China Independent Refinery Monthly Report Methodology

19 October 2018

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Introduction to ICIS China Independent Refinery Monthly Report (CIRM)

The ICIS China Independent Refinery Monthly Report (CIRM) provides updates on the development of key independent refiners in China, especially in Shandong province. The report contains in-depth analysis on crude imports, feedstock shipping arrivals, the feedstock mix of independent refiners, updates on refinery operations, turnaround schedules, refining margins and crude inventories, as well as commentary on key downstream refined products. Coverage for some markets stretches back as far as 2010 and a comprehensive price history database is available for this report.

CIRM is published on the 10th Chinese working day of each month in China as a PDF.

The early history database is available as an additional service.

General methodology

ICIS continuously develops, reviews and revises its methodologies in consultation with industry participants. Product specifications and trading terms and conditions used are intended to reflect typical working practices prevalent in the industry.

ICIS publishes market assessments based on information continuously gathered from market participants. These include spot transactions, spot bid and offer levels, contract price negotiations, prices of related commodities, and relevant freight costs.

ICIS does not make retrospective adjustments or changes to price assessments based on information received after publication time in all cases, or after any cut-off point specified in individual methodology documents.

ICIS regards all arm’s-length transactions which meet its specification criteria as carrying equal weight.

ICIS uses proprietary models where necessary to normalise data to the typical specifications for cargo size and date ranges given for each commodity.

Some ICIS assessments are the product of calculation alone, for example in markets where insufficient market activity takes place to permit price assessment, or where a market habitually itself sets prices according to a formula. Such calculated assessments are noted as such in their detailed methodology specifications.

ICIS endeavours to cross-check all the transaction information it gathers. ICIS will not use information for assessment purposes where such checks call into doubt the accuracy of the original information, or where a transaction appears to have occurred under circumstances that render it non-repeatable or otherwise markedly unusual.
**Definition of independent refiners**

The term ‘independent refiners’ is defined to include both the large private integrated refining complexes with refining capacity above 10m tonnes/year which are due to start up from 2018, and the smaller scale private refiners traditionally known as ‘teapot refiners’. Refiners under PetroChina, Sinopec, China National Offshore Oil Corp (CNOOC), Shaanxi Yanchang Petroleum and China North Industries Group Corp as well as Sinochem Quanzhou Petrochemical are not included.

Independent refiners mentioned in this report are those equipped with crude distillation units (CDUs) or vacuum distillation units, while those with only fluid catalytic crackers, cokers or other secondary processing units but no CDUs are not included.

This monthly report mainly focuses on independent refiners in Shandong province, the key hub of such refineries in China.

**Primary data tables in CIRM**

**Feedstock mix of Shandong independent refiners**

The data is based on daily tracking of shipping arrivals of key feedstocks for Shandong independent refiners, such as imported crude oil, cutback bitumen, domestic offshore crude oil, imported straight-run fuel oil and domestic crude oil. The data published is for the current month, with month-on-month comparisons.

**Commercial crude inventory at Shandong ports**

This is based on bi-weekly research by ICIS on the four key ports in Shandong province for crude oil imports. The oil terminals involved in the research have a total crude oil storage capacity of 7.92m cubic meters (mcm). The four ports are Laizhou, Longkou, Qingdao and Rizhao ports. Forecast on the key trends in the coming month is included. Commercial crude inventory = crude cargo arrivals – crude withdrawals + crude stock levels two weeks prior to publishing date

**Refining margins of Shandong independent refiners**

ICIS calculates the refining margins of Shandong independent refiners by taking into consideration the weighted average cost of five main feedstocks – Merey, Oman, ESPO, domestic offshore crude and domestic Shengli crude. The integrated sales revenue of main products from the refiners is based on the average output ratio and selling prices. ICIS also takes into account other costs, including feedstock logistic cost, processing cost and consumption tax on oil products. The full-amount of taxes including consumption taxes have been considered when calculating the refining margins. The research is done every other Wednesday, typically in the middle and at the end of each month.
Refining margin = integrated sales income from key refined products (gasoil, gasoline, LPG, petroleum coke, bitumen, naphtha, sulphur, propylene, etc.) – weighted average feedstock costs – other processing costs.

Operating rate of Shandong independent refiners

ICIS research covers 37 key independent refiners in Shandong, with annual topping capacities totalling 151.5m tonnes/year. These refiners’ aggregated topping capacity makes up about 86% of the total topping capacity of all the independent refiners in Shandong. The research is done every Thursday.

CDU operating rate = daily throughput / (total annual CDU capacity/333)

Crude imports of Shandong independent refiners

Updates on crude oil import volumes by each of the independent refiners that have crude import quotas granted by the Ministry of Commerce for the year. Crude import volumes for the current month as well as accumulated year-to-date import volumes are published, and are compared with the crude import quota for the year.

Imported crude grades analysis

Analysis of the top 10 crude grades that have recorded the largest import volume by Shandong independent refiners in the current month and their share in the total import volume, as well as the accumulated import volume during the year.

Pie charts on crude imports by API index and sulphur content are included in the report.

Update on crude import quota

ICIS posts the latest updates on the crude import quota for independent refiners, which includes the import quota granted by the Ministry of Commerce as well as the ceiling volumes of import crude throughput set by the National Development and Reform Commission.

A bar chart on utilisation of crude import quotas by each independent refiner that is qualified to refine imported crude is included in the section.

Shipping fixtures of feedstocks for independent refiners

This is based on daily tracking and research by ICIS on all the key ports in Shandong province for oil imports, including Rizhao, Laizhou, Yantai, Qingdao, Longkou, Dongying and Tianjin. Data on the arrival date, volume, origin, crude grade, receiver, carrier and arrival port of each cargo are included.
ICIS publishes key Shandong independent refiners’ gasoline, gasoil, LPG and fuel oil output volumes during the current month as well as the inventories of these products at the end of each month. On a bi-weekly basis, ICIS surveys gasoil and gasoline production and inventories at 20 key Shandong independent refiners that have a total topping capacity of 8.68m tonnes/year. The production and inventories of commercial LPG are from 30 independent refiners, and those of commercial fuel oil are from 14 independent refiners.

Refining capacity of independent refiners

ICIS collects data on the total refining capacities of key units at 134 of China’s independent refiners, such as crude distillation units, fluid catalytic crackers, delayed cokers and reformer units. Aggregate capacities in Guangdong, Shandong and Shaanxi are included in the report.

Feedstock prices and product prices

ICIS publishes the monthly average settlement price of domestic Shengli crude and Merey crude, two major feedstock grades for Shandong independent refiners. Sinopec announces its Shengli crude price for the current month at the end of the month, taking as reference the average price of Dubai crude between the 26th day of the previous month and the 25th day of the current month. The monthly Merey crude price is linked to WTI futures, with reference to the average price between the 26th day of the previous month and the 25th day of the current month.

ICIS publishes monthly average prices of national standard (GB) VI 92-Ron gasoline with sulphur content at 0.001% and national standard (GB) VI gasoil with sulphur content at 0.001% in Shandong province; north China and national standard (GB) V 92-Ron gasoline with sulphur content at 0.001% and national standard (GB) V gasoil with sulphur content at 0.001% in Yangtze River Delta, east China; Pearl River Delta, south China; Shaanxi province and northeast China, as well as the average price in China for these grades. ICIS also covers the monthly average prices of domestic LPG in south China, east China and Shandong province.

Distillate inventories of Shandong independent refiners

ICIS biweekly research on the gasoil and gasoline inventories of Shandong independent refiners covers 20 key independents in the province with crude processing capacities aggregating 8.68m tonnes/year. These refiners’ oil product storage capacities amount to 2.54m cubic meters. The research is done twice a month, typically in the middle and at the end of each month.
**Currency conversions**

Exchange rates are used for conversion between different currencies. ICIS does not formulate exchange rates, and instead adopts the exchange rates from XE (http://www.xe.com). The exchange rates published by ICIS are for reference only, and may be different from the rates provided by local banks or other financial institutions.

**Other principles and guidelines**

**Changes to methodology**

All markets evolve, and ICIS ensures its methodologies for market-reporting evolve in line with the markets.

ICIS therefore regularly conducts internal reviews of the appropriateness of its methodologies.

Draft changes are then made public and feedback requested from industry participants, with a minimum two-week notice period, except where a force majeure event (natural disaster, war, bankruptcy of a trading exchange, etc.) makes necessary a shorter notice period.

ICIS is committed to reviewing all comments on proposed methodology changes, but in some cases may find it necessary to alter its methodologies against the wishes of some market participants.

**Consistency**

ICIS achieves consistency among its assessors in exercising their judgment by requiring all assessors to understand and follow this detailed methodology as well as the company’s Editorial Standards document. In addition, ICIS employees are required to complete standard training before undertaking the work of a market reporter. Every reporter’s work is peer-reviewed daily and spot-checked by senior management. Adherence to these processes is documented at every stage.

**Data standards**

ICIS has a public Data Standards Policy which covers the type and quality of information gathered from market participants.

The following principles relate to ICIS gas market assessments and commentaries:
• Where possible, please allow ICIS access to active market traders and allow them to comment on active news stories.
• Where possible, please provide market data from both front and back-office functions.
• Where possible, please provide complete data and not a sub-section.
• Flag inter-affiliate transactions.
• Flag sleeve trade.
• Flag spread trades.
• When a source or contact leaves the organisation, please contact ICIS to inform on the replacement (ICIS requests that both the source and the organisation contacts them).
• Where the information is not validated or confirmed by an official source (i.e. rumour) please indicate as such.

Market communication

ICIS communicates with a broad range of market participants – traders, brokers, back-office employees, supply managers, operations personnel and company executives – to obtain market information.

ICIS communicates with participants by telephone, email, instant messenger and in person. All instant messages, email communication and notes taken during any in-person communication are archived and details of telephone communication are logged and stored in a database.

ICIS does not accept instant messenger communication from unknown parties. Reporters are required to verify a market participant’s identity prior to using instant message communication.

ICIS does not regard attempts by companies to restrict communication with their employees as binding in any way. ICIS has a duty to its subscribers to obtain the maximum possible amount of market information. ICIS treats all communication from market participants as confidential.

ICIS reporters are bound by a Code of Conduct to report to their superiors any coercive or threatening communication from market participants, or any offers of inducements of any kind intended to influence an assessment.

Where improper communication appears to have taken place, ICIS will communicate in the first instance with senior management at the company or companies involved, and if necessary with relevant market authorities.

ICIS expects the highest standards of propriety from all market participants, and regards all communications from market participants as representative of the views of an individual’s employer.
ICIS is committed to the highest levels of customer service, and has a formal feedback and complaints policy, which can be viewed here: http://www.icis.com/about/icis-feedback-policy

Market data verification

ICIS will always make best endeavours to confirm bids, offers and transactions with the relevant party/parties. ICIS attempts to cross-check all market data received from a buy- or sell-side participant with the participant’s trading counterparty.

Where all counterparties to a transaction cannot or will not confirm the data, ICIS will seek corroboration from other market sources.

Where transaction or bid/offer information was received from a trader rather than from a company’s back office, ICIS always seeks confirmation from other sources.

Where ICIS has grounds to doubt an item of market data, it may request further evidence that a transaction has taken place, including documentary evidence.

ICIS treats transaction data received from active brokerages as confirmed and treats bid/offer information as firm. This information will be considered in conjunction with other sources during the assessment and index process as described above.

In markets with low liquidity and a low number of participants, ICIS may choose to use unconfirmed data, but only in so far as it is aligned with other market information and comes from a source deemed reliable by ICIS based on previous interactions.

Selection of participants

ICIS policy on general market data is that it welcomes all information regardless of source or constitution as long as it is provided in good faith as true.

However, only active market participants verified as such by existing active industry participants and verified as a viable business by ICIS investigations will be allowed to contribute price data to ICIS for the purpose of assessing tradable market value under this methodology.

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