserves the right to suspend assessments should there be a major calamity, such as the events of September 11.

TRADING PLATFORMS

Platts treats firm trading positions and deals from Internet platforms exactly as it does any other information from principals or from intermediaries such as voice brokers. Platts cannot make any guarantee in advance about how and whether the information will be incorporated in its final assessments. All trading positions and deals submitted to Platts need to meet general requirements on openness and transparency. Platts market specialists then make an assessment based on published assessment parameters using all the information available.

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Methodology and Specifications Guide

Asian Naphtha

LATEST UPDATE: JUNE 2004

The McGraw Hill Companies

INTRODUCTION

Platts assesses naphtha markets in the Asian and Middle East regions to reflect values prevailing at the close of the market, specifically at 1730 Singapore time.

The numbers reflect spot prices prevailing in the quoted regions and are based primarily on bids-offers and deals done on a fixed price basis.

In the cases where there are no spot transactions done on a fixed prices basis, markets may be assessed relative to other locations.

The following document explains in detail the process used in the main markets.

JAPAN NAPHTHA ASSESSMENTS

Platts quotes several time cycles for the Japan naphtha assessments. The time cycles are reflective of half monthly cycles.

Platts publishes 3 cycles as follows:
1) 30-45 days forward
2) 45-60 days forward
3) 60-75 days forward

This quotes are rolled over on the 1st and 16th of each month.

For example, on Apr 1, Platts assesses:
1) Second half May
2) First half June
3) Second half June

These quotes would be rolled over on Apr 16.

The quotes will then read as:
1) First half June
2) Second half June
2) First half July

The main quote 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 price as a 45-75 day market.

ARAB GULF NAPHTHA ASSESSMENTS

The Arab Gulf quotations, because of lack of outright transactions, are assessed as a freight netback. Most of the physical naphtha deals in Asia are done on floating basis.

The Arab Gulf quotations (for both 55,000mt (Naphtha) and 75,000mt (Naphtha LR2), are assessed as freight netbacks from MOPJ.

Platts will use its daily assessments of the freight market (published in the Platts Clean Tankerwire) to determine the netback.

Assessments are issued for clean and dirty tanker markets. In these reports, freights are assessed and fixtures are listed, alongside with comments of the important factors moving the freight markets.

In a typical Arab Gulf calculation the following methodology would apply:

On Apr 15, 2004:

MOPJ Naphtha quote:	$347.25-349.25
Freight cost (LR1):	$27.225
Freight cost (LR2):	$24.503
MOPAG Netback:	$320.05-322.05
MOPAG (LR2)Net-back:	$322.75-324.75

For a detailed explanation on freight netback basis points see freight attachment

Please note that the world scale rates used in Platts daily assessments have a one-day lag as they are done out of Platts UK office. The assessments usually emerge very late in the Asian day, and as such, Platts uses the previous day's Worldscale assessments.

The assessments for Singapore naphtha share some of the characteristics of both the AG and Japan assessments. Most of the deals are done on a floating basis although at times there is fixed price talk. Fixed price talk in Singapore is reflected in the "Experimental" spot naphtha assessment.

For purposes of the assessments in the experimental quote, Platts will include fixed price deals, fixed price bids and offers and floating transactions of a minimum of 100,000 barrels loading in one berth. The closing window is 5.30pm Singapore time and all the transactions up to that time will be considered in the assessments.

As such, its Singapore naphtha prices are going to follow prices prevailing in other large consuming markets such as Japan and Korea minus an assessed freight. Its price therefore will have a 'floor' established by those importing centers.

In all these calculations, the gravity of the naphtha is a critical issue as most end users are concerned with the price of their commodities, which are quoted on a weight basis.

Platts has traditionally used a conversion factor in its calculation of 9 barrels per metric tonne. This reflects the stated 0.69 to 0.71 gravity as per our guide for specifications.

In a typical freight derived assessment, the price in the Japan selling market minus the Singapore-Japan freight cost would equal FOB Singapore.

FOB SINGAPORE NAPHTHA ASSESSMENTS

The FOB Singapore naphtha assessment is established using a freight netback from CIF Japan. Platts converts the naphtha quoted in Japan in dollars per tonne to dollars per barrel. The conversion is done using a 9 bbl per metric tonne factor. The calculation is as follows:

(1ST Published Cycle minus (Sing-Japan) freight)/9 -0.05)

The assessed freight is for a medium range vessel of 30,000 tonnes. Port charges, otherwise imposed in Japan, are deducted in the FOB Singapore naphtha quote and are set at 0.05cts per barrel.

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

Platts FOB Singapore naphtha quotations 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 Apr 15:
Price in Japan: 349.00-349.50 (2nd half May)
less freight: 19.118
Fob Singapore: 330.13
Barrel basis: 36.68
less costs: 36.63 or 36.60-36.65

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 quotation will absorb the backwardation or contango of the lapsed cycle in Japan for 5 days inclusive of Saturday and Sunday. For example, on April 16, the contango between 2nd half May and 1st half June was around $0.25/mt and remains constant throughout the 5 days. Platts will factor in this contango on declining scale till April 20th:

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

Platts also assesses naphtha in Singapore on a fixed price basis equivalent. These assessments are published in the experimental quote. Platts will include fixed price deals, fixed price bids and offers and floating transactions of a minimum of 100,000 barrels loading in one berth. The closing window is 5.30pm Singapore time and all the transactions up to that time will be considered in the assessments.

NAPHTHA FREIGHT: RATES FOR 2004

Platts assessments use a freight calculation establishing a freight value from the Arab Gulf to Japan. The freight calculation is set on a Quoin Island basis to Chiba/Yokohama. Platts sets a freight from a typical naphtha loading port in the Middle East to Quoin Island. This calculation is an average of Jubail, Mina Al Ahmadi, Shuaba, Ras tanura, Ruwais, Mina Abdulla. A detailed calculation is provided below:

Please note that Platts uses medium range vessels to establish its Singapore freight netback from Japan. Medium range vessels are typically built with a capacity of 30,000 mt. Platts further adjusts the size downward to 26,250 mt because of the lighter gravity of naphtha. This implies that vessels built to carry 30,000 mt of denser material would normally carry smaller naphtha loads as naphtha is lighter. For the Japan to Arab Gulf netbacks Platts uses two vessels sizes. One assessment is derived using a long range 1 vessel of 55,000 mt. The second assessment uses a LR2 vessel of 75,000 mt. The LR1 vessel size is adjusted to 52,500 mt. The LR2 assessment however has no downward adjustment.

Singapore to Chiba= 6.97

Spot WS X 30 / 26.25 X 6.97 =

Quoin Island to Chiba/Yokohama = 13.26

Jubail/Mina Al Ahmadi to Quoin Island:	1.38 + 0.27=1.65
Shuaiba/Ras Tanura to Quoin Island:	1.48
Ruwais/Mina Abdulla to Quoin Island:	1.63
	4.76 / 3 = 1.59

AG to Chiba = Base rate Quoin Island to Chiba/Yokohama= 13.26
plus average of 6 ports to Quoin Island= 1.59
Total: 14.85

Spot Worldscale x 55 / 52.50 x 14.85 =

Naphtha LR2 netback:

75,000mt ship spot worldscale x 14.85 =

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Methodology and Specifications Guide

Asian Oil Products

LATEST UPDATE: MARCH 2006

INTRODUCTION

Platts Assessment Methodologies in Asia

This report contains the specifications and methodology for products in Singapore. It is to be used as a reference for the various products quoted by Platts and to enhance the awareness in the trading community of what the assessments mean. This guide is updated regularly and will keep you informed of additional changes.

If the quality or grades assessed change, Platts informs subscribers in advance through the various wires, faxes, printed products and electronic systems.

Platts price specialists focus on price discovery and follow prices in all main trading markets. In markets where trading activity occurs continuously, Platts price specialists cover those markets continuously as well, with the editorial responsibilities transferred across the globe. In the Asia-Pacific region, Platts specialists and energy reporters in Singapore, Tokyo, Sydney and Hong Kong track prices starting at 9.30 am Singapore time.

Platts staff track events as well as pricing developments with the information then summarized in our daily reports. The market activity is reflected in the assessments in a very rigorous manner using a methodology developed by Platts. The methodology reflects the activity of the market players and takes into account industry practices in each reporting region.

Platts assessments focus on commodity grades in the various regions and reflect activity and grades that are typical for each region. We are listing the most important factors used in the assessment methodologies.

Industry Standards:

- Quality Specifications
- Typical Volume
- Loading Timing
- Location

Quality specifications

Platts assessments for Singapore reflect standard qualities and the main specifications are listed in this guide. The Platts assessment reflects the standard grade and therefore market participants can determine more efficiently what the quality differentials should be versus the benchmark grades. Platts also assesses paper values up to one year forward for refined products, and up to three years forward for crude oil.

Typical Volume

The volumes traded in the market also vary greatly and the prices for the parcels vary depending on the volume. For the gasoil assessments, Platts focuses on volumes for a minimum of 150,000 barrels for gasoil, for jet 100,000 barrels, for fuel oil 20,000mt, gasoline 50,000 bbl and naphtha C+F Japan 25,000 mt.

Loading time

The assessments for Singapore reflect pricing for products loading 15-30 days from the date of publication. For instance, on Jan 2, Platts assessments reflect the product market 15-30 days from date of publication, namely Jan 17- Feb 1.

Platts is very rigorous in following this important timing specification due to variability in pricing in the various windows, particularly when a market is steeply in contango or backwardation. It is not uncommon in times of tight supply for the backwardation to be over $2.00/month or roughly 6 cts/day. This means that cargoes loading one week apart can vary in price by close to 30 cts/bbl, or even more, depending on the steepness of the curve.

Thus it is extremely important to follow pricing windows very methodically. In a contango market, the excess of prompt barrels causes the front end to be significantly cheaper than barrels loading at a later date, while in backwardation tight prompt supply causes the front end of the curve to be much higher than the back end of the curve.

By using a methodology where Platts focuses on a very specific window the consistency of prices is maintained, with the variability in the assessments reflecting a price move rather than an emphasis in a different part of the price curve.

Platts reflects a 15-30 day assessment window from the day of publication for the Singapore product assessments to take into account the prevailing trading practices in the Asian region. Most companies tend to cover their requirements far in advance with sellers also selling forward. As a result, most of the liquidity is centered on this time period for physical transactions. By not taking the first two weeks into consideration, transactions reflecting distressed prices are excluded.

Location

Platts publishes assessments for several locations on a FOB and C+F basis. Platts publishes FOB Arab Gulf, China, Japan, Singapore and South Korea assessments. Platts also publishes C+F Australia, China and Japan assessments. Spot transactions in the region are typically done at a differential versus the Mean of Platts Singapore (MOPS) assessment. **The main benchmark is FOB Singapore and FOB bids/offers for any terminal or refinery in Singapore are accepted as a basis for pricing.**

Reporting coverage

In Asia, Platts has offices in Singapore, Tokyo, Hong Kong, Guangzhou, Sydney and Dubai. Reporters covering the products markets in Asia are on the phone from around 9:30am to around 7:30pm Singapore time. FOB Singapore assessments reflect trading activity up to 4:30pm Singapore time.

Platts guidelines for Global Alert page 190 trading activity

Buyers and sellers are able to communicate bids or offers directly to Platts price specialists. If those bids and offers are determined to be fit to publish Platts will post them in its electronic systems. Companies must be perceived by the market as having appropriate credit and must be credible to Platts and have a good performance record. Trades between affiliates, subsidiaries or related parties will not be recognized and may result in the loss of credibility by the parties, and subsequent removal of the privilege to submit bids and offers.

All bids and offers are firm from the moment of submission. Bids and offers are to be submitted by 15:59:59 Singapore time. Bids/offers will not be accepted from 16:00:00 precisely. **Platts recognizes only the time of receiving a message of intent to buy/sell, not the time it was sent by the trading party.** The volume, quality or loading timing cannot be changed from 16:00:00. However, an onscreen seller or buyer has the right to change the price of the offer or bid up to 16.24.59. No changes in price can be made from 16:25:00 precisely. Bids and offers for all products (including C+F Japan naphtha) expire at 16:30:00 Singapore time.

Buyers or sellers may name their own terms and conditions for trade. These terms and conditions will be posted on page 190 by Platts. However, **any deal done on non-standard trading terms and conditions may not be used in Platts' assessment**. Any terms and conditions used on Platts' page 190 window between trading parties that do not reflect standard market trading practices outside the trading window may not be used for assessments.

Buyers or sellers can withdraw bids/offers at any time provided no prior interest to transact has been expressed by any potential counter-party.

Following any trade, the original onscreen seller/buyer obliged to revert immediately as to whether or not they are there for more volume. **If the onscreen seller or buyer fails to indicate if they are intending to sell or buy more, upon reporting the trade, then by default they are no longer selling on or buying on. All onscreen buyers or sellers are obliged to report their trades. Any third party executing a trade with an onscreen buyer or seller is by definition accepting Platts editorial protocols and therefore needs to disclose any information relevant to the transaction.**

If, following a trade, any party expresses interest to buy/sell at a time near to the close of trade at 16:29:59, that party must stand firm on that bid/offer for three minutes, until 16.32.59, in order to adequately test repeatability. A notice for extension of the window will be sent out on page 190 as soon as possible after this interest is posted.

If an onscreen bid is taken up by a seller, Platts will not recognize subsequent buying interest at the traded price by an offscreen player as a test of repeatability, as this would be treated as a fresh (and therefore late) bid. Although Platts will send out any new offscreen buying interest on the page 190 after 16:30:00 (or after the close of an extended window), any deal done at that price would not be reflected in Platts' assessment. Further selling interest after an onscreen bid is hit, however, is recognized as a true test of repeatability. The reverse conditions apply in like fashion for any onscreen offer that is taken out.

In case of technological problems suffered by the page 190 trading window, any buying or selling interest may be deemed by Platts to be non-public and non-executable, and therefore not used for Platts' assessment.

Platts will monitor all the activity and the price formation that occurs with the transparency provided by firm bids/offers or deals done. **. Platts may not take transactions into consideration if negotiations for deals heard done have not been monitored by Platts.** Deals done at a level different from those publicly available to all market players may not be taken into consideration. Platts assessments will then reflect the closing levels.

The three main factors in price determination are:

- Fixed price
- Premiums
- Paper/Swaps

Fixed price

The ultimate question in the mind of an end user, a producer, refiner, trader or broker is PRICE. Price in turns determines expense, refining margin, profit, loss, etc. The spot market trades actively on a FOB Singapore basis on a fixed price basis. Fixed price is defined as the forward value plus the differential. Activity has been commoditized and most players now can focus on prices as the qualities, volumes and loading procedures have been standardized.

Premiums

Many transactions are carried out in relation to a standard commodity. In this case a differential, also know as premium in the Asian markets, is generated. Premiums will arise if the quality, volumes, location or loading times differ from the benchmark. In addition, the floating transactions are done in relation to the assessments. Premiums will usually rise in those times when the market is backwardated and the steeper the curve the greater the premium. In a contango situation, premiums will have a tendency to turn into discounts. Platts

page 190 displays trading activity on a premium or fixed price basis.

Paper/Swaps

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

Swaps or paper are risk management tools. Swaps allows players to lock prices because swaps enable players to transform floating prices to fixed or fixed to floating .Swaps is also used as a speculative tool. Platts reflects the immediate changes in the swaps markets on **Platts Global Alert page 190.**

The Spot Market

The three factors, fixed price, premiums and papers come all together in the spot price determination. For instance, if a physical jet cargo trades at the $32.50/bbl for a 100,000 bbl parcel loading 20-25 days forward FOB Singapore, we can then determine that this commodity's spot level is around $32.50/bbl.

In the absence of fixed prices, swaps and prevailing premiums/discounts will be used in the assessments. For example, if the underlying paper market for the assessment window is $33.45/bbl and the discounts are around $0.90-1.00/bbl then the fixed price equivalent is $32.50/bbl. The premium/discount quoted are the differential between the fixed price and the swaps level for the specified loading window.

PRODUCTS

GASOLINE

Platts assesses physical gasoline grades in Singapore, China, Korea, Japan, Australia:

Singapore	-	97 RON unleaded
Singapore	-	95 RON unleaded
Singapore	-	92 RON unleaded
China	-	90 RON unleaded
China	-	93 RON unleaded
Korea	-	95 RON unleaded
Japan	-	91-92 RON unleaded
Japan	-	95 RON unleaded
Australia	-	92 RON unleaded
Australia	-	95 RON unleaded
Arab Gulf	-	95 RON unleaded

Singapore

1) Singapore - 97 research octane number (RON) unleaded grade
2) Singapore - 95 RON unleaded
3) Singapore - 92 RON unleaded

Below are standard industry specifications that Platts uses in its assessments for gasoline FOB Singapore. Platts derives its assessments from information obtained in the marketplace, including transactions reported on Platts Global Alert page 190. All the bids/offers and transactions must meet these specifications, unless clearly stated prior to the submission of bid/offer. The specifications listed below are not all inclusive, but cargoes must at all time be deemed to fall within industry standards including merchantability of the product.

Transactions and bids/offers of a minimum of 50,000 bbl are considered for the assessments. The maximum cargo size for any one bid or offer is 150,000 bbl. The assessments reflect transactions and bids/offers for barrels loading 15 to 30 days from the date of publication. Market participants should specify loading for a five-day date range. Ten days prior to loading, seller must declare terminal and buyer nominates vessel seven days prior with the buyer narrowing the loading window to three days, subject to loading terminal acceptance.

FOB Singapore gasoline specifications

Property	Standard
Research Octane Number (RON)	Min 92.0, Min 95.0, Min 97.0
Lead content, gpb/l	Max 0.013
Density at 15 deg C, kg/l	Report
Reid Vapour Pressure (PSI)	Max 10.0
Distillation, degree C	
Initial Boiling Point	Report
10% evaporated	Max 74
50% evaporated	Max 127
90% evaporated	Max 190
Final Boiling Point	Max 225
Residue, % vol	Max 2.0
Loss, % vol	Max 2.0
Odor	Marketable
Existent gum, mg/100ml	Max 4.0
Benzene content, % vol	Max 5.0
Sulphur, % wt	Max 0.10
Doctor test	Negative
or Mercaptan sulphur, ppm	Max 15
Mercaptan sulphur, % wt	Max 0.0015
Copper corrosion (3 hours at 50 deg C)	Max 1.0
Induction period, minutes	Min 240
MTBE content, % vol	Max 10.0
Aromatics, % vol	Report
Color Undyed	Undyed, light yellow
Alcohol	No additions of any alcohol

Note: Singapore gasoline paper quotes were discontinued Nov 17, 2000

FOB Singapore gasoline specifications follow:

China

4) China - 90 RON unleaded

5) China - 93 RON unleaded

Platts assesses 90 and 93 RON unleaded gasoline FOB South China. Assessments take into account spot trades of 25-30,000mt. This market typically trades at a differential to naphtha or to Singapore 92 RON unleaded quotes. Platts' China quotes are expressed in USD/mt, using a conversion factor of 8.5 from USD/bbl.

Korea

6) Korea - 95 RON unleaded

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

Japan

7) Japan - 91-92 RON unleaded

8) Japan - 95 RON unleaded

Platts assesses 91-92 RON unleaded C+F Chiba. The trace lead content is 0.01g/l. This quote is a netback into Japan that uses the FOB Singapore 92 RON unleaded gasoline as a base. A freight rate for 30,000mt tankers is used. The freight amount is divided by 8.5 and added to the Singapore base assessment.

The 95 RON unleaded C+F Chiba quote is determined by assessing the gasoline market delivered into the Chiba region in Japan. This market typically trades at a differential to naphtha.

Australia

9) Australia - 92 RON unleaded
10) Australia - 95 RON unleaded

Platts assesses Australian 92 and 95 RON unleaded quotes C+F Melbourne/Sydney. These quotes are assessed on a netback basis from FOB Singapore 92 and 95 RON unleaded quotes using a freight rate for 30,000mt tankers. Freight rates are published daily in Platts Clean Tankerwire.

Arab Gulf

11) Arab Gulf - 95 RON unleaded

Platts assesses 95 RON unleaded quotes FOB AG. These quotes are assessed on a netback basis from FOB Singapore 95 RON unleaded quotes using a freight rate for 30,000mt tankers. Freight rates are published daily in Platts Clean Tankerwire.

NAPHTHA

Arab Gulf

Arab Gulf assessments are a netback from the C+F Japan quote using 55,000mt and 75,000mt (LR2) ship freight rates. Freights rates reported in the Platts clean tanker reports are used. For detailed explanation on methodology see attachment, Asian Naphtha Methodology.

Japan

C+F Japan forward naphtha quotes represent trade for 30-45 days, 45-60 days, and 60-75 days ahead of publication. Whichever half-month these quotes fall into becomes the label for the quote.

As an example, on February 2, Platts quoted three cycles: second half March, first half April and second half April. The main quote assesses the market 45 to 75 days from the date of publication. On the first working day of the month and the first working day after the 15th of the month, the quotes will roll-over to the following half-month cycles. For detailed explanation on methodology see attachment, Asian Naphtha Methodology.

FOB Singapore naphtha is quoted on a US dollars per barrel basis while C+F Japan and FOB Arab Gulf assessments are quoted on a US dollars per metric ton basis.

Naphtha Premiums

Singapore: The FOB Singapore naphtha premium/discount takes into account activities 15 to 30 days from date of publication. The minimum volume reflected is 100,000 to 250,000 bbls
Japan: The Mean of Platts Japan (MOPJ) naphtha premium/discount quote reflects activities in the 1st and 2nd C+F Japan naphtha cycles. The premium reflects open spec grade naphtha. The volume reflected is 25,000 mt.
Korea: The mean of Platts Korea naphtha premium/discount quote reflects activities in the 1st and 2nd C+F Japan naphtha cycles. The premium reflects open spec grade naphtha. The volume reflected is 25,000 mt.
Arab Gulf: The FOB AG naptha prem/disc takes into account activities 30-45 days from date of publication. Cargo size is 80 kt and of open spec quality on the basis.

JET/KEROSENE

Singapore

Singapore jet/kerosene assessments are based on latest UK Defence Standard specifications (the latest Defstan 91-91 issue 5, as published February 8, 2005). 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 Singapore cargoes reflect a minimum of 18 Saybolt color guarantee.

The Singapore physical assessment reflects transactions, bids/offers of a minimum of 100,000 bbl, maximum 250,000 bbl, loading 15-30 days from date of publication. Market participants should specify loading for a five-day date range. Seven days prior to loading, seller must declare terminal and buyer nominates vessel with buyer narrowing loading window to three days, subject to terminal's acceptance. For additional information on Platts page 190 and specific methodology issues see **Platts Asia-Pacific Methodology.**

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

The Singapore jet paper assessment reflects a minimum of 50,000 bbl paper transactions. Assessments for paper are for one and two months forward and are quoted on a full calendar **month** basis. As an example, during the month of February, Platts would quote paper for March and for April. Paper jet kerosene is a non-deliverable contract.

Arab Gulf

FOB Arab Gulf quotes are assessed on a netback basis from FOB Singapore assessment using 55,000mt and **80,000mt (LR2)** ship freight rates. Freight rates reported in the Platts clean tanker reports are used. It may also be assessed independently depending on spot cargo movement and competing barrels from other areas. For the freight calculation see attachment **Asian Freight Calculation.**

Japan

The C+F Japan assessment is based on the latest DERD specification (the latest Defstan 91-91 issue 5, as published February 8, 2005). Color typically sold into Japan is around 20-21. 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.

Korea

Korea jet fuel is assessed on a FOB Korea basis reflecting the latest DERD specifications (the latest Defstan 91-91 issue 5, as published February 8, 2005). Platts surveys the market to determine the tradable levels for cargoes loading 15-30 days forward.

China

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

Australia

Jet fuel is quoted on a C+F Sydney/Melbourne basis. Assessment reflects cargoes which meet the **latest DERD specifications (the latest Defstan 91-91 issue 5, as published February 8, 2005) and** for medium range vessels. The assessments are based on Singapore plus applicable freight.

All jet/kerosene assessments are quoted on a US dollars per barrel basis.

GASOIL

Singapore

1) Singapore – 0.5% sulfur

2) Singapore – 0.25% sulfur

3) Singapore – **0.05**% sulfur

4) Singapore – **0.005**% sulfur

In Singapore, several grades of gasoil are quoted ranging from 0.005 to 0.5% sulfur. The Singapore 0.50% sulphur gasoil quotes represent barrels with a pour point of 9 deg C maximum. The color represented is maximum 2 and the flash point is minimum 66 degrees Centigrade. Cetane is a minimum 48. Water and

Singapore's Standard Specifications for Gasoil

Property	Standard
Density at 15 Deg C	0.82 - 0.87
Color Max	2.0
Flash Point Min	66 Deg C
Pour Point Max	9 Deg C
Copper Corrosion 3 hrs Max	1.0
Water and Sediment Max	0.05%
Sulfur Max	0.50%
Distillation Max	370
Cetane Min	48
Total Acid Number Max	0.5
Viscosity	1.7-5.5 max
Ash Max	0.1
Conradson Carbon Residue Max	0.10

Platts FOB Singapore 0.05% sulfur specs

Property	Standard
Density at 15 Deg C	0.82-0.86
Color Max	2.0
Flash Point Min	66 Deg C
Pour Point Max	9 Deg C
Copper Corrosion 3 hrs Max	1.0
Water and Sediment Max	0.05%
Sulfur Max	0.050%
Cetane Number Min	48
Total Acid Number Max	0.5
Viscosity	2.0min-4.5max
Ash	0.01 max
Dist 90% Recovered Deg C Max	357
Dist 95% Recovered Deg C Max	370
Appearance	Visually clear & Free from Undissolved Water or Sediment
Lubricity (HFRR) MIRCONS MAX	460
Filter Blocking Tendency Max	1.4
Total Aromatics % Min	15
Cloud point Deg C Max	8
Carbon Residue Max	0.2%

sediment is 0.05% maximum.

The Singapore 0.50 pct L/P quote is based on gasoil with a pour point below 6 deg C and 0.5% sulfur content.

The Singapore physical gasoil assessments reflect a minimum of 150,000 bbl, maximum 250,000 bbl, loading 15-30 days from the date of publication. Market participants should specify loading for a five-day date range. **Seven days prior to loading, seller must declare terminal and buyer nominates vessel with loading window narrowed to three days, subject to terminal's acceptance.** For additional information on Platts page 190 and specific methodology issues see Platts Asia-Pacific Methodology.

China

5) China

The minimum volume assessed is 100,000 bbl or 10-15,000mt. The sulfur content of the gasoil cargoes assessed for delivery into China is **0.50** % and 0.20% maximum. 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.

Japan

6) Japan – **0.50**% sulfur, FOB

7) Japan – C+F

Japan gasoil is assessed on a FOB Japan basis reflecting cargoes with **0.50**% sulfur maximum. Platts surveys the market to determine the tradable levels for cargoes loading 15-30 days forward. Most cargoes trade on a **Mean** of Platts Singapore (MOPS) basis plus a differential.

Korea

8) Korea – **0.50**% sulfur FOB

Korea gasoil is assessed on a FOB Korea basis reflecting the **0.50**% sulfur maximum grade. Platts surveys the market to determine the tradable levels for cargoes loading 15-30 days forward.

Arab Gulf

9) Arab Gulf - **0.50**% sulfur

10) Arab Gulf - 0.25% sulfur

11) Arab Gulf - 0.05% sulfur

The FOB Arab Gulf gasoil **0.50**% sulfur quote is assessed as a netback to Singapore Gasoil Reg 0.50% sulfur quote using 55,000mt and 80,000mt (LR2) freight rates. Freight rates reported in the Platts clean tanker reports are used for this netback. For the freight calculation see attachment Asia freight calculation. The FOB Arab Gulf 0.25% gasoil quote is derived from the Gasoil Reg 0.50% quote plus its differential, while the FOB Arab Gulf 0.05% sulfur quote is assessed versus the 0.25% quote plus a differential.

The FOB Singapore and Arab Gulf gasoil premium/discount assessments take into account all activities transacted 15 to 30 days from date of publication.

Australia

12) Australia – **0.50**% sulfur

13) Australia – 0.25% sulfur

14) Australia – 0.05% sulfur

15) Australia – 0.005% sulfur

In Australia, four grades of gasoil are quoted ranging from 0.005 to **0.50**% sulfur. Gasoil is quoted on a C+F Sydney/Melbourne basis. Assessment reflects cargoes for medium range vessels. The assessments is based on Singapore plus applicable freight.

All gasoil assessments are quoted on a US dollars per barrel basis.

FUEL OIL

Platts assesses physical fuel oil spot cargo values in Singapore, Japan, China, Korea and the Arab Gulf

Singapore	180 centistoke, 3.5% sulfur, FOB
	180 centistoke, 2.0% sulfur, FOB
	380 centistoke, 4.0% sulfur, FOB
China	180 centistoke, 3.5% sulfur, C+F
	380 centistoke, 3.5% sulfur, C+F
Korea	180 centistoke, 1.5% sulfur, FOB
	180 centistoke, 3.5% sulfur, FOB
	380 centistoke, 3.5% sulfur, FOB
Japan	180 centistoke, 3.5% sulfur, C+F
	180 centistoke, 3.5% sulfur, FOB Okinawa
	180 centistoke, 1.5% sulfur, FOB Okinawa
Arab Gulf	180 centistoke, 3.5% sulfur, FOB

Singapore

Singapore	180 centistoke, 3.5% sulfur, FOB
	180 centistoke, 2.0% sulfur, FOB
	380 centistoke, 4.0% sulfur, FOB

Platts quotes 2.0% and 3.5% sulfur 180 centistoke grades FOB Singapore. Platts also quotes 380 centistoke with a 4.0% sulfur content. **All fuel oil assessments are based on cracked material.** In Singapore, the HSFO 180 and 380 CST assessments reflect transactions or bids/offers for parcels of a minimum of 20,000mt, maximum 40,000mt per transaction, loading 15-30 days from the date of publication. Market participants should specify loading for a five-day date range. Seven days prior to loading, seller must declare terminal and buyer nominates vessel and narrows loading window to three days subject to terminal's acceptance.

Two grades are quoted - 180 and 380 CST. Sulfur is 3.5 pct maximum. Density is 0.991 maximum. Metals specs are normal cargo specs. Vanadium is 200 ppm and sodium is 100 ppm maximum. Water is 0.5 pct maximum. Specifications for fuel oil grades follow:

Singapore's Standard Specs for 180 centistoke Fuel Oil, 2.0% sulfur

Property	Standard
Sulfur Max	2.0%
Kinematic viscosity Max	180 CST
Specific gravity at 15 C kg/l Max	0.991
Flash point Min	66 deg C
Pour point Max	24 deg C
Ash on a weight basis Max	0.10%
Conradson carbon residue (CCR) Max	16%
Vanadium Max	95 parts per million (ppm)
Sodium Max	65 ppm
Aluminium + Silicon Max	80 ppm with aluminium at Max 30 ppm
Water by distillation volume Max	0.50%
Sediment by extraction Max	0.10%
Total existent sediment	0.10%

Singapore's Standard Specs for 180 centistoke Fuel Oil, 3.5% sulfur

Property	Standard
Sulfur Max	3.5%
Kinematic viscosity Max	180 CST
Specific gravity at 15 C kg/l Max	0.991
Flash point Min	66 deg C
Pour point Max	24 deg C
Ash on a weight basis Max	0.10%
Conradson carbon residue (CCR) Max	16%
Vanadium Max	200 parts per million (ppm)
Sodium Max	100 ppm
Aluminium + Silicon Max Max 30 ppm	80 ppm with aluminium at
Water by distillation volume Max	0.50%
Sediment by extraction Max	0.10%
Total existent sediment	0.10%

Singapore's Standard Specs for 380 centistoke Fuel oil

Property	Standard
Sulfur Max	4.0%
Kinematic viscosity Max	380 CST
Specific gravity at 15 C kg/l Max	0.991
Flash point Min	66 deg C
Pour point Max	24 deg C
Ash on a weight basis Max	0.10%
Conradson carbon residue (CCR) Max	18%
Vanadium Max	200 parts per million (ppm)
Sodium Max	100 ppm
Aluminium + Silicone Max	80 ppm
Water by distillation volume Max	0.50%
Sediment by extraction Max	0.10%
Total existent sediment	0.10%

China

China 180 centistoke, 3.5% sulfur, C+F
380 centistoke, 3.5% sulfur, C+F

Platts assesses 180 and 380 centistoke cargoes C+F main ports in southern China, including **Huangpu** and Shenzhen. The assessments reflect cargoes of around 30,000 mt for delivery 15-30 days forward. These cargoes can trade linked to mean of Platts Singapore, 180 centistoke 3.5% sulfur quote, or fixed price.

Korea

Korea 180 centistoke, 1.5% sulfur, FOB
180 centistoke, 3.5% sulfur, FOB
380 centistoke, 3.5% sulfur, FOB

Platts assesses 180 and 380 centistoke cargoes FOB 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 centistoke 3.5% sulfur quote. Platts also assesses premiums/discounts to the mean of Platts Singapore for each grade.

Japan

Japan 180 centistoke, 3.5% sulfur, C+F
180 centistoke, 3.5% sulfur, FOB Okinawa
180 centistoke, 1.5% sulfur, FOB Okinawa

Platts assesses 180 centistoke cargoes delivered into the Chiba area and FOB Okinawa. The C+F Japan assessment is a netback from the FOB Singapore 180 CST quote using 80,000mt freight rates published in the Platts dirty tanker reports. For specific methodology see attachment Asia freight calculation. 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 centistoke 3.5% sulfur quote. Platts also assesses premiums/discounts to the mean of Platts Singapore for FOB Okinawa.

Arab Gulf

Arab Gulf 180 centistoke, 3.5% sulfur, FOB

The Arab Gulf fuel oil 180 CST quote is assessed as a netback to Singapore using 80,000mt freight rates. Freight rates reported in the Platts dirty tanker reports are used to derive the FOB Arab Gulf fuel oil quote. For specific methodology see attachment Asia freight calculation. It may also be assessed independently depending on spot cargo movements and competing barrels from other areas. Density in the Arab Gulf varies and assessments include 0.96-0.975.

Arab Gulf 380 centistoke 4% sulfur, FOB

The Arab Gulf fuel oil 380 CST quote is assessed as a netback to Singapore using 80,000mt freight rates. Freight rates reported in the Platts dirty tanker reports are used to derive the FOB Arab Gulf fuel oil quote. For specific methodology see attachment Asia freight calculation. It may also be assessed independently depending on spot cargo movements and competing barrels from other areas

Prices for all fuel oil assessments are quoted on a US dollars per metric ton basis.

LSWR

Platts assesses Low Sulfur Waxy Residue FOB Indonesia. The assessment reflects Low Sulfur Waxy Residue-Mixed/Cracked with a maximum sulfur content of 0.3% on a FOB Indonesia basis, loading 15-30 days from date of publication. The Indonesian grade typically has a sulfur content of 0.2%. A minimum volume of 100,000 bbl will be considered for the assessment. Prices are quoted on a US dollars per barrel basis.

Please note: The LSWR straight-run 0.3% S assessment was discontinued effective Apr 1, 1996.

MTBE

The assessment reflects product with a minimum purity of 98%, maximum water content of 1,000 ppm and a maximum methanol content of 1.5% of the total weight. The minimum cargo size reflected is 1,000 mt. The loading time is 20-40 days forward. The assessment is FOB Singapore in $/mt.

PLATTS FREIGHT METHODOLOGY IN ASIA (2006 RATES)

The following document contains the methodology for product netbacks 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 flat rate is multiplied against the flat base rate to obtain the actual freight cost. For example, a Worldscale rate of 200 implies a 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 - 2005

Singapore to Jebel Ali at 7.62
(Quoin Island to Singapore + Jebel Ali to Quoin Island)
FOB AG 95 RON:

Jebel Ali to Quoin Is	= 0.53
Quoin Is to Singapore	= 7.70
Jebel Ali port charges	= 0.46
TOTAL	= 8.69

THUS: Spot WS x 8.69 / 8.5 =

TO CONVERT MT/BBL use 8.5.

Naphtha freight methodology

1. Singapore netback

Freight rate methodology for Singapore to Japan:

Base rate from Singapore to Chiba, Japan equals $7.96/mt
Formula: Spot WS x 30 / 26.25 x 7.96 =

2. Arab Gulf netback

Quoin Island to Chiba/Yokohama base rate equals $15.22/mt

Jubail/Mina Al Ahmadi to Quoin Island	1.62 + 0.27 = 1.89
Shuaiba/Ras Tanura to Quoin Island	1.68
Ruwais/Mina Abdulla to Quoin Island	1.89
	5.46 / 3 =1.82

AG to Chiba = Base rate Quoin Island to Chiba/Yokohama 15.22
plus average of 6 ports to Quoin Island 1.82
Total: $17.04/mt

Formula: Freight = Spot WS x 55 / 52.50 x 17.04

For Naphtha LR2 netback:
Spot 75,000mt: Freight = Spot WS x 17.04

Fuel Oil freight methodology

1. Japan netback

Singapore to Chiba/Yokohama, Japan: The freight rate is $8.07/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 × 8.90

2. Arab Gulf netback

Quoin Island to Singapore: $6.70/mt plus $1.34/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 $9.04/mt. This amount of $9.04/mt should be used for the AG freight netback calculation.

Formula: Freight = Spot WS x 9.04 =

Gasoil/Kerosene freight methodology

Singapore - Arab Gulf netback calculations.

Singapore + Quoin Island + four port average discharge (Ras Tanura, Bahrain, Jubail and Mina al-Ahmadi) + any additional port charges.

Singapore to Quoin Island	$7.70/mt
Quoin Island to Jubail	(0.87 + 0.27 + 7.70) x WS
Quoin Island to Bahrain	(1.00 + 7.70) x WS
Quoin Island to Ras Tanura	(0.90 + 7.70) x WS
Quoin Island to Mina al-Ahmadi	(1.34 + 7.70) x WS
Formula:	1.095 + 7.70 = 8.795 x WS

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

Australian netback assessments

Base freight rate from Singapore to Melbourne/Sydney, Australia is $10.31/mt

To obtain the actual freight Platts will determine the worldscale rate from Singapore to Australia times 10.31 and then the result will be divided by the conversion rate to equate from metric tonne to barrel basis.

1) C+F Australian Mogas:
Spot WS x 12.02 / 8.5 =

2) C+F Australia Gasoil:
Spot WS x 12.02 / 7.45 =

3) C+F Australia Jet:
Spot WS x 12.02 / 7.9 =

Spot worldscale rates are available on Platts Global Alert page 136 for clean rates and Platts Global Alert page 137

ASIA PACIFIC-ARAB GULF BUNKER ASSESSMENTS

Platts assesses gasoil and fuel oil bunkers in Singapore, Japan, Korea, Australia, Fujairah and Hong Kong. **Platts also publishes posted bunker prices for China and Taiwan.** Platts assesses ex-wharf fuel oil bunkers in Singapore.

Singapore Bunkers: Same specifications as Platts current bunker specs. Prices reflect for 180 CST, 300-500mt lots. Larger volumes might be reflected at the low end of the assessment range. For 380 CST, volumes are typically 500-1,000mt. MDO typically is for 50-100mt lots. The timing is for material delivered three to seven days from date of publication. Prices are on a delivered basis and include barging cost.

Hong Kong Bunkers: Same specifications as Platts current bunker specs. Prices reflect for 180 CST, 300-500mt lots. Larger volumes might be reflected at the low end of the range. For 380 CST, volumes are typically 500-1,000mt. MDO typically is for 50-100mt lots. The timing is for material delivered with three to seven days from date of publication. Prices are on a delivered basis and include barging cost.

Platts Ex-Wharf Singapore Fuel Oil Bunkers Specifications

Platts ex-wharf Singapore fuel oil bunker assessments reflect spot trading activity 3 to 15 days from the date of publication. The assessments will reflect trading activity up to 5.30 PM Singapore time. Transactions of between 1,000 mt and 6,000 mt per parcel, will be taken into account for assessment purposes. Buyers/sellers must specify a loading laycan of 3 days. Platts will track activity in Malaysia's Pasir Gudang terminal as well. Platts will reflect bids/offers issued up to 5.00 PM Singapore time, and will track changes in the bids or offers up to 5.25 PM Singapore time. The real time market information will be available on Platts Marine Alert pages 997-998. The assessments will be published on Platts Marine Alert page 980 and 986 and on the Platts Oilgram Bunkerwire.

Platts has surveyed the market and found several standards typically used by the bunker traders. If you have any questions or comments please email Paul Young (paul_young@platts.com) or call him at the Platts Singapore office on: +65-6530-6517.

Product Specifications
380 centistoke and 180 centistoke fuel oil bunker product specification should meet the following specifications.

380 CST - Properties

Standard

Density at 50 degrees Celsius, kg/cubic meter	0.991 max
Kinematic viscosity at 50 degree Celsius,	380 CST
Flash point in degrees Celsius	60 min
Pour point (upper) degrees Celsius	30 max
Carbon residue percentage weight basis	18 %max
Ash on weight basis	0.15% max
Water	0.5% max
Sulfur	5.0% max
Vanadium	300 ppm max
Sodium	No guarantee
Aluminum plus silicon	80 ppm max
Total Sediment Potential	0.10% max

180 CST - Properties

Standard

Density at 50 degrees Celsius, kg/cubic metre	0.991 max
Kinematic viscosity at 50 degree Celsius,	180 CST
Flash point in degrees Celsius	60 min
Pour point (upper) degrees Celsius	30 max
Carbon residue percentage	15% max
Ash on a weight basis	0.10% max
Water	0.5 % max
Sulfur	5.0% max
Vanadium	200 ppm max
Sodium	No guarantee
Aluminum plus silicon	80 ppm max
Total Sediment Potential	0.10% max

Note: Should an issue arise regarding a new standard or a new specification, Platts would then survey the market and determine the appropriate typical specification.

Platts has surveyed the market and found several standards typically used by the bunker traders. A sample of those standards follows:

Delivery
Parcel to be supplied on an ex-wharf basis one safe terminal, off-shore delivery but within the Port of Singapore limits to buyer's nominated vessel/barge. Inter/in Tank Transfer (ITT) is also acceptable.

Barge Nomination
The buyer will 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.

Barge Acceptance
The seller will notify the buyer of barge acceptance promptly and within a reasonable time. But the acceptance is subjected to terminal availability.

Terminalling Penalty
In the event of the buyer being unable to load the purchased parcel within the contractual loading date range, a surcharge will be applied. The surcharge is in the amount of $0.60 (US Dollars Zero Point Six Zero) per metric ton per seven calendar days. The surcharge shall be imposed on any unlifted quantity after the last day of the contractual loading date range (last day of the contractual loading date range shall count as day zero).

Merchantability
Seller should supply material that is merchantable.

Mooring/Wharfage/Piloting
Any cost associated with the barge transportation shall be borne by the buyer.

Determination of Quantity and Quality
Quantity and quality shall be based on certificate of quantity and quality issued by seller's loading terminal. In the event of a dispute, seller and buyer to jointly appoint a mutually acceptable independent inspector to determine quality and quantity based on loading samples and figures. If an issue arises over the surveyor, either party has the right to appoint an additional surveyor. Cost of appointing mutual inspector shall be equally shared between buyer and seller.

Demurrage
Not Applicable, but seller is to supply cargo within reasonable time.

Tolerance
Industry standards allow for an operational tolerance level on quantity of plus/minus five percent.

Title and Risk
Title and risk of product shall pass to buyer when oil passes buyer's vessel/barge permanent flange connection at loading terminal or mother vessel in the event of barge to barge loading.

Payment
Payment shall be made in US dollars in accordance to previously established payment practices. These payment practices include full invoice value by telegraphic transfer, cheque, and by collection within thirty days from the date of loading (i.e. Date of certificate of quantity from loading terminal). Date of loading to count as Day One. Payment shall be made without withholding, deduction, discount, counter claim or offset of any kind against presentation of seller's invoice.

All bank charges at the buyer's bank will be borne by the buyer's account.

All bank charges at the seller's bank will be borne by the seller's account.

If payment falls due on a Sunday or Monday New York banking holiday, payment shall be made on the immediate following banking day. Payment falling due on a Saturday or non-Monday banking holiday in New York shall be made on the previous banking day.

In the event that payment was not settled against invoice on the due date, then without prejudice to the application of any provisions hereof and / or to any other remedy available to buyer herein or otherwise, buyer shall pay interest on the overdue amount at the prime lending rate quoted. Typically a US dollar interest rate reflecting the average of four major banks in Singapore or a major bank are used. In addition, seller adds two percent to the base rate or two percent per month which ever is higher, until and including the date of settlement is made. Payment of the interest shall be made on the same day of the overdue payment made by the buyer.

The typical industry contract adds that the following paragraph shall not be construed by the buyer as an indication of the seller's willingness to provide extended credit.

Credit terms
Buyer shall open a irrevocable standby letter of credit or banker's guarantee from a first class international bank located in Singapore in form and substance acceptable to seller and valid for a minimum duration of sixty days from the date of loading. Buyer shall open letter of credit or banker's guarantee no later than (ten) working days from the loading date. The letter of credit or banker's guarantee shall be open for an amount of at least 105% of the estimated purchase value.

Law and Arbitration
Any dispute arising in connection with this agreement, including any questions regarding its existing, validity or termination shall be referred to and resolved by arbitration in Singapore in accordance with the arbitration rules of Singapore International Arbitration Center ('SIAC Rules') for the time being in force which rules are deemed to be incorporated by agreement of the parties and there are no oral promises, representations or warranties affecting it.

The language of the arbitration shall be English.

The validity, construction and performance of the agreement shall be governed by the law of Singapore.

Force Majeure
If either party is rendered unable by force majeure to perform or comply fully or in part with any obligations or conditions of this contract, upon such party's giving written notice to the other of such force majeure within forty eight (48) hours after receiving notice thereof, such performance or compliance shall be suspended. During the continuance of the inabilities so caused, and such party shall be relieved of liability and shall suffer no prejudice for failure to perform the same during such period.

In the event that the said period of suspension of performance shall continue in excess of thirty (30) calendar days, this

contract is deemed to be canceled without liability of either party, unless otherwise mutually agreed.

As used herein, the term force majeure shall include, by way of example and not in limitation, fire, wars of belligerent action, riots or commotions, acts of God, navigational accidents, vessel/barge damage or loss, accidents at or closing of navigation or transportation mechanism, strikes, grievances, or actions by among workers, lock-outs, other labor disturbances, explosions or accidents to wells, pipelines, storage depots, refinery facilities, machinery and other facilities, actions of any government, or by any person purporting to represent a government, or other cause not reasonable within the control of the respective parties.

FAQ

1.What time standard does Platts follow?

Platts follows the Singapore standard time. Platts aligns its clocks daily with an atomic clock to ensure that all of its computers are displaying the proper time.

2. If, as a subscriber, I believe I called on time based on my wristwatch to submit a bid/offer for Platts page 190, would Platts recognize my entry?

If the subscriber's clock and the Platts clock are out of alignment, Platts will follow its own clock.

3. If a subscriber calls on time but the lines are too busy and Platts only picks it up after time, would Platts recognize the entry?

No. Platts will only recognize the entry if it is communicated to Platts on time. If a user is concerned about communicating the information on time, he/she should allow some time for the delivery of the communication.

4. Does Platts have alternatives for phone communication, in the event that the lines are jammed?

Yes, Platts provides subscribers the options of communicating their information using the internet. Platts provides support to customers that would like to use **AOL's Instant Messenger** or **Yahoo Instant Messenger.** Please communicate with the Singapore editorial office to arrange for setting up instant messaging at 65-6530-6517.

5. If my company has a firewall and I can't use messaging systems what are my alternatives?

Platts may be able to work with your companies IT department to provide a link through the firewall.

6. If I enter a bid and offer on Platts page 190, is it firm?

Platts will only publish firm bids and offers, along with the names of the buyer/s or seller/s, on Platts page 190 during the 1600-1630 Singapore standard time period. At other times, indicative bids and offers may be entered and the update on page 190 will note that the information is only indicative and not firm.

7. After I have entered my bid/offer can I change the price?

Yes, but only up to 1625 Singapore standard time for physical bids/offer.

8. And can I change the volume or the quality?

Platts will only recognize price changes after 1600 Singapore time. Before 1600 Singapore time, the user could change specifications, volumes, etc, which would equate to a replacement of the initial bid/offer.

9. If I change my mind can I withdraw my bid/offer?

Yes, provided that no trading counter party has indicated its willingness to execute a transaction. Platts will accept a withdrawal at any time.

10. What is Platts response if I withdraw my bid/offer after a counter party indicated its willingness to trade with me?

Platts will deem the withdrawal to have been made under duress. Any withdrawal of this nature would suggest that the provider of information was not a serious buyer/seller and his information was not reliable. Platts only reflects in its assessments information deemed reliable and only from reliable sources.

11. Do I have to be a subscriber to participate on page 190?

No. Platts interest is in determining market levels. What is of interest to Platts editorial is not whether the company is a subscriber, but whether the company is a reliable source of information.

12. What do I have to do to submit a bid/offer?

You need to communicate to Platts and demonstrate that you have market credibility with potential market counter parties. Platts will investigate whether your company has a 'good' credit standing in the marketplace. The final arbiter of your credibility standing is the market place as counter party may elect to trade or not with your company after they have done their own credit checks.

13. Can I lose my privilege to submit bid and offers to Platts page 190?

Yes. You can lose your privilege under many circumstances. For instance, if Platts determines that your information is not reliable Platts will not post your bid/offers in any of its publications. Platts, as a responsible publisher, is only interested in publishing information that is reliable. In another case, if your company does not respect the terms and conditions

prevailing at the time of sale you may lose your privilege. Furthermore, if Platts determines that buyer/seller is frustrating the transaction by making it difficult operationally or otherwise to load or discharge a cargo, you may also lose your privilege.

14. Does Platts write reports regarding operational difficulties or when information submitted was not fully correct?

Yes. Platts has many functions including a critical role in informing the market about operational difficulties, rogue market information, delays in letter credit issuance, etc.

15. If I lose my privilege to submit bids/offers, how do I gain it back?

There is no sure way to get it back. Platts is only interested in publishing reliable information. Part of the process may require higher management within your organization to communicate with Platts as to what actions your company has taken corporately to ensure that there is no market misleading. But really there is no sure way to regain credibility once it has been lost.

16. If I disagree with the Platts reports, to whom do I complain?

The first stop is the regional management. If a disagreement still continues you may contact the director for market reporting, Jorge Montepeque, or the vice president of editorial, Dan Tanz. If the dispute still remains, you may contact higher management within Platts or McGraw-Hill. List of numbers follow:

- Singapore +65-6532-2800
- London +44-207-176-6171
- New York +1-212-904-3121

17. Is there a detailed methodology for the assessments?

Yes, and you can find it in the Platts Asia-Pacific Products Methodology.

18. Is Platts open and transparent? Can I visit the office to see the activity on page 190?

Platts assessment process is open and transparent. Its methodologies are available to our subscribers and are available also on Platts.com. Our methodologies and assessments are subject of scrutiny both internally and by our subscribers. You can also visit our offices to observe the activity on page 190. Call our office in Singapore at +65-6530-6517 for an appointment.

19. What jurisdictional law governs the contracts of the transactions that Platts takes into consideration for its assessments?

There is a dual standard in Singapore where some companies use either English or Singapore law. Both are acceptable. If a dispute arises, the customary jurisdiction used by the seller/buyer on page 190 will prevail. It is up to the counter party to accept the terms of the original buyer/seller.

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Methodology and Specifications Guide

Asian LPG

LATEST UPDATE: DECEMBER 2005

The McGraw Hill Companies

ASIA LPG METHODOLOGY

Platts assesses the LPG market in Asia from the Arab Gulf to Japan/Korea (see locations), 35-55 days forward from date of publication (unless otherwise stated).

Platts will consider confirmed deals on the day of business and subsequent firm bids and offers, along with supply/demand fundamentals, reported in the market. In the absence of confirmed deals, Platts will consider firm bids and offers along with market fundamentals. All bids, offers and trades will be measured against standards of repeatability and incrementability before inclusion in the assessment process. Assessments reflect transactable levels.

Platts considers fixed price transactions and floating price transactions in its assessments. Floating price transactions are most commonly based on a premium or discount over Saudi Aramco's monthly export contract prices (CP).

Timing: Platts tracks the markets continuously and assessments reflect the latest information up to 1630 Singapore standard time on the date of publication.

Basis: Platts assessments reflect standard terms and conditions for FOB spot transactions lifting from the Arab Gulf and C+F spot transactions into Japan, Korea, South China and Taiwan mainports (see locations). Cost and Freight are defined by Incoterms.

Asia Proxy: Platts publishes two proxy 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.

Terms: AG/JAPAN/KOREA/SOUTH CHINA/TAIWAN: Platt's assessments reflect transactions based on letter of credit with 30-day contract terms.

LOADING/DELIVERY WINDOWS

Refrigerated Cargos

FOB AG: Assessments typically reflect parcels loading in Arab Gulf 20-40 days out from the date of publication. C+F

JAPAN/KOREA: Assessments typically reflect parcels to be delivered 35-55 days out from the date of publication. C+F

SOUTH CHINA: Assessments typically reflect parcels to be delivered 20-35 days out from the date of publication.

Pressurized Cargos

C+F SOUTH CHINA: Assessments typically reflect parcels to be delivered 7-15 days out from the date of publication.

C+F EAST CHINA: Assessments typically reflect parcels to be delivered 7-15 days out from the date of publication.

SIZE

Platts Asia assessments reflect the following typical volumes:

Refrigerated Cargos

FOB AG:	10,000-40,000mt split refrigerated cargo
C+F JAPAN:	10,000-40,000mt split refrigerated cargo
C+F KOREA:	10,000-40,000mt split refrigerated cargo
C+F SOUTH CHINA/TAIWAN:	10,000-40,000mt split refrigerated cargo

Pressurized Cargos

C+F CHINA: 1,800-2,500mt pressurized mixed LPG

LOCATION

Platts assessments apply to the following ports:

Refrigerated Cargos

FOB AG: Export terminals including, but not limited to: Ras Tanura, Saudi Arabia and Yanbu, Saudi Arabia

C+F JAPAN: Import terminals at main ports including, but not limited to Kashima, Yokkaichi and Oita

C+F KOREA: Import terminals at main ports including, but not limited to Yeosu and Ulsan

C+F SOUTH CHINA/TAIWAN: Import terminals, and floating storage vessels off China main ports including, but not limited to Shenzhen, Zhuhai, Shantou, Mai Liao and Kaohsiung

Pressurized Cargos

C+F SOUTH CHINA: Pressurized LPG storage terminals in South China including, but not limited to Shenzhen, Zhuhai, Xiamen and Shantou

C+F EAST CHINA: Pressurized LPG storage terminals in East China including, but not limited to Shanghai, Ningbo and Nantong

SPECIFICATIONS

Propane (C3): Conforming to SAMAREC A-140 specifications issued by Saudi Aramco, including: minimum 95% propane content, maximum 4% butane content and maximum 0.1% olefin content.

Normal Butane (C4): Conforming to SAMAREC A-160 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.

CHINA LPG METHODOLOGY

This report contains the specifications and methodology for LPG in China. It is to be used as a reference for the assessments produced by Platts and to enhance the awareness in the trading community of what the assessments mean. This guide is updated regularly and will keep you informed of additional changes.

Platts price specialists focus on price discovery and follow prices in all main trading markets. In markets where trading activity occurs continuously, Platts price specialists cover those markets continuously as well, with responsibilities transferred across the globe. In the Asia-Pacific region, Platts specialists in Guangzhou, Singapore, Tokyo, Sydney and Hong Kong track prices and analyze market conditions starting at 9.30 am China Standard Time (China and Singapore are in the same time zone).

Platts staff track events as well as pricing developments with the information then summarized in our daily reports. The market activity is reflected in the assessments in a very rigorous manner using a methodology developed by Platts. The methodology reflects the activity of the market players and takes into account industry practices

Platts China domestic LPG assessments reflect spot activity in several regions within China. Platts only takes into account transactions done at arms' length between unrelated companies. Trades between affiliates, subsidiaries or related parties will not be recognized and may result in the loss of credibility by the parties, and subsequent removal of the privilege to submit bids and offers.

Platts will consider confirmed deals on the day of business and subsequent firm bids and offers, along with supply/demand fundamentals, reported in the market. In the absence of confirmed deals, Platts will consider firm bids and offers along with market fundamentals. All bids, offers and trades will be measured against standards of repeatability and incrementability before inclusion in the assessment process. Assessments reflect transactable levels. A list of the main factors used in the assessments follows:

Timing: Platts tracks the markets continuously and our assessments reflect the latest information available at up to 1630 (4.30pm) China local time (0830 GMT) on the day of publication.

Basis: Assessments are for the spot market, and are based on actual transactions. In the absence of deals, bids and offers are considered. Assessments reflect a transactable level.

Range: The range reflects levels at which a deal can take place. Reporters do not simply take the highest market bid and the lowest market offer to publish a range.

Waterborne: Spot deals done ex-refinery or ex-tank terminal into coastal vessels.

Ex-truck: Spot deals done from the product terminals and refineries into trucks. The assessments do not reflect term transactions for branded products.

LOCATIONS

LPG Import Terminals

- East China assessments include, but are not limited to terminals in the following regions: Shanghai, Jiangsu, Zhejiang and Fujian
- North China assessments include, but are not limited to terminals in the following regions: Hebei, Shandong and Tianjing
- Northeast China assessments include, but are not limited to terminals in the following region: Liaoning
- South China assessments include the Pearl River Delta, East and West Guangdong areas.

Pearl River Delta assessments include, but are not limited to terminals in the following regions: Guangzhou, Shenzhen (including Huizhou) and Zhuhai

West Guangdong assessments include, but are not limited to terminals in the following regions: Yangjiang and Maoming

East Guangdong assessments include, but are not limited to terminals in the following regions: Chaozhou and Shantou

Refineries

South China assessments include, but are not limited to the following refineries: Guangzhou and Maoming

East China assessments include, but are not limited to the following refineries: Zhenhai, Shanghai, Gaoqiao and Jinling, Yangzi and Fujian

North China assessments include, but are not limited to the following refineries: Tianjin, Yanshan, Dagang, Cangzhou, Huabei

Northeast China assessments include, but are not limited to the following refineries: Daqing, Dalian, Jinzhou and Jinxi

Assessment units

Yuan (RMB) per metric ton.

Taxes

Assessments include value-added tax (typically 13%), import duties (typically 5%) and berthing fees (typically Yuan 40-50/mt)

Volumes

Assessments reflect typical volumes traded in the spot market. Standard volumes are: 600-1,500mt for waterborne, and 10-25mt parcels for ex-truck assessments.

Loading time

Waterborne: Assessments typically reflect parcels loading in 2-5

People's Republic of China LPG standard specifications GB 1174-1997

Item	Quality Standard	Testing Method
Density (15°C), kg/m³	Report	SH/T 0221[1]
Vapor pressure (37.8°C), kPa ≤	1380	GB/T 6602[2]
Pentanes and heavier , %(V/V)≤	3.0	SH/T 0230
Residue	0.05	SY/T 7509
Evaporation residue, mL/100mL≤	pass[3]	
Oil Stain Observation		
Copper Strip (Corrosion)≤	1	SH/T 0232
Sulfur (Total), mg/m³≤	343	SH/T 0222
Free Water Content	N/A	Visual Test

[1] The density can also be calculated by test method GB/T 12576, but in arbitration it must follow SH/T 0221.

[2] Vapor pressure can also be calculated test method GB/T 12576,but in arbitration it must follow GB/T 6602.

[3] According to description in SY/T 7509, 0.3ml residue of solvent is dropped separately with 0.1ml individually onto the filter paper, which in 2 minutes is observed under day light, sample passes test if there is no oil residue on the filter paper.

Saudi Aramco product specification / refrigerated Propane LPG

Test	Guarantee	Method
Composition,liquid volume %		ASTM D-2163
Ethane	Max 2.0	
Propane	Min 95.0	
Butanes	Max 4.0	
Pentanes and heavier	Nil	
Total Olefins	Max 0.1	
Corrosive Compunds,Copper strip	Max No 1b	ASTM D-1838
Hydrogen Sulfide, ppm (wt)[2]	Max 5	Lead acetate paper per Exxon Lab. Inspection Circular 200.14 UOP-212
Specific Gravity 60°F/60°F	To be reported	ASTM D-2598
Sulfur (Total),ppm (wt) (ug/g)	Max 30	ASTM D-2784/D-4045[4]
Vapor Pressure @ 100°F,psig (KPa(g))	Max 200 (1380)	ASTM D-2598/D-1267
Water Content, ppm (wt)	Max 10[3]	ASTM E-700

Notes:

[1] Odorant not required in refrigerated propane LPG.

[2] Hydrogen sulfide test required only when volatile sulfur test exceeds 5 ppm. Passing test of hydrogen sulfide shall be reported as "Not more than 5 ppm".

[3] Product shall contain no free water.

[4] ASTM D-4045 as modified by Saudi Aramco can also be used as an alternative method of testing

Saudi Aramco product specification / refrigerated Butane LPG

Test	Guarantee	Method
Composition,liquid volume %		ASTM D-2163
Propane	Max 2.0	
Iso-butane	Max 29.0	
N-butane	Min 68.0	
Isopentane and heavier	Mix 1.0	
Olefins	Max 0.1	
Corrosive Compunds,Copper strip	Max No. 1b	ASTM D-1838
Hydrogen Sulfide, ppm (wt)[2]	Max 5	Exxon Laboratory Inspection Circular 200.14 or UOP.212
Specific Gravity 60°F/60°F	To be reported	ASTM D-2598
Total Sulfur ,ppm (wt) (ug/g)	Max 30	ASTM D-2784/ D-4045[4]
Vapor Pressure @ 100°F,psig (KPa(g))	Max 70 (483)	ASTM D-2598/ D-1267
Water Content, ppm (wt)	Max 10[3]	ASTM E-700

Notes:

[1] Odorant not required in refrigerated propane LPG.

[2] Hydrogen sulfide test required only when volatile sulfur test exceeds 5 ppm. Passing test of hydrogen sulfide shall be reported as "Not more than 5 ppm".

[3] Product shall contain no free water.

[4] ASTM D-4045 as modified by Saudi Aramco can also be used as an alternative method of testing

days out from the date of publication.

Ex-Truck: Assessments typically reflect parcels loading in 1-3 days out from the date of publication.

PRODUCT SPECIFICATIONS

Platts assesses two grades of LPG in China. Refinery grade LPG is defined as the Peoples' Republic of China LPG standard specifications, detailed in the table below. Import grade LPG is defined according to Saudi Aramco's specifications for propane and butane, detailed in the tables below. Import grade LPG is defined as typically being 30:70, propane:butane. Refinery grade is defined as typically being 10:90, propane:butane.

Platts assesses refinery-grade or China standard LPG in northern and northeastern China.

Platts assesses refinery and imported-grade LPG in eastern China.

Platts assesses imported grade LPG in southern China.

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Methodology and Specifications Guide

European Products

LATEST UPDATE: DECEMBER 2004

The McGraw Hill Companies

GENERAL TERMS AND CONDITIONS

TIME OF ASSESSMENT

Platts European products assessments reflect the transactable value prevailing at 17.30:00 London time precisely. The assessment methodology reflects values on a market-on- close basis. Trading activity, including bids/offers and transactions, is covered during the typical operating hours of the European markets with market values determined precisely at 1730:00 London time.

Platts tracks outright and spread levels through the day between 08.30:00-17.30:00 London time and these levels may have a bearing on final assessment levels, depending on transparency and the patterns of liquidity over the day. Transactions and activity in futures, physical or derivatives markets before 08.30:00 and after 17.30:00 London time are not taken into account. All market activity is viewed in light of its market relevance, repeatability and transparency. Transactions between related parties or transactions that do not meet Platts high standards for transparency, verifiability and repeatability may not be taken into account.

Platts European products assessments have reflected the transactable value prevailing at 17.30:00 London time since April 1, 2003.

BIDS/OFFERS

Platts considers transactions, bid/offer levels and market indications that are reflective of typical conditions and originating from sources deemed reliable. Bids and offers must in principle be open to any reputable and creditworthy counterparty. 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 will be dealt with on a case-by-case basis. Platts will exclude transactions, bids/offers or any market indications when these appear to be unrepresentative of the market, or unrepeatable. 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.

EXECUTABILITY

Platts only takes into account bids and offers where trading participants have demonstrated that those bids and offers are firm and executable.

For the purposes of its assessments, Platts will only consider in its assessment process bids and offers that heve been communicated to reporters/price specialists before 16.45:00 London time for cargoes and 17.00:00 for barges. Any new bid/offer submitted later than these cutoffs will not be considered in the assessment process.

Platts considers in its assessment price changes made to applicable bids or offers up to but no later than 17.25:00 London time, after which only deals will be considered. In the case of 3.5% fuel oil barges, price changes up to 17.27:00 are accepted.

Platts takes into account bids/offers that are executable under normal circumstances. Where provisions in the bid or offer make it difficult or impossible to execute, the bid or offer will not be considered in the assessment. Such provisions may include, for instance, non-standard nomination procedures and charter party or loading options outside the normal range of ports considered as standard in each market.

MERCHANTABILITY

Platts products assessments are based on merchantable grades. Bids/offers that exclude legitimate supply sources may be deemed restrictive and excluded from the assessment process.

INCREMENTABILITY

Price changes to bids and offers will be considered in the assessment process only if the changes are incremental in nature. Typically the increments considered would be of a maximum of $1/mt but this varies according to market conditions. Where related futures markets exhibit unusual volatility, Platts may increase the level of increment accepted without notice. Price changes made very rapidly, that do not allow a counterparty to execute, may be disregarded.

REPEATABILITY

Bids, offers and transactions are viewed against the broader supply/demand generated by those bids/offers and transactions. Hence if a low price offer generates too much demand, Platts may determine in its editorial process that the market value is hence higher than the level offered. Likewise if a high bid generates too much supply and the buyer is unable to buy all the volume that is offered, Platts in its editorial process may determine that that the market value is lower than the level bid.

SPREADS

Platts typically reflects fixed price deals, bids and offers in its assessments. Platts also uses bids/offers and transactions on a Platts related basis. Platts may use additional indications as appropriate including the market value of spread relationships with other oil grades and associated markets such as derivatives

and futures. In certain illiquid markets, it may establish FOB or CIF values based on freight differentials to more liquid benchmarks.

TIMING

Assessments reflect arrivals or loadings between 10-25 days from date of publication for all grades on cargoes, and 2-15 days from date of publication on barges. In practice, because of the 48-hour nomination procedure on barges, the assessment reflects trading activity for 3-15 days from date of publication excluding weekends and holidays where the 48 hour nomintion clause results in a loading 4, 5 or 6 days forward.

The Platts assessment process typically considers bids and offers made with 5 day loading /delivery windows within the standard 2-15 days forward for barges and 10-25 days forward for cargoes. Platts considers CIF transactions where the seller has the right to narrow to a 3 day delivery window, five calendar days prior to the first day of the three day laycan. Ship must be nominated 5 calendar days prior to the first laycan day. Normal notice of readiness procedures will be considered.

Note: Prior to April 1, 2003, the cargo assessments reflected reasonably prompt arrival or lifting, typically between 5 to 15 days from date of publication for cargo assessments, while barges typically reflected 2-8 days from date of publication.

CREDIT/PAYMENT TERMS

Payment is as per standard commercial practice which may be prompt or within a few working days of lifting or discharge. Wherever greater credit is given this will be allowed for in the assessment process.

TIME GRADIENT

Platts assessments fully take into account any backwardation or contango in the marketplace. The assessments thus reflect the value after taking into consideration the difference in prices prevailing along the time curve assessed by Platts. Typically, Platts assesses to the middle of the loading/delivery window specified for each market. Backwardation and contango is factored into all assessments, whether cargoes or barges.

For instance, if a cargo were to trade at a fixed price of $230.00/mt for 10-14 days forward, in a backwardated market where the daily value of the backwardation is 0.50/mt, then the assessment would need to reflect a value representative for the entire window (10-25 days forward) and not just the 10-14 day forward window. In this case, the assessment would have a range centered on the mean assessed value of $227.25/mt, i.e. $230.00 less 5.5 days of backwardation. The opposite could occur in a contango market. If a trade occurs at $230.00/mt for a cargo loading 10-14 days forward and the market exhibits contango at the rate of $0.50/mt per day then the assessment would be centered on $232.75/mt.

EMBEDDED OPTIONS

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 and the intrinsic value of the commodity is masked, Platts may use its editorial judgement to factor out such extraneous elements from the value of the commodity, or it may decide not to use the bid, offer or transaction in its assessment process.

Optionalities that typically mask the value of the commodity include loading or delivery options held by the buyer or seller, volume option tolerances exercisable by the buyer or seller or quality specifications among others.

PRICE UNITS

All product prices in Europe are in US dollars per metric tonne (mt). The minimum fluctuation in price is 25 cts/mt for all products, on both cargoes and barges.

PARCEL SIZE

Cargoes: Platts seeks to reflect bids/offers and transactions typical of each of the markets it reflects. Platts defines cargo sizes reflected under the individual assessments, but these may vary according to market conditions. In the Med ULSD market, for instance, the typical cargo size is 25-30,000mt, while the standard for Jet cargo CIF NWE is 30,000 mt.

Barges: Typical barge size is 1,000-5,000mt, except for jet fuel where a range of 2,000-5,000 mt is reflected. In all cases the smallest tradeable barge -1,000mt for fuel oil and gasoil and 2,000mt for jet fuel- sets the assessment.

LOADING/DELIVERY LOCATION

Cargoes—The CIF NWE cargo assessments typically reflect deliveries into ARA, basis Rotterdam. The CIF Med cargo assessments reflect a Genoa/Lavera basis. On the CIF, a normal range of charter options is considered. Where these have been defined, they are listed separately by product. The location basis of assessments FOB NWE and FOB Med vary by product.

Barges—Unless otherwise specified, loading for material covered by 'Barges FOB Rotterdam' assessments is assumed to be from

refinery or storage in the Amsterdam, Rotterdam or Antwerp area. The assessment are basis Rotterdam except when stated otherwise. Other sources such as Flushing may be considered in the assessment where these are deemed relevant, but at a differential which may reflect freight differentials to Rotterdam or to related end-user markets such as Germany.

QUALITY

For both cargoes and barges, no distinction is made between refinery and storage in terms of the origin of the material. Typical specifications for each product are detailed below.

FREIGHT DIFFERENTIALS

Platts takes into account prevailing freight rate levels in establishing both FOB and CIF values. Where a market has become illiquid, Platts may routinely determine the FOB value from the CIF value. Where there is limited local demand but longer range arbitrage opportunities emerge, the FOB value may rise relative to the CIF value and may at times be assessed at parity.

In the past, Platts has tended to track broader freight trends over time to establish FOB/CIF relationships. Platts now actively assesses those relationships on a daily basis, and actively uses freight information published by Platts in the assessment of product values. Platts tanker publications Platts Clean Tankerwire and Platts Dirty Tankerwire now carry both worldscale and $/mt freight assessments for clean products and fuel oil, which may be incorporated in assessments where appropriate.

SHIPPING

Platts typically reflects good quality modern tonnage in its freight assessments, and excludes from its CIF assessments any vessels which are outside the normal parameters of acceptability. Platts may take into account a variety of factors when establishing whether it will include bids or offers with specific shipping requirements or conditions in its assessments, such as the vessel's age and chartering history.

Platts considers in its CIF cargo assessments offers where the seller a) names the ship carrying the oil product, b) seller commits to meet 'normal' requirement by buyer, c) seller commits to have ship approved by at least three named majors which need to be stated, d) or commits to ship which will be approved by major selling, major buying, and second major named by buyer.

DATA CODES

Each Platts assessment is identified in the electronic databases by a 7-character data code. The following table provides the data codes for each European oil product assessment carried in Platts European Marketscan. The table layout is that carried in the telex/newsletter version of Platts European Marketscan; when assessments are carried in related publications such as Platts Oilgram price Report or the regional marketscans, the actual layout may vary.

EUROPEAN MARKETSCAN ASSESSMENTS

		FOB Med (Italy)			CIF Med(Genova/Lavera)	
Prem Unl	+X.00	PGAMP00-PGAMP00	+X.00	+X.00	PGAMN00-PGAMN00	+X.00
Prem Unl 50ppm	+X.00	AAOPW00-AAOPW00	+X.00	+X.00	AAOPX00-AAOPX00	+X.00
Prem 15	+X.00	PGABV00-PGABV00	+X.00			
Naphtha	+X.00	PAAAI00-PAAAI00	+X.00	+X.00	PAAAH00-PAAAH00	+X.00
Jet Av.Fuel	+X.00	AAIDL00-AAIDL00	+X.00			
EN590 **	+X.00	PPAQB00-PPAQB00	+X.00	+X.00	PPAQD00-PPAQD00	+X.00
50ppm ULSD	+X.00	AAOQC00-AAOQC00	+X.00	+X.00	AAOQD00-AAOQD00	+X.00
Gasoil.2	+X.00	POAAB00-POAAB00	+X.00	+X.00	POAAA00-POAAA00	+X.00
1 PCT	+X.00	PUAAK00-PUAAK00	+X.00	+X.00	PUAAJ00-PUAAJ00	+X.00
3.5 PCT	+X.00	PUAAZ00-PUAAZ00	+X.00	+X.00	PUAAY00-PUAAY00	+X.00
Jet FOB Med	Prem	AAIDN00-AAIDN00				
		Cargoes CIF NWE/Basis ARA			**Cargoes FOB NWE**	
Prem Unl	+X.00	PGABH00-PGABH00	+X.00	+X.00	PGABI00-PGABI00	+X.00
Prem Unl 10ppm	+X.00	AAOPZ00-AAOPZ00	+X.00	+X.00	AAOPY00-AAOPY00	+X.00
Reg Unl	+X.00	PGACZ00-PGACZ00	+X.00	+X.00	PGADA00-PGADA00	+X.00
Nap Aug	+X.00	PAAAJ00-PAAAJ00	+X.00			
Nap Phy	+X.00	PAAAL00-PAAAL00	+X.00			
Jet	+X.00	PJAAU00-PJAAU00	+X.00	+X.00	PJAAV00-PJAAV00	+X.00
EN590(1)	+X.00	PPAQH00-PPAQH00	+X.00	+X.00	PPAQF00-PPAQF00	+X.00
10 PPM	+X.00	AAKWP00-AAKWP00	+X.00	+X.00	AAKWR00-AAKWR00	+X.00
ULSD	+X.00	AAIKO00-AAIKO00	+X.00	+X.00	AAIKM00-AAIKM00	+X.00
50ppm ULSD	+X.00	AAOQB00-AAOQB00	+X.00	+X.00	AAOQA00-AAOQA00	+X.00
0.2 RGO	+X.00	AAOQZ00-AAOQZ00	+X.00			
Gasoil.2	+X.00	POAAC00-POAAC00	+X.00	+X.00	POAAD00-POAAD00	+X.00
1 PCT		PUAAL00-PUAAL00		+X.00	PUAAM00-PUAAM00	+X.00
3.5 PCT	+X.00	PUABA00-PUABA00	+X.00	+X.00	PUABB00-PUABB00	+X.00
0.5-0.7 PCT S.R.				+X.00	PKABA00-PKABA00	+X.00
LS VGO(4)	+X.00	AAHMZ00-AAHMZ00	+X.00	+X.00	AAHMX00-AAHMX00	+X.00
HS VGO(4)	+X.00	AAHND00-AAHND00	+X.00	+X.00	AAHNB00-AAHNB00	+X.00
		Barges FOB Rotterdam	**150ppm-Barge diff - 50ppm**			
Unl 98	+X.00	PGAMR00-PGAMR00	+X.00			
Prem Unl	+X.00	PGABM00-PGABM00	+X.00	AAIJP00/AAIJP00	AALBJ00/AALBJ00	
Euro 50ppm	+X.00	AANWY00-AANWY00	+X.00			
Reg Unl	+X.00	PGADE00-PGADE00	+X.00			
MTBE	+X.00	PHAKZ00-PHAKZ00	+X.00	IPE Gasoil Avg 17.30(Ldn Time)		
Nap Phy	+X.00	PAAAM00-PAAAM00	+X.00	Jul PXAAJ00 IPE CODE		
Jet	+X.00	PJABA00-PJABA00	+X.00	Aug PXAAK00 IPE CODE		
10 PPM	+X.00	AAJUS00-AAJUS00	+X.00			
ULSD	+X.00	AAGMK00-AAGMK00	+X.00			
Gasoil.2	+X.00	POAAG00-POAAG00	+X.00			
1 PCT	+X.00	PUAAP00-PUAAP00	+X.00	Rotterdam Bunker 380 CST		
3.5 PCT	+X.00	PUABC00-PUABC00	+X.00	PUAYW00-PUAYW00		+X.00
LS VGO(4)	+X.00	AAHNF00-AAHNF00	+X.00			
HS VGO(4)	+X.00	AAHNI00-AAHNI00	+X.00			

** Assessment will be relabelled 350 ppm eff. Jan 1, 2005 as this quality is no longer tradeable within EU countries as a motor fuel.
** Assessments highlighted in red are to be discontinued Jan 1, 2005 because of specifications changes in line with EU regulations.

GASOLINE

European premium gasoline assessment reflects EN228 material for loading or deliver 10-25 days from date of publication. The detailed parameters for individual assessments are provided below.

SEASONALITY ISSUES ON GASOLINE

The switch in gasoline quality from summer to winter grade and vice versa may have a significant impact on gasoline prices in Europe. Platts typically has reflected winter spec material until April 1, after which summer grade only is reflected; similarly, Platts has reflected summer grade until October 1, after which winter grade only is reflected. In NWE and the Med, material up to 90 kPa is reflected in winter, and up to 60 kPa in summer.

Platts generally announces a phase-in period for the summer and winter grades on cargoes and barges, in which the incoming seasonal grade is given an increasing weighting in the assessment. For instance, in late summer 2004, Platts said it would begin to phase-in winter spec material on barges from Sep 22, 2004 and on cargoes from Sep 13, giving this grade increasing weighting up until Oct 1 when the assessments reflect winter spec only. In spring 2004, Platts said it would begin to phase-in summer spec material on barges from March 22 and on cargoes from March 12, giving this grade increasing weighting up until April 1 when the assessments reflected winter spec only.

Because Platts aims to synchronise the transition in seasonal qualities in its assessments with market practice, Platts may revise these timeframes at short notice if market practice changes in this regard.

PGAMN00 PREMIUM UNLEADED CARGOES CIF MED

Quality: The assessment represents EN 228 meeting Italian, French, and Spanish specifications with a maximum sulfur content of 150 ppm. The RON is 95 and the MON is 85. The specific gravity is 0.755 g/ml.

Size: The CIF assessment typically reflects parcels of 25,000-30,000mt each.

Location: The assessment is CIF basis Genoa/Lavera with normal CP options.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: Effective 2 January 2003, when grades in NWE move to 50 ppm, the Mediterranean cargo assessments remained unchanged and continued to reflect 150ppm sulphur specification only. Platts introduced new 50 ppm gasoline assessments FOB and CIF Med on July 1, 2004 to run concurrently with the existing 150 ppm assessments until the end of 2004. Assuming no change in the EU's implementation schedule for tightening sulfur standards in European gasoline, on the first trading day of January 2005, Platts plans to drop its Prem Unl 150 ppm assessments.

Dispatch Category	EB
12 Char. Symbol	PRPPRUGNACEK
9 Char. Symbol(s)	PPGMMGDCH · PPGMMGDCL
7 Char. Symbol	PGAMN00
Earliest Date	03-OCT-1994
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Prem Unl CIF Med Cargoes

PGAMP00 PREMIUM UNLEADED CARGOES FOB MED

Quality: The assessment represents EN 228 material meeting Italian, French, and Spanish specifications with a maximum sulfur content of 150 ppm. The RON is 95 and the MON is 85. The specific gravity is 0.755 g/ml. .

Size: The assessment typically reflects parcels of 25,000-30,000mt each, though FOB cargoes of up to 33,000 mt may be considered when arbitrage openings mean theseshipments are a significant market factor.

Location: FOB basis Italy but with other origins considered in the assessment on the basis that neither buyer nor seller is disadvantaged by any additional costs incurred if the material is non-Italian origin.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: The netback value from the US acts as a floor for the FOB Med assessment. To establish this floor, Platts calculates the freight netback to basis Augusta from New York Harbour using the Med-USAC Worldscale freight rate published in Platts clean tankerwire. Platts current practice is to calculate this value as the netback for oxygenated cargoes for delivery into the US Atlantic Coast. Platts uses the 37 kt assessment pro-rated to 33 kt.

Background: Effective 2 January 2003, when grades in NWE move to 50 ppm, the Mediterranean cargo assessments remained unchanged and continued to reflect 150ppm sulphur specification only. Platts introduced new 50 ppm gasoline assessments FOB and CIF Med on July 1, 2004 to run concurrently with the existing 150 ppm assessments until the

end of 2004. Assuming no change in the EU's implementation schedule for tightening sulfur standards in European gasoline, on the first trading day of January 2005, Platts plans to drop its Prem Unl 150 ppm assessment.

Dispatch Category	EB
12 Char. Symbol	PRPPRUMEDCEM
9 Char. Symbol(s)	PPGMMISCH · PPGMMISCL
7 Char. Symbol	PGAMP00
Earliest Date	03-OCT-1994
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Prem Unl FOB Med Cargoes

AAOPX00 PREMIUM UNLEADED 50 PPM CARGOES CIF MED

Quality: The Mediterranean unleaded cargo assessments represent EN 228 95 RON meeting Italian, French, and Spanish specifications. The RON for FOB and CIF Mediterranean cargoes is 95 and the MON is 85. The specific gravity for Mediterranean assessments is 0.755 g/ml. **Size:** Cargo assessments reflect parcels of 25,000-30,000mt each.

Location: Assessment is CIF basis Genoa/Lavera with normal CP options within the Med.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: The 50 ppm assessment was introduced July 1, 2004.

Dispatch Category	EB
12 Char. Symbol	AAOPX0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAOPX00
Earliest Date	01-JUL-2004
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Prem Unl 50 PPM CIF Med

AAOPW00 PREMIUM UNLEADED 50 PPM CARGOES FOB MED

Quality: The Mediterranean unleaded cargo assessments represent EN 228 95 RON meeting Italian, French, and Spanish specifications. The RON for FOB and CIF Mediterranean cargoes is 95 and the MON is 85. The specific gravity for Mediterranean assessments is 0.755 g/ml. Size: Cargo assessments reflect parcels of 25,000-30,000mt each, though FOB cargoes of up to 33,000 mt may be considered when arbitrage opening mean these are a significant market factor.

Location: FOB basis Italy but with other origins considered in the assessment on the basis that neither buyer nor seller is disadvantaged by additional costs incurred if non-Italy origin.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: The 50 ppm assessment was introduced July 1, 2004.

Dispatch Category	EB
12 Char. Symbol	AAOPW0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAOPW00
Earliest Date	01-JUL-2004
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Prem Unl 50 PPM FOB Med

PGABV00 PREMIUM 0.15 CARGOES FOB MED

Platts dropped its Premium 0.15 (leaded gasoline) CIF assessment in 2002 because of changes in European Union regulations which made the use of lead in gasoline illegal. Platts maintained its Premium 0.15 g/l FOB Med assessment at the industry's request. This assessment is determined using a fixed premium of $6/mt against the FOB Med Premium Unleaded gasoline assessment, the prevailing differential that was used before the change in EU regulations. Platts has proposed to drop the Premium 0.15 Fob Med assessment several times, but has continued the assessment at the request of market participants. Platts intends to drop the assessment from April 1, 2005.

Dispatch Category	EB
12 Char. Symbol	PRPPR1MEDCFS
9 Char. Symbol(s)	PPGPMISCH · PPGPMISCL
7 Char. Symbol	PGABV00
Earliest Date	01-MAY-1991
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Prem 0.15 FOB Med Cargoes

PGABH00 PREMIUM UNLEADED CARGOES CIF NWE

Quality: The NWE cargo assessments represent EN 228 95 RON material with a maximum sulfur content of 50 ppm and specific gravity of 0.755 g/ml. The Motor Octane (MON) number is 85.

Size: Cargo assessments reflect parcels of 10,000-30,000mt each, though on the CIF assessment parcels traded are currently most often in the 10-15,000 mt range.

Location: The assessment is CIF basis Rotterdam, with normal CP options within NWE

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: Effective 2 January 2003, FOB and CIF NWE cargo assessments reflected 50ppm sulphur specification only. Before that date, 150 ppm sulfur material was reflected in the assessment.

Dispatch Category	EB
12 Char. Symbol	PRPPRUNWECEO
9 Char. Symbol(s)	.
7 Char. Symbol	PGABH00
Earliest Date	01-JUN-1992
Vendors	BLM CQI DRI EMS FTP FUT KR RTR
SAR	
Description	Prem Unl CIF NWE Cargoes

PGABI00 PREMIUM UNLEADED CARGOES FOB NWE

Quality: The NWE cargo assessments represent EN 228 95 RON material with specific gravity of 0.755 g/ml. The Motor Octane (MON) number is 85. **Size:** Cargo assessments reflect parcels of 10,000-30,000mt each, though FOB cargoes of up to 33,000 mt may be considered when arbitrage opening mean these are a significant market factor.

Location: FOB NWE. Typically the assessment is normalized to Rotterdam, but material from other origins is considered at differentials according to market conditions.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: The netback value from the US acts as a floor for the FOB NWE assessment. To establish this floor, Platts calculates the freight netback to basis Rotterdam from New York Harbour using the NWE-USAC Worldscale freight rate published in Platts Clean tankerwire. Platts current practice is to calculate this value as the netback for oxygenated cargoes for delivery into the US Atlantic Coast. But Platts is monitoring market conditions to determine when and how the existing approach needs to be updated to ensure that the netback is in line with market practice.

Background: Effective 2 January 2003, FOB and CIF NWE cargo assessments reflected 50ppm sulphur specification only. Before that date, 150 ppm sulfur material was reflected in the assessment.

Dispatch Category	EB
12 Char. Symbol	PRPPRUNWECEQ
9 Char. Symbol(s)	.
7 Char. Symbol	PGABI00
Earliest Date	01-JUN-1992
Vendors	BLM CQI DRI EMS FTP FUT KR RTR
SAR	
Description	Prem Unl FOB NWE Cargoes

AAOPZ00 PREMIUM UNLEADED 10 PPM CARGOES CIF NWE

Quality: The NWE cargo assessments represent EN 228 95 RON material with a maximum suflur of 10 ppm. Specific gravity is basis 0.755 g/ml. The Motor Octane (MON) number is 85. The aromatics limit for much of 2004 was 42 but a limit of 35 is currently being phased in ahead of that standard becoming mandatory within the EU from January 1, 2005 because of changes in EU regulations.

Size: Cargo assessments reflect parcels of 10,000-25,000mt each, though FOB cargoes of up to 33,000 mt may be considered when arbitrage opening mean these are a significant market factor.

Location: The assessment is basis German North Sea with normal charter-party options within NWE.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: The assessment was introduced July 1, 2004.

Dispatch Category	EB
12 Char. Symbol	AAOPZ0000000
9 Char. Symbol(s)	.
7 Char. Symbol	AAOPZ00
Earliest Date	01-JUL-2004
Vendors	BLM CQI DRI EMS FTP FUT KR RTR
SAR	
Description	Prem Unl 10 PPM CIF ARA

AAOPY00 PREMIUM UNLEADED 10 PPM CARGOES FOB NWE

Quality: The NWE cargo assessments represent EN 228 95 RON material with a maximum suflur of 10 ppm. Specific gravity is basis 0.755 g/ml. The Motor Octane (MON) number is 85. The aromatics limit for much of 2004 was 42 but a limit of 35 is currently being phased in ahead of that standard becoming mandatory within the EU from January 1, 2005 because of changes in EU regulations.

Size: Cargo assessments reflect parcels of 10,000-25,000mt each, though FOB cargoes of up to 33,000 mt may be considered when arbitrage opening mean these are a significant market factor.

Location: FOB NWE. Typically the assessment is normalized to

Rotterdam, but material from other origins is considered at differentials according to market conditions.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: The assessment was introduced July 1, 2004.

Dispatch Category	EB
12 Char. Symbol	AAOPY0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAOPY00
Earliest Date	01-JUL-2004
Vendors	BLM CQI DRI EMS FTP FUT KR RTR
SAR	
Description	Prem Unl 10 PPM FOB ARA

PGACZ00 REGULAR UNLEADED CARGOES CIF NWE

Quality: Assessments are based on specific gravity of 0.745 grams per liter; the RON is typically 91 and the MON 82.5.

Size: Cargo assessments reflect parcels of 10,000-25,000mt each.

Location: The assessment is basis German North Sea with normal charter-party options within NWE.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: Effective 2 January 2003, FOB and CIF NWE cargo assessments reflected 50ppm sulphur specification only.

Dispatch Category	EB
12 Char. Symbol	PRPGU$NWECIF
9 Char. Symbol(s)	·
7 Char. Symbol	PGACZ00
Earliest Date	08-FEB-1988
Vendors	BLM CQI DRI EMS FTP FUT KR RTR
SAR	
Description	Reg Unl CIF NWE Cargoes

PGADA00 REGULAR UNLEADED CARGOES FOB NWE

Quality: Assessments are based on specific gravity of 0.745 grams per liter, the RON is typically 91 and the MON 82.5.

Size: Cargo assessments reflect parcels of 10,000-25,000mt each.

Location: FOB NWE. Typically the assessment is normalized to Rotterdam, but material from other origins is considered at differentials according to market conditions.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: Effective 2 January 2003, FOB and CIF NWE cargo assessments reflected 50ppm sulphur specification only.

Dispatch Category	EB
12 Char. Symbol	PRPGU$NWECIH
9 Char. Symbol(s)	·
7 Char. Symbol	PGADA00
Earliest Date	01-JUN-1992
Vendors	BLM CQI DRI EMS FTP FUT KR RTR
SAR	
Description	Reg Unl FOB NWE Cargoes

PGAMR00 UNLEADED 98 BARGES FOB ARA

Quality: The NWE barge assessments represent German grade with specific gravity of 0.755 g/ml and a maximum benzene content of 1%. The RON is 98 and the MON is 88.

Size: Barge assessments reflect parcels of 1,000-5,000mt each.

Location: Gasoline barges are typically basis AR(Amsterdam/Rotterdam). Any transactions occurring at other loading ports in NWE (including Antwerp) are normalized to AR basis on an incremental freight differential basis into the main consuming area, which is typically Germany.

Timing: Reflects material for loading 2-15 days from date of publication, with prices normalized to the mid-point of this loading window.

Other: Because this assessment is illiquid, it is generally established through a differential to Prem Unl barges.

Background: Platts has made a number of changes in recent years in the maximum sulphur content in line with EU regulations on gasoline quality. Eff Jan 2 2002, Platts Unl 98 assessment reflected 50ppm sulfur material in line with prevailing market trends. Platts clarified that in 2001 the Unl 98 assessment already incorporated 50ppm as the traded grade in ARA. Platts introduced experimental 10ppm barge assessments for the above, effective 1 October to 31 December 2002 to run in tandem with 50ppm barge assessments. Unleaded 98 FOB Rotterdam barge assessments have reflected 10 ppm maximum sulfur effective 2 January 2003.

Dispatch Category	EB
12 Char. Symbol	PRPM9URTTBFO

9 Char. Symbol(s)	.
7 Char. Symbol	PGAMR00
Earliest Date	03-OCT-1994
Vendors	BLM CQI DRI EMS FTP FUT KR RTR
SAR	
Description	Unl 98 FOB R'dam Barges

PGABM00 PREMIUM UNLEADED BARGES FOB ARA

Quality: The barge assessments represent 95 RON, 85 MON German grade material with a specific gravity basis of 0.755 g/ml. The maximum sulfur is 10 ppm.

Size: Barge assessments reflect parcels of 1,000-5,000mt each.

Location: Gasoline barges are typically basis AR(Amsterdam/Rotterdam). Any transactions occurring at other loading ports in NWE (including Antwerp) are normalized to AR basis on an incremental freight differential basis into the main consuming area, which is typically Germany.

Timing: Reflects material for loading 2-15 days from date of publication, with prices normalized to the mid-point of this loading window.

Other: The assessment has reflected 10 ppm maximum sulfur from January 2, 2003. Platts introduced experimental 10ppm barge assessments effective 1 October to 31 December 2002 to run in tandem with 50ppm barge assessments. Platts has made a number of changes in recent years in the maximum sulphur content in line with EU regulations on gasoline quality. Platts introduced a 50ppm assessment for premium unleaded barges FOB Rotterdam as an experimental assessment effective 1 October 2001 to run until 31 December, 2001. The premium unleaded barge assessment became 50ppm on Jan 2, 2002.

Dispatch Category	EB
12 Char. Symbol	PRPPRURTTCEY
9 Char. Symbol(s)	.
7 Char. Symbol	PGABM00
Earliest Date	01-JUN-1992
Vendors	BLM CQI DRI EMS FTP FUT KR RTR
SAR	
Description	Prem Unl FOB R'dam Barges

AANWY00 EURO 50 PPM BARGES FOB ARA

Quality: Assessments reflect Benelux spec material, and are based on specific gravity of 0.755 grams per liter, the RON is typically 95 and the MON 85. The assessment reflects a maximum sulfur of 50 ppm.

Location: The 50ppm barge assessment reflects spot activity in the Amsterdam Rotterdam and Antwerp area, with the value normalized to Rotterdam basis.

Size: Barge assessments reflect parcels of 1,000-5,000mt each.

Timing: Reflects material for loading 2-15 days from date of publication, with prices normalized to the mid-point of this loading window.

Other: N/A

Background: The 50 ppm barge assessment was introduced April 1, 2004. Prior to that Platts had assessed the 50 ppm market as a differential to 10 ppm (see barge differnenial assessments below).

Dispatch Category	EB
12 Char. Symbol	AANWY0000000
9 Char. Symbol(s)	.
7 Char. Symbol	AANWY00
Earliest Date	01-APR-2004
Vendors	BLM CQI DRI EMS FTP FUT KR RTR
SAR	
Description	Prem Unl 50 PPM FOB AR

PGADE00 REGULAR UNLEADED BARGES FOB ARA

Quality: Assessments are based on specific gravity of 0.745 grams per liter, the RON is typically 91 and the MON 82.5. The maximum sulfur is 10 ppm.

Location: Gasoline barges are typically basis AR(Amsterdam/Rotterdam). Any transactions occurring at other loading ports in NWE (including Antwerp) are normalized to AR basis on an incremental freight differential basis into the main consuming area, which is typically Germany.

Size: Barge assessments reflect parcels of 1,000-5,000mt each.

Timing: Reflects material for loading 2-15 days from date of publication, with prices normalized to the mid-point of this loading window.

Other: N/A

Background: The assessment has reflected 10 ppm maximum sulfur since 2 January 2003. Platts introduced experimental 10ppm barge assessments for the above, effective 1 October to 31 December 2002 to run in tandem with 50ppm barge assessments. Platts has made a number of changes in recent years in the maximum sulphur content in line with EU regulations on gasoline quality. Effective Jan 2, 2002, the sulfur content of the assessment for Regular Unleaded barges became 50ppm in line with premium unleaded. On 1 October 2001, Platts introduced the assessment for ultra low sulfur 50ppm regular unleaded barges as a separate experimental assessment to run until 31 December 2001, when the new quality was reflected in the main assessment.

Dispatch Category	EB
12 Char. Symbol	PRPGU$RTTCIP

9 Char. Symbol(s)	·
7 Char. Symbol	PGADE00
Earliest Date	02-APR-1987
Vendors	BLM CQI DRI EMS FTP FUT KR RTR
SAR	
Description	Reg Unl FOB R'dam Barges

AALBJ00 GASOLINE BARGE QUALITY DIFFERENTIAL

Quality: The assessment reflects the differential between 10 ppm and 50 ppm material

Size: 1,000-5,000 mt parcels

Location: FOB ARA basis Rotterdam

Timing: 2-15 days from date of publication

Other: The mid-point of the differntial is used to establish the value of the Prem 50 ppm assessment.

Background: Effective 2 January 2003, Platts introduced an assessment of the differential of prem unl 50ppm to prem unl 10ppm barges, basis FOB Rotterdam.

Note: Platts has proposed to discontinue the 50 vs 10ppm barge differential assesment, effective Jan 1 2005 and has invited feedback on this proposal.

Dispatch Category	EB
12 Char. Symbol	AALBJ0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AALBJ00
Earliest Date	02-JAN-2003
Vendors	BLM CQI DRI EMS FTP FUT KR RTR
SAR	
Description	Barge Differential 50 PPM-10 PPM

AAIJP00 GASOLINE BARGE QUALITY DIFFERENTIAL

Quality: The assessment reflects the differential between 50 ppm and 150 ppm material

Size: 1,000-5,000 mt parcels

Location: FOB ARA basis Rotterdam

Timing: 2-15 days fro0m date of publication

Other: N/A

Background: Platts introduced its assessment of the differential between prem unl 150ppm barges and prem unl 50ppm barges on Jan 2, 2002. Platts discontinued this differential assessment Oct 1 2004.

PHAKZ00 MTBE BARGES

Quality: Platts quotes MTBE in Rotterdam complying with T2 (duty paid) status. In Northwest Europe, the quote is for product with a minimum purity of 98%, a maximum water content of 1,000 ppm and a maximum methanol content of 1.5% of the total weight.

Location: Northwest European assessments reflect sales made on an FOB Rotterdam basis, and no adjustments are made to reflect handling costs.

Size: The assessment reflects barges of 1,000-5,000 mt. Cargoes of a minimum 5,000 mt may be taken into account, with values netted back to a FOB Rotterdam basis. Smaller lots are only used as a guide in the absence of any deals. All FOB assessments are for product ex-refinery, ex-storage, and ex-terminal in the Rotterdam area. Aside from specific details listed above in Basis and Location, all other business concluded on the basis of FOB ARA or other northwest ports is used only as a guide.

Timing: Assessments for MTBE are 3-15 days forward.

Other: Daily MTBE assessments are published in European Marketscan and Platts Petrochemical Alert. The Friday daily assessments also appear in the Platts Europe & Americas regional editions of Platts Petrochemical Scan. Weekly Averages: Platts publishes weekly averages for daily MTBE assessments in Northwest Europe. These appear in Platts Europe & Americas Petrochemical Scan published on Fridays. These averages represent an arithmetic average of the daily assessments as published in Platts Petrochemical Alert.

Dispatch Category	EB
12 Char. Symbol	PCPMTBRTTANE
9 Char. Symbol(s)	PHYPRTAAH · PHYPRTAAL
7 Char. Symbol	PHAKZ00
Earliest Date	22-JUN-1992
Vendors	BLM CQI DRI EMS FTP FUT KR RTR
SAR	
Description	MTBE FOB AR MOC

NAPHTHA

PAAAL00 CIF NWE NAPHTHA CARGOES

Quality: The CIF NWE cargo assessment reflects open spec material with a min 65 paraffin content and a typical specific gravity of 0.69 to 0.73 g/ml. Other qualities – for instance 70-min paraffins and pipe spec — may be taken into account when traded but these may command a premium or discount to cargoes fitting Platts' typical specifications. The assessment is always normalized to the open spec quality naphtha and any market indicator that fits those parameters overrides signals

stemming from other quality cargoes. The premium or discount to be applied will be at the reporter's discretion, based on relevant market activity. Platts products assessments are based on merchantable grades. Bids/offers that exclude legitimate supply sources may be deemed restrictive and excluded from the assessment process. As an example, naphtha bids that exclude Tees as a supply source can not be taken into account for assessment purposes. Likewise, naphtha with larger than normal mercury levels may not be considered in the assessment process. The maximum mercury considered in the assessment is 5 parts per billion.

Size: The physical assessments reflect parcels of 12,500 mt +/- a maximum 10% operational tolerance, full or part-cargo. A cargo meeting these volume specifications meets the standard and overrides signals stemming from other cargo sizes. Specific volumes in the range 10,000-15,000 mt with a maximum 10% operational tolerance, full or part-cargo, may be considered in the assessment if any other clear indicators are lacking. Other cargo sizes —for example 10-15,000 mt sellers's option or cargoes up to 30,000 mt may be taken into account when traded but these may command a premium or discount to cargoes fitting Platts' typical specifications. The premium or discount to be applied will be at the reporter's discretion, based on relevant market activity.

Location: CIF basis Rotterdam. Where part-cargoes are delivered CIF basis Rotterdam, it is assumed that the buyer should not be disadvantaged by the seller's decision to not deliver a full cargo. Therefore Platts will tend to reflect deals in which charter party and demurrage paid by the buyer is on a pro-rata basis to destinations in NWE, even when these are outside the ARA range.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Nomination procedure: Platts will consider for assessment purposes deals in which the seller gives five days notice of the three-day delivery window, with three-day notice of vessel nomination. Alternative procedures may be requested by trading coutnerparties but Platts standard is 5 days notice of the narrower window. Where a seller offers the full Platts window, Platts will consider as most valid for assessment purposes those offers which give the buyer the option to choose the 5-day range in which he will take delivery. Where a seller bids the full Platts window, Platts will consider as most valid for assessment purposes those bids which give the seller the option to choose the 5-day loading range in which he will make delivery. Platts will then factor in or out the relevant contango or backwardation structure in the assessment.

Other: Platts recognizes that certain companies have legal constraints that prevent them trading with certain counterparties, or taking material from certain origins. Platts will consider bids and offers under standard industry terms and conditions, including those which are consistent with national legislation, for instance for US companies which are unable to trade in materials of certain origin. Platts accepts bids and offers on either a fixed price or a floating (quotes-linked) basis. Platts may incorporate such quotes-linked indications in making its physical assessments, by adding spot differentials or discounts to the underlying swaps, normalized using the time gradient of the market. Fixed price and floating price indications will in general be normalized to reflect the midpoint of the loading/delivery ranges assessed.

Dispatch Category	EB
12 Char. Symbol	PRPNPHNWECQC
9 Char. Symbol(s)	PPNANEDDH · PPNANEDDL
7 Char. Symbol	PAAAL00
Earliest Date	19-NOV-1990
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Naphtha CIF NWE Physical

PAAAJ00 NAPHTHA PAPER CIF NWE

The assessment reflects swap market values for one month ahead of publication. The rollover is on the first day of each month. Therefore on June 1, July swaps are quoted.

Background: In the past, the rollover was the first working day after the 25th of the month. Therefore, on Jan 26 the quoted month was moved from February to March.

Dispatch Category	EB
12 Char. Symbol	PRPNPHNWECPY
9 Char. Symbol(s)	PPNANEDAH · PPNANEDAL
7 Char. Symbol	PAAAJ00
Earliest Date	19-NOV-1990
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Naphtha CIF NWE Paper

PAAAH00 NAPHTHA CARGOES CIF MED

Quality: The cargo assessments include both full range and paraffinic grades, with prices normalized to reflect 65 min paraffins.

Size: 27,500 mt

Location: CIF basis Lavera.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: The differential between the FOB Med and CIF Med naphtha assessment is evaluated using the freight value between Alexandria and Lavera. This is calculated using Platts cross-Med clean tanker assessments for 27,500 mt naphtha cargoes plus an allowance of $3/mt for port costs. Adjustments to the freight cost are made on the first working day of January

each year to reflect updated Worldscale flat rates as published by Worldscale.

Background: Platts introduced the new methodology for the freight calculation on Jul 1, 2004. Before then, FOB values were assessed as a differential to the CIF Med assessment, but using the same freight calculation FOB/CIF. Effective Jan 2, 2001, the adjustment for superior tonnage was discontinued.

Dispatch Category	EB
12 Char. Symbol	PRPNPHGNACPU
9 Char. Symbol(s)	PPNAMGDCH · PPNAMGDCL
7 Char. Symbol	PAAAH00
Earliest Date	03-SEP-1979
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Naphtha CIF Med Cargoes

PAAAI00 NAPHTHA CARGOES FOB MED

Quality: The cargo assessments include both full range and paraffinic grades, with prices normalized to reflect 65 min paraffins.

Size: 27,500 mt

Location: FOB basis Alexandria. Effective July 1, 2004, Platts has set the FOB Med Naphtha cargo assessment as a freight differential to the CIF NWE assessment based on a base rate of $7.77 per mt, which is calculated as a basket of several Worldscale flat rates. The actual freight applied to the netback fluctuates daily based on changes in Platts UKC-Med assessments for 27.5kt naphtha cargoes, applied against the $7.77/mt rate. These rates can be found in Platts Clean Tanker Wire. Platts will adjust the flat rate in line with 2005 WS rates on Jan 1, 2005.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: Platts introduced the new methodology for the freight calculation on Jul 1, 2004. Before then, FOB values were assessed as a differential to the CIF Med assessment, using the freight value between Alexandria and Lavera. This was calculated using Platts cross-Med clean tanker assessments for 27,500 mt naphtha cargoes plus an allowance of $3/mt for port costs.

Dispatch Category	EB
12 Char. Symbol	PRPNPHMEDCPW
9 Char. Symbol(s)	PPNAMISCH · PPNAMISCL
7 Char. Symbol	PAAAI00
Earliest Date	03-SEP-1979
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Naphtha FOB Med Cargoes

PAAAM00 NAPHTHA BARGES FOB ARA

Quality: Barge naphtha assessments notionally reflect material, with prices normalized to reflect 65 min paraffins.

Size: Barge assessments notionally reflect parcels of 1,000-5,000mt each.

Location: FOB ARA basis Rotterdam.

Timing: Barge assessments reflect parcels for loading 2-15ays forward.

Other: Because of illiquidity in this market, the barge assessment is often made based on comparability with cargoes CIF NWE taking account of freight costs. Bids and offers may be considered on a case-by-case basis to determine if they are typical and repeatable.

Background: In the past, Platts has tended to reflect the most recent trade on barges, and has reflected this in the cargo-barge differential. Because this market is extremely illiquid, Platts now realigns the cargo-barge spread in line with prevailing freight rates on a daily basis.

Dispatch Category	EB
12 Char. Symbol	PRPNPHRTTCQE
9 Char. Symbol(s)	PPNARTSBH · PPNARTSBL
7 Char. Symbol	PAAAM00
Earliest Date	03-SEP-1979
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Naphtha FOB R'dam Barges

JET FUEL

PJAAU00 CARGOES CIF NWE

Quality: The assessments reflect standard commercial Jet-A1 specifications, as defined by UK Ministry of Defence in DEFSTAN 91/91 latest issue. Latest issue 4 was published June 14, 2002. The UK Ministry of Defence is expected to release issue 5 in 2005. Typical standards as published by the DEFSTAN are as follows: Sulfur is 0.3% maximum, specific gravity is 0.775-0.840 g/ml, flash point is 38 degrees C minimum, freeze point is minus 47 degrees C maximum.

Size: Cargo assessments reflect standard tradable parcels. Because of a change in the production and consumption patterns in Europe, spot parcels have become increasingly larger with typical spot trade within 25-45,000 mt with a standard emerging to around 30,000mt.. Platts takes into account spot deliveries made in full or part cargoes at seller's options. Typically the assessment is normalized to 30 kt full or part-cargo, seller's option, delivered basis a "par" port within NWE where the seller guarantees lay-

time of 36 plus 6 hours to the buyer of each parcel. Full-cargo only bids will be considered restrictive.

Location: CIF NWE. Typically, cargoes delivered into ARA, UK and northern France are considered in the assessment but because trading patterns are diverse, no single base base location is reflected. Deliveries into Scandinavia including Copenhagen are not considered, however. Offers are assumed to carry a normal range of CP options within NWE. Where an offer is made without CP options, it is regarded restrictive.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: "Par" ports are typically considered to be those with flexibility to handle a variety of cargo sizes from MR to LR. Offers or bids basis non-par ports may considered in the assessment, but these will typically be normalized to the standard. Typical "par" ports within NWE include Fawley, Milford Haven, Shell Haven. Royal Portbury Docks is considered as par port in those situations when the seller absorbs the extra discharge costs and when offers/bids are made that do not penalize the counterparty based on tidal draft conditions. Le Havre is typically reflected at a slight discount to a "par" port as this port can receive very large cargoes that may not fit in other locations, while smaller ports with vessel-size restrictions such as Isle of Grain may be considered at a premium to the standard.

Background: DEFSTAN 91/91 was formerly referred to as DERD 2494.

Dispatch Category	EB
12 Char. Symbol	PRPJK$NWECLS
9 Char. Symbol(s)	PPJKNEDCH · PPJKNEDCL
7 Char. Symbol	PJAAU00
Earliest Date	03-SEP-1979
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Jet Kero CIF NWE Cargoes

PJAAV00 CARGOES FOB NWE

Quality: The assessments reflect standard commercial Jet-A1 specifications, as defined by UK Ministry of Defence in DEFSTAN 91/91 latest issue. Latest issue 4 was published June 14, 2002. The UK Ministry of Defence is expected to release issue 5 in 2005. Sulfur is 0.3% maximum, specific gravity is 0.775-0.840 g/ml, flash point is 38 degrees C minimum, freeze point is minus 47 degrees C maximum.

Timing: Cargo assessments reflect parcels loading or delivered 10-25 days forward.

Size: Cargo assessments reflect standard tradable parcels. Because of a change in the production and consumption patterns in Europe, spot parcels have become increasingly larger with typical spot trade within 25-45,000 mt. Platts will also take into account spot deliveries made in full or part cargoes.

Location: FOB NWE.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: The FOB NWE assessment is typically derived from the CIF value based on a freight differential representing freight costs for handy size vessels on typical routes within NWE.

Background: DEFSTAN 91/91 was formerly referred to as DERD 2494.

Dispatch Category	EB
12 Char. Symbol	PRPJK$NWECLU
9 Char. Symbol(s)	PPJKNESCH · PPJKNESCL
7 Char. Symbol	PJAAV00
Earliest Date	01-JUL-1986
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Jet Kero FOB NWE Cargoes

PJABA00 JET BARGES FOB ARA

Quality: The assessments reflect standard commercial Jet-A1 specifications, as defined by UK Ministry of Defence in DEFSTAN 91/91 latest issue. Latest issue 4 was published June 14, 2002. The UK Ministry of Defence is expected to release issue 5 in 2005. Typical DEFSTAN specifications are as follows: Sulfur is 0.3% maximum, specific gravity is 0.775-0.840 g/ml, flash point is 38 degrees C minimum, freeze point is minus 47 degrees C maximum.

Size: Barge assessments reflect parcels of 2,000-5,000mt each. Parcels of 1,000 mt are not considered in the assessment.

Location: Jet barges are basis FOB Rotterdam. Any transactions occurring at other loading ports in NWE are typically normalized on a freight differential basis back to Rotterdam. Platts considers bids and offers from Rotterdam, Antwerp, Amsterdam, Ghent and Flushing.

Timing: Reflects material for loading 2-15 days from date of publication, with prices normalized to the mid-point of this loading window.

Other: N/A

Background: DEFSTAN 91/91 was formerly referred to as DERD 2494.

Dispatch Category	EB
12 Char. Symbol	PRPJK$RTTCMC
9 Char. Symbol(s)	PPJKRTSBH · PPJKRTSBL

7 Char. Symbol	PJABA00
Earliest Date	03-SEP-1979
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Jet FOB R'dam Barges

AAIDL00 JET AV FUEL FOB MED

Quality: The assessments reflect standard commercial Jet-A1 specifications, as defined by UK Ministry of Defence in DEFSTAN 91/91 latest issue. Latest issue 4 was published June 14, 2002. Sulfur is 0.3% maximum, specific gravity is 0.775-0.840 g/ml, flash point is 38 degrees C minimum, freeze point is minus 47 degrees C maximum.

Size: 27.5 kt.

Location: FOB Med basis Augusta

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: Details of the calculation methodology for Jet Av Fuel FOB Med are as follows: The calculation takes the spot Worldscale rate as published in Platts Marine Alert and Platts Clean Tankerwire, for jet fuel Med-Northwest Europe pro-rated from 30kt to 27.5kt. This total is multiplied by the flat rate Augusta-Rotterdam as defined by Worldscale, and the appropriate allowance for harbor dues at Rotterdam is then added. The result of this formula is rounded to the nearest $0.25/mt and subtracted from the mean of the CIF Northwest European jet assessment, to define the FOB Med mean. The spread low to high on the FOB Med is set $0.50/mt either side of this mean.

Platts Marine Department assess the worldscale rate for jet cargoes for the route Med-Northwest Europe. The rate has been published on a daily basis in Platts Marine Alert and in the daily Clean Tankerwire, effective Nov 1, 2001. This rate is applied to determine the netback calculation of the FOB Mediterranean Jet Aviation Fuel assessment.

Adjustments to the formula are made on the first working day of January each year to reflect updated Worldscale flat rates as published by Worldscale.

Background: Effective Nov 1, 2001, Platts introduced a new FOB Mediterranean assessment entitled Jet Aviation Fuel. The Jet Aviation Fuel assessment was published at the bottom of the Mediterranean spot assessments table until April 30, 2003, after which it replaced Jet Fob Med in the main table. The Jet Av Fuel FOB Med assessment is a reflection of a proposal issued in June 2001 to more accurately reflect the cost of marine freight between the Med and NWE.

Dispatch Category	EB
12 Char. Symbol	AAIDL0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAIDL00
Earliest Date	01-NOV-2001
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	AvJet Fuel FOB Med

AAIDN00 MED JET FUEL PREMIUM ASSESSMENT

Quality: The assessments reflect standard commercial Jet-A1 specifications, as defined by UK Ministry of Defence in DEFSTAN 91/91 latest issue. Latest issue 4 was published June 14, 2002. Sulfur is 0.3% maximum, specific gravity is 0.775-0.840 g/ml, flash point is 38 degrees C minimum, freeze point is minus 47 degrees C maximum. Higher quality, low sulfur jet grades, for instance those meeting DPK standards, are not directly included in the assessment but may be used indicatively.

Size: Cargo assessments reflect standard tradable parcels on MR size vesssels.

Location: basis FOB Italy. Jet fuel from a wide geographic area bounded approximately by North Africa, Greece and Spain may form the basis of the assessment, with freight differentials applied to ensure consistency.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: In line with Jet Fuel Subscriber Notes published in October and November 2001, Platts from Jan 2 2002 to Dec 31 2002 published an assessment to reflect the premium paid on a spot basis to FOB Med jet. From Jan 2 2003, the Platts premium assessment has reflected the premium paid to the Jet Aviation Fuel assessment. The premium assessed is for jet fuel cargoes meeting normal aviation fuel requirements. Platts clarified that the FOB Med jet premium is a separate assessment, and the premium will not be included in the formula used to calculate Jet Aviation Fuel.

Dispatch Category	EB
12 Char. Symbol	AAIDN0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAIDN00
Earliest Date	02-JAN-2002
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	FOB Med Jet Prem Cargo

PJAAT00 Jet Fob Med (assessment discontinued May 1, 2003)

Platts introduced a formula to calculate FOB Med jet as a netback from NWE CIF cargo assessment on Oct 1, 1998.

The formula for FOB Med jet took the Worldscale flat rate from Augusta to Rotterdam plus harbor dues at Rotterdam based on cts/mt of vessel converted to metric tonnes basis. The flat rate was then multiplied by Platts clean tanker rate assessment for Med-NWE cargoes. The spot tanker rate assessment was first pro-rated from 30,000mt to 25,000mt and then multiplied by 1.3 to reflect the added cost for superior tonnage. Adjustments to the formula were made on the first working day of January each year to reflect updated Worldscale flat rates as published by Worldscale.

Platts extended its original January 2, 2003 deadline for dropping its Jet FOB Med assessment. Platts continued to publish an assessment for Jet FOB MED until April 30, 2003, simultaneously with the Jet Av Fuel FOB Med assessment which it had published since November 2002.

ULSD

Seasonal changes: Platts set out its schedule for changing the seasonal specification of diesel fuels in early spring and late summer, ahead of the switch from winter to summer and then summer to winter grades. Platts intends to follow broadly similar schedules each year, but the exact dates may be varied in line with prevailing patterns of refining activity and trading liquidity. As trading and seasonal patterns change from year to year, any schedule is provisional and subject to change with only limited notice.

AAKWP00 10 PPM DIESEL CIF NWE

Quality: The ULSD 10 ppm CIF NWE assessment reflects German quality diesel fuel with a maximum sulfur of 10 ppm. German spec reflects a reference density of 0.845 g/l.

Size: Typical cargo sizes of 10-20,000 mt are reflected. Platts currently normalizes to reflect the smaller end of the range of parcel-sizes as this is the prevailing cargo size traded at present. Platts monitors changes in shipping practices to ensure its assessments are in line with shipping logistics.

Location: The CIF assessment reflects German North Sea delivery basis Hamburg with normal CP options within NWE calculated pro rata at cost.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: Platts started the CIF NWE 10ppm cargo assessment effective December 1, 2002. The new assessment has run in tandem with the existing NWE ULSD cargo assessment which currently reflects 50ppm material.

Note: For typical qualities traded in individual countries, see attached table.

Dispatch Category	EB
12 Char. Symbol	AAKWP0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAKWP00
Earliest Date	02-DEC-2002
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Gsl ULSD 10 PPM CIF NWE Crg

AAKWR00 10 PPM DIESEL FOB NWE

Quality: The ULSD 10 ppm FOB NWE assessment reflects German quality diesel fuel with a maximum sulfur of 10 ppm. German spec reflects a reference density of 0.845 g/l.

Size: Typical cargo sizes of 10-20,000 mt are reflected. Platts currently normalizes to reflect the smaller end of the range of parcel-sizes as this is the prevailing cargo size traded at present. Platts monitors changes in shipping practices to ensure its assessments are in line with shipping logistics.

Location: FOB NWE.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: Typically the FOB assessment is derived at a freight differential to the CIF assessment. Recently, a flat rate of 4.02 has been reflected based on the freight between Hamburg and origin ports including Wilhelmshaven, Porvoo, Tees, Slagen, Klaipeda, Ventspils, and Antwerp. Platts will adjust the flat rate in line with 2005 WS rates on Jan 1, 2005.

Background: Platts started the FOB NWE 10ppm cargo assessment effective December 1, 2002. The new assessment has run in tandem with the existing NWE ULSD cargo assessment which currently reflects 50ppm material.

Dispatch Category	EB
12 Char. Symbol	AAKWR0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAKWR00
Earliest Date	02-DEC-2002
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Gsl ULSD 10 PPM FOB NEW Crg

AAIK000 ULSD CARGOES CIF NWE

Quality: The ULSD CIF NWE assessment reflects UK spec diesel fuel which currently has a maximum sulfur of 50 ppm. UK spec ULSD ranges from 0.2-0.835 g/l and the assessment reflects a

reference density of 0.835 g/l.

Size: Typical cargo sizes of 10-20,000 mt are reflected. Platts currently normalizes to reflect the smaller end of the range of parcel-sizes as this is the prevailing cargo size traded at present. Platts monitors changes in shipping practices to ensure its assessments are in line with shipping logistics.

Location: The CIF assessment reflects UK east coast delivery basis Thames with normal UK delivery options.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: The assessment was introduced February 1, 2002 and originally represented a high-low range including Dutch/German and UK spec ULSD. Platts stated when it introduced the assessment that the qualities reflected would be reviewed in the light of prevailing liquidity patterns. The switch to UK spec followed Germany's move to 10 ppm sulphur diesel.

Dispatch Category	EB
12 Char. Symbol	AAIKO0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAIKO00
Earliest Date	01-FEB-2002
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	ULSD CIF NWE Cargo $/Mt

AAIKM00 ULSD CARGOES FOB NWE

Quality: The ULSD FOB NWE assessment reflects UK spec diesel fuel which currently has a maximum sulfur of 50 ppm. UK spec ULSD ranges from 0.2-0.835 g/l and the assessments reflect a reference density of 0.835 g/l. **Size:** Typical cargo sizes of 10-20,000 mt are reflected. Platts monitors changes in shipping practices to ensure its assessments are in line with shipping logistics.

Location: FOB NWE. Typically the FOB assessment is derived at a freight differential to the CIF assessment. Recently, a flat rate of 4.42 has been reflected based on the following routes: Wilhelmshaven, Porvoo, Tees, Slagen, Klaipeda, Ventspils and Antwerp. Platts will adjust the flat rate in line with 2005 WS rates on Jan 1, 2005.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: Typically the FOB assessment is derived at a freight differential to the CIF assessment. Recently, a flat rate of 4.42 has been reflected based on handy size freight (20 kt) for Thames (London) destination and origins including Wilhelmshaven, Porvoo, Tees, Slagen, Klaipeda, Ventspils and Antwerp. Platts will adjust the flat rate in line with 2005 WS rates on Jan 1, 2005.

Background: The assessment was introduced February 1, 2002 and originally represented a high-low range including Dutch/German and UK spec ULSD. Platts stated when it introduced the assessment that the qualities reflected would be reviewed in the light of prevailing liquidity patterns. The switch to UK spec followed Germany's move to 10 ppm sulphur diesel.

Dispatch Category	EB
12 Char. Symbol	AAIKM0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAIKM00
Earliest Date	01-FEB-2002
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	ULSD FOB NWE Cargo $/Mt

AAOQB00 50 PPM ULSD CIF NWE

Quality: The 50 ppm ULSD CIF NWE assessment reflects Benelux and French quality diesel fuel with a maximum sulfur of 50 ppm and SG in the range 0.82-0.845. The reference density is 0.845 g/l.

Size: Typical cargo sizes of 10-25,000 mt are reflected. Platts currently normalizes to reflect the standard flexi volume of 20,000 mt as this is the prevailing cargo size at present. Note that Platts is considering whether to inclusde North Spain as part of the normal range of deliveries. Platts decision is likely ot be made at some point later in 2005.

Location: The CIF assessment is basis Havre with normal CP options in the Hamburg to Bordeaux range calculated pro rata at cost.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: The typical CP options in flexi contracts are currently being reviewed by Platts. Platts issued a subscriber note in November 2004 as follows:

DIESEL SUBSCRIBER NOTE: Platts invites industry feedback regarding typical CP options for French/Benelux spec 50 ppm ULSD cargoes sold in NWE. Specifically, Platts wants feedback on whether North Spain or North Spain+Portugal options should be considered as typical in flexi contracts. Platts considers cargo sizes of 10-25kt in its 50 ppm ULSD CIF and FOB NWE assessments, but values are currently normalized to 20kt as this is the prevailing cargo size. Please send comments by December 3 to Annalisa_Jeffries @platts.com and Patrick_gourlay@platts.com, with CC to Jorge_Montepeque@platts.com and Peter_Stewart@platts.com.

Background: Platts introduced the 50 ppm ULSD assessments reflecting Benelux and French quality on July 1, 2004. which has run concurrently with the ULSD assessments reflecting UK spec.

Dispatch Category	EB
12 Char. Symbol	AAOQB0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAOQB00
Earliest Date	01-JUL-2004
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	ULSD 50 PPM CIF ARA

AAOQA00 50 PPM ULSD FOB NWE

Quality: The 50 ppm ULSD FOB NWE assessment reflects Benelux and French quality diesel fuel with a maximum sulfur of 50 ppm and SG in the range 0.82-0.845. The reference density is 0.845 g/l.

Size: Typical cargo sizes of 10-25,000 mt are reflected. Platts currently normalizes to reflect the standard flexi volume of 20,000 mt as this is the prevailing cargo size at present.

Location: FOB NWE.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: Typically the FOB assessment is derived at a freight differential to the CIF assessment. Recently, a flat rate of 5.11 based on handy size freight between origin ports including Amsterdam, Rotterdam, Antwerp, Klaipeda, Wilhelmshaven and Ventspils and destination ports in northern France. Platts will adjust the flat rate in line with 2005 WS rates on Jan 1, 2005.

Background: Platts introduced the 50 ppm ULSD assessments reflecting Benelux and French quality on July 1, 2004. This assessment has run concurrently with the ULSD assessments reflecting UK spec.

Dispatch Category	EB
12 Char. Symbol	AAOQA0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAOQA00
Earliest Date	01-JUL-2004
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	ULSD 50 PPM FOB ARA

AAJUS00 10 PPM DIESEL BARGES

Quality: The assessment reflects German spec diesel with a maximum sulfur content of 10 ppm. The typical density is basis 0.845 g/ml (actual SG ranges from 0.82 to 0.845 g/ml)

Size: Barge assessments reflect parcels of 1,000-5,000mt each. Platts has requested subscriber feedback on whether to increase the minimum assessable barge volume to 2kt. No decision has yet been made on this issue.

Location: FOB basis Rotterdam. Other load ports are typically normalized on an incremental freight differential basis. i.e. if the barge is loading from Antwerp, the freight differential from Antwerp to Germany against the freight differential from Rotterdam to Germany would generally be applied.

Timing: Barge assessments reflect parcels for loading 2-15 days forward.

Other: N/A

Background: Platts started the 10ppm FOB ARA gasoil barge assessment reflecting German spec material from October 1, 2002, to run in tandem with the existing 50 ppm ULSD barge assessment.

Dispatch Category	EB
12 Char. Symbol	AAJUS0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAJUS00
Earliest Date	01-OCT-2002
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Gasoil 10 PPM FOB NWE Brg

AAGMK00 ULTRA LOW SULFUR DIESEL BARGES

Quality: The assessment reflects qualities of diesel fuel typically traded in the Benelux region. The typical density is basis 0.845 g/ml (actual SG ranges from 0.82 to 0.845 g/ml) and the maximum sulfur is 50 ppm.

Size: Barge assessments reflect parcels of 1,000-5,000mt each. Platts has requested subscriber feedback on whether to increase the minimum assessable barge volume to 2kt. No decision has yet been made on this issue.

Location: FOB basis Rotterdam. Transactions occurring at other loading ports in NWE are typically normalized on a freight differential basis back to Rotterdam.

Timing: Barge assessments reflect parcels for loading 2-15 days forward.

Other: N/A

Background: Platts introduced the assessment for 50ppm sulfur Ultra Low Sulfur Diesel barges FOB Rotterdam on Apr 2, 2001, using Netherlands spec as the base grade. The ULSD barge assessment incorporated German spec ULSD from Oct 15, 2001. From October 1 2002 Platts started a new 10ppm FOB ARA gasoil barge assessment reflecting German spec material, to run in

tandem with the 50 ppm ULSD barge assessment, and the ULSD assessment reverted to qualities typical of Benelux.

Dispatch Category	EB
12 Char. Symbol	AAGMK0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAGMK00
Earliest Date	02-APR-2001
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Gasoil ULSD R'dam Brg

PPAQH00 EN590 CARGO ASSESSMENTS CIF NWE

Quality: The EN590 assessment CIF NWE reflects finished French Gasoil Moteur (GOM) grade meeting EU directive number EN590 with a maximum sulfur of 350 ppm. The density is basis 0.845 g/l.

Size: Cargo assessments reflect parcels of 20,000 mt each.

Location: CIF NWE assessments reflect cargoes basis Le Havre, and delivered in a Le Havre/Hamburg port range.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: Platts has made a number of changes in recent years in the maximum sulphur content in line with EU regulations. Effective Sep 2, 1996, sulfur content in EN590 was reduced from 0.2% to 0.05% in line with European Union legislation. Effective Jan 1, 2000 sulfur content was reduced further to 0.035%. The new quality was reflected from Dec 1, 1999. Effective Jan 1, 2000, the standard density range for EN590 cargoes became 0.82 to 0.845 g/ml maximum to reflect changes to EU regulations. Platts' assessments continued to reflect a reference density of 0.845 in line with industry practice. From Feb 1, 1997, Platts no longer included the additive WASA used for finished German grades in its assessments for EN590 gasoil cargoes and barges in Northwest Europe.

Dispatch Category	EB
12 Char. Symbol	PRPGS9NWEBJA
9 Char. Symbol(s)	PPD7NEDCH · PPD7NEDCL
7 Char. Symbol	PPAQH00
Earliest Date	01-JUL-1994
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Gasoil EN590 CIF NWE Cargo

PPAQF00 EN590 CARGO ASSESSMENTS FOB NWE

Quality: The EN590 assessment FOB NWE reflects finished French Gasoil Moteur (GOM) grade meeting EU directive number EN590 with a maximum sulfur of 350 ppm. The density is basis 0.845 g/l.

Size: Cargo assessments reflect parcels of 20,000 mt each.

Location: FOB NWE.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: Typically the FOB assessment is derived at a freight differential to the CIF assessment. Recently, a flat rate of 5.11 based on handy size freight between origin ports including Amsterdam, Rotterdam, Antwerp, Klaipeda, Wilhelmshaven and Ventspils and destination ports in northern France.

Background: Platts has made a number of changes in recent years in the maximum sulphur content in line with EU regulations. Effective Sep 2, 1996, sulfur content in EN590 was reduced from 0.2% to 0.05% in line with European Union legislation. Effective Jan 1, 2000 sulfur content was reduced further to 0.035%. The new quality was reflected from Dec 1, 1999. Effective Jan 1, 2000, the standard density range for EN590 cargoes became 0.82 to 0.845 g/ml maximum to reflect changes to EU regulations. Platts' assessments continued to reflect a reference density of 0.845 in line with industry practice. From Feb 1, 1997, Platts no longer included the additive WASA used for finished German grades in its assessments for EN590 gasoil cargoes and barges in Northwest Europe.

Dispatch Category	EB
12 Char. Symbol	PRPGS9NWEBJC
9 Char. Symbol(s)	PPD7NESCH · PPD7NESCL
7 Char. Symbol	PPAQF00
Earliest Date	01-JUL-1994
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Gasoil EN590 FOB NWE Cargo

PPAQD00 EN590 MEDITERRANEAN CIF CARGOES

Quality: Mediterranean En590 CIF assessment typically reflects French spec diesel fuel for automotive use but other grades such as Italian and Spanish may be considered.

Size: Cargo assessments reflect parcels of 25,000-30,000mt each.

Location: CIF assessment is calculated basis Lavera, with normal CP options within the Med considered.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: Platts has made a number of changes in recent years in the maximum sulphur content in line with EU regulations. Effective Sep 2, 1996, sulfur content in EN590 was reduced from 0.2% to 0.05% in line with European Union legislation. Effective Jan 1, 2000 sulfur content was reduced further to 0.035%. The new quality was reflected from Dec 1, 1999.

Dispatch Category	EB
12 Char. Symbol	PRPGS9GNABIW
9 Char. Symbol(s)	PPD7MGDCH · PPD7MGDCL
7 Char. Symbol	PPAQD00
Earliest Date	01-JUL-1994
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Gasoil EN590 CIF Med Cargo

PPAQB00 EN590 MEDITERRANEAN FOB CARGOES

Quality: Mediterranean En590 FOB assessment typically reflects French spec diesel fuel for automotive use but other grades such as Italian and Spanish may be considered.

Size: Cargo assessments reflect parcels of 25,000-30,000mt each.

Location: FOB Med (see freight calculation below).

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: The FOB assessment is calculated as a freight netback from the CIF value, using a worldscale rate published in Platts Clean Tankerwire and a basket of flat rates including typical routes in the Mediterranean from Genoa and Lavrea. Recently a flat rate of 4.5 has been applied representing freight between origin ports including Santa Panagia, Constantza and Skikda and destination ports Genoa and Lavera.

Background: Platts has made a number of changes in recent years in the maximum sulphur content in line with EU regulations. Effective Sep 2, 1996, sulfur content in EN590 was reduced from 0.2% to 0.05% in line with European Union legislation. Effective Jan 1, 2000 sulfur content was reduced further to 0.035%. The new quality was reflected from Dec 1, 1999.

Dispatch Category	EB
12 Char. Symbol	PRPGS9MEDBIY
9 Char. Symbol(s)	PPD7MISCH · PPD7MISCL
7 Char. Symbol	PPAQB00
Earliest Date	01-JUL-1994
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Gasoil EN590 FOB Med Cargo

AAOQD00 50 PPM ULSD CIF MED CARGOES

Quality: The Mediterranean 50 ppm ULSD CIF assessment typically reflects French spec diesel but other grades such as Italian and Spanish may be considered.

Size: Cargo assessments reflect parcels of 25,000-30,000mt each.

Location: CIF assessment is calculated basis Lavera, with normal CP options within the Med considered.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: The assessment was introduced on July 1, 2004

Dispatch Category	EB
12 Char. Symbol	AAOQD0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAOQD00
Earliest Date	01-JUL-2004
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	ULSD 50 PPM CIF Med

AAOQC00 50 PPM ULSD FOB MED CARGOES

Quality: The Mediterranean 50 ppm ULSD FOB assessment typically reflects French spec diesel but other grades such as Italian and Spanish may be considered.

Size: Cargo assessments reflect parcels of 25,000-30,000mt each.

Location: FOB Med (see freight calculation below).

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: The FOB assessment is calculated as a freight netback from the CIF value, using a worldscale rate published in Platts Clean Tankerwire and a basket of flat rates including typical routes in the Mediterranean from Genoa and Lavrea. Recently a flat rate of 4.5 has been applied representing freight between origin ports including Santa Panagia, Constantza and Skikda and destination ports Genoa and Lavera. Platts will adjust the flat rate in line with 2005 WS rates on Jan 1, 2005.

Background: The assessment was introduced on July 1, 2004

Dispatch Category	EB
12 Char. Symbol	AAOQC0000000

9 Char. Symbol(s)	·
7 Char. Symbol	AAOQC00
Earliest Date	01-JUL-2004
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	ULSD 50 PPM FOB Med

EN590 barges FOB Rotterdam (assessment discontinued April 1, 2003)

GASOIL

POAAC00 0.2% SULFUR GASOIL CARGOES CIF NWE

Quality: The NWE 0.2% CIF assessment reflects material meeting the minimum requirements of French Fuel Oil Domestique (FOD) and German Deutsche Industrie Norm (DIN) spec, and reflects cracked gasoil for heating oil use. Typically the assessment reflects the higher in value of FOD or DIN. SG is basis 0.845 and sulfur is max 0.2%.

Size: Cargo size is for full cargoes of 10-20 kt.

Location: CIF assessments are typically calculated basis Hamburg with CP options in the Hamburg to Havre range. Where FOD trades above DIN and is reflected in the assessment, the basis is Le Havre.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: The assessment was introduced in September 1990. Before that, 0.3% maximum sulfur gasoil was reflected.

Dispatch Category	EB
12 Char. Symbol	PRP202NWEBHZ
9 Char. Symbol(s)	PPD2NEDCH · PPD2NEDCL
7 Char. Symbol	POAAC00
Earliest Date	03-SEP-1990
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Gasoil 0.2 CIF NWE Cargoes

POAAD00 0.2% SULFUR GASOIL CARGOES FOB NWE

Quality: The NWE 0.2% CIF assessment reflects material meeting the minimum requirements of French Fuel Oil Domestique (FOD) and German Deutsche Industrie Norm (DIN) spec, and reflects cracked gasoil for heating oil use. Typically the assessment reflects the higher in value of FOD or DIN. SG is basis 0.845 and sulfur is max 0.2%.

Size: Cargo size is for full cargoes of 10-20 kt.

Location: FOB NWE.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: Typically the FOB assessment is derived at a freight differential to the CIF assessment. Recently a flat rate of 4.83 has been reflected based on freight from origin ports including Ventspils, Klaipeda and Stockholm to destination Hamburg. Platts will adjust the flat rate in line with 2005 WS rates on Jan 1, 2005.

Background: The assessment was introduced in September 1990. Before that, 0.3% maximum sulfur gasoil was reflected.

Dispatch Category	EB
12 Char. Symbol	PRP202NWEBIB
9 Char. Symbol(s)	PPD2NESCH · PPD2NESCL
7 Char. Symbol	POAAD00
Earliest Date	03-SEP-1990
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Gasoil 0.2 FOB NWE Cargoes

AAOQZ00 0.2% RUSSIAN GASOIL CARGOES CIF NWE

Quality: The 0.2% Russian gasoil CIF NWE assessment (0.2 RGO) reflects straight-run Russian gasoil with maximum 0.2% sulfur. Because the gasoil quality is straight-run, it may carry a blending premium over standard heating oil grades such as DIN.

Size: The 0.2 RGO assessment reflects full- or part- cargoes of 25-30,000 mt.

Location: The assessment is CIF ARA basis Antwerp with normal CP options within NWE calculated pro rata at cost.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: The assessment was introduced on July 1, 2004.

Dispatch Category	EB
12 Char. Symbol	AAOQZ0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAOQZ00
Earliest Date	01-JUL-2004
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Russian Gsl 0.2 CIF ARA $/Mt

POAAA00 0.2% SULFUR GASOIL CARGOES CIF MED

Quality: The assessment reflects generally merchantable qualities for heating oil use. Russian material meeting these qualities would typically be included in the assessment. Grades which are not widely merchantable, (for instance because of low cetane or above normal water content), may not be reflected in the assessments.

Size: Cargo assessments reflect parcels of 25,000-30,000mt each.

Location: CIF assessment is are basis Genoa with normal CP options considered.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: The assessment was introduced in December 1991. Before that, 0.3% maximum sulfur gasoil was reflected.

Dispatch Category	EB
12 Char. Symbol	PRP202GNABHV
9 Char. Symbol(s)	PPD2MGDCH · PPD2MGDCL
7 Char. Symbol	POAAA00
Earliest Date	16-DEC-1991
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Gasoil 0.2 CIF Med Cargoes

POAAB00 0.2% SULFUR GASOIL CARGOES FOB MED

Quality: The assessment reflects generally merchantable qualities for heating oil use. Russian material meeting these qualities would typically be included in the assessment. Grades which are not widely merchantable, (for instance because of low cetane or above normal water content), may not be reflected in the assessments.

Size: Cargo assessments reflect parcels of 25,000-30,000mt each.

Location: Platts in 2002 formalized that the basis of its 0.2% FOB Med assessment includes material from Black Sea ports, when these form a significant part of the trade.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: The FOB assessment is typically calculated as a freight netback from the Genoa and Lavera, using a worldscale rate published in Platts Clean Tankerwire and a basket of flat rates including typical routes within the Mediterranean from Black Sea ports. The routes include orin ports Tuapse, Novorossiysk, Batumi and Odessa and destination ports Genoa/Lavera.

Background: The assessment was introduced in December 1991. Before that, 0.3% maximum sulfur gasoil was reflected.

Dispatch Category	EB
12 Char. Symbol	PRP202MEDBHX
9 Char. Symbol(s)	PPD2MISCH · PPD2MISCL
7 Char. Symbol	POAAB00
Earliest Date	04-JAN-1993
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Gasoil 0.2 FOB Med Cargoes

POAAG00 0.2 GASOIL BARGES

Quality: The barge assessments represent heating oil grades with a specific gravity of 0.845 g/ml with a maximum sulfur content of 0.2%.

Size: Barge assessments currently reflect parcels of 1,000-5,000mt each. Platts has requested subscriber feedback on whether to increase the minimum assessable barge volume to 2kt. No decision has yet been made on this issue.

Location: FOB basis Rotterdam. Transactions occurring at other loading ports in NWE are typically normalized on a freight differential basis back to Rotterdam.

Timing: Barge assessments reflect parcels for loading 2-15 days forward.

Other: N/A

Background: The assessment was introduced in September 1990. Before that, 0.3% maximum sulfur gasoil was reflected.

Dispatch Category	EB
12 Char. Symbol	PRP202RTTBIH
9 Char. Symbol(s)	PPD2RTSBH · PPD2RTSBL
7 Char. Symbol	POAAG00
Earliest Date	03-SEP-1990
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Gasoil 0.2 FOB R'dam Barges

IPE GASOIL PRICES

Platts publishes the IPE gasoil weighted average as well as the settlement prices for the first two futures months. The figures reflect the values provided by the IPE rounded to the nearest 25 cts/mt and are not an assessment by Platts. In those cases where trasnactions are done on an EFP basis Platts will typically determine the fixed price value of the transaction after taking into consideration the EFP differential and the

International Petroleum Exchange gasoil futures contract settlement levels.

Please note that while the IPE settlements are routinely used in calculating physical values, Platts reserves the right to adapt or abandon this methodology if required. For instance, Platts may use alternative systems if in Platts opinion the the settlement were to appear anomalous.

Platts rolls the trading months on the day after expiry (i.e. on expiry day, the expiring front-month and the second-month futures contracts are carried in the assesssment tables).

Platts has routinely used the IPE gasoil settlements and its assessment of the EFP premium in calculating the physical values for middle distillates since April 1, 2003. Before April 1, 2003, the IPE gasoil weighted averages were used.

CRACKED FUEL OIL

CRACKED FUEL OIL

In the cracked fuel oil market, a multitude of qualities trade. For the fuel assessments, therefore, the combination of qualities is extremely important as individual specifications can not be considered in isolation.

Platts may in some cases incorporate freight differentials in establishing FOB to CIF spreads. Platts introduced fuel oil freight assessments for a number of European routes from February 2003 in Platts Dirty tankerwire.

Platts fuel oil assessments reflect both high and low sulfur material. Low sulfur cracked grades reflect a maximum 1% sulfur. On the high sulfur, material in the range 3-4% is typically considered, and the price is normalized to 3.5%.

PUAAJ00 LSFO CIF MED

Quality: The typical quality traded CIF is that imported by the Italian utility Enel. Platts reflects a maximum sulfur of 1%, material with a density of up to 0.995 SG and a maximum viscocity of 420 CST. Material with higher densities such as 0.998 max may be considered at a discount to this typical quality.

Size: Cargo assessments typically reflect parcels of 17,000-25,000mt each except where otherwise stated.

Location: The assessment is CIF basis Milazzo. Platts considers bids, offers and transactions into a range of east and West Med locations and normalizes these prices to basis Milazzo.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: Where the CIF Med market is illiquid, and when there is insufficient local supply to meet utility demand in the region, Platts may derive the CIF Med value using FOB NWE plus freight into Milazzo.

Background: Platts implemented a number of redefinitions in the quality of fuel oil reflected in the assessment, in response to changes in the structure of the market. Platts previously based its assessment on a viscosity of 380 centistokes at 50 degrees C and a specific gravity of 0.965 to 0.990 g/ml.

Dispatch Category	EB
12 Char. Symbol	PRP610GNABRG
9 Char. Symbol(s)	PPF5MGDCH · PPF5MGDCL
7 Char. Symbol	PUAAJ00
Earliest Date	02-JAN-1990
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	1PCT Fuel CIF Med Cargoes

PUAAK00 LSFO FOB MED

Quality: The typical quality relfected in the FOB assessment is that imported by the Italian utility Enel. Platts reflects a maximum sulfur of 1%, material with a density of up to 0.995 SG and a maximum viscocity of 420 CST. Material with higher densities such as 0.998 max may be considered at a discount to this typical quality.

Size: Cargo assessments typically reflect parcels of 25,000-30,000mt each, although smaller volumes may be considered. On the FOB Med assessments, cargoes up to 50,000 mt may be taken into account.

Location: FOB Med.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this loading window.

Other: In the absence of FOB fixed price bids/offers, the FOB may be calculated as a freight differential to the CIF Med assessment using a flat rate based on a basket of typical tanker routes, multiplied by the current Worldscale rate assessed in Platts Dirty Tankerwire. Recently, a flat rate of $4.32 per mt has been reflected, representing the following routes: Agio Theodori-Genoa, Falconara-Lavera and Milzazzo-Gibraltar. Platts will adjust the flat rate in line with 2005 WS rates on Jan 1, 2005.

Background: Platts implemented a number of redefinitions in the quality of fuel oil reflected in the assessment, in response to changes in the structure of the market. Platts previously based its assessment on a viscosity of 380 centistokes at 50 degrees C and a specific gravity of 0.965 to 0.990 g/ml.

Dispatch Category	EB
12 Char. Symbol	PRP610MEDBRI
9 Char. Symbol(s)	PPF5MISCH · PPF5MISCL
7 Char. Symbol	PUAAK00
Earliest Date	03-SEP-1979
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	1PCT Fuel FOB Med Cargoes

PUAAL00 LSFO CIF NWE

Quality: Cargo assessments are typically based on a maximum sulfur of 1%, a viscosity of 420 centistokes at 50 degrees C, and a specific gravity of 0.995 g/ml.

Size: Typically 17-25,000 mt

Location: CIF basis Rotterdam with normal range of CP options within NWE.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: In 2004, CIF NWE trade was extremely limited. In the absence of fixed price bids/offers, the CIF may be calculated as a freight differential to the FOB NWE assessment using a flat rate based on a basket of typical tanker routes, multiplied by the current Worldscale rate assessed in Platts Dirty Tankerwire. Recently, a flat rate of $4.00 per mt has been reflected. Platts will adjust the flat rate in line with 2005 WS rates on Jan 1, 2005. FOB/CIF differentials may vary with market conditions.

Background: N/A

Dispatch Category	EB
12 Char. Symbol	PRP610NWEBRK
9 Char. Symbol(s)	PPF5NEDCH · PPF5NEDCL
7 Char. Symbol	PUAAL00
Earliest Date	03-SEP-1979
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	1PCT Fuel CIF NWE Cargoes

PUAAM00 LSFO FOB NWE

Quality: A range of qualities from Northwest European refineries is reflected. Cargo assessments are typically based on a maximum sulfur of 1%, a viscosity of 420 centistokes at 50 degrees C, and a specific gravity of 0.965 to 0.990 g/ml. Very low sulfur material may be considered at a premium.

Size: Volume: Cargo assessments typically reflect parcels of 25-30,000mt each, although smaller volumes may be considered. On the FOB Northwest Europe, cargoes up to 50,000 mt may be taken into account when arbitrage openings present themselves.

Location: FOB NWE basis Antwerp.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: Material trading from other origins may be normalized back to Antwerp, depending on the destination for the oil. Where the FOB value is calculated from values in the USAC, Platts uses the price at New York Harbour to FOB Antwerp based on 50,000 mt cargo size and using a SG conversion of 6.4.

Background: N/A

Dispatch Category	EB
12 Char. Symbol	PRP610NWEBRM
9 Char. Symbol(s)	PPF5NESCH · PPF5NESCL
7 Char. Symbol	PUAAM00
Earliest Date	01-JUL-1980
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	1PCT Fuel FOB NWE Cargoes

PUAAP00 LSFO BARGES FOB ARA

Quality: The assessment reflects Belgium spec fuel oil with a maximum sulfur of 1%. German DIN spec material is not reflected. The quality represented is, however, in line with power plant requirements in the region. This results in the price of the material being influenced by specification such as metals content s much as the sulfur content. The metals content in the 3.5% sulfur is tighter than the specs in 1.0% barges. This may result in 1.0% sulfur being at times cheaper than 3.5%, but the cause is the metals content, obviously not the sulfur.

Size: Barge assessments reflect parcels of 1,000- 5,000mt each.

Location: FOB ARA basis Antwerp.

Timing: Barge assessments reflect parcels for loading 2-15 days forward.

Other: N/A

Background: In the past, the low-high range included both German and Belgian spec.

Dispatch Category	EB
12 Char. Symbol	PRP610RTTBRS
9 Char. Symbol(s)	PPF5RTSBH · PPF5RTSBL
7 Char. Symbol	PUAAP00
Earliest Date	03-SEP-1979
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	1PCT Fuel FOB R'dam Barges

PUAAY00 HSFO CIF MED

Quality: The typical quality reflected is 3.5% maximum sulfur with 420 cst max viscocity and 0.995 density. Platts takes an inclusive approach to the assessment, as the quality of fuel oil in the Med is less homogenous than that in NWE. Bunker grade material is considered in the CIF Med assessment, but typically at a premium to the typical quality assessed. The premium varies according to market conditions.

Size: Cargo assessments typically reflect handy size parcels of 25-30,000mt each although smaller volumes may be considered. The smaller volume on CIF reflects local port constraints.

Location: CIF basis Genoa/Lavera

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: From Apr 2, 2001, bunker grade material was considered in the assessment with the specific gravity range extended to 0.991-0.998. Higher density cargoes of up to 1.020 SG were viewed as typically traded at a discount to the assessed quality.

Dispatch Category	EB
12 Char. Symbol	PRP635GNABSM
9 Char. Symbol(s)	PPFBMGDCH · PPFBMGDCL
7 Char. Symbol	PUAAY00
Earliest Date	03-SEP-1979
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	3.5PCT Fuel CIF Med Cargoes

PUAAZ00 HSFO FOB MED

Quality: The typical quality reflected is 3.5% maximum sulfur with 420 cst max viscocity and 0.995 density. Platts takes an inclusive approach to the assessment, as the quality of fuel oil in the Med is less homogenous than that in N-WE. Bunker grade material is considered in the CIF Med assessment, but typically at a premium to the typical quality assessed. The premium varies according to market conditions.

Size: Cargo assessments typically reflect parcels of 25-30,000mt each, but cargoes up to 50,000 mt may be taken into account when arbitrage openings present themselves, for instance to the Far East.

Location: FOB Med basis Italy.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this loading window.

Other: Where the market is illiquid, the FOB Med value may be inferred from the CIF Med value, or from related swaps markets plus any physical premium or discount.

Backrgound: From Apr 2, 2001, bunker grade material was considered in the assessment with the specific gravity range extended to 0.991-0.998. Higher density cargoes of up to 1.020 SG were viewed as typically traded at a discount to the assessed quality.

Dispatch Category	EB
12 Char. Symbol	PRP635MEDBSO
9 Char. Symbol(s)	PPFBMISCH · PPFBMISCL
7 Char. Symbol	PUAAZ00
Earliest Date	03-SEP-1979
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	3.5PCT Fuel FOB Med Cargoes

PUABA00 HSFO CIF NWE

Quality: The assessment typically reflects 3.5% sulfur cracked fuel oil with 0.991 max density and 12 engler max viscocity. Typically, standard cracked Russian quality M100 is reflected in the assessment. The quality of M100 may vary widely in density, viscocity and water content, however, and Platts monitors differentials to the two means formula in making its assessment.

Size: The cargo assessment reflect parcels of 17-25,000 mt.

Location: CIF NWE basis Rotterdam.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: Where the market is illiquid, CIF NWE values may be derived from the time gradient on barges extrapolated to cargo dates (10-25 forward rather than the barge dates of 2-15 forward) plus blending costs to meet 12 engler basis.

Background: In the past utility companies used to buy 3.5% sulfur cargoes for burning purposes, but limits endorsed by the EU on the sulfur content mean that utility grade trades on high sulfur are rare. Most utilities now use 1% max for burning purposes. From Apr 2, 2001, cargo assessments for 3.5% sulfur were renamed CIF basis ARA and have incorporated duty-paid utility grade fuel oil and bunker grade fuel oil. Specific gravity range was expanded to cover 0.991 to 0.998g/ml. Utility grade cargoes traded on FOB basis continue to be taken into account, but some grades such as 16ccr (Conradson Carbon Residue) material are seen as grades typically commanding a premium to the assessed quality. Similarly, higher density cargoes around 1.005 SG are viewed as typically traded at a discount to assessed quality. Effective July 3, 2000, assessments for 3% sulfur cargoes FOB and CIF NWE were discontinued.

Dispatch Category	EB
12 Char. Symbol	PRP635NWEBSQ
9 Char. Symbol(s)	PPFBNEDCH · PPFBNEDCL
7 Char. Symbol	PUABA00
Earliest Date	03-SEP-1979
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	3.5PCT Fuel CIF NWE Cargoes

PUABB00 HSFO FOB NWE

Quality: The assessment reflects standard cracked Russian quality M100 with 0.991 max density and 12 engler max viscocity. The quality of M100 may vary widely in density, viscosity and water content, and Platts monitors differentials to the two means formula in making assessment.

Size: Cargo assessments typically reflect parcels of 25-30,000mt each, although smaller volumes may be considered. On the FOB Med, cargoes up to 50,000 mt may be taken into account when arbitrage openings present themselves, for instance to the Far East.

Location: FOB Baltic ports.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: The FOB NWE assessment may be assessed as a freight differential to the CIF NWE cargoes using an average flat rate of $4.5/mt representing an average of Baltic and NWE destinations and Platts spot dirty tankerwire freight assessments. Platts will adjust the flat rate in line with 2005 WS rates on Jan 1, 2005.

Background: In the past utility companies used to buy 3.5% sulfur cargoes for burning purposes, but limits endorsed by the EU on the sulfur content mean that utility grade trades on high sulfur are rare. Most utilities now use 1% max for burning purposes. From Apr 2, 2001, 3.5% sulfur cargoes FOB Northwest Europe have incorporated bunker grade cargoes. Utility grade cargoes traded on FOB basis continue to be taken into account, but some grades such as 16ccr (Conradson Carbon Residue) material are seen as grades typically commanding a premium to the assessed quality. Similarly, higher density cargoes around 1.005 SG are viewed as typically traded at a discount to assessed quality. Effective July 3, 2000, assessments for 3% sulfur cargoes FOB and CIF NWE were discontinued.

Dispatch Category	EB
12 Char. Symbol	PRP635NWEBSS
9 Char. Symbol(s)	PPFBNESCH · PPFBNESCL
7 Char. Symbol	PUABB00
Earliest Date	01-JUL-1980
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	3.5PCT Fuel FOB NWE Cargoes

PUABC00 HSFO BARGES FOB ARA

Quality: 3.5% sulfur barges: typical specifications are 3 to 4% sulfur content, specific gravity of 0.998 to 0.991 g/ml, and viscosity of around 380 to 420 centistokes at 50 degrees C. Factors such as water, Conradson carbon residue and other metals may also have a marked influence on price. Material is bunker quality for supply into the shipping market.

Volume: Barge assessments reflect parcels of 1,000 to 5,000mt each. Barges are traded typically in 1-2kt lots, but 3-5kt trades are not uncommon. In all cases the smallest tradeable volume sets the market prices and in this case the smallest volume applicable is 1,000mt.

Location: FOB basis Rotterdam

Timing: Barge assessments reflect parcels for loading 2-15 days forward. Barges typically trade for full window dates and the front five days or the back five days depending on whether the market is in contango or backwardation.

Other: N/A

Background: In the past, Platts has assessed slightly different specs: the typical quality for high sulfur cargo assessments was a viscosity of 380 to 420 centistokes at 50 degrees C, a maximum of 300 parts per million of vanadium.

Dispatch Category	EB
12 Char. Symbol	PRP635RTTBSU
9 Char. Symbol(s)	PPFBRTSBH · PPFBRTSBL
7 Char. Symbol	PUABC00
Earliest Date	03-SEP-1979
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	3.5PCT Fuel FOB R'dam Barges

PUAYW00 ROTTERDAM BUNKER 380 CST

Quality: IFO 380: Specifications generally conform with that for RMG 35. Approximate Kinematic Viscosity: At 100degC, max 25 cst; at 50degC, max 225 cst. Flash point 60degC minimum. Pour point (upper) winter quality, 30degC maximum; summer quality the same. Ash 0.15 m/m maximum. Sulphur, maximum 5%. Vanadium max 500 mg/kg. Aluminum plus silicon, 80 mg/kg max; water, 1% maximum. Bunker fuel The specifications followed are generally those found in ISO 8217:1996 (E) - Petroleum products - Fuels (class F) - Specifications of marine fuels.

Size: Typical volumes reflected are between 300-1000 mt.

Location: IFO 380 CST delivered prices reflect prices at Rotterdam, but delivered on board, ie delivered into ship.

Timing: Prices are typically quoted for product to be supplied 1-8 days ahead

Other: N/A

Note: Platts bunker price assessments are based on typical trading levels during the course of the day, and are based on actual transactable market levels, i.e. confirmed trades, bids and offers. Much of the price direction is derived early in the day at European ports, based on the previous day's outright cargo fuel oil assessments. respectively, on the high and low of the distillate price

Dispatch Category	EB
12 Char. Symbol	PRPF38RTTDBK
9 Char. Symbol(s)	PPFDRTSVH · PPFDRTSVL
7 Char. Symbol	PUAYW00
Earliest Date	02-JAN-1996
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Rotterdam Bunker 380 CST

FEEDSTOCKS

PKABA00 LOW SULFUR STRAIGHT-RUN

Quality: The assessments reflect prices for straight-run fuel oil from Northwest Europe with typically 0.5-0.7% sulfur, normalized to 0.6%.

Size: The cargo assessments typically reflects parcels of 25,000-30,000mt each within NWE, but cargoes of up to 50,000 tonnes may be taken into account when arbitrage openings present themselves.

Location: FOB NWE basis Rotterdam.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: LSSR is typically negotiated at a differential to IPE Brent crude oil futures. When this occurs, the prevailing value of IPE Brent at 1730 London time is used in setting the outright level. The IPE trading month used in the calculation is generally the front-month trading 17.5 days from publication date. A conversion factor of 6.77 is used to calculate the price in $/mt.

Background: Effective Apr 2, 2001, the timing window for assessing FOB Northwest Europe cargoes changed to 10-25 days to take account of prevailing trading patterns.

Note: Platts ceased running its assessment of E-4 straight run from January 1, 2003, because of the market's illiquidity. Effective Apr 2, 2001, M-40 assessments CIF Mediterranean were discontinued.

Dispatch Category	EB
12 Char. Symbol	PRPSR6NWECOY
9 Char. Symbol(s)	PPMONESCH · PPMONESCL
7 Char. Symbol	PKABA00
Earliest Date	03-OCT-1994
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	St Run 0.5-0.7 PCT FOB NWE

AAHMZ00 LS VGO CIF NWE

Quality: The assessments represent VGO cargoes of 0.5-0.6pct sulfur with a specific gravity of 0.900-0.920 g/ml.

Size: Cargo assessments reflect parcels of 10,000-25,000mt.

Location: CIF NWE basis ARA.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: The assessment was introduced June 1, 2001.

Dispatch Category	FS
12 Char. Symbol	AAHMZ0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAHMZ00
Earliest Date	01-JUN-2001
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	VGO 0.5-0.6%S CIF NWE

AAHMX00 LS VGO FOB NWE

Quality: The assessments represent VGO cargoes of 0.5-0.6pct sulfur with a specific gravity of 0.900-0.920 g/ml.

Size: Cargo assessments reflect parcels of 10,000-25,000mt each though FOB cargoes of up to 50,000 mt may be considered when arbitrage opening mean these are a significant market factor.

Location: FOB NEW basis Rotterdam.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this loading window.

Other: N/A

Background: The assessment was introduced June 1, 2001.

Dispatch Category	FS
12 Char. Symbol	AAHMX0000000

9 Char. Symbol(s)	·
7 Char. Symbol	AAHMX00
Earliest Date	01-JUN-2001
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	VGO 0.5-0.6%S FOB NWE

AAHNF00 LS VGO FOB ARA

Quality: The assessments represent VGO cargoes of 0.5-0.6pct sulfur with a specific gravity of 0.900-0.920 g/ml.

Size: Barge assessments reflect parcels of 1,000 to 5,000mt each.

Location: FOB ARA basis Rotterdam

Timing: Barge assessments reflect parcels for loading 2-15 days forward.

Other: N/A

Background: The assessment was introduced June 1, 2001, replacing barge assessment reflecting 1.5-1.6% sulfur VGO.

Dispatch Category	FS
12 Char. Symbol	AAHNF0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAHNF00
Earliest Date	01-JUN-2001
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	VGO 0.5-0.6%S FOB Rdam

AAHND00 HS VGO CIF NWE

Quality: The assessments represent VGO cargoes of 2% max sulfur with a specific gravity of 0.900-0.920 g/ml.

Size: Cargo assessments reflect parcels of 10,000-25,000mt each.

Location: CIF NWE basis ARA.

Timing: Reflects material for delivery 10-25 days from date of publication, with prices normalized to the mid-point of this delivery window.

Other: N/A

Background: The assessment was introduced June 1, 2001.

Dispatch Category	FS
12 Char. Symbol	AAHND0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAHND00
Earliest Date	01-JUN-2001
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	VGO 2.0% Max CIF NEW

AAHNB00 HS VGO FOB NWE

Quality: The assessments represent VGO cargoes of 2% max sulfur with a specific gravity of 0.900-0.920 g/ml.

Size: Cargo assessments reflect parcels of 10,000-25,000mt each though FOB cargoes of up to 50,000 mt may be considered when arbitrage opening mean these are a significant market factor.

Location: FOB NEW basis Rotterdam.

Timing: Reflects material for loading 10-25 days from date of publication, with prices normalized to the mid-point of this loading window.

Other: N/A

Background: The assessment was introduced June 1, 2001.

Dispatch Category	FS
12 Char. Symbol	AAHNB0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAHNB00
Earliest Date	01-JUN-2001
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	VGO 2.0% Max FOB NEW

AAHNI00 HS VGO FOB ARA

Quality: 2% max with a specific gravity of 0.900-0.920 g/ml.

Size: Barge assessments reflect parcels of 1,000 to 5,000mt each.

Location: FOB ARA basis Rotterdam

Timing: Barge assessments reflect parcels for loading 2-15 days forward.

Other: N/A

Background: The assessment was introduced June 1, 2001, replacing barge assessment reflecting 1.5-1.6% sulfur VGO.

Dispatch Category	FS
12 Char. Symbol	AAHNI0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAHNI00
Earliest Date	01-JUN-2001
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	VGO 2.0% Max FOB Rdam

LPG

Platts European and west Mediterranean LPG assessments typically reflect transactable values over the course of the trading day, typically 08.30-17.30 local London time. All bids, offers and transactions will be included over the set time period, but prices will be normalized to reflect end of day market values. As such, the timing of the transaction will be taken into consideration.

BIDS/OFFERS

Platts considers transactions, bid/offer levels and market indications that are reflective of typical conditions and originating from sources deemed reliable. Bids and offers must in principle be open to the market at large. Platts accepts that individual companies may have trading limits with counter parties and that national legislation may prevent companies from dealing in materials from certain origins and specifications. These will be dealt with on a case-by-case basis.

Platts will exclude transactions, bids/offers or any market indications when these appear to be unrepresentative of the market, or unrepeatable. Deals done below the level of prevailing bids or above the level of prevailing offers (ie, selling through the bid or buying through the offer) will not be reflected in Platts assessments. Exception will be given to circumstances where one party can demonstrate a necessity to pay above the offer or sell below the bid, ie, paying a higher FOB price from a location where there is a demonstrable freight advantage.

Reported transactions must be confirmed by both parties including approximate time of price agreement, irrespective of outstanding subjects. All other deals may be taken into account at the editor's discretion. Only arm's length deals will be taken into account. Parties should report any terms, conditions or clauses that would distort the typical market value. This would include charter-party options, price options, credit terms or transactions that are commercially linked to any other transaction etc.

REPEATABILITY

Bids, offers and transactions are also viewed against the broader supply/demand generated by those bids/offers and transactions. Hence if a low price offer generates too much demand, Platts may determine in its editorial process that the market value is hence higher. Likewise if a high bid generates too much supply and the buyer is unable to buy all the volume that is offered, Platts in its editorial process may determine that that the market value is lower.

SPREADS

Platts typically reflects fixed price transactions, bids and offers in its assessments, but may use additional indications as

LPGASWIRE EUROPEAN ASSESSMENTS

NWE:		Propane SPOT USD/MT			Butane SPOT USD/MT	
FOB SEAGOING	+x.00	PMABB00-PMABB00	+x.00	+x.00	PMAAL00-PMAAL00	+x.00
FOB ARA	+x.00	PMAAS00-PMAAS00	+x.00	+x.00	PMAAC00-PMAAC00	+x.00
FCA ARA*	+x.00	PMABH00-PMABH00	+x.00	+x.00	PMABI00-PMABI00	+x.00
CIF 1-3000MT	+x.00	PMAAZ00-PMAAZ00	+x.00	+x.00	PMAAJ00-PMAAJ00	+x.00
CIF 3000+MT	+x.00	PMAAC00-PMAAC00	+x.00			
CIF 7000+MT	+x.00	PMABA00-PMABA00	+x.00			
Monthly rolling average						
FOB SEAGOING		PMUDI00-PMUDI00				
CIF 7000+MT		PMUDK00-PMUDK00				
Propane swaps (basis CIF NWE)						
Aug	+x.00	AAHIK00-AAHIK00	+x.00			
Sep	+x.00	AAHIM00-AAHIM00	+x.00			
Oct	+x.00	AAHIO00-AAHIO00	+x.00			
Q4	+x.00	AAHIL00-AAHIL00	+x.00			
W MED:						
FOB EX-REF/STOR	+x.00	PMABC00-PMABC00	+x.00	+x.00	PMAAM00-PMAAM00	+x.00
FCA EX-REF/STOR	+x.00	PMABJ00-PMABJ00	+x.00			
CIF 7000+MT	+x.00	PMABE00-PMABE00	+x.00			

NOTE:* FCA ARA refers to sales onto railcars and trucks in the Amsterdam-Rotterdam-Antwerp region

appropriate including the market value of spread relationships with other oil products where there is a demonstrable price relationship with LPG as well as associated markets such as derivatives. When assessing the market, Platts will give priority to, in descending order, deals, firm bids and offers, indications, market fundamentals and price relationship with associated markets. In certain illiquid markets, Platts may establish FOB or CIF values based on freight differentials. However Platts recognizes that FOB and CIF prices within northwest Europe may operate independently.

TIME GRADIENT

Platts' assessments take into account any backwardation or contango in the market place. Typically, Platts assesses to the middle of the loading/delivery window specified for each market. The assessment thus reflects the value after taken into consideration the difference in prices prevailing along the time curve, assessed by Platts, where appropriate.

FREIGHT ISSUES

Platts takes into account prevailing freight rates in establishing both FOB and CIF values. Where a market has become illiquid, Platts may routinely determine the FOB value from the CIF value. Where there is limited local demand but longer range arbitrage opportunities emerge, the FOB value may rise relative to the CIF value.

Platts typically reflects good quality modern tonnage in its assessments, and excludes from its CIF assessments any vessels which are outside the normal parameters of acceptability

DATA CODES

Each Platts assessment is identified in the electronic databases by a 7-character data code. The following table provides the data codes for each European LPG assessment carried in Platts LPGaswire. The table layout is that carried in the telex/newsletter version of LPGaswire; when assessments are carried in related publications such as Platts Petrochemical Alert, the actual layout may vary.

PMABB00 PROPANE FOB SEAGOING

Quality: Pressurized vessels including both field-grade and refinery material with a minimum of 93% C3s and a maximum of 30% olefinic content. A slight premium may be given for product with a higher c3 content.

Size: The assessment refers to coasters ex-refinery/storage with full cargoes between 1,000-3,600mt, although smaller full cargoes or split cargoes may be included at the discretion of the editor after consultation with the market.

Location: The assessment covers an area represented by a triangle, with Wilhelmshaven (Germany), Teesside (UK) and Le Havre (France) as its three corners, and also including Milford Haven, Fawley and Grangemouth. Product from ports on the French Atlantic coast, as well as Portugal and the Spanish Atlantic coast, are not included in assessments.

Timing: Loading 5-15 days from date of publication

Other: N/A

Dispatch Category	LI
12 Char. Symbol	PRPPN$NWECVD
9 Char. Symbol(s)	PPPRNESGH · PPPRNESGL
7 Char. Symbol	PMABB00
Earliest Date	02-JUL-1982
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Propane FOB NWE Seagoing Hi

PMAAS00 PROPANE FOB ARA

Quality: Pressurized vessels including both field-grade and refinery material with a minimum of 93% C3s and a maximum of 30% olefinic content.

Size: Refers to sales onto barges of full cargoes between 420-1,100mt.

Location: FOB Amsterdam-Rotterdam-Antwerp.

Timing: Barges loading ex-refinery/storage between 3-10 days from date of publication.

Other: N/A

Dispatch Category	LI
12 Char. Symbol	PRPPN$ARACUP
9 Char. Symbol(s)	PPPRAASCH · PPPRAASCL
7 Char. Symbol	PMAAS00
Earliest Date	05-APR-1985
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Propane FOB ARA

PMABH00 PROPANE FCA ARA

Quality: Pressurized vessels including both field-grade and refinery material with a minimum of 93% C3s and a maximum of 30% olefinic content.

Size: Parcels of 20-500mt.

Location: FCA ARA refers to sales onto railcars and trucks in the Amsterdam-Rotterdam-Antwerp region

Timing: Loadings ex-refinery/storage between 3-10 days from date of publication.

Dispatch Category	LI
12 Char. Symbol	PRPPN$ARACUQ
9 Char. Symbol(s)	PPPRAASQH · PPPRAASQL
7 Char. Symbol	PMABH00
Earliest Date	22-JUL-1994
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Propane FCA ARA

PMAAZ00 PROPANE CIF 1-3,000MT

Quality: Pressurized vessels including both field-grade and refinery material with a minimum of 93% C3s and a maximum of 30% olefinic content. A slight premium may be given for product with a higher c3 content.

Size: Full cargoes of between 1,000-3,600mt sold on a CIF basis are reflected. Slightly smaller CIF cargoes may be included at the discretion of the editor, while CIF cargoes of more than 3,600mt may occasionally be sold at prices that correspond most to the 1-3,600mt market, and therefore may also be included in the 1-3,600mt assessment.

Location: The assessment covers an area represented by a triangle, with Wilhelmshaven (Germany), Teesside (UK) and Le Havre (France) as its three corners, and also including Milford Haven, Fawley and Grangemouth. Product from ports on the French Atlantic coast, as well as Portugal and the Spanish Atlantic coast, are not included in assessments. Sales into the port of Brest on the French Atlantic coast may be included in the assessment.

Timing: Vessels loading 5-15 days from date of publication.

Other: Please note that Platts has not formally renamed this assessment even though volumes larger than 3,000 mt are currently considered.

Dispatch Category	LI
12 Char. Symbol	PRPPN$NWECVB
9 Char. Symbol(s)	PPPRNEGCH · PPPRNEGCL
7 Char. Symbol	PMAAZ00
Earliest Date	05-APR-1985
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Propane CIF NWE 1-3kt

PMABA00 PROPANE CIF LARGE CARGOES

Quality: Refrigerated commercial propane meeting Braefoot Bay specification.

Size: Typically reflects full-cargoes of between 8.5-20 kt

Location: The assessment covers an area represented by a triangle, with Wilhelmshaven (Germany), Teesside (UK) and Le Havre (France) as its three corners, and also including Milford Haven, Fawley and Grangemouth. Product from ports on the French Atlantic coast, as well as Portugal and the Spanish Atlantic coast, are not included in assessments. Sales into the port of Brest on the French Atlantic coast may be included in the assessment. Sales made into selected western Scandinavian ports - Stenungsund, Rafnes, Porvoo and Karsto - are included, but will be normalized to Flushing.

Timing: Large cargo assessments refer to vessels delivery 10-25 days from the date of publication.

Other: Please note that Platts has not formally renamed this assessment even though volumes larger than 7,000 mt are now typically considered.

Dispatch Category	LI
12 Char. Symbol	PRPPN$NWECVC
9 Char. Symbol(s)	PPPRNEHCH · PPPRNEHCL
7 Char. Symbol	PMABA00
Earliest Date	05-APR-1985
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Propane CIF NWE 7000+MT

PMAAL00 BUTANE FOB SEAGOING

Quality: Both field-grade and refinery grade butane is included in the assessment with a maximum of 30% olefins, 85% normal butane and 49% isobutane. For the CIF quote, product will be normalized to a specification of 70:30 split with a maximum olefin content of 10%. Isobutane is considered to be any product with over 50% isobutane content, and such product is not assessed by Platts, except in the US Gulf.

Size: The assessment refers to coasters ex-refinery/storage with full cargoes between 1,000-3,600mt, although smaller full cargoes or split cargoes may be included at the discretion of the editor after consultation with the market.

Location: The assessment covers an area represented by a triangle, with Wilhelmshaven (Germany), Teesside (UK) and Le Havre (France) as its three corners, and also including Milford Haven, Fawley and Grangemouth. Product from ports on the French Atlantic coast, as well as Portugal and the Spanish Atlantic coast, are not included in assessments.

Timing: Vessels loading 5-15 days from date of publication.

Other: N/A

Dispatch Category	LI
12 Char. Symbol	PRPBTNNWEBHR

9 Char. Symbol(s)	PPBNNESGH · PPBNNESGL
7 Char. Symbol	PMAAL00
Earliest Date	05-APR-1985
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Butane FOB NEW

PMAAC00 BUTANE FOB ARA

Quality: Both field-grade and refinery grade butane is included in the assessment with a maximum of 10% olefins, 85% normal butane and 49% isobutane. Isobutane is considered to be any product with over 50% isobutane content, and such product is not assessed by Platts, except in the US Gulf.

Size: Sales onto barges of full cargoes between 420-1,100mt.

Location: FOB Amsterdam-Rotterdam-Antwerp.

Timing: Barges loading between 3-10 days from date of publication.

Other: N/A

Dispatch Category	LI
12 Char. Symbol	PRPBTNARABHD
9 Char. Symbol(s)	PPBNAASCH · PPBNAASCL
7 Char. Symbol	PMAAC00
Earliest Date	05-APR-1985
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Butane FOB ARA

PMABI00 BUTANE FCA ARA

Quality: Both field-grade and refinery grade butane is included in the assessment with a maximum of 10% olefins, 85% normal butane and 49% isobutane. Isobutane is considered to be any product with over 50% isobutane content, and such product is not assessed by Platts, except in the US Gulf.

Size: Parcels of 20-500mt.

Location: FCA ARA refers to sales onto railcars and trucks in the Amsterdam-Rotterdam-Antwerp region

Timing: Loadings ex-refinery/storage between 3-10 days from date of publication.

Other: N/A

Dispatch Category	LI
12 Char. Symbol	PRPBTNARABHE
9 Char. Symbol(s)	PPBNAASQH · PPBNAASQL
7 Char. Symbol	PMABI00
Earliest Date	22-JUL-1994
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Butane FCA ARA

PMAAJ00 BUTANE CIF 1-3,000MT

Quality: Both field-grade and refinery grade butane is included in the assessment with a maximum of 30% olefins, 85% normal butane and 49% isobutane. For the CIF quote, product will be normalized to a specification of 70:30 split with a maximum olefin content of 10%. Isobutane is considered to be any product with over 50% isobutane content, and such product is not assessed by Platts, except in the US Gulf.

Size: Full cargoes of between 1,000-3,600mt sold on a CIF basis. Slightly smaller CIF cargoes may be included at the discretion of the editor, while CIF cargoes slightly over 3,600mt may occasionally be sold at prices that correspond most to the 1-3,600mt market, and therefore may also be included in the 1-3,600mt assessment.

Location: The assessment covers an area represented by a triangle, with Wilhelmshaven (Germany), Teesside (UK) and Le Havre (France) as its three corners, and also including Milford Haven, Fawley and Grangemouth. Product from ports on the French Atlantic coast, as well as Portugal and the Spanish Atlantic coast, are not included in assessments. Sales into the port of Brest on the French Atlantic coast may be included in the assessment.

Timing: Vessels loading 5-15 days from date of publication.

Other: Please note that Platts has not formally renamed this assessment even though volumes larger than 3,000 mt are currently considered.

Dispatch Category	LI
12 Char. Symbol	PRPBTNNWEBHP
9 Char. Symbol(s)	PPBNNEGCH · PPBNNEGCL
7 Char. Symbol	PMAAJ00
Earliest Date	05-APR-1985
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Butane CIF NWE 1-3kt

PMAAK00 BUTANE CIF LARGE CARGOES

Quality: Refers to Braefoot Bay mixed butane with a typical split of 70% normal and 30% isobutane. Pure normal butane and isobutane is not assessed by Platts, although pure normal prices may be used as guidance at the editor's discretion following consultation with the market.

Size: Cargoes of over 4,000mt sold into NWE on a CIF basis. Occasionally, part-cargoes of less than 4,000mt from large shipments may be sold at prices which reflect the 4,000mt+ market, and these prices may be included in the assessment.

Location: The assessment covers an area represented by a triangle, with Wilhelmshaven (Germany), Teesside (UK) and Le Havre (France) as its three corners, and also including Milford Haven, Fawley and Grangemouth. Product from ports on the French Atlantic coast, as well as Portugal and the Spanish Atlantic coast, are not included in assessments. Sales into the port of Brest on the French Atlantic coast may be included in the assessment.

Timing: Vessels delivery 10-25 days from the date of publication.

Other: Please note that Platts has not formally renamed this assessment even though volumes larger than 3,000 mt are now typically considered.

Dispatch Category	LI
12 Char. Symbol	PRPBTNNWEBHQ
9 Char. Symbol(s)	PPBNNEHCH · PPBNNEHCL
7 Char. Symbol	PMAAK00
Earliest Date	05-APR-1985
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Butane CIF NWE 3kt+

PMUDI00 PROPANE FOB SEAGOING MONTHLY ROLLING AVG

The average is of the daily Propane FOB Seagoing assessments. The average takes each of the daily data points, and divides by the number of working days there have been during the month.

Dispatch Category	LI
12 Char. Symbol	PRPPN$NWEDBH
9 Char. Symbol(s)	PPPRNE5GH · PPPRNE5GL
7 Char. Symbol	PMUDI00
Earliest Date	24-JUN-1998
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Propane NWE Sea FOB RollAvg

PMUDK00 PROPANE CIF LARGE CARGOES MONTHLY ROLLING AVG

The average is of the daily Propane CIF Largew Cargo assessments. The average takes each of the daily data points, and divides by the number of working days there have been during the month.

Dispatch Category	LI
12 Char. Symbol	PRPPN$NWEDBJ
9 Char. Symbol(s)	PPPRNEDUH · PPPRNEDUL
7 Char. Symbol	PMUDK00
Earliest Date	24-JUN-1998
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Propane NWE 7kMT+ CIF RollAvg

PROPANE SWAPS BASIS CIF NWE

Platts asssesses the forward swap market for CIF NW E 7000+mt cargoes for three months and one quarter forward. The swaps are settled against the monthly average of daily assessments for propane CIF NWE 7000+mt. The swap months quoted roll forward on the first day of the month, and the swap quarter quoted rolls on the first day of the quarter. Thus on July 1, 2004 the monthly swap assessments would roll forward to reflect Aug, Sep and Oct 2004. On July 1, 2004 the quarter published would roll from Q3 2004 (Jul, Aug, Sep) to Q4 2004 (Oct, Nov, Dec).

AAHIK00/PMABU00

Dispatch Category	LI
12 Char. Symbol	PRPPN$NWEDBC
9 Char. Symbol(s)	PPPRNE1AH · PPPRNE1AL
7 Char. Symbol	PMABU00
Earliest Date	01-DEC-1995
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Propane NWE swaps 1st month

Dispatch Category	DR
12 Char. Symbol	AAHIK0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAHIK00
Earliest Date	28-MAR-2001
Vendors	BLM CQI DRI EMS FTP FUT KR PL12 TR SAR
Description	Propane CIF ARA Lg 1-Mo

AAHIM00/PMUDH00

Dispatch Category	LI
12 Char. Symbol	PRPPN$NWEDBE
9 Char. Symbol(s)	PPPRNE2AH · PPPRNE2AL
7 Char. Symbol	PMUDH00
Earliest Date	01-DEC-1995
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Propane NWE swaps 2nd month

Dispatch Category	DR
12 Char. Symbol	AAHIM0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAHIM00
Earliest Date	28-MAR-2001
Vendors	BLM CQI DRI EMS FTP FUT KR PL12 TR SAR
Description	Propane CIF ARA Lg 2-Mo

AAHIO00

Dispatch Category	DR
12 Char. Symbol	AAHIO0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAHIO00
Earliest Date	28-MAR-2001
Vendors	BLM CQI DRI EMS FTP FUT KR PL12
TR SAR	
Description	Propane CIF ARA Lg 3-Mo

AAHIL00/PMUDE00

Dispatch Category	DR
12 Char. Symbol	AAHIL0000000
9 Char. Symbol(s)	·
7 Char. Symbol	AAHIL00
Earliest Date	28-MAR-2001
Vendors	BLM CQI DRI EMS FTP FUT KR PL12
TR SAR	
Description	Propane CIF ARA Lg 1-Qr

Dispatch Category	LI
12 Char. Symbol	PRPPN$NWEDBF
9 Char. Symbol(s)	PPPRNEVAH · PPPRNEVAL
7 Char. Symbol	PMUDE00
Earliest Date	02-JAN-1997
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Propane NWE swaps 1st quarter

PMABC00 PROPANE W MED FOB EX-REF/STOR

Quality: Pressurized vessels including both field-grade and refinery material with a minimum of 93% C3s and a maximum of 30% olefinic content.

Size: Sales of up to 3,000mt basis FOB Lavera.

Location: The assessment is FOB basis Lavera, but includes the area west of Italy - including Algeria, Tunisia and Morocco. To the north, Italy and France are included, as well as the east and south coasts of Spain.

Timing: Vessels loading 5-15 days from date of publication.

Dispatch Category	LI
12 Char. Symbol	PRPPN$WMDCVE
9 Char. Symbol(s)	·
7 Char. Symbol	PMABC00
Earliest Date	05-APR-1985
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Propane FOB W Med Ex-Ref/Stor Hi

PMABJ00 PROPANE W MED FCA EX-REF/STOR

Quality: Pressurized vessels including both field-grade and refinery material with a minimum of 93% C3s and a maximum of 30% olefinic content.

Size: Parcels of 20-500mt

Location: FCA ex-refinery storage refers to sales of auto, trucks, and railcars of 20-500mt basis Lavera. The assessment includes the area west of Italy - including Algeria, Tunisia and Morocco. To the north, Italy and France are included, as well as the east and south coasts of Spain.

Timing: Loading between 3-10 days from date of publication.

Other: N/A

Dispatch Category LI 12 Char. Symbol PRPPN$WMDCVH 9 Char. Symbol(s) · 7 Char. Symbol PMABJ00 Earliest Date 22-JUL-1994 Vendors BLM CQI DRI EMS FTP FUT KR RTR SAR Description Propane FCA W Med Ex-Ref/Stor Hi

Dispatch Category	LI
12 Char. Symbol	PRPPN$WMDCVH
9 Char. Symbol(s)	·
7 Char. Symbol	PMABJ00
Earliest Date	22-JUL-1994
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Propane FCA W Med Ex-Ref/Stor Hi

PMABE00 PROPANE W MED CIF 7000+MT

Quality: Refrigerated commercial propane meeting Sonatrach specification.

Size: Full cargoes of 7,000 mt and greater

Location: Refers to trades in the west Mediterranean region, although prices will be normalized to Lavera. The assessment includes the area west of Italy - including Algeria, Tunisia and Morocco. To the north, Italy and France are included, as well as the east and south coasts of Spain.

Timing: Delivery 10-25 days from the date of publication.

Other: N/A

Dispatch Category	LI
12 Char. Symbol	PRPPN$WMDCVG
9 Char. Symbol(s)	PPPRWMHCH · PPPRWMHCL
7 Char. Symbol	PMABE00
Earliest Date	05-APR-1985
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Propane CIF W Med 7kt+

PMAAM00 BUTANE W MED FOB EX-REF/STOR

Quality: Both field-grade and refinery grade butane is included in the assessment with a maximum of 30% olefins, 85% normal butane and 49% isobutane.

Size: FOB butane refers to sales of parcels of a minimum of 2,500mt on an FOB basis Lavera.

Location: FOB basis Lavera ex-refinery storage including the area west of Italy - including Algeria, Tunisia and Morocco. To the north, Italy and France are included, as well as the east and south coasts of Spain.

Timing: Loading 5-15 days from date of publication.

Other: N/A

Dispatch Category	LI
12 Char. Symbol	PRPBTNWMDBHS
9 Char. Symbol(s)	PPBNWMAUH · PPBNWMAUL
7 Char. Symbol	PMAAM00
Earliest Date	05-APR-1985
Vendors	BLM CQI DRI EMS FTP FUT KR RTR SAR
Description	Butane WstMed FOB XRef/Str Hi

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APPENDIX I DEFINITION OF EN228

EUROPEAN STANDARD **EN 228: 2002**

NORME EUROPÉENNE

EUROPÄISCHE NORM

ICS 75.160.20 Supersedes EN 228:1999

Descriptors : petroleum products, road vehicles, mineral oils, automotive fuels, gasoline, unleaded gasoline, specifications, testing, petroleum, fuels, liquid fuels, petroleum technology, petroleum industry

English version

Automotive fuels - Unleaded petrol - Requirements and test methods

Carburants pour automobiles - Essence sans plomb - Exigences et méthodes d'essai

Kraftstoffe für Kraftfahrzeuge - Unverbleite Ottokraftstoffe - Anforderungen und Prüfverfahren

This draft European Standard is submitted to CEN members for Unique Acceptance Procedure.
It has been drawn up by Technical Committee CEN/TC 19.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of national standard without any alteration.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung
Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Foreword

This document has been prepared by CEN /TC 19, "Petroleum products, lubricants and related products".
This document is currently submitted to the Unique Acceptance Procedure.

This standard has been prepared under a Mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

This European Standard cancels and replaces EN 228:1999 in whole. In this 5th edition of EN 228 all relevant characteristics, requirements and test methods are specified.

Significant technical changes between this European Standard and the previous edition are:

- This version supports early national introduction of further reduced sulfur and aromatics contents anticipated by the European Union. Requirements of the modified European Fuels Directive 98/70/EC [1] are taken into account, including a maximum 10 mg/kg sulphur grade to be available in EU countries as from 1-1-2005 and is intended to replace all higher sulfur grades as from 1-1-2009.
- Test method dates are fully included in 2. Normative References.
  Dates have been removed from test method references in the text and in the tables.
  The modified European Fuels Directive 98/70/EC [1] refers to the test methods in EN 228, with the requirement that updated analytical methods must be shown to give at least the same accuracy and at least the same precision as the methods they replace.
- several new or revised test methods have been introduced
- Table 1, Table 2 and Table 3 explicitly differentiate between requirements included in the modified European Fuels Directive 98/70/EC [1] and other requirements.
- From 1-1-2005 regular grade unleaded petrol may be specified in a National Annex to this standard.
- Annex A has been updated and has become the Bibliography.

1 Scope

This European Standard specifies requirements and test methods for marketed and delivered unleaded petrol. It is applicable to unleaded petrol for use in petrol engine vehicles designed to run on unleaded petrol.

NOTE For the purposes of this European Standard, the terms "% (*m/m*)" and "% (*V/V*)" are used to represent respectively the mass fraction and the volume fraction.

2 Normative references

This European Standard incorporates by dated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision.

prEN 237:2002, *Liquid petroleum products - Petrol - Determination of low lead concentrations by atomic absorption spectrometry.*

EN 238:1996, *Liquid petroleum products - Petrol - Determination of the benzene content by infrared spectrometry.*

EN 1601:1997, *Liquid petroleum products - Unleaded petrol - Determination of organic oxygenate compounds and total oxygen content by gas chromatography (O-FID).*

EN 12177:1998, *Liquid petroleum products - Petrol - Determination of benzene content by gas chromatography.*

EN 13016-1:2000, *Liquid petroleum products - Vapour pressure - Part 1: Determination of air saturated vapour pressure (ASVP).*

EN 13132:2000, *Liquid petroleum products - Unleaded petrol - Determination of organic oxygenate compounds and total organically bound oxygen content by gas chromatography using column switching.*

prEN 14517:2002, Liquid *petroleum products — Determination of hydrocarbon types and oxygenates in petrol — Multidimensional gas chromatography method.*

EN ISO 2160:1998, *Petroleum products - Corrosiveness to copper - Copper strip test (ISO 2160:1998).*

prEN ISO/DIS 3170:2002, *Petroleum liquids – Manual sampling (ISO/DIS 3170:2002).*

EN ISO 3171:1988, *Petroleum liquids – Automatic pipeline sampling (ISO 3171:1988).*

EN ISO 3405:2000, *Petroleum products - Determination of distillation characteristics (ISO 3405:2000).*

EN ISO 3675:1998, *Crude petroleum and liquid petroleum products - Laboratory determination of density or relative density - Hydrometer method (ISO 3675:1998).*

EN ISO 4259:1995, *Petroleum products - Determination and application of precision data in relation to methods of test (ISO 4259:1992, including Cor. 1: 1993).*

prEN ISO/DIS 5163:2002, *Motor and aviation-type fuels - Determination of knock characteristics - Motor method (ISO/DIS 5163:2002).*

prEN ISO/DIS 5164:2002, *Motor fuels - Determination of knock characteristics - Research method (ISO/DIS 5164:2002).*

EN ISO 6246: 1997, *Petroleum products - Gum content of light and middle distillate fuels - Jet*

evaporation method (ISO 6246:1995).

EN ISO 7536: 1996, *Gasoline - Determination of oxidation stability of gasoline - Induction period method (ISO 7536:1994).*

EN ISO 12185:1996/C1:2001, *Crude petroleum and petroleum products - Determination of density - Oscillating U-tube method (ISO 12185:1996, including Cor.1:2001).*

prEN ISO/DIS 20846:2002, *Petroleum products – Determination of total sulfur content of liquid petroleum products – Ultraviolet Fluorescence Method (ISO/DIS 20846:2002)*

prEN ISO/DIS 20847:2002, *Petroleum products – Determination of total sulfur content of liquid petroleum products – Energy-dispersive X-ray fluorescence method (ISO/DIS 20847:2002).*

prEN ISO/DIS 20884:2002, *Petroleum products – Determination of low sulfur content of automotive fuels – Wavelength-dispersive X-ray fluorescence spectroscopy (ISO/DIS 20884:2002).*

ASTM D 1319:2002, *Hydrocarbon types in liquid petroleum products by Fluorescent Indicator Adsorption.*

ASTM D 1613:1996, *Standard test method for acidity in volatile solvents and chemical intermediates used in paint, varnish, lacquer, and related products*

3 Sampling

Samples shall be taken as described in prEN ISO/DIS 3170 or EN ISO 3171 and/or in accordance with the requirements of national standards or regulations for the sampling of unleaded petrol. The national requirements shall be set out in detail or shall be referred to by reference in a national annex to this European Standard.

In view of the sensitivity of some of the test methods referred to in this European Standard, particular attention shall be paid to compliance with any guidance on sampling containers which is included in the test method standard.

It is essential that for sampling of unleaded petrol the containers used to take and store the samples before test are not contaminated with lead and/or sulfur.

4 Pump marking

Information to be marked on dispensing pumps used for delivering unleaded petrol, and the dimensions of the mark shall be in accordance with the requirements of national standards or regulations for the marking of pumps for unleaded petrol. Such requirements shall be set out in detail or shall be referred to by reference in a national annex to this European Standard.

NOTE It is recommended to set marking for sulfur and aromatics in a national annex to this European Standard. The recommended designation for 10 mg/kg sulfur content is the letter S striped out with a slash forward, eventually accompanied with the wording "sulfur-free" in national language. An example is given in Figure 1.

Figure 1 - Example of marking of 10 mg/kg sulfur

5 Requirements and test methods

5.1 Dyes and markers

The use of dyes and markers is allowed.

5.2 Additives

In order to improve the performance quality the use of additives is allowed. Suitable fuel additives without known harmful side-effects are recommended in the appropriate amount, to help to avoid deterioration of driveability and emissions control durability. Other technical means with equivalent effect may also be used.

NOTE Deposit forming tendency test methods suitable for routine control purposes have not yet been identified and developed.

5.3 Phosphorus

In order to protect automotive catalyst systems, phosphorus containing compounds shall not be included in unleaded petrol.

5.4 Acidity

To adequately limit the acidity of the petrol, the acidity of fuel ethanol used as a blendstock shall not exceed 0,007 % (*m/m*) (as acetic acid) when tested in accordance with ASTM D 1613.

5.5 Generally applicable requirements and test methods

When tested by the methods indicated in Tables 1, 2 and 3, premium grade unleaded petrol and regular grade unleaded petrol shall be in accordance with the limits specified in Tables 1, 2 and 3.

As from 1-1-2005 regular grade petrol (Table 2) is not longer included in EN 228 (see Foreword).

Methods of test included as normative references in EN 228, when updated, shall give at least the same accuracy and at least the same level of precision as the methods they replace.

Table 1 - Requirements and test methods for premium grade unleaded petrol
requirements in bold refer to the modified European Directive 98/70/EC [1]

Property	Units	Limits Min.	Limits Max.	Test Method [a] (See 2. Normative references)
Research octane number, RON		**95,0**	--	prEN ISO/DIS 5164 [b]
Motor octane number, MON		**85,0**	--	prEN ISO/DIS 5163 [b]
Lead content	**mg/l**	--	**5**	prEN 237
Density (at 15 °C) [c]	kg/m^3	720	775	EN ISO 3675 EN ISO 12185
Sulfur content [c]	**mg/kg**	--	**150** (until 31-12-2004) or **50,0**	prEN ISO/DIS 20846 prEN ISO/DIS 20847 prEN ISO/DIS 20884
		--	**10,0**	prEN ISO/DIS 20846 prEN ISO/DIS 20884
Oxidation stability	minutes	360	--	EN ISO 7536
Existent gum content (solvent washed)	mg/100 ml	--	5	EN ISO 6246
Copper strip corrosion (3 h at 50 °C)	rating	class 1		EN ISO 2160
Appearance		clear and bright		visual inspection
Hydrocarbon type content [c,]	**% (V/V)**			ASTM D 1319 [d, e, f] prEN 14517
- olefins		--	**18,0**	
- aromatics		--	**42,0** (until 31-12-2004) or **35,0**	
Benzene content [c]	**% (V/V)**	--	**1,00**	EN 12177 EN 238 prEN 14517
Oxygen content [c]	**% (m/m)**	--	**2,7**	EN 1601 EN 13132
Oxygenates content [c]	**% (V/V)**			EN 1601 EN 13132
- methanol [g]		--	**3,0**	
- ethanol [h]		--	**5,0**	
- iso-propyl alcohol		--	**10,0**	
- iso-butyl alcohol		--	**10,0**	
- tert-butyl alcohol		--	**7,0**	
- ethers (5 or more C atoms)		--	**15,0**	
- other oxygenates [i]		--	**10,0**	

[a] See also 5.7.1
[b] A correction factor of 0.2 for MON and RON shall be subtracted for the calculation of the final result before reporting accordance to the requirements of the modified European Directive 98/70/EC [1]
[c] See also 5.7.2
[d] The content of oxygenate compounds shall be determined as prescribed in Table 1 in order to make the corrections when necessary according to clause 13.2 of ASTM D 1319.
[e] When Ethyl-tert-butyl ether (ETBE) is present in the sample, the aromatic zone shall be determined from the pink brown ring downstream of the red ring normally used in the absence of ETBE. The presence or absence of ETBE can be concluded from the analysis as required in footnote d.
[f] For the purpose or this standard ASTM D 1319 shall be applied without the optional depentanisation step. Therefore clauses 6.1, 10.1 and 14.1.1 shall not be applied.
[g] Stabilising agents shall be added.
[h] Stabilising agents may be necessary.
[i] Other mono-alcohols and ethers with a final boiling point no higher than prescribed in Table 3.

Table 2 - Requirements and test methods for regular grade unleaded petrol until 31-12-2004 (see clause 5.5)

requirements in bold refer to the modified European Directive 98/70/EC [1]

Property	Units	Limits Min.	Limits Max.	Test Method [a] (See 2. Normative references)
Research octane number, RON		[k]	--	prEN ISO/DIS 5164 [b]
Motor octane number, MON		[k]	--	prEN ISO/DIS 5163 [b]
Lead content	**mg/l**	--	**5**	prEN 237
Density (at 15 °C) [c]	kg/m^3	720	775	EN ISO 3675 EN ISO 12185
Sulfur content [c]	**mg/kg**	--	**150** or **50**	prEN ISO/DIS 20846 prEN ISO/DIS 20847 prEN ISO/DIS 20884
		--	10,0	prEN ISO/DIS 20846 prEN ISO/DIS 20884
Oxidation stability	minutes	360	--	EN ISO 7536
Existent gum content (solvent washed)	mg/100 ml	--	5	EN ISO 6246
Copper strip corrosion (3 h at 50 °C)	rating	class 1		EN ISO 2160
Appearance		clear and bright		visual inspection
Hydrocarbon type content [c,]	**% (V/V)**			ASTM D 1319 [d, e, f] prEN 14517
- olefins		--	**21,0**	
- aromatics		--	**42,0** **or** **35,0**	
Benzene content [c]	**% (V/V)**	--	**1,00**	EN 12177 EN 238 prEN 14517
Oxygen content [c]	**% (m/m)**	--	**2,7**	EN 1601 EN 13132
Oxygenates content [c]	**% (V/V)**			EN 1601 EN 13132
- methanol [g]		--	**3,0**	
- ethanol [h]		--	**5,0**	
- iso-propyl alcohol		--	**10,0**	
- iso-butyl alcohol		--	**10,0**	
- tert-butyl alcohol		--	**7,0**	
- ethers (5 or more C atoms)		--	**15,0**	
- other oxygenates [i]		--	**10,0**	

[a] See also 5.7.1
[b] A correction factor of 0.2 for MON and RON shall be subtracted for the calculation of the final result before reporting accordance to the requirements of the modified European Directive 98/70/EC [1]
[c] See also 5.7.2
[d] The content of oxygenate compounds shall be determined as prescribed in Table 1 in order to make the corrections when necessary according to clause 13.2 of ASTM D 1319
[e] When Ethyl-tert-butyl ether (ETBE) is present in the sample, the aromatic zone shall be determined from the pink brown ring downstream of the red ring normally used in the absence of ETBE. The presence or absence of ETBE can be concluded from the analysis as required in footnote d
[f] For the purpose or this standard ASTM D 1319 shall be applied without the optional depentanisation step. Therefore clauses 6.1, 10.1 and 14.1.1 shall not be applied
[g] Stabilising agents shall be added
[h] Stabilising agents may be necessary
[i] Other mono-alcohols and ethers with a final boiling point no higher than prescribed in Table 3
[k] When regular grade is marketed, RON and MON shall be specified in a national annex to this European Standard, but **not lower than 81.0 MON and 91.0 RON**

5.6 Climatically dependent requirements and test methods

5.6.1 Water tolerance

Given the known potential for some motor gasolines to absorb water, suppliers shall ensure that no water segregation occurs under the range of climatic conditions experienced in the country concerned. When there is a risk of water separation, anti-corrosion additives shall be incorporated.

5.6.2 Volatility requirements

To meet hot and cold vehicle driveability requirements under the European seasonal and geographical conditions, 10 volatility classes are defined as given in Table 3 and illustrated in Figure 1. Each country shall, in a national annex to this European Standard, specify which of these 10 volatility classes apply during which period of the year for defined regions of the country.

Class A shall apply during summer, starting not later than 1 May and ending not before 30 September. In countries with arctic or severe winter conditions, class B shall apply during summer, starting not later than 1 June and ending not before 31 August.

Each country shall apply one or more volatility classes with VLI (class C1, D1, E1, or F1) for the transition periods on either side of summer. Each transition period shall be a minimum of 4 weeks. When transition periods are deemed critical, the critical transition period(s) shall be a minimum of 8 weeks. During the remaining period one or more winter classes shall apply with or without VLI (class C, C1, D, D1, E, E1, F or F1).

Table 3 - Volatility classes
requirements in bold refer to the modified European Directive 98/70/EC [1]

Property	Units	Limits						Test method [a] See also 2. Normative references
		class A	class B	class C/C1	class D/D1	class E/E1	class F/F1	
Vapour pressure	kPa, min. **kPa, max.**	45,0 **60,0**	45,0 **70,0**	50,0 80,0	60,0 90,0	65,0 95,0	70,0 100,0	EN 13016-1[b]
% evaporated at 70°C, E70	% (*V/V*), min. % (*V/V*), max.	20,0 48,0	20,0 48,0	22,0 50,0	22,0 50,0	22,0 50,0	22,0 50,0	EN ISO 3405
% evaporated at 100°C, E100	**% (*V/V*), min.** % (*V/V*), max.	**46,0** 71,0	**46,0** 71,0	**46,0** 71,0	**46,0** 71,0	**46,0** 71,0	**46,0** 71,0	EN ISO 3405
% evaporated at 150°C, E150	**% (*V/V*), min.**	**75,0**	**75,0**	**75,0**	**75,0**	**75,0**	**75,0**	EN ISO 3405
Final Boiling Point FBP	°C, max.	210	210	210	210	210	210	EN ISO 3405
Distillation residue	% (*V/V*), max.	2	2	2	2	2	2	EN ISO 3405
VLI (10 VP + 7 E70)	index, max.	--	--	C --	D --	E --	F --	
VLI (10 VP + 7 E70)	index, max.			C1 1050	D1 1150	E1 1200	F1 1250	

[a] See also 5.7.1
[b] DVPE shall be reported

No change anticipated in figure 1

Figure 1 - Relation between VP, E70 and VLI for the ten different volatility classes

5.7 Precision and dispute

5.7.1 All test methods referred to in this European Standard include a precision statement. In cases of dispute, the procedures described in EN ISO 4259 for resolving the dispute, and interpretation of the results based on test method precision shall be used.

5.7.2.
In cases of dispute concerning sulfur prEN ISO/DIS 20847 is unsuitable as an arbitration method.
In cases of dispute concerning benzene content, EN 12177 shall be used.
In cases of dispute concerning oxygen and oxygenates content, EN 1601 shall be used.
In cases of dispute on hydrocarbon type content, ASTM D 1319 shall be used.
In cases of dispute concerning density, EN-ISO 3675 shall be used.

Bibliography

[1] Directive 2002/XX/EC of the European Parliament and of the Council on the quality of petrol and diesel fuels and amending Directive 98/70/EC *(to be published, proposal by the Council known as 5117/02).*

APPENDIX II DEFINITION OF EN590

EUROPEAN STANDARD **prEN 590: 2002**

NORME EUROPÉENNE

EUROPÄISCHE NORM

ICS 75.160.20 Supersedes EN 590: 1999

Descriptors : petroleum products, road vehicles, diesel fuels, specifications, testing, automotive fuels, petroleum, fuels, liquid fuels, petroleum technology, petroleum industry

English version

Automotive fuels - Diesel - Requirements and test methods

Carburants pour automobiles - Combustibles pour moteurs diesel (gazole) - Exigences et méthodes d'essai

Kraftstoffe für Kraftfahrzeuge - Dieselkraftstoff - Anforderungen und Prüfverfahren

This draft European Standard is submitted to CEN members for the Unique Acceptance Procedure.
It has been drawn up by Technical Committee CEN/TC 19.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of national standard without any alteration.

This draft European Standard was established in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Foreword

This document has been prepared by CEN /TC 19, "Petroleum products, lubricants and related products".

This document is currently submitted to the Unique Acceptance Procedure.

This European Standard has been prepared under a Mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

This European Standard replaces EN 590:1999 in whole. In this fourth edition of EN 590 all relevant characteristics, requirements and test methods are specified.

Significant technical changes between this European Standard and the previous edition are:

- The requirements of the modified European Fuels Directive 98/70/EC [1] have been included, supporting early national introduction of zero sulfur automotive diesel fuel.
- Provision is made for a maximum of 5% (*V/V*) of fatty acid methyl esters (FAME) to be included in automotive diesel fuel.
- Dates have been included with all normative test method references in order to comply with the requirements of the European Commission, with the accompanying assurance that updated versions will always give similar accuracy and the same or better precision.
- Table 1 explicitly differentiates between requirements included in the modified European Fuels Directive 98/70/EC [1] and other requirements.
- Many of the test methods included in this standard were the subject of inter-laboratory testing to determine the applicability of the method and its precision in relation to blends of automotive diesel fuel containing 5% (*V/V*) of different sources of fatty acid methyl esters (FAME). These fatty acid methyl esters were produced from rapeseed and sunflower oil.

Annex A is normative and contains the precision data generated on the test methods which are the result of the inter-laboratory testing as mentioned above, carried out by working groups of CEN/TC19.

1 Scope

This European Standard specifies requirements and test methods for marketed and delivered automotive diesel fuel. It is applicable to automotive diesel fuel for use in diesel engine vehicles designed to run on automotive diesel fuel.

NOTE For the purposes of this European Standard, the terms "% (*m/m*)" and "% (*V/V*)" are used to represent respectively the mass fraction and the volume fraction.

2 Normative references

This European Standard incorporates by dated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision.

EN 116:1997, *Diesel and domestic heating fuels - Determination of cold filter plugging point.*

EN 12662:1998, *Liquid petroleum products – Determination of contamination in middle distillates.*

EN 12916:2000, *Petroleum products – Determination of aromatic hydrocarbon types in middle distillates – High performance liquid chromatography method with refractive index detection.*

prEN 14078:2002, *Liquid petroleum products – Determination of fatty acid methyl ester (FAME) content in middle distillates – Infrared spectrometry method.*

prEN 14214:2002, *Automotive fuels – Fatty acid methyl esters (FAME) for diesel engines – Requirements and test methods*

EN ISO 2160:1998, *Petroleum products - Corrosiveness to copper - Copper strip test. (ISO 2160:1998)*

prEN ISO/FDIS 2719:2002, *Petroleum products and lubricants - Determination of flash point - Pensky-Martens closed cup method. (ISO/FDIS 2719:2002)*

EN ISO 3104:1996, *Petroleum products - Transparent and opaque liquids - Determination of kinematic viscosity and calculation of dynamic viscosity. (ISO 3104:1994)*

prEN ISO/DIS 3170:2002, *Petroleum liquids – Manual sampling. (ISO/DIS 3170:2002)*

EN ISO 3171:1988, *Petroleum liquids – Automatic pipeline sampling. (ISO 3171:1988)*

EN ISO 3405:2000, *Petroleum products - Determination of distillation characteristics. (ISO 3405:2000)*

EN ISO 3675:1998, *Crude petroleum and liquid petroleum products - Laboratory determination of density or relative density - Hydrometer method. (ISO 3675:1998)*

EN ISO 4259:1995, *Petroleum products - Determination and application of precision data in relation to methods of test. (ISO 4259:1992, including Cor. 1: 1993)*

EN ISO 4264: 1996, *Petroleum products - Distillate fuels - Calculation of cetane index.*

(ISO 4264: 1995)

EN ISO 5165:1998, *Diesel fuels - Determination of ignition quality - Cetane method. (ISO 5165:1998)*

prEN ISO/DIS 6245:2002, *Petroleum products - Determination of ash. (ISO/DIS 6245:2001)*

EN ISO 10370:1995, *Petroleum products - Determination of carbon residue (micro method). (ISO 10370:1993).*

EN ISO 12185:1996/C1:2001, *Crude petroleum and petroleum products - Determination of density - Oscillating U-tube method (ISO 12185:1996, including Cor.1:2001).*

EN ISO 12205:1996, *Petroleum products - Determination of the oxidation stability of distillate fuels. (ISO 12205:1995)*

EN ISO 12937:2000, *Petroleum products - Determination of water - Coulometric Karl Fisher titration method.* (ISO 12937:2000)

EN ISO 13759:1996, *Petroleum products - Determination of alkyl nitrate in diesel fuels - Spectrometric method.* (ISO 13759:1996)

prEN-ISO/DIS 20846:2002, *Petroleum products – Determination of total sulfur content of liquid petroleum products – Ultraviolet Fluorescence Method (ISO/DIS 20846:2002)*

prEN-ISO/DIS 20847:2002, *Petroleum products – Determination of total sulfur content of liquid petroleum products – Energy-dispersive X-ray fluorescence method (ISO/DIS 20847:2002).*

prEN-ISO/DIS 20884:2002, *Petroleum products – Determination of low sulfur content of automotive fuels – Wavelength-dispersive X-ray fluorescence spectroscopy (ISO/DIS 20884:2002).*

EN 23015:1994, *Petroleum products - Determination of cloud point. (ISO 3015:1992)*

ISO 12156-1:1997, *Diesel fuels - Assessment of lubricity by HFRR.* (including Cor.1:1998)

3 Sampling

Samples shall be taken as described in prEN ISO/DIS 3170 or EN ISO 3171 and/or in accordance with the requirements of national standards or regulations for the sampling of automotive diesel fuel. The national requirements shall be set out in detail or shall be referred to by reference in a national annex to this European Standard.

In view of the sensitivity of some of the test methods referred to in this European Standard, particular attention shall be paid to compliance with any guidance on sampling containers which is included in the test method standard.

4 Pump marking

Information to be marked on dispensing pumps used for delivering automotive diesel fuel, and the dimensions of the mark shall be in accordance with the requirements of national standards or regulations for the marking of pumps for automotive diesel fuel. Such requirements shall be set out in detail or shall be referred to by reference in a national annex to this European

Standard.

NOTE It is recommended to set marking for sulfur and aromatics in a national annex to this European Standard. The recommended designation for 10 mg/kg sulfur content is the letter S striped out with a slash, eventually accompanied with the wording "sulfur-free" in national language.

5 Requirements and test methods

5.1 Dyes and markers

The use of dyes or markers is allowed.

5.2 Additives

In order to improve the performance quality, the use of additives is allowed. Suitable fuel additives without known harmful side-effects are recommended in the appropriate amount, to help to avoid deterioration of driveability and emissions control durability. Other technical means with equivalent effect may also be used.

NOTE Deposit forming tendency test methods suitable for routine control purposes have not yet been identified and developed.

5.3 Fatty acid methyl ester (FAME)

Diesel fuel may contain up to 5% (*V/V*) of FAME complying with prEN 14214.

NOTE A suitable method for the separation and identification of FAME is given in EN 14331 [2].

5.4 Generally applicable requirements and related test methods

5.4.1 When tested by the methods indicated in Table 1, automotive diesel fuel shall be in accordance with the limits specified in Table 1.

5.4.2 The limiting value for the carbon residue given in Table 1 is based on product prior to addition of ignition improver, if used. If a value exceeding the limit is obtained on finished fuel in the market, EN ISO 13759 shall be used as an indicator of the presence of a nitrate-containing compound. If an ignition improver is thus proved present, the limit value for the carbon residue of the product under test cannot be applied. The use of additives does not exempt the manufacturer from meeting the requirement of maximum 0,30 % (*m/m*) of carbon residue prior to addition of additives.

Table 1 - Generally applicable requirements and test methods
requirements in bold refer to the modified European Directive 98/70/EC [1]

Property	Unit	Limits		Test method [a] (See 2. Normative references)
		minimum	maximum	
Cetane number [b]		**51,0**	–	EN ISO 5165
Cetane index		46,0	–	EN ISO 4264
Density at 15 °C [c]	**kg/m³**	820	**845**	EN ISO 3675 EN ISO 12185
Polycyclic aromatic hydrocarbons [d, e]	**% (*m/m*)**	–	**11**	EN 12916
Sulfur content [f]	**mg/kg**	–	**350** (until 31-12-2004) or **50,0**	prEN ISO/DIS 20846 prEN ISO/DIS 20847 prEN ISO/DIS 20884
			10,0	prEN ISO/DIS 20846 prEN ISO/DIS 20884
Flash point	°C	Above 55	–	prEN ISO/FDIS 2719
Carbon residue [g] (on 10 % distillation residue)	% (*m/m*)	–	0,30	EN ISO 10370
Ash content	% (*m/m*)	–	0,01	prEN ISO/DIS 6245
Water content	mg/kg	–	200	EN ISO 12937
Total contamination	mg/kg	–	24	EN 12662
Copper strip corrosion (3 h at 50 °C)	rating	class 1		EN ISO 2160
Oxidation stability	g/m³	–	25	EN ISO 12205
Lubricity, corrected wear scar diameter (wsd 1,4) at 60 °C	µm	–	460	ISO 12156-1
Viscosity at 40 °C	mm²/s	2,00	4,50	EN ISO 3104
Distillation [h, i]				EN ISO 3405
% (*V/V*) recovered at 250 °C	% (*V/V*)		< 65	
% (*V/V*) recovered at 350 °C	% (*V/V*)	85		
95 % (*V/V*) recovered at	**°C**		**360**	
Fatty acid methyl ester (FAME) content [k]	% (*V/V*)	-	5	prEN 14078

[a] See also 5.6.1
[b] See also 5.6.4
[c] See also 5.6.2
[d] For the purposes of this European Standard, polycyclic aromatic hydrocarbons are defined as the total aromatic hydrocarbon content less the mono-aromatic hydrocarbon content, both as determined by EN 12916.
[e] EN 12916 is not able to distinguish between polycyclic aromatic hydrocarbons and fatty acid methyl esters (FAME). FAME, if present in diesel fuels, will give a bias which will increase the value for polycyclic aromatic hydrocarbons. An improved method for the determination of polycyclic aromatic hydrocarbons is under development by CEN/TC 19.
[f] See also 5.6.3
[g] See also 5.4.2
[h] For the calculation of the cetane index the 10 %, 50 % and 90 % (*V/V*) recovery points are also needed.
[i] The limits for distillation at 250 °C and 350 °C are included for diesel fuel in line with EU Common Customs tariff.
[k] FAME shall meet the requirements of prEN 14214

5.5 Climate dependent requirements and related test methods

5.5.1 For climate-dependent requirements options are given to allow for seasonal grades to

be set nationally. The options are for temperate climates six CFPP (cold filter plugging point) grades and for arctic or severe winter climates five different classes. Climate-dependent requirements are given in Table 2. Table 2 is divided into two sections, one for temperate climates (Table 2a) and one for arctic or severe winter climates (Table 2b). When tested by the methods given in Tables 2a and 2b, automotive diesel fuel shall be in accordance with the limits specified in these tables.

5.5.2 The cetane number limits for arctic or severe winter grades in Table 2b are lower than for the temperate grade (Table 1), reflecting the correlation between ignition quality and density, and the low density of arctic or severe winter grades. The values for cetane number given in Table 2b do not meet the requirements of the modified European Directive 98/70/EC [1], and are included for use in countries where the modified European Directive 98/70/EC [1] does not apply or for countries where cetane number exceptions have been granted for arctic or severe winter grades.

5.5.3 In a national annex to this European Standard each country shall detail requirements for a summer and a winter grade and may include (an) intermediate and/or regional grade(s) which shall be justified by national meteorological data.

Table 2 - Climate-related requirements and test methods

Table 2a - Temperate climates

Property	Unit	Limits						Test method [a]
		Grade A	Grade B	Grade C	Grade D	Grade E	Grade F	(See 2. Normative references)
CFPP	°C, max.	+5	0	-5	-10	-15	-20	EN 116
[a] See also 5.6.1								

Table 2b - Arctic or severe winter climates

Property	Units	Limits					Test method [a]
		class 0	class 1	class 2	class 3	class 4	(See 2. Normative references)
CFPP	°C, max.	-20	-26	-32	-38	-44	EN 116
Cloud point	°C, max.	-10	-16	-22	-28	-34	EN 23015
Density at 15 °C [b]	kg/m^3, min. kg/m^3, max.	800 845	800 845	800 840	800 840	800 840	EN ISO 3675 EN ISO 12185
Viscosity at 40 °C	mm^2/s, min. mm^2/s, max.	1,50 4,00	1,50 4,00	1,50 4,00	1,40 4,00	1,20 4,00	EN ISO 3104
Cetane number [c]	minimum	49,0	49,0	48,0	47,0	47,0	EN ISO 5165
Cetane index	minimum	46,0	46,0	46,0	43,0	43,0	EN ISO 4264
Distillation [d,e] % (*V/V*) recovered at 180 °C % (*V/V*) recovered at 340 °C	 % (*V/V*),max. % (*V/V*),min.	 10 95	 10 95	 10 95	 10 95	 10 95	EN ISO 3405

[a] See also 5.6.1
[b] See also 5.6.2
[c] See also 5.6.4
[d] EU Common Customs Tariff definition of gas oil may not apply to the grades defined for use in arctic or severe winter climates.
[e] For the calculation of the cetane index the 10 %, 50 % and 90 % (*V/V*) recovery points are also needed

5.6 Precision and dispute

5.6.1 All test methods referred to in this European Standard include a precision statement. In cases of dispute, the procedures described in EN ISO 4259 for resolving the dispute, and interpretation of the results based on the test method precision, shall be used.

5.6.2 In cases of dispute concerning density, EN ISO 3675 shall be used.

5.6.3 In cases of dispute concerning sulfur content, prEN ISO/DIS 20847 is unsuitable as an arbitration method.

5.6.4 For the determination of cetane number alternative methods may also be used in cases of dispute, provided that these methods originate from a recognised method series, and have a valid precision statement, derived in accordance with EN ISO 4259, which demonstrates precision at least equal to that of the referenced method. The test result, when using an alternative method, shall also have a demonstrable relationship to the result obtained when using the referenced method.

Annex A
(Normative)
Details of inter-laboratory test programme

Table A.1 - Precision data from inter-laboratory test programme for requirements where precision differs from ISO/TC28 precision data

Property	Test method	Unit	CEN/TC19 data for 5% (*V/V*) FAME blend
Viscosity at 40 °C	EN ISO 3104	mm^2/s	r 0,11% R 1,8%
Flash point	EN 22719	deg C	r 2,0 R 3,5
Ash content	prEN ISO/DIS 6245	% (m/m)	not available
Total contamination	EN 12662	mg/kg	not available
Oxidation stability	EN ISO 12205	g/m^3	not available
Distillation	EN ISO 3405	deg C	not available
CFPP	EN 116	deg C	not available
where: r is repeatability (EN ISO 4259) R is reproducibility (EN ISO 4259)			

Bibliography

[1] Directive 2002/XX/EC of the European Parliament and of the Council on the quality of petrol and diesel fuels and amending Directive 98/70/EC (to be published, proposal known as COM(2001) 241 final).

[2] EN 14331:2002, Liquid petroleum products – Separation and characterization of fatty acid methyl esters (FAME) by liquid chromatography/ gas chromatography (LC/GC).

APPENDIX III TYPICAL MIDDLE DISTILLATE QUALITIES

These specifications represent a guideline, but are not Platts specifications. Platts assesses the typical grades in the market.

DIESEL

PROPERTY	UNITS	50 ULSD cargoes NWE and Med	EN590 cargoes NWE and MED	ULSD cargoes NWE	10 cargoes and barges	ULSD barges ARA
SULFUR	Parts per Million	50 max	350 max	50 max	10 max	50 max
DENSITY At 15 deg C	Kg/m3	0.820-0.845	0.820-0.845	0.820-0.835	0.820-0.845	0.820-0.845
CETANE INDEX NUMBER		46 min	46 min	46 min	46 min	46 min
CLOUD						
Winter	Deg C	-5 max	-5 max	-5 max	-7 max	-7 max (*1)
Intermediate				-3 max	0 max	
Summer		5 max	5 max	3 max	5 max	4 max
CFFP POINT						
Winter	Deg C	-15 max	-15 max	-15 max	-22 max	-20 max
Intermediate					-13 max	-11 max
Summer		0 max	0 max	-5 max	-2	-5 max
DISTILLATION						
Recovered at	% Vol					
250 deg C		65 max	65 max	65 max	64 max	64 max
345 deg C				95 min		
350 deg C		85 min	85 min		85 min	85 min
360 deg C			95 min		95 min	95 min
370 deg C						
FLASH POINT	Deg C	55 min	55 min	60 min (*1)	56 min (*3)	56 min
		120 max	120 max			
VISCOSITY	At 40 deg C	2 to 4.5	2 to 4.5	2 to 4.5	2 to 4.5	2 to 4.5

(*1)-5 cloud is often traded, if effective WASA available, minimum 150ppm, as part of an industry agreement
(*2) 55 min is the standard flash, but tends to be 60 flash min in practice.
(*3) 10ppm barges can reflect 59 min flash point for pipeline grade, but not barge

GASOIL

PROPERTY	UNITS	GERMAN Cargo DIN and barge	FRENCH FOD	RUSSIAN
SULFUR	Parts per million	2000	2000	2000
DENSITY	Kg/m3	Assessed basis	Assessed basis	Assessed basis
		0.845	0.845	0.845
CETANE INDEX		Standard calorific value 42.6 MJ/KG	40 min	45 min, but typically tends to be more than 50
CLOUD	Deg C	1 max (a)	2 max	-5 max
		2 max (b)		
		3 max (c)		
CFPP POINT	Deg C	-10 max (a)	- 5 max	-7 typical
		-11 max (b)		
		-12 max ©		
DISTILLATION	% Vol			
Recovered at				
280 deg C		65 max	65 max	50 max
360 deg C		85 min	85 min	96 min
FLASH POINT	Deg C	55 min	(*4)	55 min
62 min				
VISCOSITY				
At 20 deg C				3 to 6
At 40 deg C		2 to 6	2 to 4.5	

(*4) German DIN official is 55 min flash, but the requirements is sometimes higher in the cargo market, 57 min flash.
TEST METHOD
French FOD and German DIN test method is based on standard European test methods.
Russian gasoil test method is GOST

APPENDIX IV ASSESSMENT LIST WITH DATA CODES

DATA CODES

Each Platts assessment is identified in the electronic databases by a 7-character data code. The following tables provides the data codes for each European oil product assessment carried in Platts European Marketscan and each LPG assessment carried in LPGaswire. The table layout is that carried in the telex/newsletter version of these publications; when assessments are carried in related publications such as Platts Oilgram Price Report, Platts Global Alert, or the regional marketscans, the actual layout may vary.

EUROPEAN MARKETSCAN ASSESSMENTS

		FOB Med (Italy)			CIF Med(Genova/Lavera)	
Prem Unl	+X.00	PGAMP00-PGAMP00	+X.00	+X.00	PGAMN00-PGAMN00	+X.00
Prem Unl 50ppm	+X.00	AAOPW00-AAOPW00	+X.00	+X.00	AAOPX00-AAOPX00	+X.00
Prem 15	+X.00	PGABV00-PGABV00	+X.00			
Naphtha	+X.00	PAAAI00-PAAAI00	+X.00	+X.00	PAAAH00-PAAAH00	+X.00
Jet Av.Fuel	+X.00	AAIDL00-AAIDL00	+X.00			
EN590 **	+X.00	PPAQB00-PPAQB00	+X.00	+X.00	PPAQD00-PPAQD00	+X.00
50ppm ULSD	+X.00	AAOQC00-AAOQC00	+X.00	+X.00	AAOQD00-AAOQD00	+X.00
Gasoil.2	+X.00	POAAB00-POAAB00	+X.00	+X.00	POAAA00-POAAA00	+X.00
1 PCT	+X.00	PUAAK00-PUAAK00	+X.00	+X.00	PUAAJ00-PUAAJ00	+X.00
3.5 PCT	+X.00	PUAAZ00-PUAAZ00	+X.00	+X.00	PUAAY00-PUAAY00	+X.00
Jet FOB Med	Prem	AAIDN00-AAIDN00				
		Cargoes CIF NWE/Basis ARA			**Cargoes FOB NWE**	
Prem Unl	+X.00	PGABH00-PGABH00	+X.00	+X.00	PGABI00-PGABI00	+X.00
Prem Unl 10ppm	+X.00	AAOPZ00-AAOPZ00	+X.00	+X.00	AAOPY00-AAOPY00	+X.00
Reg Unl	+X.00	PGACZ00-PGACZ00	+X.00	+X.00	PGADA00-PGADA00	+X.00
Nap Aug	+X.00	PAAAJ00-PAAAJ00	+X.00			
Nap Phy	+X.00	PAAAL00-PAAAL00	+X.00			
Jet	+X.00	PJAAU00-PJAAU00	+X.00	+X.00	PJAAV00-PJAAV00	+X.00
EN590(1)	+X.00	PPAQH00-PPAQH00	+X.00	+X.00	PPAQF00-PPAQF00	+X.00
10 PPM	+X.00	AAKWP00-AAKWP00	+X.00	+X.00	AAKWR00-AAKWR00	+X.00
ULSD	+X.00	AAIKO00-AAIKO00	+X.00	+X.00	AAIKM00-AAIKM00	+X.00
50ppm ULSD	+X.00	AAOQB00-AAOQB00	+X.00	+X.00	AAOQA00-AAOQA00	+X.00
0.2 RGO	+X.00	AAOQZ00-AAOQZ00	+X.00			
Gasoil.2	+X.00	POAAC00-POAAC00	+X.00	+X.00	POAAD00-POAAD00	+X.00
1 PCT		PUAAL00-PUAAL00		+X.00	PUAAM00-PUAAM00	+X.00
3.5 PCT	+X.00	PUABA00-PUABA00	+X.00	+X.00	PUABB00-PUABB00	+X.00
0.5-0.7 PCT S.R.				+X.00	PKABA00-PKABA00	+X.00
LS VGO(4)	+X.00	AAHMZ00-AAHMZ00	+X.00	+X.00	AAHMX00-AAHMX00	+X.00
HS VGO(4)	+X.00	AAHND00-AAHND00	+X.00	+X.00	AAHNB00-AAHNB00	+X.00
		Barges FOB Rotterdam	**150ppm-Barge diff - 50ppm**			
Unl 98	+X.00	PGAMR00-PGAMR00	+X.00			
Prem Unl	+X.00	PGABM00-PGABM00	+X.00	AAIJP00/AAIJP00	AALBJ00/AALBJ00	
Euro 50ppm	+X.00	AANWY00-AANWY00	+X.00			
Reg Unl	+X.00	PGADE00-PGADE00	+X.00			
MTBE	+X.00	PHAKZ00-PHAKZ00	+X.00	IPE Gasoil Avg 17.30(Ldn Time)		
Nap Phy	+X.00	PAAAM00-PAAAM00	+X.00	Jul PXAAJ00 IPE CODE		
Jet	+X.00	PJABA00-PJABA00	+X.00	Aug PXAAK00 IPE CODE		
10 PPM	+X.00	AAJUS00-AAJUS00	+X.00			
ULSD	+X.00	AAGMK00-AAGMK00	+X.00			
Gasoil.2	+X.00	POAAG00-POAAG00	+X.00			
1 PCT	+X.00	PUAAP00-PUAAP00	+X.00	Rotterdam Bunker 380 CST		
3.5 PCT	+X.00	PUABC00-PUABC00	+X.00	PUAYW00-PUAYW00		+X.00
LS VGO(4)	+X.00	AAHNF00-AAHNF00	+X.00			
HS VGO(4)	+X.00	AAHNI00-AAHNI00	+X.00			

** Assessment will be relabelled 350 ppm eff. Jan 1, 2005 as this quality is no longer tradeable within EU countries as a motor fuel.
** Assessments highlighted in red are to be discontinued Jan 1, 2005 because of specifications changes in line with EU regulations.

LPGASWIRE EUROPEAN ASSESSMENTS

NWE:		Propane SPOT USD/MT			Butane SPOT USD/MT	
FOB SEAGOING	+x.00	PMABB00-PMABB00	+x.00	+x.00	PMAAL00-PMAAL00	+x.00
FOB ARA	+x.00	PMAAS00-PMAAS00	+x.00	+x.00	PMAAC00-PMAAC00	+x.00
FCA ARA*	+x.00	PMABH00-PMABH00	+x.00	+x.00	PMABI00-PMABI00	+x.00
CIF 1-3000MT	+x.00	PMAAZ00-PMAAZ00	+x.00	+x.00	PMAAJ00-PMAAJ00	+x.00
CIF 3000+MT	+x.00	PMAAC00-PMAAC00	+x.00			
CIF 7000+MT	+x.00	PMABA00-PMABA00	+x.00			
Monthly rolling average						
FOB SEAGOING		PMUDI00-PMUDI00				
CIF 7000+MT		PMUDK00-PMUDK00				
Propane swaps (basis CIF NWE)						
Aug	+x.00	AAHIK00-AAHIK00	+x.00			
Sep	+x.00	AAHIM00-AAHIM00	+x.00			
Oct	+x.00	AAHIO00-AAHIO00	+x.00			
Q4	+x.00	AAHIL00-AAHIL00	+x.00			
W MED:						
FOB EX-REF/STOR	+x.00	PMABC00-PMABC00	+x.00	+x.00	PMAAM00-PMAAM00	+x.00
FCA EX-REF/STOR	+x.00	PMABJ00-PMABJ00	+x.00			
CIF 7000+MT	+x.00	PMABE00-PMABE00	+x.00			

NOTE:* FCA ARA refers to sales onto railcars and trucks in the Amsterdam-Rotterdam-Antwerp region

APPENDIX V SUBSCRIBER NOTES ISSUED IN 2004

Version 1, Dec 22 2004

Following is a listing of key Subscriber notes and Clarification notes issued by Platts in 2004:

CLARIFICATION NOTE: CIF bids or offers should state specific charter party options. Bids or offers indicating charter party options that could result in uncertainty either due to the vagueness or unfeasibility of the request will not be considered in the assessment process. For example, a bid requesting full Mediterranean discharge options is not considered. A bid requesting Euromed, neobig and additional feasible specific options will be considered.

CLARIFICATION NOTE: Platts European products assessments take into account CIF bid/offers that are executable under normal circumstances. Hence Platts adheres to standards where it considers offer s where the seller a) names the ship carrying the oil product, b) seller commits to meet 'normal' requirement by buyer, c) seller commits to have ship approved by at least three named majors which need to be stated, d) or commits to ship which will be approved by major selling, major buying, and second major named by buyer. While there may be other versions Platts objective is to consider bids/offers that are executable and have minimal or no restrictions.

CLARIFICATION NOTE: Platts reflects bids/offers and transactions in its assessment process. Bids or offers should move incrementally and should give a counterparty ample time to execute. Increments that are in excess of actual market volatility may not be considered in the assessment process. In practice, changes in excess of $1.00/mt may be seen as excessive.

SUBSCRIBER NOTE:Platts Editorial Guidelines and Methodologies for the European oil products market is now available on the web at the following link: http://www.platts.com/oil/guidetospec/index.shtml. The document details the bid/offer protocol for Platts page 5.

CLARIFICATION NOTE ON INSPECTION: Platts assessments reflect bids/offers/transactions where the quality of the oil delivered is tested by independent inspectors. Buyer always has the right to appoint an additional inspector at his own cost.

CLARIFICATION NOTE: Buyer on a cif basis has the right to request a change in the destination. Seller has the obligation to pass on the request for change of destination to the shipper. Shipper should not unreasonably reject the request.

MOC SUBSCRIBER NOTE REMINDER: PGA page 5 extension period: If, following a trade, any party expresses its interest to buy/sell at a time near to the close of trade at 17:29:59, that party must stand firm on that bid/offer for an additional three

minutes, until 17:33:00, in order to adequately test repeatability. A notice for extension of the window will be sent out on page 5 as soon as possible after this interest is posted. Details are carried on www.platts.com under European Products Specifications Guidlines.

CLARIFICATION NOTE: Platts products assessments are based on merchantable grades. In the case of naphtha, bids/offers with larger than normal mercury levels may not be considered in the assessment process. The current standard used in the assessment process is a maximum of 5 parts per billion of mercury.

SUBSCRIBER NOTE: Platts invites feedback from the industry on whether to link the FOB MED Naphtha assessment with the CIF NWE assessment based on a freight differential. Currently the FOB MED assessment is a freight differential to the CIF MED assessment. Any feedback please email by April 2 to annalisa_jeffries@platts.com, and cc peter_stewart@platts.com and jorge_montepeque@platts.com.

SUBSCRIBER NOTE: Following industry feedback Platts will set the FOB Med Naphtha cargo assessment as a freight differential to the CIF NWE assessment, effective July 1 2004. The freight differential will be based on a base rate of $7.77 per mt, which is calculated as a basket of several Worldscale flat rates. The actual freight applied to the netback will fluctuate daily based on changes in Platts UKC-Med assessments for 27.5kt naphtha cargoes, applied against the $7.77/mt rate. These rates can be found in Platts Clean Tanker Wire. CIF MED assessments will remain a freight differential to FOB MED values. Any feedback please email by June 21 to annalisa_jeffries@platts.com, and cc peter_stewart@platts.com and jorge_montepeque@platts.com.

CLARIFICATION NOTE: Platts products assessments are based on merchantable grades. Bids/offers that exclude legitimate supply sources may be deemed restrictive and excluded from the assessment process. As an example, naphtha bids that exclude Tees as a supply source can not be taken into account for assessment purposes. Likewise, naphtha with larger than normal mercury levels may not be considered in the assessment process.

GASOLINE SUBSCRIBER NOTE: Following industry feedback to recent subscriber notes on the EU's planned tightening of sulfur standards in gasoline, Platts plans to introduce Prem unl 50 ppm cargo assessments for FOB Med basis Italy and CIF Med basis Genoa/ Lavera, under the name "Prem Unl 50 ppm". The new assessments will be introduced on July 1, 2004 to run concurrently with the existing 150 ppm assessment until the end of 2004. Assuming no change in the EU's implementation schedule for tightening sulfur standards in European gasoline, on the first trading day of January 2005, Platts plans to drop its Prem Unl 150 ppm assessment. Any further subscriber feedback should be sent by May 21, 2004 to: john_mckay@platts.com and annalisa_jeffries@platts.com with a CC to peter_stewart@platts.com.

GASOLINE SUBSCRIBER NOTE: Following industry feedback Platts will introduce a new Prem unl 10 ppm cargo assessment for FOB NWE basis Rdam and CIF NWE /basis ARA effective July 1, 2004. Please note Platts will continue to run existing 50 ppm assessments (Prem unl). Any further subscriber feedback should be sent by June 14 2004 to: peter_stewart @platts.com, jorge_montepeque@platts.com and CC to annalisa_jeffries@platts.com, john_mckay.com.

GASOLINE SUBSCRIBER NOTE: With 10ppm gasoline becoming more widely available in Europe from as early as September 1 2004, Platts requests feedback on whether to introduce a new Prem unl 10 ppm cargo assessment for FOB NWE basis Rdam and CIF NWE /basis ARA effective July 1, 2004. These would run concurrently with the existing 50 ppm assessments(Prem unl). Subscriber feedback on the proposal should be sent by May21 2004 to: peter_stewart @platts.com, jorge_montepeque@platts.com and CC to annalisa_jeffries@platts.com, john_mckay.com.

GASOLINE SUBSCRIBER NOTE: Following industry feedback, effective Apr 1, 2004 Platts will publish a fixed price assessment for Premium unleaded 50ppm barges FOB ARA basis Rotterdam in $/mt. The 50ppm barge assessment will reflect spot activity in the Amsterdam Rotterdam and Antwerp area, with the value normalized to Rotterdam basis. Platts will continue to report the existing 10 vs 50ppm barge differential. Please direct final comments by Mar 26, 2004 to annalisa_jeffries@platts.com and CC to peter_stewart@platts.com and jorge_montepeque@platts.com.

GASOLINE SUBSCRIBER NOTE: Effective March 1, 2004, Platts proposes to publish a premium unleaded 50 ppm barge assessment in $/mt to replace the existing 10 vs 50 ppm barge differential assessment. Platts also proposes to discontinue the 150 ppm barge differential assessment on April 1, 2004. Subscriber feedback on the proposal should be sent by January 15, 2004 to: peter_stewart@platts.com, Jorge_montepeque@platts.com and with a CC to Annalisa_jeffries@platts.com.

GASOLINE SUBSCRIBER NOTE: Platts proposes as of April 1, 2004 that all European gasoline barge and cargo assessments will reflect summer specification only. As of March 22, 2004 gasoline barge assessments may include summer spec when this grade predominates. As of March 12, gasoline cargo assessments may include summer spec when this grade predominates. Any comments please to simon_webb@platts.com and annalisa_jeffries@platts.com, with CC to peter_stewart@platts.com and jorge_montepeque@platts.com.

GASOLINE SUBSCRIBER NOTE: Following industry feedback, effective Apr 1, 2004 Platts will publish a fixed price 50ppm barge assessment FOB AR in $/mt. The 50ppm barge assessment will reflect spot activity in the Amsterdam and Rotterdam area. Platts will continue to report the existing 10 vs 50ppm barge differential. Final comments by Mar 12, 2004 to peter_stewart@platts.com, jorge_montepeque@platts.com and CC to annalisa_jeffries@platts.com.

GASOLINE SUBSCRIBER NOTE: Following industry feedback, Platts will discontinue the 150 vs 10ppm barge differential assessment Oct 1 2004. Final comments by Mar 12, 2004 to peter_stewart@platts.com, jorge_montepeque@platts.com and CC to annalisa_jeffries@platts.com.

GASOLINE SUBSCRIBER NOTE: Following industry feedback, effective Apr 1, 2004 Platts will publish a fixed price 50ppm barge assessment FOB AR in $/mt. The 50ppm barge assessment will reflect spot activity in the Amsterdam and Rotterdam area. Platts will continue to report the existing 10 vs 50ppm barge differential. Final comments by Mar 12, 2004 to peter_stewart@platts.com, jorge_montepeque@platts.com and CC to annalisa_jeffries@platts.com.

GASOLINE SUBSCRIBER NOTE: In view of legislative changes in the US from Jan 1 banning the use of oxygenates in gasoline in the states of New York and Connecticut, Platts invites feedback from subscribers on the use of oxygenated or non-oxygenated gasoline in calculating FOB Mediterranean and FOB Northwest Europe netback values from the US. Current practice is to calculate this value, which acts as a floor for the European spot assessment, as the netback for oxygenated cargoes for delivery into the US Atlantic Coast. Any comments please contact simon _webb@platts.com and annalisa_jeffries@platts.com, with CC to Peter_Stewart@platts.com and Jorge_Montepeque@platts.com.

GASOLINE SUBSCRIBER NOTE: In light of the European Union's planned tightening of sulfur standards in European gasoline to 50 ppm from Jan 1, 2005, Platts proposes to introduce new Prem unl 50 ppm cargo assessments for FOB Med basis Italy and CIF Med basis Genoa/ Lavera effective June 1, 2004 to run concurrently with the existing 150 ppm assessment until the end of 2004. Assuming no change in the EU's implementation schedule, on the first trading day of January 2005, the Prem Unl 150 ppm assessment would be redefined as 50 ppm and would be carried under the existing heading Prem Unl FOB Med/CIF Med. Please note this is a preliminary proposal which may be modified. Subscriber feedback on the proposal should be sent by January 15, 2004 to: peter_stewart @platts.com, Jorge_montepeque@platts.com and CC to annalisa_jeffries@platts.com.

GASOLINE SUBSCRIBER NOTE: Following industry feedback to recent subscriber notes on the EU's planned tightening of sulfur standards in gasoline, Platts plans to introduce Prem unl 50 ppm cargo assessments for FOB Med basis Italy and CIF Med basis Genoa/ Lavera, under the name "Prem Unl 50 ppm". The new assessments will be introduced on July 1, 2004 to run concurrently with the existing 150 ppm assessment until the end of 2004. Assuming no change in the EU's implementation schedule for tightening sulfur standards in European gasoline, on the first trading day of January 2005, Platts plans to drop its Prem Unl 150 ppm assessment. Any further subscriber feedback should be sent by May 7, 2004 to: annalisa_jeffries@platts.com.

GASOLINE SUBSCRIBER NOTE: Effective March 1, 2004, Platts proposes to publish a premium unleaded 50 ppm barge assessment in $/mt to replace the existing 10 vs 50 ppm barge differential assessment. Platts also proposes to discontinue the 150 ppm barge differential assessment on April 1, 2004. Subscriber feedback on the proposal should be sent by January 15, 2004 to: peter_stewart@platts.com, Jorge_montepeque@platts.com and with a CC to Annalisa_jeffries@platts.com.

SUBSCRIBER NOTE: Effective Jan 2, the Worldscale flat rate used to calculate FOB Med naphtha will be $4.68. FOB Med naphtha is assessed as a freight differential to the CIF Med based on published freight values between Alexandria and Lavera using Platts cross-Med clean tanker naphtha assessments.

SUBSCRIBER NOTE: Effective Jan 2, the Worldscale flat rate Augusta-Rotterdam used to calculate the netback formula for FOB Med jet and jet av fuel becomes $5.83 per metric tonne. Harbor dues at Rotterdam are calculated at $0.43/mt based on 0.76/GT of vessel, converted to an mt basis

SUBSCRIBER NOTE: Revised Worldscale tanker flat rates for 2004 are now available to subscribers, the Worldscale Association said Wednesday. Worldscale reported Tuesday that a number of its flat rates for January were incorrectly calculated. "The effective date of the revised 2004 rates, now available on the website and from the Associations, is for all voyages on which loading is commenced on or after 7th January 2004," Worldscale said Wednesday in a statement. According to Worldscale, a "thorough systems check" revealed a computer program used in currency conversion was found to be defective, affecting rates for voyages involving ports in the Azores, Belgium, Cameroun, Canary Islands, Finland, France, Germany, Greece, Irish Republic, Italy, Netherlands, Portugal and Spain.

MOC SUBSCRIBER NOTE REMINDER: PGA page 5 extension period: If, following a trade, any party expresses its interest to buy/sell at a time near to the close of trade at 17:29:59, that party must stand firm on that bid/offer for an additional three minutes, until 17:33:00, in order to adequately test repeatability. A notice for extension of the window will be sent out on page 5 as soon as possible after this interest is posted. Details are carried on www.platts.com under European Products Specifications Guidlines.

SUBSCRIBER NOTE: Platts European market-on-close (MOC) crude and products assessments for Weds Dec 31 2003 and Fri Jan 2 2004 will reflect values at 1230 GMT (12.30pm local time, 13.30 CET). Timing of bid/offer indications for use in the MOC assessments should be adjusted accordingly. No European or US assessments will be published Dec 25, Dec 26 and Jan 1. Any comments please contact paul_young@platts.com or annalisa_jeffries@platts.com

Clarification note: The fuel oil European cargo assessments have been based traditionally on single full cargo lots. Any bids or offers for part cargoes need to be clearly stated.

SUBSCRIBER NOTE: Platts requests subscriber feedback on

whether to increase the minimum assessable barge volume to 2kt on 0.2 gasoil and ULSD diesel barges. Currently Platts reflects 1kt as the minimum on gasoil/diesel barge assessments. Any subscriber feedback should be sent by May21, 2004 to: patrick_gourlay@platts.com, annalisa_jeffries@platts.com and with a CC to peter_stewart@platts.com

SUBSCRIBER NOTE: Platts will start publishing a Russian gasoil CIF cargo assessment for 25-30kt cargoes in Northwest Europe. The new quote will be started on July 1, and will reflect qualities of typical standard Russian gasoil grades. Please note Platts will continue to run the existing gasoil 0.2 FOB/CIF quotes for cargoes of 10-20kt of French FOD and German DIN grades. Any further subscriber feedback should be sent by June 21 2004 to: peter_stewart @platts.com, jorge_montepeque@platts.com and CC to annalisa_jeffries@platts.com, patrick_gourlay@platts.com.

SUBSCRIBER NOTE: Following industry feedback Platts proposes to keep the name ULSD for UK quality 50ppm diesel and will not as proposed rename its existing ULSD assessments "UK ULSD".

CLARIFICATION NOTE: Platts assessment process considers bids and offers made with 5 day loading /delivery windows within the standard 2-15 days forward for barges and 10-25 days forward for cargoes. Platts considers transactions where the seller has the right to narrow to a 3 day delivery window, five calendar days prior to the first day of the three day laycan. Ship must be nominate 5 calendar days prior to 1st laycan day. Normal notice of readiness procedures will be considered. (published on Feb 24, 2004)

DIESEL SUBSCRIBER NOTE: Following industry feedback to recent subscriber notes on the EU's planned tightening of sulphur standards in diesel, Platts will introduce new 50ppm diesel cargo assessments for the Mediterranean and north west Europe from July 1, 2004. These assessments will be named "50ppm ULSD". Platts intends to reflect the Benelux and French diesel specification in the north and French specification in the Mediterranean, but seeks further feedback on the detailed qualities for the ULSD FOB and CIF assessments. Effective July 1, Platts proposes to rename its existing ULSD assessments, which currently reflect UK quality 50ppm diesel, "UK ULSD". Platts will cease publication of its current EN590(350ppm) assessments at the end of 2004. Platts requests further feedback on whether to start an FOB and CIF East Med 350ppm assessment as of Jan 1 2005. Subscriber feedback should be sent on this proposal by May 31 2004 to peter_stewart@platts.com, Jorge_montepeque@platts.com and with a CC to annalisa_jeffries@platts.com, Patrick_gourlay@platts.com.

DIESEL SUBSCRIBER NOTE: Platts proposes the following date for the change in seasonal specifications of diesel: from Feb 23, 2004, ULSD 10 and 50ppm spec barge prices will start to reflect intermediate grade. As trading and seasonal patterns vary, Platts seeks subscriber feedback on the above schedule, which is therefore provisional. Final comments from subscribers regarding the proposed changeover date should be e-mailed to patrick_gourlay @platts.com with CC to annalisa_jeffries@platts.com.

DIESEL SUBSCRIBER NOTE: In light of the European Union's planned tightening of sulphur standards in European gasoline to 50 ppm from Jan 1, 2005, Platts proposes to introduce new ULSD cargo assessments for FOB Med basis Italy and CIF Med basis Genoa/ Lavera effective June 1, 2004 to run concurrently with the existing EN590 (350 ppm) assessment until the end of 2004. Assuming no change in the EU's implementation schedule, on the first trading day of January 2005, the EN590(350 ppm) assessments in both the Med and NWE would be discontinued. The ULSD assessments would continue to be carried, reflecting 50 ppm quality.Please note this is a preliminary proposal which may be modified. Subscriber feedback on the proposal should be sent by January 15, 2004 to: peter_stewart @platts.com, Jorge _montepeque@platts.com and with a CC to annalisa_jeffries @platts.com.

GASOIL SUBSCRIBER NOTE: Following industry comments Platts wishes to clarify that its Med 0.2 gasoil assessments reflect generally merchantable qualities for heating oil use. Grades which are not widely merchantable, for instance because of low cetane or above normal water content, may not be reflected in the assessments. As part of a review of gas oil specifications, Platts is seeking further feedback on specification issues for both the Mediterranean and NWE. In particular, Platts is seeking to review gas oil specifications, cargo sizes and basis ports applicable in the Med and NWE. Comments from subscribers should be emailed to jorge.montepeque@platts.com and cc to peter.stewart@platts.com and annalisa.jeffries@platts.com.

DIESEL NWE SUBSCRIBER NOTE: Platts requests further industry feedback regarding the upcoming changes in EU regulations which tighten sulfur standards in European diesel to a maximum 50 ppm from Jan 1, 2005. The existing 50 ppm assessments typically reflect UK spec. Platts requires feedback on whether to start additional NWE 50ppm assessments to reflect other 50ppm grades trading in the region. Please direct feedback to annalisa_jeffries@platts.com with CC to peter_stewart@platts.com and jorge_montepeque@platts.com.

GASOIL SUBSCRIBER NOTE: Platts requests industry feedback over starting a 25-30kt Russian gasoil FOB Baltic assessment basis Ventspils. Any comments please to patrick_gourlay@platts.com and annalisa_jeffries@platts.com, with CC to peter_stewart@platts.com and jorge_montepeque@platts.com.

DIESEL SUBSCRIBER NOTE: Platts will start to assess summer spec En590 from March 21. Winter spec will stop being assessed from March 25. Comments from subscribers regarding the proposed changeover date should be e-mailed to patrick_gourlay@platts.com.

DIESEL SUBSCRIBER NOTE: Following industry feedback, and due to the EU's planned tightening of sulfur standards in European diesel to 50ppm from Jan 1, 2005, Platts proposes to introduce new 50ppm ULSD cargo assessment FOB Med basis Italy and CIF MED basis Genoa/Lavera effective July 1 2004.

Platts also proposes to redefine its existing EN590 assessments as basis East Med by Jan 1 2005 as this will be the main consumption area once EU regulations change. Platts seeks further feedback on this proposal. Subscriber feedback should be sent on this proposal by Mar 26 2004 to peter_stewart @platts.com, Jorge_montepeque@platts.com.

DIESEL SUBSCRIBER NOTE: Platts will start to assess summer spec En590 from March 21. Comments from subscribers regarding the proposed changeover date should be e-mailed to patrick_gourlay@platts.com with CC to annalisa_jeffries@platts.com.

DIESEL SUBSCRIBER NOTE: In light of feedback, Platts will assess winter spec 10ppm and 50ppm diesel barge quality until Feb 27. Intermediate 10 and 50ppm grade will be reflected from Feb 23.

Comments from subscribers regarding the proposed changeover date should be e-mailed to patrick_gourlay@platts.com with CC to annalisa_jeffries@platts.com.

DIESEL NWE SUBSCRIBER NOTE: Platts requests further industry feedback regarding the upcoming changes in EU regulations which tighten sulfur standards in European diesel to a maximum 50 ppm from Jan 1, 2005. The existing 50 ppm assessments typically reflect UK spec. Platts requires feedback on whether to start additional NWE 50ppm assessments to reflect other 50ppm grades trading in the region. Please direct feedback by April 2 to annalisa_jeffries@platts.com with CC to peter_stewart@platts.com and jorge_montepeque@platts.com.

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Editorial Guidelines and Methodologies

European Oil Products

LATEST UPDATE: OCTOBER 2005

INTRODUCTION

Platts European oil products Editorial Guidelines and Methodologies is designed to complement the existing Platts Guide to Specifications.

The Editorial Guidelines document focuses on the protocols applicable to Platts reporting on real time Platts Global Alert (PGA) page 005. The document was produced at the request of the industry, which asked for clear and detailed guidelines from Platts on these protocols and the Market on Close assessment process. The document will be updated periodically to ensure that the guidelines are as comprehensive as possible.

The latest update includes changes in Platts Market on Close assessment process to reflect a 16:30 London time close, an hour earlier than previously. All related editorial processes have also been advanced by one hour.

PGA page 005 is a page on the electronic screen service Platts Global Alert that publishes information in real time on bids, offers, transactions and any other information relevant for the trade in European oil products. Bids and offers published on PGA page 005 are assumed to be firm and may be used in the open and transparent assessment processes employed by Platts. The information contained in PGA page 005 is stored electronically and is time-stamped.

Platts operates a similar page on Petrochemical Alert for LPG information. These are carried on PCA 468 in addition to PGA 005.

Method of submission/communication for bids/offers and transactions

Platts accepts any reasonable method of delivery/communication for bids, offers and transactions. Platts editors typically communicate with trading companies by phone 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.

The list below gives key telephone and Instant Messaging contact points for Platts European products team effactive October 1, 2005. Please note that all telephone numbers and Yahoo IDs are subject to change.

Product	Phone number	Yahoo address
Naphtha	44 207 176 6125	plattseuronaphtha
Gasoline	44 207 176 6112	plattsgasoline
Jet	44 207 176 6134	jetplatts
Diesel	44 207 176 6110	Plattsdiesel
Gasoil	44 207 176 6287	plattsgasoil
Fuel Oil	44 207 176 6120	plattsfueloil
Feedstocks	44 207 176 6683	plattsfeedsuk
LPG	44 207 176 6672	plattslpg
General phone	44 207 176 6100	

Reporting coverage

Reporters covering the products markets in Europe are on the phone from around 09:30 to around 19:00 London time (9:30 am to 7:00 pm).

Time of assessment

Platts' assessment methodologies for European products reflect the prevailing market price at 1630 London time. Platts also takes into its editorial consideration bids, offers and transactions seen during the assessment day. These inputs are analyzed and normalized to reflect a market value at 1630 London time.

PLATTS GUIDELINES FOR GLOBAL ALERT PAGE 005 TRADING

Buyers and sellers have the right to communicate bids or offers directly to Platts' price specialists, provided that the companies are perceived by the market as having appropriate credit and good credibility.

All bids and offers are firm from the moment of submission. Bids and offers on barges are to be submitted up to but no later than 16:00:00 London time. Bids/offers will not be accepted from 16:00:01 precisely.

All swaps bids and offers are firm from the moment of submission. Bids and offers are to be submitted up to but no later than 16:15:00 London time. Bids/offers will not be accepted from 16:15:01 precisely.

All cargo bids and offers are to be submitted up to but no later than 15:45:00 London time. Bids/offers will not be accepted from 15:45:01 precisely.

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.

The volume, quality or loading/delivery timing cannot be changed from 15:45:01 on the cargoes and 16:00:01 on the barges. However, a seller or buyer may change the price of the offer or bid up to 16:28:00. No changes in price can be made from 16:28:01 precisely.

Buyers or sellers can withdraw bids/offers at any time, provided no prior interest to transact has been expressed by any potential counter-party.

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

Repeat bids/offers

Following any trade, the original on-screen seller/buyer must revert immediately as to whether or not he/she is prepared to offer or bid for more volume. If the party fails to do this, then returns later in the window with more volume to buy/sell, the party will be treated on the same basis as an entirely new bid or offer from any other trader emerging. If this new bid or offer emerges after the cut-off point for the entry of new bids or offers (15:45 London for cargoes, 16:00 for barges, 16:15 for swaps), such a bid or offer may not be considered. Unless sellers/buyers expressly inform Platts of their continued interest to buy/sell after a deal, Platts will presume the players are not there for more volume.

Extension period

If, following a trade, any party expresses its interest to buy/sell at a time near to the close of trade at 16:29:59, that party must stand firm on that bid/offer for an additional three minutes, until 16:33:00, in order to adequately test repeatability. A notice for extension of the window will be sent out on page 5 as soon as possible after this interest is posted.

Examples of non-assessible information

Buyers or sellers may name their own terms and conditions for trade. Platts will post these terms and conditions on PGA page 005. However, Platts reserves the right of discretion to not reflect in its assessments any deals that are done on non-standard trading terms and conditions. In the same way, any terms and conditions reported on PGA page 005 that do not reflect standard market trading practices outside the trading window may not be reflected in the Platts assessments.

If an onscreen bid is filled by a seller, Platts will not recognize subsequent buying interest at the traded price by an off-screen player as a test of repeatability, as this would be treated as a fresh (and therefore late) bid.

Platts will report the details of new off-screen buying interest on page 5 after 16:30:00 (or after the close of an extended window). However, any deal done at that price would not be reflected in Platts' assessment.

In case of technological difficulties or any communication problems encountered on page 5 where market participants are unable to see the bids and offers, buying or selling interest may be considered by Platts to be non-public and non-executable, and therefore not used for Platts' assessment.

Platts will monitor all the activity and price formation that occurs with the transparency provided by firm bids/offers or deals done.

Platts may not take deals into consideration if negotiations for such deals have not been properly monitored to ensure the transacted value reflects a transaction done on an arms length basis.

Deals done at a level different from those publicly available to all market players may not be taken into consideration.

Trades between affiliates, subsidiaries or related parties will not be recognized for assessment purposes. Bids and offers are understood to be available to the market at large and not to the affiliates and subsidiaries of the company bidding/offering.

If a bid or offer is taken out by an affiliate, subsidiary or other related party, this may result in loss of credibility by the parties with Platts, which may subsequently remove the parties' right to submit bids and offers.

Submission of bids and offers

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.

Hence 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.

Acknowledgement of receipt

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

Verification

The assessment process reflects bids/offers and trades made in a transparent environment. The bids/offers and trades are subjected to validation and verification by Platts editors. The bids and offers made on a firm basis are executable by any creditworthy counterparty.

Platts will monitor instances when it appears that a buyer or seller fails to answer to a potential counter party wishing to do business. This monitoring is intended to ensure that the failure is not intentional and designed to prevent performance.

The assessment process is very rigorous and tracks the time of submission of bids, offers and transactions. The assessment process tracks all circumstances surrounding the trade and any issues regarding performance.

Platts not only focuses on the performance of the transaction but also on issues stemming from it, including logistics and eventual delivery of the product.

This post-deal tracking enables Platts to determine the actual performance of the participants in the trade and the validity of their inputs. Platts therefore may request documentary material to determine performance and validity.

Timing of entry of bids and offers

Cargoes: Bids and offers may be submitted at any time during the day with a deadline of 15:45 London time. Platts synchronizes its computer clocks every day precisely, and will compare the time of any submitted bid/offer or communication by a market participant intending to transact, against the computer time, in order to ensure that the cut-off points for new bids and offers, price changes and the market's close are accurate. Please note that Platts applies the timing deadlines strictly.

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

Barges: Bids and offers may be submitted at any time during the day with a deadline of 16:00 London time. Platts synchronizes its computer clocks every day precisely, and will compare the time of any submitted bid/offer or communication by a market participant intending to transact, against the computer time, in order to ensure that the cut-off points for new bids and offers, price changes and the market's close are accurate. Please note that Platts applies the timing deadlines strictly.

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

Terms of entry for bids and offers

Platts is an information company and in general it aims to publish any credible bid or offer reported to it. Platts makes no commitment to publish every bid or offer submitted to it, however. For instance, frivolous bids and offers may not be

retransmitted. Information reported by market participants that may have legal implications, for instance potential slander, will not be reported.

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

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

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

Expiration of bids and offers

Published bids and offers have an automatic expiration of 16:30:00 London time. Market participants may extend the validity of their bids and offers by 'adding' a specific additional time span. In those cases where buyers or sellers express their intention to keep on buying or selling right before the expiration of the validity of the bids and offers, a time extension of 3:00 minutes may be added to enable proper communication with potential counter parties. This would extend the validity of the bids and offers to 1633:00 London time.

Incrementability

Submitted bids or offers may be changed by market participants up to 16:28:00 London time. The bids/offers may be changed by small increments in line with ongoing market practice. In markets trading on a $/mt basis typical changes may be in the range $0.25/mt to $1.00/mt. In markets trading in dollars per barrel, typical increments may be in the range $0.01 to $0.10/bbl for normal market conditions. Trading conditions such as market volatility help determine normal increments.

Changes exceeding those parameters may result in the bids and offers being ignored in the assessment process. Where transactions are concluded at levels that have not been fully tested by the market because price changes have been non-incremental, assessors may determine that the actual market value is somewhere within that price gap, rather that at the actual level of the transaction.

Repeatability

Single transactions may be a reflection of market value. However, single transactions need to be measured against the broad span of similar transactions.

If, for instance, a buyer decides to lift an offer but is unwilling to buy more material offered at the same level, it would be determined that the buyer failed the repeatability test. This transaction may be considered as not fully representative and Platts would use the remaining offers as the basis for the assessment process. An inverse case would apply when the seller is only willing to sell into a low bid and unwilling to repeat its transaction.

If a seller wishes to continue selling additional material at the level transacted, he should declare his intention promptly. If a seller fails to declare promptly his intention to keep on selling, Platts editors may determine that the seller has no more material to sell. Any subsequent offer may then be considered within the stated times for entry. If the seller notifies his intention to re-offer after the cut-off period for new bids and offers, the offer would be considered too late to be used in the assessment process. The same scenarios apply to a buyer who wishes to keep on buying.

Sequence in trading

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

Communication protocol

In the event that a party is bidding/offering a parcel and he/she starts communication with a counterparty with the aim of executing a transaction, the initial bidder or offeror should either 1) communicate that his/her parcel is no longer available, 2) make it clear that his parcel is still available to the open market.

If the parcel is still available to the open market – and despite the discussions seller may have with buyer – any other party can execute the transaction with the original bid/offer

Communication system failure

In the event of a failure of telephone or computer networks editorial deadlines may be changed. This event is extremely infrequent but 'windows' may be extended by a few minutes to enable proper communication.

Entry of a bid or an offer that has not been retransmitted to the market at large may not be considered in the assessment process, as it would only be known to an editor and not to a potential counterparty in the market place.

ASSESSMENT PARAMETERS

Loading/delivery timing:

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

Platts' barge assessments consider bids, offers and transactions for loading 3 to 15 days from the day of publication. For example on October 1, Platts barge assessments would reflect barges loading between October 4 and October 16. In the case of 3.5% fuel oil barges, a 5-15 day window is reflected on Thursdays and Fridays

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

with October 22-26.

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

Time Gradient

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

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

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

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

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

Determination of backwardation or contango

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

Typical calculations include a determination made for the difference in price for a month, and a daily value is then assigned for each day. Example of the calculation is available at the Platts website www.platts.com.

Inclusivity of assessment process

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

- Fixed price
- Premiums
- Paper/Swaps

Fixed price

The ultimate question in the mind of an end-user, producer, refiner, trader or broker is PRICE. Price in turns determines expense, refining margin, profit, loss, etc. The spot market trades actively on a fixed price basis and a floating price basis. Platts takes both into account in its assessments. PGA page 5 displays trading activity on both a fixed and a floating basis.

Premiums/discount

Many transactions are carried out in relation to a benchmark. In this case a differential, also know as premium/discount is generated. Premiums/discounts arise if the quality, volumes or loading times differ from the benchmark. In addition, floating price transactions are done in relation to assessments that will be published in the future.

Premiums will usually rise in those times when the market is backwardated, and the steeper the curve, the greater the premium. In a contango situation, premiums will have a tendency to turn into discounts. PGA page 5 displays trading activity on both a fixed and a floating basis.

Paper/Swaps

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

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

The spot market

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

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

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

For example, if a jet cargo CIF NWE trades at a premium of $30.00/mt over November IPE gasoil futures, then the fixed price equivalent is precisely $30.00/mt over November IPE gasoil futures. If the gasoil November futures contract is trading at $250.00/mt then the price of the jet cargo is $280.00/mt.

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

Law

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

Embargoed products

Laws stating that nationals from specific countries may not buy products from embargoed countries may prevent market participants from lawfully executing transactions. A seller therefore may not assume that a buyer has the obligation to buy embargoed materials.

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.

Specifications

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

Note that Platts assessments reflect undyed material. Dyed material may trade at a differential to normal undyed material. If a transaction occurs for dyed product it will be normalized to the value of undyed material. In the case of gasoil, for instance, dyed material normally trades at approximately a $2/mt premium to undyed material.

Testing of products

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

Implied guarantees in specifications

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

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

Merchantability

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

Shipping considerations

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

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

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

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

Up front conditions	Conditions to be met
Name of Ship	Buyer to determine if ship is acceptable to its vetting department
Unnamed ship	Seller has the responsibility to declare its commitment to meet either the vetting requirement of any buyer or conversely to declare up front how many ship vettings he seller is confident the ship will meet.

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

Offers that include a commitment to meet the vetting requirements of a minimum of two large majors and at least one regional European refiner would normally be considered in the assessment process.

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

CIF transactions

A CIF buyer has the right to request a deviation of the ship to another port, provided the shipper 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.

Location

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

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

Barges

Jet barges are basis FOB Rotterdam. Any transactions occurring at other loading ports in NWE are typically normalized on a freight differential basis back to Rotterdam. Platts considers bids and offers from Rotterdam, Antwerp, Amsterdam, Ghent and Flushing.

10ppm ULSD barges are FOB basis Rotterdam and all other load ports are typically normalized on an incremental freight

differential basis. i.e. if the barge is loading from Antwerp, the freight differential from Antwerp to Germany against the freight differential from Rotterdam to Germany would generally be applied.

0.2 gasoil barges and 50ppm ULSD barges are FOB basis Rotterdam. Transactions occurring at other loading ports in NWE are typically normalized on a freight differential basis back to Rotterdam.

Gasoline barges are typically basis AR(Amsterdam/Rotterdam). Any transactions occurring at other loading ports in NWE (including Antwerp) are normalized on an incremental freight differential basis into the main consuming area, which is typically Germany.

Examples of typical bids and offers considered in the assessment process.

The names are for illustrative purposes only and reflect real bids and offers submitted by Platts on Platts Global Alert.

Naphtha:

Vitol bid 260, 12.5kt+/- 10% open spec, Oct 21-25, CFR R'dam.
Cargill bid 263, 12.5kt +/-10% open spec Oct 22-26 c+f Rotterdam
Stasco raises bid for open spec to $287.50 CFR R'dam Oct 21-25 del 12.5 kt +/- 10%.

Gasoline:

Cargill offers PU 10ppm 277 AR Oct 15-20
Glencore bid PU 10ppm 275 AR/RRR Oct 9-22
Preem offers PU 10ppm 286.5 AR Oct 8-21

Gasoil:

EN590: Total bids flexi en590 19-23 cif le Havre basis at nov plus 28.
BP bids, en590 flexi + north Spain option, 19-23/oct basis bordaux, price basis le Havre at Nov + 25/mt.
GASOIL 0.2, offer Nov+4.5 FOB Amstdam, 17-30 Oct, Hetco UK 1-2KT.
GASOIL ULSD Statoil offer Nov+45 AR, 2 KT, Oct 15-28, winter barge 10 ppm

Jet:

TOTSA offer Nov+33.5 CIF bss Fawley for 30kt +/-10% Seller's Option full cargo, EU-qualified Nov 5-9, Or Nov+28 CIF/ITT Le Havre for 30kt +/-10% Seller's Option, Oct 26-30.
BP bid Nov+34 for 2kt FOB Rdam full window.

Fuel Oil:

HSFO barge: Lukoil bids 151 FW flex any 5 days 150.
LSFO barges: Famm offers 166 1-10kt 17-21 and 168.50 1-5kt f/w both Belgian spec

platts

Methodology and Specifications Guide

Petroleum Products & Gas Liquids: US, Caribbean and Latin America

LATEST UPDATE: November 2005

GENERAL METHODOLOGY

Platts US Gulf Coast and US Atlantic Coast refined product assessments are typically based on market activity between 9:00 a.m. and 3:30 p.m. Central time. However, trading positions and deals that take place in the first hours of the day and are no longer considered repeatable in the afternoon will not be considered for assessment purposes. Platts only takes into consideration arms-length, transparent and verifiable market activity.

Units: Product prices in the US are in US cents per gallon for gasoline, jet fuel and diesel. Residual fuel oils are priced in US dollars per barrel in the US with the exception of the US West Coast pipeline 180 and 380 CST fuel oils, which are assessed in US dollars per metric tonne.

Specifications: Product specifications for motor fuels vary across the US depending on prevailing regulations and trading practices. The specifications also change due to existing pipeline requirements. Pipelines may typically request the delivery of specifications tighter than those contractually agreed to deliver at the end of the pipeline. Platts grades reflect the quality delivered into the pipeline. The guide will provide a listing of the quotations and the main specifications reflected in the Platts assessments. Gasoline specifications vary widely depending on the time of the year and the location. General gasoline specifications follow:

Reid vapor pressure (RVP): RVP can vary from a current low of 7.0 pounds per square inch (summer), to a high of 15.0 psi (winter). Allowable RVP will vary seasonally, depending on the area. Platts makes announcements during the course of the year regarding the specification changes.

Oxygenated gasoline: The US Environmental Protection Agency requires oxygenated gasoline during the winter months in carbon monoxide non-attainment areas. The definition of winter months may start as early as October and run through March. In general, the EPA requires the non-attainment areas to use gasoline with a minimum 2.7% oxygen by weight. Both reformulated and conventional grades of gasoline may be oxygenated during the winter months to aid in compliance with carbon monoxide standards as prescribed by the Clean Air Act.

Reformulated gasoline (RFG): Nine metropolitan areas in the US were designated "extreme" or "severe" in terms of atmospheric ozone levels by the US Environmental Protection Agency. Provisions in the Clean Air Act of 1990 require those areas to use reformulated gasoline. Oxygen content of RFG is a minimum of 1.5% to a maximum of 2.7%. However, in areas where oxygenated gasoline is required during the winter months such as the New York metropolitan area, RFG oxygen content is required to be 2.7-2.9%.

Conventional Gasoline: All gasoline not considered RFG is conventional. Under the Clean Air Act provisions, conventional gasoline produced or sold in the US after Jan 1, 1995 must be at least as clean as gasoline produced or sold during the 1990 baseline period, as specified by the Clean Air Act. Benzene content is limited to a maximum of 1.3%.

Reformulated Blendstock for Oxygenate Blending (RBOB): RBOB is an unfinished gasoline product that lacks an oxygenate. The oxygenate in question is always ethanol, because ethanol can not be transported in a pipeline. Ethanol is blended into RBOB at the wholesale rack terminal. A California version of RBOB is generally known as CARBOB.

Regions of coverage: In the Americas products market, Platts covers the New York cargoes and barges, Boston cargoes, Chicago, Group 3, Buckeye pipeline, gas liquids for Mount Belvieu, Mount Belvieu TET and Conway, Gulf Coast waterborne and pipeline, West Coast pipeline prices for Los Angeles, San Francisco, Seattle, Portland and Phoenix and West Coast waterborne. Platts also covers cargo markets in the Caribbean. A list of sample assessments follows and you can jump to the section that interests you by following the links provided.

Trading platforms: Platts' policy on electronic platforms is that it will treat firm trading positions and deals from Internet platforms as it does any other information from principals or from intermediaries such as voice brokers. Platts cannot make any guarantee in advance about how and whether the information will be incorporated in its final assessment. All trading positions and deals submitted to Platts need to meet general requirements on openness, transparency and repeatability and then makes an assessment based on published assessment parameters, using all the information available. Platts always seeks direct verification from the principals to a bid/offer deal, and will not disintermediate the actual market-maker, whether a deal is done on- or off-line.

PLATTS POLICY ON UNSCHEDULED NYMEX CLOSURES

Platts established in late 2001, in the wake of the September 11-related closure of the New York Mercantile Exchange, a policy on price assessments should a similar incident occur, or should the NYMEX close as a result of another unplanned event.

All US crude assessments will be produced. Platts believes there will be adequate OTC trade in the Brent/WTI market and the market for grade differentials to produce an accurate assessment. That policy also will apply to Latin American crudes.

Based on past history, Platts does not believe there will be adequate flat price OTC trade in the markets for light ends in the US Gulf Coast, US Atlantic Coast and the US Midcontinent to serve as a substitute for an outright NYMEX settlement. Instead, those markets will be assessed by adjusting the prior day's NYMEX settlement up or down by an amount equivalent to the equalized per gallon price of the $/bbl movement in the Platts' WTI assessment for Gulf Coast and Midcontinent, and its 15-day

Brent assessment for the US Atlantic Coast. New assessments of market differentials will then be applied against those prices to determine the final assessment. West Coast light ends, residual fuel, bunker fuel, LPG, MTBE and other blendstocks will be produced as normal.

PLATTS ALSO RESERVES THE RIGHT TO SUSPEND ASSESSMENTS SHOULD THERE BE A MAJOR CALAMITY, SUCH AS THE EVENTS OF SEPTEMBER 11, 2001.

US ATLANTIC COAST

Platts covers markets in New York and Boston for both cargoes and barges, barrels loading into the Buckeye Pipeline at Linden, New Jersey, and barrels loading into the Laurel Pipeline at Boothwyn, Pennsylvania.

Assessment time: Platts US Atlantic Coast refined product assessments are typically based on market activity between 9:00 a.m. and 3:30 p.m. Central time. However, trading positions and deals that take place in the first hours of the day and are no longer considered repeatable in the afternoon will not be considered for assessment purposes. Platts only takes into consideration arms-length, transparent and verifiable market activity.

Loading/delivery time: Cargo assessments are 5-15 days from date of publication. Barge, Buckeye and Laurel Pipeline assessments reflect loading 3-7 days away from date of publication. Platts had previously assessed barges and Buckeye deliveries for 3-10 days out, but changed that practice Aug 6, 2001, to reflect typical industry activity. Although the Buckeye assessment is a pipeline grade, it is scheduled on a basis similar to barges.

Volume: Cargo assessments reflect parcels with a minimum of 150,000 bbl up to normal vessel size limitation. Most products parcels delivered into the US markets are carried in medium range vessels, with occasional deliveries using long range vessels. Barge assessments, Buckeye and Laurel deliveries reflect volumes of 10,000 bbl minimum up to 100,000 bbl.

GASOLINE & DISTILLATES

Platts covers five unleaded octane gasoline grades in the US Atlantic Coast: 87, 89 and 93 Octane. RBOB grade Octanes are UNL 83.7 and PREM 91.3 Octane is defined as RON plus MON divided by two. Platts reflects various RVP grades depending on the time of the year. Platts assessments are for conventional gasoline as well as reformulated gasoline (RFG).

Regular unleaded: 87 octane, R+M/2, lead content 0.01 grams per gallon, gravity 62 API. Sometimes referred to as 48 grade.

Unleaded midgrade: 89 octane, R+M/2, lead 0.01 grams per gallon, gravity 62 API.

Super premium unleaded: 93 octane, R+M/2, lead 0.01 grams per gallon, gravity 62 API.

Effective November 3, 2003, Platts launched daily spot price assessments for New York Harbor and Buckeye Pipeline ***Conventional Unleaded 87,89 and 93 that will reflect specifications limiting the gasoline to a 0.3 vol% max MTBE***. The new gasoline blend will be required as New York and Connecticut ban MTBE as a gasoline additive from January 1, 2004.

Eff. November 3, 2003, Platts discontinued existing daily spot price assessments for New York Harbor and Buckeye Pipeline Conventional Unleaded 87, 89 and 93 which contained MTBE.

Effective November 3, 2003, Platts launched daily spot price assessments for regular (83.7 octane) and premium (91.4 octane) ***RBOB gasoline for barges delivered into New York Harbor, and for delivery into the Buckeye pipeline at Linden, New Jersey***. Platts' new Buckeye RBOB assessments will effectively replace Platts' current Buckeye reformulated (RFG) gasoline assessments. The existing RFG Buckeye Pipeline Unleaded 87,89 and 93 assessments were discontinued after November 14, 2003.

Jet Kero: The cargo assessments reflects jet-A1 meeting latest DERD 2494 specifications. The barge assessment reflects Colonial Pipeline reference 54 grade, the sulfur content is 0.3% sulfur; 37-51 API gravity; ***108° F min flash***; and freeze point -40° F max.

Low Sulfur Jet Kerosene: For cargoes and barges, the assessments reflect Colonial Pipeline 55 grade with 37-51 API gravity, 123° F flash point, minus 40° F freeze point, 42 cetane and 0.04% sulfur. Low sulfur jet kerosene is typically used a low sulfur blendstock to mix with diesel.

No.2 oil: The assessment reflects 40 cetane, sulfur content 0.2% maximum at New York Harbor, and up to 0.5% outside New York, gravity 34 API, 130° F minimum flash.

Low Sulfur Diesel (formerly known as Low sulfur No. 2 oil). : The assessment reflects 42 cetane, 0.05% sulfur. 130 F minimum flash

GASOLINE RVP CHANGES

RVP levels are effective for gasoline in New York harbor, Boston, Buckeye and Laurel Pipeline.

January through most of February: 15.0 RVP for all grades.

February 28: RVP changes to 13.5 RVP for all grades.

With prices effective around mid-March, Platts begins quoting supplemental 7.1 RVP RFG unleaded prices. Also effective at that time, Platts will add the supplemental 9.0 RVP conventional

unleaded prices. The date fluctuates on the basis of market liquidity.

The 13.5 RVP conventional and RFG unleaded prices will continue to appear as the main assessments and be carried through mid-April or when liquidity ends.

In mid-April, when the 13.5 RVP assessments end, the 7.1 RVP RFG and 9.0 RVP conventional unleaded become the main assessments and will run through summer.

Near the first week of September, the precise date dependent upon liquidity, Platt's will add 13.5 RVP assessments for RFG and conventional gasoline. The 7.1 RVP RFG and the 9.0 RVP conventional prices will appear as supplemental assessments until mid -September.

At that time, precise date to be determined, Platts will stop assessing supplemental 7.1 RVP RFG and the 9.0 RVP conventional prices. At that time, Platts will only assess the 13.5 RVP for both RFG and conventional gasoline. Near the end of October, Platts will change the basis for its gasoline assessments to 15.0 RVP.

MTBE

Specifications are for material with minimum 95% MTBE, 1,500 ppm maximum water and 500 ppm maximum methanol. RVP is 8-10 psi. Octane is 109 R+M/2. Oxygen is 18.2% by weight. US Gulf Coast assessments include volumes of 25,000 bbl or greater traded FOB Houston-Texas City. Smaller volume transactions and deals done outside of the Houston-Texas City area are used only as a guide in the assessment process. Assessments focus on deals lifting 2-15 days from date of publication, excluding prompt business for immediate lifting. Assessments cover physical spot trade and not paper deals. Platts FOB New York Harbor MTBE assessment is for the same spec material as the US Gulf Coast but volumes are 10,000 bbl or greater. Both US Gulf Coast and New York Harbor assessments are made at 1600 CST (2200 GMT).

RESIDUAL FUEL

Assessment Schedule: No initial bids/offers considered after 3:30pm ET. No trades considered after 4:30pm ET

Size: Cargo 200,000bbls and up (one or multiple bottoms). Barge: 25-140,000bbls.

Location: Cargo price assessment is delivered, in a Boston-Maryland range. Barge price assessment is delivered basis New York Harbor.

Timing: Cargo — Platts considers in its assessment process cargoes bid/offered/traded with a 5 day delivery range within the 5-20 days forward assessment delivery window. Barge – delivery 3-10 days out.

Platts assessments reflect verified, repeatable, on-spec deals reported prior to deadline. Platts also takes into account firm, credible bids and offers reported by brokers and principals. In the absence of deals, bids and offers, Platts will assess what in its editorial opinion reflects a transactable value of fuel oil delivered 5-20 days forward based on an interpolation along the forward fuel oil curve and by taking into account prevailing physical premiums or discounts. Additionally, Platts will utilize the forward curve for deals done on a 50-50 basis, with half of the deal fixed and the other half floating. The implied value of the floating portion of the transaction will be calculated.

SPECIFICATIONS

0.3% S HP: 10.5 api min-24.9 api max, 300 ssf viscosity max, 110 F pour, 149,000 BTUs, 175 min flash;

0.3% S LP: 10.5 api min-24.9 api max, 1,000 ssu viscosity max (at 100 degrees F), 60 F pour max, 150 min flash;

0.7% S: 10api min, 300 ssf viscosity max, 0.5% nitrogen max, 150ppm vanadium max, 8 max asphaltenes, 151,500 BTUs;

1.0% S: 10.1api min, 300 ssf viscosity max, 0.5% nitrogen max, 150ppm vanadium max, 8 max asphaltenes, 151,500 BTUs;

2.2% S: 10api min, 300 ssf viscosity max, 300ppm vanadium max, 100 max aluminum and silicon;

2.2% Boston S: 10api min, 300 ssf viscosity max, 300ppm vanadium max, 100 max aluminum and silicon;

3.0% S: 10api min, 300 ssf viscosity max, 300ppm vanadium max, 100 max aluminum and silicon;

Trading positions with other quality specifications will be normalized for assessment purposes to be comparable with the updated Platts-specification basis.

FEEDSTOCKS & BLENDSTOCKS

Vacuum Gasoil: VGO assessments reflect material CIF 50,000 bbl and higher, north of Hatteras. The timing range is 7-21 days. Three sulfur grades are assessed: Under 0.5%, 1.0% and over 2%. The Aniline point is generally 180 minimum. Conradson carbon residue is generally 0.7% maximum.

Straight Run: Straight run assessments reflect material CIF 50,000 bbl and higher, north of Hatteras. The timing range is 7-21 days. Low Sulfur: 0.3% sulfur, approximately 20-22 degrees API gravity and viscosity is 1,000 ssu or approximately 100 ssf. The product generally is low pour with a pour point of 60° F. High Sulfur: 2.0 to 3.5% sulfur and approximately 15-20 degrees

API gravity.

US GULF COAST

PIPELINE GRADES

Platts US Gulf Coast refined product assessments are typically based on market activity between 9:00 a.m. and 3:30 p.m. Central time. However, trading positions and deals that take place in the first hours of the day and are no longer considered repeatable in the afternoon will not be considered for assessment purposes. Platts only takes into consideration arms-length, transparent and verifiable market activity.

Pipeline prices are for product moving on the Colonial Pipeline with input at Pasadena, Texas. Pipeline assessments reflect southern grade products on the Colonial Pipeline with the exception of the supplemental northern grade gasoline, which represents northern grade material.

Shipments on the Colonial Pipeline system are scheduled according to cycles. There are typically three cycles per month for a total of 36 cycles per year. For example, cycles 1, 2, and 3 are for January, cycles 4, 5, and 6 are for February, cycles 7, 8, and 9 are for March, etc. Each cycle lasts approximately ten days and is divided into two five-day sections known as the front-half and the back-half of the cycle. For practical purposes, there is a new product shipment every five days, leading to about 72 shipments per year. Due to market conditions, cycles may carry premiums or discounts versus the next shipment. The cycle schedule is dictated by Colonial Pipeline, and is subject to change during the course of the year. Hence, rollover dates for the Platts assessments cannot be announced in advance. The cycles among products differ. Gasoline 13th cycle and distillate 13th cycle will not necessarily be in alignment.

Effective Jan. 2, 2002, the primary Platts assessment for pipeline grades has consisted solely of the prompt half cycle, front or back. In addition, Platts publishes assessments for half cycle shipments, going out to three full cycles. Before Jan 2, 2002, Platts' main assessments reflected a full prompt cycle, except when only the back half of that prompt cycle was available for scheduling, in which case that back half would constitute the assessment.

Waterborne barrels represent different locations depending on product, and locations are noted within product categories below. Assessments for fuel oil generally reflect product being lifted within the next 7 to 14 days. Waterborne assessments for gasoline and distillates are concurrent with the pipeline cycles. Waterborne assessments for light ends cover barge (minimum 50,000 bbl) and cargo movements being shipped out of ports located anywhere from Houston, Texas, to the Mississippi River. Product can be moving from a US Gulf Coast location to another US port or for export. Prices are on an FOB basis.

GASOLINE & DISTILLATES

See general section under Products - US for information on conventional, RFG and oxygenated requirements.

Regular unleaded: 87 octane R+M/2; lead, 0.01 grams per gallon; 62 API gravity.

Unleaded midgrade: 89 octane R+M/2; lead, 0.01 grams per gallon; 62 API gravity.

Super premium unleaded: 93 octane R+M/2; lead, 0.01 grams per gallon; 62 API gravity.

Ultra Low Sulfur 30 unleaded 87 ("Atlanta" grade): 87 octane R+M/2; lead, 0.01 grams per gallon; 62 API gravity, 30ppm max sulfur.

Ultra Low Sulfur 30 unleaded 93 ("Atlanta" grade): 93 octane R+M/2; lead, 0.01 grams per gallon; 62 API gravity, 30ppm max sulfur.

Effective November 3, 2003, Platts launched daily spot price assessments for regular (83.7 octane) and premium (91.4 octane) ***RBOB gasoline for delivery into the Colonial Pipeline*** at Pasadena, Texas. Platts will initially assess only the prompt Colonial pipeline cycle, but will add forward cycle assessments as liquidity develops. Initial indications suggest that two grades of RBOB will be available for shipping, 5.7% ethanol blendable RBOB and 10% ethanol blendable RBOB, but only 10% ethanol blendable RBOB will be actively traded.

GASOLINE RVP CHANGES

Specific dates for the changing of RVP specifications can not be projected, because the actual dates of shipping cycles on the Colonial Pipeline varies. However, below is a projected schedule for conventional gasoline, based on past practice.

Conventional gasoline on the Colonial Pipeline is the "M" grade, with a numerical designation that applies to the RVP level.

Beginning in early March, when the 7th cycle becomes prompt, Platts will begin assessing M3 gasoline, which carries an RVP of 11.0.

Beginning mid-March, when the 8th cycle becomes prompt, Platts will begin assessing M2 gasoline, which carries an RVP of 9.0.

Beginning early April , when the 10th cycle becomes prompt, Platts will begin assessing M1 gasoline, which carries an RVP of 7.8. At this time, Platts will also begin to assess its summer supplemental quote, which carries an RVP of 9.0. This will last until early September.

(Please note that Platts' primary gasoline assessment will always be the grade with the lowest RVP regulations. As a result, the 9.0 RVP summer grade for northern destinations is considered the supplemental assessment, and the 7.8 assessment is considered the primary assessment. The Platts data code for Gulf Coast pipeline gasoline will reflect the 7.8 RVP grade, not the 9.0 RVP grade, which has its own date code.)

In early September, or at the end of the 26th cycle, Platts will cease its 9.0 RVP summer supplemental assessments. The primary assessment will then correspond to M3, which carries a RVP of 11.5.

Beginning in mid-October, and running through February, Platts will begin assessing M4 gasoline, with an RVP of 13.5.

Beginning early March or whenever the 7th cycle becomes prompt, Platts will begin assessing M3 gasoline with an RVP of 11.5.

Beginning mid March or whenever the 8th cycle becomes prompt, Platts will begin assessing M2 gasoline with an RVP of 9.0.

Beginning early April or whenever the 10th cycle becomes prompt through early September, Platts will begin assessing M1 gasoline with an RVP of 7.8. At this time Platts will also begin publishing a summer supplemental quote and will lower the RVP on RFG unleaded and RFG premium from 7.8 to 7.1. The summer supplemental quote will hold an RVP of 9.0.

In early September or at the end of the 26th cycle 7.1, 7.8 and 9.0 RVP will cancel out and Platts will begin assessing M3 gasoline with an RVP of 11.5 through the next four cycles. The summer supplemental assessment will end. 11.5 RVP will cancel out in October or at the end of the 30th cycle.

MTBE

Specifications are for material with minimum 95% MTBE, 1,500 ppm maximum water and 500 ppm maximum methanol. RVP is 8-10 psi. Octane is 109 R+M/2. Oxygen is 18.2% by weight. US Gulf assessments include volumes of 25,000 bbl or greater traded FOB Houston-Texas City. Smaller volume transactions and deals done outside of the Houston-Texas City area are used only as a guide in the assessment process. Assessments focus on deals lifting 2-15 days from date of assessment, excluding prompt business for immediate lifting. Assessments cover physical spot trade and not paper deals. Assessments are made basis 1600 CST.

NAPHTHA

Standard naphtha assessments represent product moving into and out of the Gulf Coast. Imports are assessed on an inside duty basis. The assessment reflects 40 N+A, typically a reforming grade, with a gravity of 56-60 API.

Heavy naphtha: Effective Feb 3, 2003, Platts added a daily spot price assessment for heavy naphtha in the US Gulf Coast, with a typical API gravity of 52 to 53, and an initial boiling point of 180F, intended for reforming.

DISTILLATES

Jet Kerosene: Jet/Kero 54 reflects material with 37-51 API gravity, 108° F flash point, minus 40° F freeze point, and 0.3% sulfur. Jet/Kero 55 grade reflects product with 37-51 API gravity, 123° F flash point, minus 40° F freeze point, 42 cetane and 0.04% sulfur.

No. 2 Oil: No 2 Oil reflects material with 40 cetane, 0.2% sulfur, 30 API gravity and 130° F min flash point.

Low Sulfur Diesel: Low Sulfur No. 2 oil specifications reflect 40 cetane, 0.05% sulfur, 30 API gravity and 130° F min flash point.

RESIDUAL FUEL

Assessments are FOB and represent product basis Houston or New Orleans, 4-12 days out from the day of assessment. Both barge lots and cargoes are covered by the assessments.

Platts reserves the right to not strictly include charter party differentials between other Gulf Coast points and one of those two cities if it believes there are other factors that are more important, such as if a cargo is being exported on a Worldscale basis.

Assessments may be influenced by blending costs associated with bringing off-specification material to the correct specification. Also, assessments take into consideration the value of different end users for the same material, e.g. straight-run fuel used as a feedstock.

The typical quantity for barge assessments is 40,000 bbl to 125,000 bbl. However, the inability of a terminal to receive certain standard barge sizes may exclude certain sales from the Platts assessment, even if a sale is made within the specified quantities. Cargo sizes are up to 50,000mt.

No.6 1.0%: 6 min API, 25-225 SSF, 0.4 max nitrogen, 100 max calcium, 200 max vanadium, 120 max al+si, 150 F min flash point, 0.8 max asphaltenes, 0.1 max ash;

No.6 1.0%: 8 min API, 225 max SSF, 140 F min flash, 0.15 max ash, 1% max water and sediment. Separately, Platts is considering discontinuing this assessment effective July 1st, 2006;

No.6 3.0%: 3%S max, 10.2 min API, 150-250 SSF, 450 max

vanadium, 0.1 max ash, 150 F min flash point, 60 F max pour;

No.6 3.5%: Typically 3.5%S with material with up to 4.5%S max considered in the assessment process, 10.2 min API, 150-300 SSF, 80 max al+si, 300 max vanadium, 18 max CCR;

Trading positions with other quality specifications will be normalized for assessment purposes to be comparable with the updated Platts-specification basis.

Platts discontinued its US Gulf Coast 0.7%S residual fuel assessment on Jan 1, 2003.

Forward curve and Fixed/Floating Trades: Platts will seek the value of a floating transaction by extrapolating prices along the forward curve. For example, in assessing the value of a transaction completed in a backwardated market that was done on a floating basis, Platts will seek to determine the market's valuation of fuel oil loading on those days in advance, and work any differentials off that number. The resulting number will not be strictly viewed as the value of the transaction, but will be taken into account in the assessment process.

FEEDSTOCKS & BLENDSTOCKS

Vacuum Gasoil: VGO assessments reflect material CIF 50,000 bbl and higher, basis Gulf Coast. The timing range is 7-21 days. Three sulfur grades are assessed: Under 0.5%, 1.0% and over 2%. The Aniline point is generally 180 minimum. Conradson carbon residue is generally 0.7% maximum.

Straight Run: Straight run assessments reflect material CIF 50,000 bbl and higher, basis Gulf Coast or East Coast. The timing range is 7-21 days, Gulf Coast. Low Sulfur: 0.3% sulfur, approximately 20-22 degrees API gravity and viscosity is 1,000 ssu or approximately 100 ssf. The product generally is low pour with a pour point of 60° F. High Sulfur: 2.0 to 3.5% sulfur and approximately 15-20 degrees API gravity.

Alkylate: The alkylate assessment reflects waterborne FOB liftings 50,000 bbl and higher, basis Houston. Delivery range is 7-21 days. The alkylate assessment reflects material 5.5 RVP, with 92-93 octane.

Reformate: The reformate assessment reflects waterborne FOB liftings 50,000 bbl and higher, basis Houston. Delivery range is 7-21 days. Reformate is 30-55 API, 0.5-2.5 RVP, 0.5 Sulfur, 95-110 RON.

Raffinate: The raffinate assessment reflects waterborne FOB liftings 50,000 bbl and higher, basis Houston. Delivery range is 7-21 days. Raffinate is 60-70 API, 2.0-6.0 RVP, 0.5 Sulfur , 55-65 RON.

US ATLANTIC & GULF COAST RESIDUAL FUEL PAPER MARKETS

Platts publishes paper market price assessments for 1.0% sulfur fuel oil on the US Atlantic Coast and 3.0% sulfur fuel oil on the US Gulf Coast:

The paper price assessments are for the immediate forward month and the next three forward months. The immediate forward month assessment expires on the last business day of the month. For example: in any given March, the paper months assessed will be April, May, June and July.

The quarterly paper market is based on the calendar quarters: January-March, April-June, July-September and October-December. The next four quarters are assessed. Quarterly paper markets are assessed until the last business day of the preceding calendar quarter. On the first business day of a new quarter, the assessment will reflect the next calendar quarter. For example, between any given January 1 through March 31, the first quarter to be assessed will be the second quarter, April-June.

CHICAGO

Assessments are made on an FOB Chicago Area Pipeline basis, a grouping of Chicago pipelines that includes the West Shore, Badger and Wolverine lines. This system takes product off the Explorer pipeline, which runs from the Gulf Coast into the Midwest. Platts has established cycle changes every ten days, on the 5th, 15th, and 25th of the month. The assessments reflect product moving on the prompt cycle.

GASOLINE & RBOB

Regular unleaded: 87 octane R+M/2; lead, 0.01 grams per gallon; 62 API gravity.

Midgrade unleaded: 89 octane R+M/2; lead 0.01 grams per gallon; 62 API gravity.

Premium unleaded: 93 octane R+M/2; lead, 0.01 grams per gallon; 62 API gravity.

RBOB (Reformulated Blendstock for Oxygenated Blending): 84.6 octane R+M/2; 62 API gravity.

For all grades of gasoline, Reid Vapor Pressure varies during the year from 9.0 psi in the summer to 15.0 psi in the winter. The RVP conversion schedule is as follows, though it is approximate:

■ February 25 (or beginning of 1st cycle March trade): Platts assessment of 15.0 RVP unleaded will convert to 13.50 RVP unleaded.

■ March 15 (or beginning of 3rd cycle March trade): Platts assessment of 13.50 RVP unleaded will convert to 9.0 RVP unleaded.

■ September 16: Platts assessment of 9.0 RVP unleaded will convert to 11.50 RVP unleaded.

■ October 1: Platts assessment of 11.50 RVP unleaded will convert to 13.50 RVP unleaded.

■ December 1: Platts assessment of 13.50 RVP unleaded will convert to 15.0 RVP unleaded.

The Platts assessment of RBOB in the Chicago market will switch to summer-grade VOC material on March 25, the start of first-cycle April trade, in line with seasonal Explorer pipeline specification changes.

DISTILLATES

Jet/kero: Assessments reflect material with 0.3% sulfur, 37-51 API gravity and 108 degrees F minimum flash point.

Low Sulfur Jet Kero: This is also known as No. 1 oil. It is an assessment that runs from approximately October 15 to April 1, depending on seasonal refinery production changes. Specifications include 0.04% sulfur and 37-51 API gravity.

No. 2 Oil: Assessments reflect material with 0.29% sulfur, 40 centane, 34 API gravity and 130 degrees F minimum flash point.

Low Sulfur Diesel: Assessments reflect material with 0.05% sulfur and 42 centane.

ETHANOL

Assessments reflect FOB Chicago area terminals, 5-10 day delivery. Assesements are for a typical refinery grade ethanol, 115 octane, 18 RVP.

GROUP THREE

Assessments are made on an FOB Tulsa, Oklahoma, basis for product moving on the Williams Pipeline. The Williams pipeline system runs from Tulsa, north through the US Midcontinent, and terminates in Minnesota and Wisconsin. Assessments reflect prompt cycle barrels scheduled into the line. Trade is assessed against the front month futures contract though the penultimate day of each month. On the last day of the month, trade is normally assessed against the second month futures contract to reflect the majority of cash activity on that day. However, spot trade can be assessed against the front month contract on this day if it reflects the majority of trades or cash positions in the market.

GASOLINE

Regular unleaded: 87 octane R+M/2; lead, 0.01 grams per gallow; 62 API gravity

Premium unleaded: 91 octane R+M/2; lead, 0.01 grams per gallon; 62 API gravity

For all grades of gasoline, Reid Vapor Pressure ranges from 9.0 psi for summer months to 13.5 for winter months. The Platts RVP conversion schedule is as follows:

■ February 1: Platts assessment of 15.0 RVP unleaded will convert to 13.5 RVP unleaded.

■ February 16: Platts assessment of 13.50 RVP unleaded will convert to 10.0 RVP unleaded.

■ March 1: Platts assessment of 10.0 RVP unleaded will convert to 8.50 RVP unleaded.

■ May 1: Platts assessment of 8.50 RVP unleaded will convert to 9.0 RVP unleaded.

■ September 16: Platts assessment of 9.0 RVP unleaded will convert to 10.0 RVP unleaded.

■ October 1: Platts assessment of 10.0 RVP unleaded will convert to 11.50 RVP unleaded.

■ November 1: Platts assessment of 11.50 RVP will convert to 13.5 RVP unleaded.

■ December 1: Platts assessment of 13.50 RVP will convert to 15.0 RVP unleaded.

DISTILLATES

Jet Kerosene: Assessments reflect material with 0.3% sulfur, 37.5 API gravity and 110 degrees F minimum.

Low-sulfur Jet Kerosene: Also known as Y grade. This is a seasonal assessment that runs from approximately October 15 through April 1, depending on seasonal refinery production changes. Specifications are 0.047% sulfur, 37 degrees minimum. The assessment is published when spot trading begins. API gravity, minimum 125 degrees F to maximum 160 degrees F flash point.

No. 2 Oil: Assessments reflect material with 0.5% sulfur, 40 centane, 30 API gravity and 140 degrees F flash point.

Low Sulfur Diesel: Assessments reflect material with 42 centane, 0.05% sulfur, 30 API gravity and 140 degrees F flash point.

US WEST COAST

Pipeline volumes are generally 10,000-25,000 bbl, with 10,000 bbl the minimum lot size for inclusion in Platts assessments. Assessments are for product moving on the Kinder Morgan Energy Partners Pipeline (formerly the Santa Fe Pacific Pipeline) system in California and the Olympic Pipeline system in the Northwest.

Platts assesses the most prompt barrel that can be scheduled for delivery on Kinder Morgan's pipeline. Shipments on the Kinder Morgan Energy Partners Pipeline system are scheduled according to cycles. There are typically four cycles every month for a total of 48 cycles per year. For example, cycles 1, 2, 3 and 4 are for January, cycles 5, 6, 7 and 8 are for February, etc. Each cycle lasts approximately 7.5 days, but changes in the schedule may occur and are decided by the pipeline company. Shipments on the Olympic Pipeline system also are scheduled according to cycles. There are typically five cycles every month with the exception of February, which has four, for a total of 59 cycles per year. Each cycle lasts approximately six to seven days, but changes in the schedule may occur and are decided by the pipeline company.

Platts does not assess include distressed trades within its assessments. Specifically, distressed deals include barrels that must be accepted within eight days or less. Distressed deals also include barrels that are bought and sold within the Kinder-Morgan "pipeline freeze." The freeze is defined as the period of time for which the pipeline shipper will no longer accept changes to its scheduled deliveries.

Waterborne: Jet and gasoline waterborne cargoes generally are in barge lots, while non-CARB diesel, the so-called EPA diesel (see below), generally trades as cargoes. Cargoes are for delivery 14-21 days out from date of publication. Cargoes cover export or import at any location from Los Angeles to Seattle, but the market keys off Los Angeles prices. Barges or cargoes with delivery dates less than two weeks is considered prompt and possibly distressed. Domestic but offshore-lightered barrels are treated as if they were domestic.

Timing: Effective Feb 3, 2003 Platts extended its reporting deadline for US West Coast gasoline and distillate oil products to 3:30 p.m. PST (2330 GMT), at which point pipeline scheduling is due and the spot market tends to close for the day. Previously, the deadline for collecting price information was 2 p.m. PST (2200 GMT). Assessments are made within half an hour of the assessment window closing, at or before 4 p.m. PST (2400 GMT).

GASOLINE & CARBOB

Gasoline: Conventional standard gravity is 57-58 API. Sulfur specifications are very stringent in California with 0.03% maximum for unleaded gasoline. Bromine is less than 30 parts per million at Los Angeles. RVP ranges from 7.0 to 13.5 for Los Angeles, 7.0 to 15.0 for San Francisco and 9.0 to 15.0 for Seattle and Portland.

Unleaded 84: R&M/2; lead content 0.01 grams/gal. The Unleaded 84 assessment is for product moving to Arizona from Los Angeles. The assessment is made on an FOB Los Angeles basis. This assessment replaces the Arizona RFG assessment which was discontinued in October 1998.

Unleaded 87: R+M/2; lead content 0.01 grams/gal.

Premium Unleaded: 92 octane, R+M/2; lead content 0.01 grams/gal.

Effective November 3, 2003, Platts discontinued its US West Coast ***CARB-grade gasoline*** assessments. With MTBE banned effective January 1, 2004, in California, the only grades that will be traded are CARBOB grades, which are blended with ethanol downstream to produce finished CARB-grade gasoline, and conventional gasoline for other markets. The discontinued assessments are: CARB unleaded pipeline, Los Angeles and San Francisco; and CARB premium pipeline, Los Angeles and San Francisco.

CARBOB: CARBOB is a non-oxygenated blendstock meeting California gasoline specifications. It is blended with ethanol to produce finished gasoline that meets CARB specifications. On Dec 2, 2002, Platts introduced four new physical CARBOB gasoline assessments for the US West Coast market. The assessments apply to the Los Angeles and San Francisco markets and cover both lower octane and premium grade versions of CARBOB gasoline. CARBOB gasoline does not contain MTBE as an oxygenate, and is instead intended to be blended with ethanol.

All products must be deliverable into Kinder Morgan's California pipeline system for done deals to warrant inclusion in the Platts daily assessment. The conventional grade CARBOB has an octane level of 85.5 and the premium CARBOB has an octane level of 90.0. Both grades of gasoline must be blendable to 5.7 percent ethanol. All CARBOB gasoline deals must involve product which meets the California Air Resources Board requirements as well as Kinder Morgan's specifications for CARB phase 3 gasoline.

Paper CARBOB assessments follow physical CARBOB requirements and consist of a one, two and three month out assessment; a one and two quarter out assessment; and a one year out assessment.

Arizona/Las Vegas: Platts assesses several grades of gasoline that trade in the Arizona/Phoenix and Las Vegas markets, respectively. Arizona and Las Vegas markets generally are supplied out of the US West Coast, but consume gasoline with specifications designed specifically for their areas. Both the AZBOB and the LVBOB are blendstocks that are blended with ethanol.

In **Arizona**, Platts assesses a Clean Burning Gasoline grade (CBG) between March 1 and October 14. After October 14, an Arizona Blendstock for Oxygenate Blending (AZBOB) is assessed until

March 1. This is consumed in the Phoenix metropolitan area.

In **Las Vegas**, Platts assess a winter grade Las Vegas Blendstock for Oxygenate Blending (LVBOB) between Oct 1 and March 24. A conventional gasoline is consumed during the remainder of the year.

SPECIFICATIONS

Arizona CBG: 87 and 91 octane grades; sulfur, 89 ppm max; lead, 0.03 gm/gal.

AZBOB: 87 and 91 octane grades; sulfur 89 ppm max; lead, 0.03 gm/gal.

LVBOB: 87 and 91 octane grades; sulfur 80 ppm max; lead, 0.03 gm/gal

GASOLINE RVP CHANGES

The various grades of gasoline on the West Coast have a variable series of RVP changes.

Los Angeles CARBOB: Jan 1, 12.5; Mar 6, 5.78; Nov 1, 10.5; Dec 1, 12.5.

Los Angeles conventional and CARB: Jan 1, 13.5; Feb 14, 7.0; Nov 1, 11.5; Dec 1, 13.5.

San Francisco Conventional and CARB: Jan 1, 15.0; Feb 1, 13.5; Mar 6, 6.8 for premium and 7.0 for regular; Apr 14, 7.0; Nov 1, 13.5; Dec 1, 15.0.

San Francisco CARBOB: Jan 1, 15.0; Mar 6, 5.78; Nov 1, 12.5; Dec 1, 14.0.

Arizona CBG:Mar 1, 8.0; Apr 7, 7.0; Sep 23, 8.0; assessment withdrawn on October 14.

Arizona BOB: (AZBOB) : Oct 14-Mar 1, 8.0

Las Vegas LVBOB: Oct 1 through Mar 24, 8.0; assessment withdrawn on that date.

Portland/Seattle: Jan 1, 15.0; Mar 1, 13.5; Mar 24, 11.5; Apr 1, 9.0; Sep 14, 11.5; Oct 1, 13.5; Dec 1, 15.0.

DISTILLATES

Jet Kero: Pipeline assessments reflect material Jet-A 0.3%S 51-37 API, delivered on the Kinder Morgan Pipeline System, with an option to deliver at Los Angeles International Airport (LAX). Physical assessments roll with the Kinder Morgan Pipeline Schedule. Waterborne assessments reflect DERD 2494 0.3%S 51-37 API.

Low Sulfur Diesel ("EPA diesel"): 40-45 cetane, 30-31 API gravity and 0.05% maximum sulfur content. This diesel meets federal environmental specifications, but not specifications of the California Air Resources Board. It is acceptable for use in some off-road applications.

CARB Diesel: Meets the specifications of the California Air Resources Board. It also reflects the Kinder Morgan Pipeline spec for aromatics of 35% by volume maximum. Other specs are cetane 40 minimum and 45 maximum, 30-31 API gravity and 0.05% maximum sulfur content.

Gasoil: Assessment reflects material with 45 cetane, 0.5% sulfur; typically 32-33 API gravity. This is a waterborne assessment only.

FUEL OIL

Industrial fuel oil 380 and IFO 180 assessment in the US West Coast reflect trade in the marine fuel (bunker) market. IFO 380 has viscosity of 380 CST, 2.5-4.0% sulfur, 150-600 mg/kg vanadium, 0.5-1.0% water and 0.1-0.2% ash. IFO 180 is the same as IFO 380 in all respects except viscosity, which is 180 CST.

No 6, 0.5%S and 1.0%S: Percentages relate to content of sulfur as a percent by weight. Power generation units, i.e. electric utility companies, usually use the low sulfur grades. This quote is used to distinguish larger volumes, whether for import or export.

ETHANOL

Effective November 3, 2003, Platts launched two daily spot price assessments for ***Ethanol in the Los Angeles Area***. The assessments reflect 800 bbl rail car deliveries into the Gardena, Wilmington and Carson terminals, 7-14 and 15-30 days ahead of publication date. Other terminals may be included in the future as this new spot market develops. The assessments are quoted in cents per gallon and reflect full-day market activity for typical refinery grade ethanol, 115 octane, 18 RVP.

US GAS LIQUIDS

Platts assessments are based primarily on confirmed deals on the day of business. In addition, account is taken of firm bids and offers, as well as supply/demand fundamentals, reported in the market. However, price assessments will ultimately be weighted toward the most recent confirmed business.

Timing: US prices reflect business done only on barrels for any days in the specified delivery month – also known as "any barrels" — and product loading at least three days from the date of the report. Wet and prompt bbls are not reflected in Platts

price assessments. Platts assesses the current month until 3 calendar days until the end of the month before switching its assessment forward by one month.

Daily NGL spot price assessments are based on market activity during the period of 2:00-5:00 EST.

Size: In the US Gulf Coast, typical parcel size is considered to be 25,000 barrels (around 3,000mt depending on product) at Mont Belvieu and South Louisiana. In the Midwest (Conway or Bushton, Kansas), typical parcel size is 10,000 barrels. Hattiesburg, Mississippi typically trades in 5,000-10,000 bbl lots.

Location: Platts publishes assessments on a FOB Mont Belvieu, Texas basis, and FOB Conway, Kansas basis for all gas liquids. Platts also assesses propane at Bushton, Kansas and Hattiesburg, Mississippi and natural gasoline on various points of the Mississippi River in Louisiana. Product specifications are the same for Mont Belvieu and Conway assessments. Product specifications are the same for all locations.

Ethane (C2): Platts publishes an assessment for purity ethane and another for ethane/propane mix. Ethane assessments reflect material with a specific gravity of 0.3546 and a boiling point of -89° C. Purity ethane is 95% pure or better. Ethane/propane mix is comprised of 80% ethane and 20% propane. Conversion rate is 7.42 US gallons per MT.

Propane (C3): Propane is assessed at Mont Belvieu on a non-TET and TET basis. TET material moves on the former Texas Eastern Transmission pipeline, now owned by Texas Eastern Products Pipeline Co, which runs from South Texas northward and terminates near Albany, New York and Philadelphia, Pennsylvania. Despite the new ownership, the terms TET and non-TET are still widely used by the industry. Product specifications are the same for both Mont Belvieu and Conway. Assessments reflect material with a specific gravity of 0.5077 and a boiling point of -43° C. Conversion rate: 5.21 US gallons per metric tonne.

Normal Butane (C4): Butane is assessed at Mont Belvieu on a non-TET and TET basis. TET material moves on the former Texas Eastern Transmission pipeline, now owned by Texas Eastern Products Pipeline Co, which runs from South Texas northward to Ohio and terminates in Massachusetts. Despite the new ownership, the terms TET and non-TET are still widely used by the industry. Product specifications are the same for both Mont Belvieu and Conway.

Assessments reflect material with a specific gravity of 0.5844 and a boiling point of -1° C. The conversion rate is 4.53 US gallons per metric tonne.

Iso-butane (IC4): Iso-butane is assessed on a TET and non-TET basis. Iso-butane assessments reflect material with a specific gravity of 0.5631 and a boiling point of -12° C. The conversion rate is 4.70 US gallons per metric tonne. Product specifications are the same for Mont Belvieu and Conway.

Natural Gasoline (C5): Natural gasoline is reported on a non-Dynegy and a Dynegy basis. Dynegy is a major terminal in the Mont Belvieu area. Platts also assess a TET-location natural gasoline price, and a natural gasoline assessment for "the River". This assessment covers various points on the Mississippi River in Louisiana, including (but not limited to) Napoleonville, Terrebonne and Norco. Assessments reflect material with a specific gravity of 81 degrees API, RVP 12-14, boiling point of 90° F, sulfur 0.1% and octane in the low 70s R+M/2. The conversion rate is 3.97 US gallons per metric tonne.

CARIBBEAN CARGOES

Platts defines the Caribbean as including any Caribbean islands. Caribbean prices are assessed on an FOB basis, depending on market conditions. There is no central delivery or loading point for the assessments. Prices reflect business 7-21 days from date of publication.

In the absence of confirmed transactions, assessments for light ends in the Caribbean are based on a spread against corresponding US Gulf Coast light ends pipeline assessments. Gasoil and jet fuel are assessed against No. 2 ad jet assessments, respectively. Naphtha is assessed against USGC waterborne naphtha. Fuel oil is assessed against US Atlantic Coast levels for similar specification material.

Naphtha, jet kerosene and gasoil are assessed as cts/gal, and a conversion to $/mt is provided. Fuel oil is assessed on a $/bbl bases.

Naphtha: Assessments reflect material of 40 N+A reforming grade with gravity of 66 API.

Jet Kerosene: Assessments reflect DERD 2494, 0.3% sulfur, 38.9-51.0 API gravity, 38° C minimum flash and minus 47° C maximum freeze point.

Gasoil: Assessments reflect material with 40 cetane, 0.2% sulfur, 30 API gravity and 130° F minimum flash.

Fuel Oil: No 6 2.0% assessments reflect material with 225-300 ssf viscosity and 10-12 API gravity. No 6 2.8% assessments reflect material with 200-250 ssf viscosity and 10-12 API gravity.

LATIN AMERICAN PRODUCTS

All assessments are reported in US dollars per barrel.

Argentina

Gasoil: minimum of 45 cetane, 0.5% sulfur.

Loading port is Buenos Aires. The assessment is FOB/CIF Buenos Aires and takes into consideration only export/import

transactions. Minimum cargo size is 30kmt or about 215,000 bbl.

Gasoline: Unleaded 83 RON minimum, 10 RVP maximum, 0.71-0.74 specific gravity, 0.1% sulfur by weight. This assessment is FOB Buenos Aires. Only exports are considered. Minimum cargo size is 30kmt or about 250,000 bbl.

Fuel Oil: 0.6% sulfur, 14 API, 550 CST.

Fuel oil is assessed FOB Buenos Aires. Only exports are considered. Minimum cargo size 30,000mt or about 190,000 bbl.

BRAZIL

Fuel Oil: 0.4% sulfur, 17 API, 150-200 ssf.

Brazilian fuel oil is assessed FOB Statia or Bahamas, per Petrobras practices. Only exports are assessed. This product is sold in cargo or barge parcels, 50,000 bbl minimum.

COLOMBIA

Fuel Oil: 1.5% sulfur, 6 API, 300 ssf.

Colombian fuel oil is assessed FOB Mamonal (Cartagena), or FOB Covenas, Colombia. Minimum cargo size is 200,000 bbl. Only exports are considered.

ECUADOR

Fuel Oil: 1.9% sulfur, 12-14 API, 250 ssf and 1.5% sulfur 12-14 API, 250 ssf

Ecuadoran fuel oil 1.9%S is assessed FOB Esmeraldas, while fuel oil 1.5%S is assessed FOB La Libertad, Ecuador. Only exports are considered. Minimum cargo size is 150,000 bbl. Typical size is about 190,000 bbl for both ports.

PERU

Naphtha: 49 N+A, full range, 63 API.

Peruvian naphtha is assessed FOB Talara, or Pampilla, Peru, and minimum cargo size is 180,000 bbl.

Fuel Oil: 0.9% sulfur, 15 API, 600 CST and 1.4% sulfur, 12.5 API, 1,000 CST.

Fuel oil 0.9%S is assessed FOB Talara, Peru for a minimum cargo size of 180,000 bbl. Peruvian fuel oil 1.4%S is assessed FOB La Pampilla, Peru. Minimum cargo size is 180,000 bbl. Typical volumes out of La Pampilla are 300-330,000 bbl.

WEEKLY JET FUEL ASSESSMENTS

Platts publishes weekly jet fuel contract price assessments for Jet-A or DERD 2494 (commercial) grade fuel, delivered to major airlines at listed major airports or delivery locations in the US. The assessments are typically adjusted based on spot assessments for jet in the applicable location (e.g., the Houston assessment is adjusted against USGC spot prices). The assessment does not apply to "Fixed base operators" servicing corporate jets, or to truck deliveries to specific operators or terminals. Typical contracts are 50,000-200,000 bbl month. Platts weekly jet fuel assessments are published every Friday in Platts Oilgram Price Report (OPR).

LUBES AND ASPHALT

PLATTS BASE OIL LUBE ASSESSMENTS

Platts assesses base oil lubes once a month, on the last business day of each month, for the following grades: SN100, SN500, and Bright Stock. The assessments are made for the following locations: US Gulf Coast, Europe (Northwest Europe), and Asia (Singapore). Lube assessments are priced in $/MT and based on market talks throughout the month. Lube assessments are published in Platts Oilgram Price Report (OPR) on the first business day of each month.

PLATTS ASPHALT ASSESSMENTS

Platts assesses US spot asphalt once a month, on the last business day of each month, for the following locations: Arkansas, Colorado, Montana, California, Illinois, Georgia, Minneapolis/St. Paul, Ohio, Oklahoma/Kansas (wholesale), Oklahoma/Kansas (rack), Philadelphia/New York, Texas, and Louisiana. Asphalt assessments are priced in $/Ton at the rack (unless specified otherwise) and based on market talks/deals throughout the month. Asphalt assessments are published in Platts Oilgram Price Report (OPR) on the first business day of each month.

PLATTS BASE OIL LUBE POSTED PRICES

Platts publishes lube posted prices for the following companies (locations): Sunoco (Mid-Continent), Conoco (US Gulf), Citgo (US Gulf), Motiva (US Gulf), ExxonMobil (East Coast and Gulf Coat), and Chevron (West Coast). Postings are priced in cts/gal and can be found on Platts Global Alert page 277, 278, 279, and in Platts Oilgram Price Report (OPR). Posted prices are updated as soon as a company updates its posted prices, and are published

at the beginning of each month in Platts Oilgram Price Report, even if there are no changes to company posted prices for the respective month.

THE PLATTS INDEX

The Platts Index gives a broad view of the state of the oil industry by putting markets for several different crudes and products on the same footing: a base period between July 1987 and December 1988, and a translation of that base period into the number 100.00. Prices for each index component were averaged for that period, and the result constitutes 100 in the Platts Index.

The index itself first appeared in July, 1990. Each day, Platts spot assessments are incorporated into a weighted formula based on consumption patterns for products, and supply patterns for crude. The result is a single number that can be used for quick comparisons of a product's status, both over time and against other products or crudes. For example, the gasoil/heating-oil index is weighted 42% to Europe, including assessments from Northwest Europe and the Mediterranean, 43% to North America, including assessments from New York, Boston, and the US Gulf Coast; and 15% to the Pacific Rim, including assessments from Singapore and Japan.

- The prices for the base period were averaged, resulting in a base price of approximately 46.5 cts/gal. That equates to 100 on the Platts Index. The ratio between each day's new price and 46.5 cts will be applied to the 100.00 base, and the result is that day's index.

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Methodology and Specifications Guide

Bunker Fuels & Tankers

LATEST UPDATE: December 2005

The McGraw Hill Companies

BUNKER FUELS

Bunker fuel is generally traded as one of four grades: Intermediate Fuel Oil (IFO) 180 centisoke (CST), IFO 380 CST, Marine Diesel (MDO) and Marine Gasoil (MGO).

The worldwide market generally follows similar specifications for these grades in all locations. The specifications followed are generally those found in ISO 8217:2005 (E) - Petroleum products - Fuels (class F) - Specifications of marine fuels.

IFO 380: Specifications generally conform with that for RMG 35. Approximate Kinematic Viscosity: At 50degC, max 380 cst. Flash point 60degC minimum. Pour point (upper) winter quality, 30degC maximum; summer quality, same. Ash 0.15 m/m maximum. Sulphur, maximum 4.5%. Vanadium max 300 mg/kg. Aluminium plus silicon, 80 mg/kg max; water, 0.5% maximum.

IFO 180: Specifications generally confirm with that for RME 25. Approximate Kinematic Viscosity: At 50degC, max 180 cst. Flash point 60degC minimum. Pour point (upper) winter quality, 30degC maximum; summer quality, same. Ash 0.10 m/m maximum. Sulphur, maximum 4.5%. Vanadium max 200 mg/kg. Aluminium plus silicon, 80 mg/kg max. ; water, 0.5% maximum.

Marine Diesel: Specifications generally conform with that for DMB. Kinematic viscosity at 40degC, max 11 cst; Flash point 60degC minimum; Pour point (upper) winter quality, 30 degreesC; pour point upper summer quality, same; Ash 0.01% maximum; Sulfur, maximum 2%; ; water, 0.3% maximum.

Marine Gasoil: Specifications generally conform with that for DMA. Kinematic Viscosity at 40DegC, 1.5 minimum CST, maxiumyum 6 cst; Flash point 60degC minimum; Pour point (upper) winter quality, 30 degreesC; pour point upper, summer quality, same; Ash 0.01% maximum; Sulfur, maximum 1.5%. Cetane, minimum 40.

EUROPE

Timing: Platts bunker price assessments are based on typical trading levels during the course of the day, and are based on actual transactable market levels, i.e. confirmed trades, bids and offers. Much of the price direction is derived early in the day at European ports, based on the previous day's outright cargo fuel oil assessments. Prices are typically quoted for product to be supplied 1-8 days ahead

Price: Prices are quoted in $/metric tonne. There is no maximum range, though generally prices are assessed with a $1-$4 spread between low and high. Prices carry a minimum range of 50 cts.

Typical Size: Typical sizes vary from port to port. The sizes attached to the list below are typical, not minimums and maximums. However, trades done outside these ranges may be considered atypical in setting an assessment. All figures are in '000's of tones.

Typical sizes

	IFOs	Distillates
Augusta	300-2200	10-200
Dakar	300-1000	10-100
Falmouth	100-1000	10-100
French Med	500-2200	10-200
Gdansk	200-900	10-100
Genoa	300-1700	10-120
Gibraltar/Algeciras/Ceuta	200-2000	10-200
Great Belt	300-1000	10-100
Hamburg	400-1000	10-100
Istanbul	100-1000	10-100
Kuwait	200-8000	20-350
Las Palmas/Tenerife:	400-2000	10-200
Malta	300-1000	10-100
Northern France/Fr. Atlantic	200-1000	20-100
Piraeus	300-1000	10-100
Suez	300-1000	10-100
St Petersburg	300-1200	10-100
Trieste	250-700	20-50

Delivery: Bunkers are assessed on either an ex-wharf basis, or a delivered basis, which is delivered at the ship, or in one case, ex-pipe.

The following ports are assessed **ex-wharf:** Northern France, French Med, Augusta, Genoa, Trieste, Dakar and Durban.

The following ports are assessed **delivered:** Rotterdam, Antwerp, Hamburg, Great Belt, Gdansk, St Petersburg, Gibraltar, Algeciras, Ceuta, Las Palmas, Tenerife, Malta, Istanbul, Suez Ports, Piraeus.

Kuwait is assessed **ex-pipe.**

Other specifications: Prices for **Falmouth** are quoted inclusive of barging, agency and pilotage costs. Prices for **Northern France** are for fuel supplied at the ports of Le Havre and Dunkirk.

Marine Diesel/Marine Gasoil: At several ports in Europe, sufficient liquidity exists in trade for both marine diesel (DMB) and marine gasoil (DMA). Values for both grades are reflected, respectively, on the high and low of the distillate price assessment. Those locations in which this practice is part of the assessment are so noted with a footnote in Platts Bunkerwire. They are: Great Belt, Gdansk, St. Petersburg, Gibraltar, Algeciras, Ceuta, Las Palmas and Tenerife.

UNITED STATES & LATIN AMERICA

Timing: Platts bunker assessments in the US reflect deliveries 3-7 days from the date of publication for the US Gulf Coast, the US Atlantic Coast, and Latin America. On the US West Coast, due to differences in market operations there, the range is 3-10 days.

Platts' assessments reflect price levels between 3-5 p.m. East

Coast time, but within the context of the broader day. While particular emphasis will be placed on market activity occurring in that period, Platts' specifications permit the consideration of deals done at other parts of the day. Those transactions will be considered against prevailing market circumstances at the time those deals were done, and the market activity toward the 5 p.m. Eastern cutoff. Consideration will include the prior day's so-called "overnight" transactions, which occur in the late West Coast afternoon or early evening, often with Asian counterparties. The market activity of the two hours leading up to 5 p.m. Eastern time will be considered for repeatability and transparency against the broader record of transactions, bids and offers that have occurred in the market prior to that two-hour time period.

Price assessments for all Latin American ports are based on deals done between 9:00 a.m. and 5:00 p.m. New York time.

Price: Prices are quoted in $/metric tonne. There is no maximum range, though generally prices are assessed with a $2-$4 spread between low and high. Prices carry a minimum range of 50 cts.

Size: Typical size ranges are as follows: New York and Houston, 500-2,000 mt; Los Angeles, San Francisco, 1,000-3,000 mt; Seattle, Portland, Philadelphia, 500-2,000 mt; Norfolk, 400-2,000 mt; Montreal, 300-500 mt; New Orleans, 200-1,500 mt. Platts reserves the right to consider other volumes depending on market conditions.

***Sulfur content*:** Per the specifications near the beginning of this document, Platts specifications on IFO 380 and IFO 180 call for a maximum sulfur content of 4.5%. Higher prices for material reflecting a tighter sulfur specification will be included in the Platts assessment.

***California bunker taxes*:** California has implemented particularly stiff taxes on bunker sales in that state. Those fees are not included in the Platts assessment.

***Delivered assessments*:** Platts delivered bunker assessments are calculated by taking the ex-wharf price and adding a barge rate. That barge rate is determined by a regular survey of the market undertaken by Platts editors. This rate is one figure that is a rough average of the prevailing barge rates in a market. It is not an assessment for a specific-sized barge, but instead is the result of a compilation of several prevailing prices.

ASIA

Singapore-UAE-Korea-Australia

These assessments are done from Platts' Singapore office, and are governed by similar methodology. The Korea assessments are based on market activity in Pusan and Ulsan. With the exception of the ex-wharf prices for Singapore, the other assessments for these regions all are done on a delivered basis.

Timing: Platts' bunker assessments for these three ports are for deliveries 3-7 days out. However, Singapore ex-wharf prices are 3-15 days out. Prices are based on an assessment of the market between 6-6:30 p.m.

However, the prices for Australia, Fujairah and Khor Fakkan in the United Arab Emirates, Korea and Singapore delivered are not done on a Market on Close basis. The Platts' assessment captures the full range of activity in that period. The Platts' ex-wharf assessment for Singapore is done on a Market on Close basis, with the assessment reflecting the price determined by Platts that is prevailing at the end of that half-hour window.

Price: Prices are quoted in $/metric tonne. There is no maximum range, though generally prices are assessed with a $2-$4 spread between low and high. Prices carry a minimum range of 50 cts.

Size: The minimum sized parcel is 500 metric tones. There is no maximum size. The typical size range is 500-1,500 mt.

Ex-Wharf vs. Delivered: Platts delivered assessments for Singapore are established in a half hour window, but it is not set as a market on close. Platts ex-wharf assessments for Singapore are settled on a market on close system. As a result, the difference between the two often will be less than the barging differential to move material from the wharf to the customer's ship. When there is no activity in the half-hour window for ex-wharf bunker fuel, ex-wharf will be assessed on the same basis as that practiced in the delivered market.

Hong Kong

Timing: The assessments reflect market activity 3-7 days out from the date of publication.

Price assessments are set on the basis of market activity between 5:30-6:30 pm Hong Kong time. Traders in the Hong Kong bunker market generally wait to see the activity in the Singapore fuel oil window before quoting firm numbers. Transactions done earlier in the day are not included in the assessments.

Price: Prices are quoted in $/metric tonne. The minimum range is 50 cts, and the maximum range if $3.

Size: IFO 180 CST prices generally reflect a minimum quantity of 300 metric tones, while 380 CST generally reflects at least 500 tonnes. Distillate assessments are for small parcels, often less than 50 mt.

Basis: Hong Kong assessments are set on a delivered basis, and include barging costs.

Japan

Timing: The assessment reflects market activity 3-7 days out from the date of publication.

Platts surveys the Japanese bunker market between 5:30-6:30 p.m. local time, but the range reflects the business activity of the

entire day. However, the bulk of the transactions in the Japanese bunker market occur late in the day.

Price: Prices are quoted in $/metric tonne. The minimum range is 50 cts, with a $2 range between low and high usually reflected.

Basis: The Japan assessment is set on a delivered basis. It reflects activity in the Tokyo/Yokohama Bay area.

Size: Platts reflects quantities of 300-2,500 metric tones.

POSTED PRICES

Chinese Petroleum Corp.: The posted prices for bunker fuel sold by CPC are quoted on a delivered basis. They are quoted in $/mt. Base size is 1,000 mt, but lots larger than that often receive a rebate of $5/mt. Smaller lot sizes often get a rebate of $3-$4/mt.

Delivery is by barge for all key ports, except Hualien, where it is by pipeline. Prices are effective for all key ports, except for IFO 380 CST. In 2003, CPC began quoting two posted prices for 380 CST, with the lower end of the range reflecting prices at Keelung and Kaohsiung, and the high end reflecting prices at other locations.

Chimbusco: Chimbusco is the state-owned Chinese marine fuel marketing agency. It posts $/mt prices for three separate ports: Shanghai, Dalian and Guangzhou. Chimbusco quotes a high and low end of a price range for its posting, though the two ends do not reflect any quality differences. However, some smaller ports in China will have slightly different prices than the main three cities, and the range reflects that. Chimbusco's distillate price represents marine gasoil. The prices are quoted on a delivered basis.

Saudi Aramco: Prices are quoted in $/mt for three locations: Jeddah, Dammam and Ras Tanura. The prices are ex-wharf.

SHIPPING

Platts assesses the open market rates for the chartering of both dirty and clean tankers. Dirty tankers are defined as one carrying crude, fuel oil or other "dirty" products such as vacuum gasoil or dirty condensate. Clean tankers carry light ends such as gasoline, distillate or naphtha. In addition, Platts carries separate assessments for smaller dirty tankers dedicated to moving just fuel oil, and assesses a special premium for the movement of jet fuel-designated tankers.

Platts mostly follows general principles for all assessments, with some specifications unique to either clean or dirty tankers.

PORTS

Platts assesses a number of key shipping regions under broad geographic descriptions. A list of those descriptions as they appear in the Tankerwires, and the markets they represent, follows.

UKC:	Bilbao to Hamburg, but not including Portugal. Designation includes southern Sweden and western Norway.
Med:	Everything from Gibraltar to Istanbul
Black Sea:	All ports in Black Sea.
Caribbean:	Venezuela and the islands.
EC Canada:	Atlantic coast, as well as shipments into the St. Lawrence.
USWC:	Seattle to Los Angeles
USGC:	Pascagoula, Mississippi to Corpus Christi
USAC:	North of Cape Hatteras to Portland, Maine.
AG:	All ports in the Arab Gulf, up to the Straits of Hormuz
Indo:	All ports in Indonesia
Skorea:	All ports in South Korea.
Japan:	All ports in Japan
Austr:	All ports in Australia
HK:	All ports in Hong Kong
Rsea:	All ports in the Red Sea
India:	All ports in India
EAfrica:	From the African horn south to Durban, South Africa.

ASSESSMENTS

Timing: Platts tanker rate assessments are published at 4 p.m. London time. They are derived from both fixtures concluded and market levels talked in the period since the previous set of assessments was published. Platts aim is two-fold: a) to provide a reflection of market activity (i.e. fixtures, vessels put on subjects, bids and offers) heard since publication of the previous set of freight assessments b) to publish an indication of the level at which Platts believes chartering activity could occur, given the

movements in other markets. Given that some particular routes can go several days without any significant activity, either actual chartering or bids/offers, Platts will adjust its tanker assessments up or down on the basis of broader market trends and a survey of the market to determine their views on a relative value of a ship charter for a particular route.

Platts tanker assessments do not reflect a standard time period in the assessment basis, given the widely divergent time windows under which markets operate. While a long-haul market such as AG-USGC might see ships chartered weeks in advance, a short-haul rate such as cross-Med traffic often has ships being chartered with just a few day's notice. Platts will make its judgement on tanker assessments within a time range consistent with standard practice in that market.

Basis: Platts tanker assessments are primarily expressed as percentage of the annual Worldscale flat rate that is being agreed upon in open market transactions to charter a ship. For example, if the Worldscale annual flat rate – also known as Worldscale 100 – is set at $10.00 per metric ton for a specific route, a Platts' assessment of 50 for that route would mean that the class of ship being assessed is being chartered for $5 per metric tonne of freight on that voyage.

The Worldscale flat rate is published at the beginning of each year by the Worldscale Association.

Lump-sum assessments: In some clean tanker markets, some routes are assessed on a lump sum for the cost of chartering a ship of the specified size. The markets that are assessed on that basis have historically traded in that manner, and the Platts' assessment of a lump sum rather than Worldscale rate simply follows the practice.

In the Clean Tankerwire, assessments that are based on a Worldscale rate carry a designation of W. There are no dirty tanker assessments done on a lump-sum basis.

Size and specifications: The tonnage specified in our assessment tables represents the weight of the cargo carried. Platts will consider charters of different yet approximate sizes when making its assessments, pro-rating the market rates to the size of the ship in the assessment.

Assessments are typically based on double-hull/double-bottom vessels under 20 years of age, or typically under 15 years for voyages involving a European load or destination port. Where there is a broadly equal amount of market activity taking place for both well-approved, modern tonnage and older, less well-approved tonnage in the same market concurrently, Platts' assessment will be based on the higher quality end of the market. The aim is to follow where the bulk of activity is taking place in each of the routes Platts assesses.

NR: NR is a designation that stands for No Recent Rate. It is utilized on a route where Platts sees at least six months of either total or near-total inactivity. NR is not used to reflect a market that is simply quiet for a few days. Platts will always seek to minimize the use of NR assessments, and a route's designation of NR will always be ended as quickly as possible when information on that route becomes available.

$/MT assessments: Platts converts its Worldscale and lump-sum rates into $/mt equivalent assessments. Platts determines $/mt freight rates based on a basket of Worldscale flat rates on several key routes between the two regions noted. For example, the UKC-USG $/mt assessment would be based on such routes as Sullom Voe-Houston. Platts' spot Worldscale assessments are applied against this basket, to produce the assessment for a $/mt rate. The basket is updated annually, when the Worldscale Association establishes new flat rates for the year. For those routes which are assessed basis a US$ lumpsum, the $/mt assessment is calculated by dividing the lumpsum total by the size of the cargo assessed.

Fuel oil-only assessments: Platts produces several assessments within the body of its Dirty Tankerwire that represent solely a standard vessel moving dirty petroleum products that do not require heating during transport or storage. This generally is fuel oil, hence the designation of these as fuel oil-only assessments. These movements generally command a premium in the spot chartering rate. Under normal market conditions, assessments loading in the Baltic are based on modern, non-ice class vessels.

The following routes and sizes (in kt) reflect fuel oil-only assessments:

Fuel oil-only routes and sizes	
UKC-UKC:	27.5, 30
UKC-Med:	27.5, 30
UKC-USG:	30
UKC-USG:	55
UKC-Med:	55
Med-Med:	27.5
Med-Med:	30
BSea-Med:	30
Caribs-USG:	50
Caribs-USAC:	50

Suez Canal: Assessments for voyages which would involve a Suez Canal transit are made inclusive of any canal fees.

Jet Fuel Premium: In its Clean Tankerwire and on the tanker pages of Platts Global Alert, Platts publishes a jet fuel premium. The premium represents the amount of Worldscale points to be added to the published Med-UKC 30kt assessment. That final number is used to determine the freight rate that Platts uses to net back the value of Amsterdam-Rotterdam-Antwerp (ARA) jet fuel to the Mediterranean. Platts does not assess an outright CIF Med jet price. The assessesment it publishes is netted back from the CIF ARA assessment.

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Methodology and Specifications Guide

China Fuel Oil

LATEST UPDATE: July 2004

The McGraw Hill Companies

REPORTING COVERAGE

Platts assesses 180 and 380 centistoke fuel oil traded in south and eastern China. Platts' 180 CST assessments reflect fuel oil traded in southern China's port of Huangpu, and eastern China's ports of Shanghai and Qingdao. Platts' 380 CST assessment reflects deliveries on a C+F basis into all main ports in southern China from Zhuhai to Xiamen. Precise specifications for the grades of fuel oil assessed are detailed in the tables below. Platts assessments reflect fixed-price deals, floating transactions, bids and offers, and are published in Yuan/mt and US dollars/mt. Platts publishes both a fixed price assessment, and a differential to Mean of Platts Singapore 180CST fuel oil where applicable.

Platts plans to launch its assessments for Shanghai and Qingdao on July 5, 2004.

GUIDELINES FOR REPORTING TRADING ACTIVITY

All Platts' China fuel oil assessments reflect trading activity up to 5:30pm China Standard Time. Singapore and China are in the same time zone. All assessments reflect end-of-day values, and are based on Platts' Market-On-Close methodology for all Asia oil products. For more information on Market On Close methodology, see the section "**Platts guidelines for Global Alert page 190 trading activity**", in "Asia Products Specifications," located on the "Methodologies and Specifications" section of the Platts website, www.platts.com.

TAX, INSPECTION AND LICENSE FEES

Platts STS Huangpu, FOB Huangpu (in Yuan) FOB Shanghai (in yuan) and FOB Qingdao (in yuan) assessments include value-added tax, import tax, inspection fees and license fees. FOB and C+F Huangpu (in dollars) assessments do not include taxes and fees. FOB Shanghai (in US dollars) and FOB Qingdao (in US dollars) do not include taxes and fees.

China
180 centistoke, 3.5% sulfur, STS
180 centistoke, 3.5% sulfur, FOB
180 centistoke, 3.5% sulfur, C+F
180 centistoke, 2.5% sulfur, C+F
180 centistoke, 1.5% sulfur, C+F
180 centistoke, 1.5% sulfur, FOB
380 centistoke, 3.5% sulfur, C+F

CREDIT TERMS

Unless requirements are otherwise stated by either participant before Platts assessment window, buyer shall open an irrevocable standby letter of credit or banker's guarantee from a first class bank in form and substance acceptable to seller and valid for a minimum duration of thirty days from the date of loading. The letter of credit or banker's guarantee shall be open for an amount of at least 105% of the estimated purchase value.

LOCATIONS, LOT SIZES, DELIVERY TERMS:

Platts' ship-to-ship (STS) Huangpu 180 CST, 3.5% sulfur assessment reflects barges of 1,000-5,000 mt for loading ex-ship 3-8 days forward from the day of assessment.

Platts' FOB Huangpu 180 CST, 3.5% sulfur assessments reflect barges of 1,000-5,000 mt loading 3-8 days forward from the day of assessment.

Platts' C+F Huangpu 180 CST, 3.5% sulfur assessment reflects cargoes of 20,000-40,000 mt for delivery 15-35 days forward from the day of assessment.

Platts C+F Huangpu 180 CST, 2.5% sulfur assessment, also known as medium sulfur fuel oil (MSFO), reflects cargoes of 20,000-40,000 mt for delivery 15-35 days forward from the day of assessment.

Platts' FOB Shanghai 180 CST, 3.5% and 1.5% sulfur assessments reflect barges of 300-700 mt loading 3-8 days forward from the day of assessment.

Platts' FOB Qingdao 180 CST, 1.5% sulfur assessments reflect barges of 5,000-20,000 mt loading 3-8 days forward from the day of assessment.

Platts' C+F Shanghai 180 CST, 3.5% and 1.5% sulfur assessment reflects cargoes of 15,000-30,000 mt for delivery 15-35 days forward from the day of assessment.

Platts' C+F Qingdao 180 CST, 1.5% sulfur assessment reflects cargoes of 15,000-30,000 mt for delivery 15-35 days forward from the day of assessment.

Platts assesses 380 CST 3.5% sulfur cargoes C+F main ports in southern China, including Huangpu and Shenzhen. The assessments reflect cargoes of around 30,000mt for delivery 15-35 days forward.

180 CENTISTOKE, 3.5% SULFUR

Cracked
Sulfur max: 3.5%
Kinematic viscosity max 180CST
Specific gravity at 15 C kg/l max 0.98
Flash point min 66 deg C
Pour point max 24 deg C
Ash on weight basis max 0.10%
Water by distillation volume max 0.50%
Total existent sediment 0.10%
Vanadium max 150 ppm
Sodium max 100 ppm
Aluminum and silicon max 80 ppm with Al not exceeding 30 ppm

180 CENTISTOKE, 2.5% SULFUR

Straight-run
Sulfur max: 2.5%
Kinematic viscosity max 180CST
Specific gravity at 15 C kg/l max 0.98
Flash point min 66 deg C
Pour point max 24 deg C
Ash on weight basis max 0.10%
Water by distillation volume max 1%
Total existent sediment 0.10%
Vanadium max 150 ppm
Sodium 100 ppm
Aluminum and silicon max 80 ppm with Al not exceeding 30 ppm

180 CENTISTOKE, 1.5% SULFUR

Straight-run
Sulfur max: 1.5%
Kinematic viscosity max 180CST
Specific gravity at 15 C kg/l max 0.98
Flash point min 66 deg C
Pour point max 24 deg C
Ash on weight basis max 0.10%
Water by distillation volume max 2%
Total existent sediment 0.10%
Vanadium max 50 ppm
Sodium 50 ppm