

# PIRA Global Oil Analytics Service



PIRA examines every aspect of the oil market including, supply, demand, inventories, refining, infrastructure, and trade flows, with the objective of helping our clients understand which way the market is headed. We provide detailed and comprehensive coverage of the global and regional crude and product markets, fully integrated with our views on the NGL and global gas markets.

## Key Features of PIRA's Global Oil Analytics Service:

### Research

Fixed-frequency reports and as-events-dictate bulletins keep you current on trends in global crude, product markets and geopolitical developments

- Global oil and regional market balances and forecasts
- Weekly analysis of DOE and Japanese statistical releases
- Analysis of topical trends and current events
- Concise, focused commentary on the implications of market developments and current events
- Refinery turnaround tracking
- Political risk analysis and alerts
- Tight oil operator and policy tracking

### Data

Interactive models and comprehensive datasets underpin PIRA's analysis and offer user-defined research tools.

- PIRA's Energy Price Portal
- High-frequency fundamentals data
- Petroleum product demands and yields
- Global oil supply
- Global crude and product demand
- Crude and product inventories
- Global and regional crude and product balances
- Commitment of traders portal
- Current/historical daily CME open interest

### Expertise

Access to the analysts and consultants behind PIRA's content creation for customized insights.

- Phone and email access to the oil team
- Private client conference calls
- Webinars on emerging trends
- On-site market updates
- Client seminars
- Visits to S&P Global offices



# Descriptions of the Service Deliverables:

All service content — current and archived — is available online via PIRA DIMENSIONS, our client portal, including daily, weekly and monthly reports, market data and the interactive Energy Price Portal. Client consultation deliverables — email/phone access, the private briefing, and the Annual Retainer Client Seminar — are available on request.

## Analytical Reports

### World Oil Market Forecast

This essential report contains PIRA's short- and medium-term outlook for world crude and petroleum products markets, along with critical intelligence on current market drivers. Price forecasts are provided for WTI and Brent, as well as for petroleum products for USGC and NYH.

#### Highlights include:

- Comprehensive overview of the underlying supply/demand fundamentals
- Updates to PIRA's world oil balances, including OPEC crude production, non-OPEC oil supply and world stocks
- Key insight into global demand and production
- Drivers of crude and petroleum products price outlooks

### Weekly EIA Analysis and Forecast Flash reports

Published each Wednesday after the U.S. EIA releases its Weekly Petroleum Status Report, the DOE Weekly Analysis covers PIRA's market perspective and analysis of the most recent U.S. crude oil and petroleum products supply/demand data, including forecasts for the next week. The report is accompanied by statistics on the EIA's latest supply, demand and inventory data. The EIA Weekly Oil Forecast Flash is a one-page early look at PIRA's forecast for next week's EIA data release. With brief commentary, as well as key elements of PIRA's forecast for the upcoming week, this report provides a first look at PIRA's view of the EIA data by 1 pm each Wednesday.

### Global Oil Spotlight

Concise, focused commentary presenting PIRA's latest views and the price implications of current events impacting supply and demand.

### North American Midcontinent Oil Forecast

This monthly examines supply/demand balances for Cushing and shale plays in the Midcontinent, as well as for Canada. These balances drive WTI, Bakken and Canadian crude prices. Highlights include: Cushing, Western Canada, and Bakken crude supply/demand forecast balances, as well as price outlooks for Syncrude, Mixed Sweet, WCS, WY Sweet, WTS, and Mars.

## European Oil Market Forecast

This monthly report provides an outlook for European crude and products markets, including supply/demand analysis and forecasts for European countries, and forecasts of Northwest Europe and Mediterranean crude (e.g. Dated Brent, Urals) and products prices.

## Platts China Oil Market Forecast

This monthly publication offers a unique combination of in-depth analysis, data, news and market coverage of the China oil market. The essential information contained within this report will help you to analyze the myriad of factors affecting China's oil balance. Users have access to proprietary 12-month rolling forecasts, detailed supply and demand analysis, independent refineries' activities, crude oil import and product export quotas and trade analysis and data.

## Platts Asia-Pacific Weekly Product Recap

Issued every Friday, this weekly report includes the latest updates on oil markets in the Asia Pacific and the regional trading hub of Singapore. This report delivers news and analysis on the key prices, margins, supply-demand trends as well as updates on trading activity impacting crude and product (gasoline, naphtha, jet-kero, gasoil, fuel oil) markets in the East of Suez.

## Asia-Pacific Oil Market Forecast

This monthly report provides an outlook for Asian crude and products markets, including supply/demand analysis and forecasts for Asia-Pacific countries, and forecasts of Dubai and Tapis crudes and Singapore products.

## Latin American Oil Market Report

Issued monthly, this report focuses on regional crude and products markets, providing country-level analysis with forecast projections. Highlights include: PIRA's downstream outlook, Latin American crude supply/differentials, and refinery requirements.

## Japan Weekly Analysis

Issued every Wednesday, this report features the latest information on major product (gasoil, jet/kero, gasoline) demand and stock draws, as well as crude runs/forecasts for the next week. Users have online access to charts and data tables included with the analysis.

## U.S. Refinery Turnarounds Report

Published twice a year (late summer and at year-end), this survey of the U.S. refining industry's crude distillation and upgrading turnaround plans are presented in total by PADD.

## Tight Oil Operator Review

A quarterly review of production trends, drilling activity, costs, and productivity among North American shale oil producers.

## Fracking Policy Monitor

This quarterly report examines the latest U.S. policy developments at the local, state and federal level. The analysis underpins PIRA's fundamentals assessments of future prospects for liquids and gas from fracking, which are critical to both short- and longer-term balances for North American gas and, to an increasing extent, North American and global oil. Highlights include: regulatory actions, legislative initiatives, court rulings, trends in public opinion and scientific studies that influence future production.

## Current News and Analysis

Brief, timely assessments and market commentaries that cover topics that are relevant for the near term and can influence trading strategy. Such items may include reports on commercial developments, refinery operations, political events, weather, supply disruptions or recent micro-/macroeconomic trends.

## Global Oil Special Reports

These periodic reports deliver more in-depth analytical views of ongoing developments and medium-term trends in the global oil market. Highlights include: coverage of political events that may affect the oil market, analysis of the global supply cost curve, and assessments of the global oil resource base.

## Political Risk Scorecard

This weekly scorecard tracks political developments in major oil- and LNG-producing and -consuming countries, while assessing price impact (bearish, neutral, bullish).

## Political Risk Alerts

Sent "as events dictate," Risk Alerts are insightful assessments of regional or global political events with the potential to alter short- and long-term market prices or trends.

## Political Risk Strategy Papers and Special Reports

These periodic reports identify emerging trends such as overseas investment patterns, royalty regime changes, and U.S. Congressional policy direction. Highlights include: in-depth analysis of emerging political and regulatory trends; coverage of retail pricing and subsidy trends; and upstream regulatory and policy developments.

## Macroeconomic Recap

A weekly analysis of relevant macroeconomic data releases and trends from around the world.

NOTE: The list of service deliverables, as well as the composition of any deliverable, are subject to change.

# Data

## The Energy Price Portal

A key feature of all PIRA services, the Energy Price Portal allows users quick and easy access to all of PIRA's latest energy price forecasts (both short and long term). Clients of Global Oil have access to 34 different crude and 91 petroleum product prices (see list below), as well as the ability to create and store custom price spreads and view data in different currencies or units. If clients subscribe to other PIRA retainers (e.g. North American Natural Gas, Global LNG, Coal, North American Electricity, etc.), the Energy Price Portal allows them the ease of retrieving price data across many sectors and regions.

A key feature of the Energy Price Portal is PIRA's Equation Manager, a specially designed utility that allows users to define, analyze and store up to 100 custom price spreads — across commodities and inclusive of freight — in the form of multi-variable equations that use PIRA's forecast prices. With the Equation Manager, users can store individual configurations and use these spread relationships as a predictive tool in forecasting price developments. As the data get updated, so to automatically do the equations.

The Portal also provides the ability to create and export large data sets in Excel, CSV and PDF formats, in addition to click-of-the-mouse charting capabilities. No more searching through multiple reports to locate prices; no more hand-entering data into your spreadsheets.

The Portal's forecast horizons currently include both short-term (forward 18-24 months) and long-term (annual to 2035) averages.

### Crude Prices Contained in the Energy Price Portal:

#### Global Crudes

ANS California	Cold Lake	Hibernia	Napo	USG SCI
Bakken Clearbrook	CPC Blend (CIF Augusta)	HLS	Oman	WCS
Basrah Light to Asia	Daqing	LLS	Oriente	WTI
Bonny Light	Dated Brent	Marlim	Syncrude Sweet Blend	WTI Midland
Cabinda	Dubai	Mars	Tapis	WTS
Canadian Condensates	Duri	Maya {FOB}	Urals {CIF Med}	Wyoming Sweet
Canadian Mixed Sweet	Gippsland	Mesa 30	Urals {CIF Rotterdam}	



## Regional Refined Products And Margins

### Europe

Med 0.1% S Gasoil FOB Italy	Med Prem Unl Gasoline FOB Italy	Rotterdam Barge Jet Kero	NWE Brent TR
Med 1.0% S Fuel Oil FOB Italy	Med ULS Diesel	Rotterdam Barge Naphtha	NWE Brent TRC
Med 3.5% S Fuel Oil FOB Italy	FOB NWE 1.0% S Fuel Oil	Rotterdam Barge Prem Unl Gasoline	NWE Urals TR
Med Gasoil	FOB NWE 3.5% S Fuel Oil	Rotterdam Barge ULS Diesel	NWE Urals TRC
Med Jet Kero FOB Italy	Rotterdam Barge Gasoil	Med Urals TR	
Med Naphtha FOB Italy	Rotterdam Barge Gasoil 0.1	Med Urals TRC	
	Rotterdam Barge Gasoil 0.1	Med Urals TRC	

### Asia-Pacific

Singapore 0.05% S Gasoil	Singapore LSWR	AG HS Fuel Oil 180 cst	C&F Japan HS Fuel Oil 180 cst
Singapore 0.25% S Gasoil	Singapore Naphtha	AG HS Fuel Oil 380 cst	C&F Japan Jet Kero
Singapore 10 ppm S Gasoil	Singapore Unl 92 Gasoline	AG Kerosene	C&F Japan Naphtha
Singapore 50 ppm S Gasoil	Singapore Unl 95 Gasoline	AG Naphtha	C&F Japan Unl 92 Gasoline
Singapore HS Fuel Oil 180 cst	Singapore Unl 97 Gasoline	AG Unl 95 Gasoline	Singapore Dubai Topping
Singapore HS Fuel Oil 380 cst	AG 0.05% S Gasoil	C&F Japan Gasoil	Singapore Dubai TRC
Singapore Jet Kero	AG 0.25% S Gasoil	C&F Japan Gasoil 50ppm	Singapore Tapis TRC
	AG 0.25% S Gasoil	C&F Japan Gasoil 50ppm	Singapore Tapis TRC

### US

USG CBOB 87	Chicago CBOB	LA Jet Fuel	NYH Prem RBOB
USG Jet Kero 54	Chicago Jet Fuel	LA Unl 84 Gasoline	NYH Reg RBOB
USG Naphtha	Chicago Reg RBOB	NYH CBOB	NYH ULS Diesel
USG No 2 Heating Oil	Chicago ULS Diesel	NYH Jet Fuel	NYH Unl 87 Gasoline
USG No 6 Fuel Oil 1.0% S 6 API	Chicago Unl 87 Gasoline	NYH No 2 Heating Oil	NYH Unl 93 Gasoline
USG No 6 Fuel Oil 3.0% S	Chicago Unl 93 Gasoline	NYH No 6 Fuel Oil 0.3% S	Chicago WTI TRC
USG Prem RBOB	LA CARB Diesel	NYH No 6 Fuel Oil 0.7% S	USG LLS TRC
USG Reg RBOB	LA CARBOB UNL	NYH No 6 Fuel Oil 1.0% S	USG Maya Coking
USG ULS Diesel	LA EPA Diesel	NYH No 6 Fuel Oil 2.2% S	USG WTI TRC
USG Unl 87 Gasoline	LA HS Fuel Oil 380 cst	NYH No 6 Fuel Oil 3.0% S	USWC ANS TRC
USG Unl 93 Gasoline			

\*Some Oil Retainer clients do not currently have access to all prices. Contact your PIRA sales representative for clarification.

## Other Deliverables

PIRA Dimensions also features other energy- and economics-related reports and data, including:

- **Macroeconomic Data:** Regularly updated analysis of currencies, the U.S./world economies, manufacturing, and transportation (land, air, sea, and rail).
- **Global Equity Market Performance:** Updated weekly, this report tracks the performance of equity markets in countries and regions around the world.
- **Financial Stress Monitor:** Weekly charts summarizing key financial indicators, such as U.S. commercial bank loan developments, equity markets, currencies, interest rates, commercial paper market activity, corporate and euro-dollar spreads, and the DJ-AIG Commodity Index.
- **DOE Weekly Data Portal:** provides historical and current data sets conveniently bundled into reports, tables and charts for immediate access and ready reference. The portal is divided into five sections: Crude and Product Balances, Six-Year Comparison Reports, Standard Reports, Weekly Charts and Data Query Analyzer.
- **Miscellaneous Oil Data and Charts:** statistics on U.S. (by region) and world petroleum markets, including supply/demand balances, stocks and refining data.
- **Refining Margins Charting Tool:** using major marker crude oil grades and refined product prices, PIRA calculates regional refining margins using proprietary equations that deliver a clearer understanding of the profitability of a generic refinery in a given location. This tool covers major global refining centers (U.S., Europe, Asia).

**Storm Watch:** The latest tracking information from the National Hurricane Center for storms that threaten oil and gas production facilities in the Gulf of Mexico.

### High-Frequency Fundamentals Data

A collection of timely data showing trends in physical oil balances. Published between issues of the World Oil Market Forecast, these data give a sense of how physical oil balances are evolving relative to PIRA's expectations. Highlights include: Weekly OPEC Exports, Non-OPEC Oil Production Tracking, Oil Demand Tracking, Crude Oil Arbitrage Calculator, Oil Supply Disruption Tracker and High-Frequency Oil Stock Data.

### World Petroleum Product Demand Monitor

This monthly slide show tracks the latest global demand for light and heavy products. It covers historical data back to 2001, as well as demand for specific products, including total demand for all major products compared to the demand for light and heavy petroleum products.

### World Petroleum Product Yield Monitor

This quarterly slide show monitors crude oil runs and refinery product yields for 38 countries. Highlights include: year-on-year changes in crude runs and refinery yields; and product output divided by crude runs for gasoline, naphtha, jet-kerosene, gasoil/diesel and heavy fuel oil. Detailed summary charts and data tables are included.

### Quarterly Iraq Oil Monitor

This slide show assesses progress in Iraq's oil production and infrastructure expansions. Highlights include: summary of recent political and security developments, PIRA's latest production forecast with current estimated production at IOC contracted fields, and updates on capacity expansions as well as export facilities and refineries.

### U.S. Rig Monitor

This weekly report — along with a supporting Excel data file — provides a detailed summary of U.S. oil and gas drilling activity in selected plays and regions.

### **Access to S&P Global Platts Analysts**

PIRA's senior oil consultants are available on a private basis to discuss PIRA's latest thinking and address an individual client's specific issues by assessing how the markets will impact their business, including special interest topics as requested.

### **Annual Client Seminar**

The seminar presents our short-, medium- and long-term (to 2035) outlooks for oil, gas, coal and electricity markets. The setting allows clients close contact with the consultants who prepare the forecasts. All presentations (audio and visual) are also available via PIRA Dimensions. (The number of attendee invitations depends on a client's service package and licensed distribution.)

### **Discounts On PIRA's Other Services**

- World Refinery Data Portal
- World Oil Supply Data Portal
- World Energy Demand Model
- Oil Products Trading Analyzer
- Oil Trade Flow Portal
- Scenario Planning Service
- Global NGLs
- Global Biofuels
- Freight Market Outlook
- North American Natural Gas
- European Natural Gas
- Global LNG





# Appendix

## Global Oil Methodology: Short-Term Forecasts

### Overview

PIRA takes a fundamentals-based approach to forecasting short-term oil prices. We build up detailed supply and demand outlooks to understand the implications for inventory changes, which is a key driver for crude and products prices. We also take into account non-fundamental factors, including (but not limited to) political risks such as supply disruption risk, and financial market behavior and sentiment. With this bottoms-up and top-down methodology we determine our forecast for global benchmark crude prices (e.g. Brent). To determine our outlook for other crudes, refining margins and product prices, we analyze individual supply/demand balances and we track trade flows within regions and globally, as well as global refinery capacity and outages. This allows us to forecast a total of over 120 global crude prices, product prices and refining margins. Our outlook is updated on a monthly basis taking into account all new relevant data, events and market developments.

### Demand

For each of the 140 countries we forecast, we begin by updating historical actuals from the most reliable official sources. We also develop macroeconomic forecasts for GDP and other economic variables for each country. Our proprietary models use the latest historical data, our macroeconomic views, and any other country-specific factors that impact demand (e.g. petrochemical plant outages or start-ups or deviations from normal weather) to produce near-term forecasts for each of the major petroleum products in each country.

### Supply

For each of the over 140 countries we forecast, we build up a forecast for oil supply in an individual country on as detailed a level as possible, based on the availability of reliable data and PIRA's assumptions. For example, if production from individual oil fields is available or can be reasonably modeled, PIRA forecasts future supplies from each field. If production is not available by field, but instead is available for crude streams (or grades), PIRA will use that as a basis for future projections. PIRA's proprietary algorithms forecast oil production using assumptions about project start-ups, drilling activity, and decline rates based on actual field and/or country performance. Where applicable, PIRA studies historical trends and applies assumptions about disruptions and maintenance to the forecast. In the case of US shale liquids production, we develop more detailed models taking into account additional factors such as rig activity, the status of drilled but uncompleted wells, and recent cost trends.

In the case of OPEC supply, we make an assessment of capacity for each country taking into account the factors mentioned above with special attention to the potential for

losses due to recent and potential geopolitical events. If the OPEC countries are in market management mode (i.e. limiting production individually or collectively in order to support price) then we make a separate assessment of how much each country will produce out of their capacity based on both OPEC quota restrictions as well as a well-informed views of individual country production and price objectives. If they are not in market management mode, then the methodology for OPEC is as described above.

All supply is identified and categorized by its specific properties such as API gravity and sulfur content for crude and condensate, as well as the type of supply such as NGLs, biofuels, shale, bitumen, syncrude, deepwater, etc. PIRA's other commodity teams (LNG, NGL, etc.) contribute to the forecasts.

### Balances, Inventory and Prices

Once our supply and demand forecasts are updated, we consolidate them to give us the best possible understanding of potential imbalances and the resulting changes to inventory levels. We note that there has been a strong historical correlation between market structure (contango vs. backwardation) and inventory behavior. We also focus on the level of OPEC spare capacity during market management periods and whether it will be rising or falling as a secondary measure of market tightness. In recent years, U.S. shale liquids production has been a relatively price sensitive source of supply so the magnitude of the response of shale to price signals is currently an important determinant of how quickly markets will rebalance and how large of a price change will be required.

While the fundamental balances represent the core of the analytical process, other non-fundamental factors influence our thinking as well. These would include to a greater or lesser degree:

- Potential supply (or demand) disruption risks and the extent that they are priced into the market via the demand for inventory.
- The behavior of financial markets and whether there is a net increase or decrease in the demand for oil as a financial asset. Specifically, we closely follow trends in non-commercial net length.
- Other factors such as the value of the dollar or the value of equities which for select periods have been highly correlated with crude prices.
- Regional specific factors that will impact a specific key crude (e.g. WTI) relative to global crude prices.
- Factors that might cause a change in the market perception of the longer-term supply and demand picture and the deferred price.

Once we establish our flat price forecast for Brent, we use our outlook for refining, product balances and trade flows (including arbitrage economics) to inform our forecasts for over 120 other crudes, product cracks and refining margins.

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