



NSE BRENT CRUDE
OIL FUTURES
Performance Review
2022-23

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Performance Review of Commodity Products for FY 2022-23

Brent Crude Oil Futures

1. Background

a. Brief about the commodity such as sample picture, lifecycle and various varieties/grade of the commodity found in India

Crude oil is critical to the global economic growth as it is the most important source of energy. Crude oil meets most of the global energy needs that arise from manufacturing, to fueling motor vehicles across the world and catering household requirements through refined petroleum products. Crude oil complex involves the below three process -

Upstream – Exploration and Production

Midstream – Transportation and Storage

Downstream – Refining and Retail Markets

International crude oil markets are highly dynamic as they respond to any shift in crude oil production and demand across the globe. The Organization of the Petroleum Exporting Countries (OPEC) controls most of the oil production and distribution, often dictating costs for not only oil suppliers but countries as well. Most nations factor oil prices into their budgets, so OPEC has been considered a leading geopolitical force. Crude oil physical markets are complemented by futures trading through which the physical participants are able to protect themselves from production and price risks and minimize the impact of volatility.

Brent crude price is the international benchmark used by the OPEC members while WTI is used as a benchmark for US oil. India imports most of its crude oil requirements from OPEC members and hence Brent is the benchmark for crude oil import basket price in India. Of the global oil trade, about two third uses Brent as the benchmark or reference. Hence any geopolitical tensions will have a major impact on the Brent prices.

b. Commodity fundamentals and balance sheet as per the following format (to be prepared based on publicly available information on best effort basis):

Table – Fundamentals & Balance Sheet

Global Scenario	Units	2021	2022
Opening Stocks	mb	4130.7	4129
Production	mb/d	95.2	101.7
Others (if any)		-	-
Consumption/Oil Demand	mb/d	96.9	100.3
Closing Stocks	Mb	4129	4130.4

Note: mb/d – million barrel/ day; mb- million barrels

Source: OPEC

Indian Scenario	2021-22	2022-23
Opening Stocks	-	-
Production	28.4	27.83
Imports	212.38	232.73
Total Supply	240.78	260.56
Exports	-	-

Domestic Consumption	201.69	222.30
Closing Stocks	-	-

Note: Values in Million Metric Tons

Source: Petroleum Planning and Analysis Cell, MoPNG, GOI

Top 10 major producing countries

Countries	2021 (mb/d)	2022 (mb/d)
United States	16.47	20.21
Saudi Arabia	11.03	12.14
Russia	10.66	10.94
Canada	5.13	5.70
China	3.90	5.12
Iraq	4.11	4.55
UAE	3.65	4.24
Brazil	3.02	3.77
Iran	3.08	3.66
Kuwait	2.68	3.02

Source: EIA (mb/d = million barrels/day)

Top 10 major consuming countries

Countries	2021 (mb/d)	2022 (mb/d)
USA	18.68	NA
China	15.44	NA
India	4.87	NA
Japan	3.34	NA
Russia	3.40	NA
Saudi Arabia	3.59	NA
Brazil	2.25	NA
South Korea	2.81	NA
Germany	2.04	NA
Canada	2.22	NA

Source: Statistical Report of World Energy 2022 – BP (2023 report not published yet)

(mb/d = million barrels/day)

Top 10 major exporting countries/regions (million tonnes)

Countries	2021	2022
Saudi Arabia	323.2	NA
Russia	263.6	NA
Canada	197.4	NA
West Africa	187.4	NA
Iraq	176.1	NA
UAE	146.1	NA
USA	138.5	NA
South & Cent America	124.1	NA
Kuwait	88.4	NA
North Africa	85.4	NA

Source: Statistical Report of World Energy 2022 – BP (2023 report not published yet)

Top 10 major importing countries/regions (million tonnes)

Countries	2021	2022
China	526.0	NA
Europe	467.7	NA
USA	304.7	NA
Other Asia Pacific	257.1	NA
India	213.7	NA
Japan	122.1	NA
Singapore	47.0	NA
Canada	23.9	NA
South & Cent America	21.8	NA
Other Middle East	18.7	NA
Other CIS	15.9	NA

Source: Statistical Report of World Energy 2022 – BP (2023 report not published yet)

* Data for top Crude Oil producing states for 2021 & 2022 is not available.

c. Major changes in the policies governing trade in the spot markets of the commodity.

Oil continues to be one of the core industries of the country. As pandemic ebbed, India witnessed revival in domestic demand resulting in increase in India's import for fuel in the previous year. Increased capital expenditure by the government in infrastructure and other core sectors will lead to increased demand for fuel and hence oil and gas sector will continue to act as backbone for the economy. Government is also encouraging start-ups, MSMEs and biogas which can provide fillip to the sector.

d. Geopolitical issues in the commodity and its impact on Indian scenario

Despite the Russian invasion of Ukraine in February 2022 and the near-global condemnation of Moscow's aggression, oil has begun to flow in large volumes from Russia to India. This is a new development—between 2010 and 2020, Russia supplied only 0.5 percent of India's oil imports. India's position remains clear: oil is an essential commodity in short supply in India, and the country will continue to source it from exporters that offer the best terms and prices. After all, Indians pay 20 percent more for oil at the pump than Americans, whose per capita income is 30 times higher. Russian crude flowing to India comes at a considerable discount and can help minimise India's budget deficit.

India's imports of crude oil from Russia are motivated by economics. Despite Western sanctions on Russia and a price cap imposed by the G7 countries to limit the global purchase of Russian oil below a certain price limit, India's imports of Russian oil have increased considerably in 2022 and 2023, to the benefit of the country's exchequer. In 2022, India paid an average of US\$91 per barrel of oil from Russia, much less than the average of US\$97.5 per barrel for India's total oil imports. Despite the extra freight costs of bringing Russian crude to Indian shores, oil imports from Russia cost even less than what Indian importers paid in 2022 to lift oil from Saudi Arabia at US\$103 per barrel, and from the United Arab Emirates at US\$105 per barrel.

Russia has become the largest supplier of petroleum crude to India, for six months in a row from September 2022 to February 2023. India's oil companies have had to overcome numerous obstacles to do business with Russia. Russian insurance firms have gradually replaced Western insurance companies in the oil trade; due to financial restrictions on

transactions with Russian firms in US\$, trade now also takes place in Rupees, Rubles and Dirhams; finally, steep discounts from Russia offset the risk of doing business. Today, India is Russia's second largest oil export destination, after only China. As a result of these exports, India-Russia trade has reached an all-time high of US\$39 billion in 2022, more than three times the bilateral trade of US\$11.5 billion in 2021.

Source: ORF (Observer Research Foundation)

2. Trading related parameter

a. Monthly and Annual traded volume (quantity in appropriate units)

The traded volume for Brent Crude Oil Futures in FY 22-23 was NIL.

b. Annual traded volume as proportion of total deliverable supply (quantity in appropriate units)

The traded volume for Brent Crude Oil Futures in FY 22-23 was NIL.

c. Annual traded volume as proportion of total annual production (quantity in appropriate units)

The traded volume for Brent Crude Oil Futures in FY 22-23 was NIL.

d. Annual average Open interest as proportion of total production

The Open Interest for Brent Crude Oil Futures in FY 22-23 was NIL.

e. Annual average Open interest as proportion of total deliverable supply

The Open Interest for Brent Crude Oil Futures in FY 22-23 was NIL.

f. Monthly and Annual value of trade (in Rs. Crores)

The traded volume for Brent Crude Oil Futures in FY 22-23 was NIL.

g. Monthly and Annual quantity of delivery (in appropriate units)

Brent Crude Oil Futures is a Cash Settled contract. Thus, the same is not applicable.

h. Monthly and Annual value of delivery (in Rs. Crores)

Brent Crude Oil Futures is a Cash Settled contract. Thus, the same is not applicable.

i. Monthly and Annual Average Open Interest (OI) (in appropriate units)

The Open Interest for Brent Crude Oil Futures in FY 22-23 was NIL.

j. Annual average volume to open interest ratio

The traded volume and Open Interest for Brent Crude Oil Futures in FY 22-23 was NIL.

k. Total number of unique members and clients who have traded during the financial year

The traded volume for Brent Crude Oil Futures in FY 22-23 was NIL.

l. Ratio of open interest by FPOs/farmers/Hedge/VCP positions to total open interest (Annual average as well as maximum daily value)

The Open Interest for Brent Crude Oil Futures in FY 22-23 was NIL.

m. Number of unique FPOs / farmers and VCPs/hedgers who traded in the financial year

The traded volume for Brent Crude Oil Futures in FY 22-23 was NIL.

n. Algorithmic trading as percentage of total trading

The traded volume for Brent Crude Oil Futures in FY 22-23 was NIL.

o. Delivery defaults

i. Number of instances

ii. Quantity involved

iii. Value involved

Brent Crude Oil Futures is a Cash Settled contract. Thus, the same is not applicable.

3. Price movements

a. Comparison, correlation and ratio of standard deviation of Exchange futures price vis-à-vis international futures price (wherever relevant comparable are available)

The traded volume for Brent Crude Oil Futures at NSE in FY 22-23 was NIL.

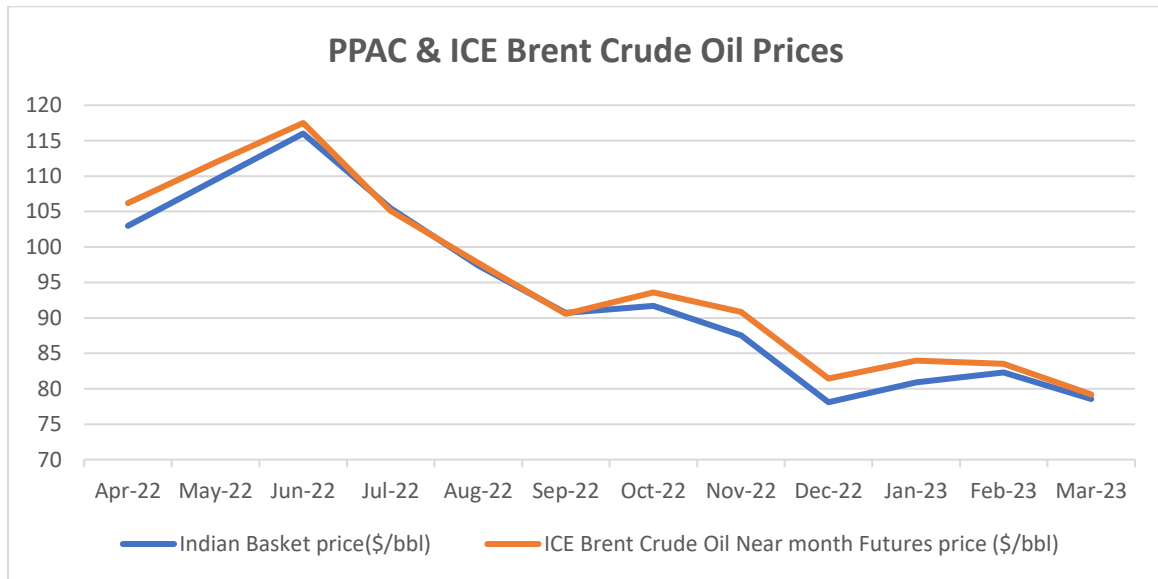
b. Comparison, correlation and ratio of standard deviation of Exchange futures price vis-à-vis international spot price (wherever relevant comparable are available) and domestic spot price (exchange polled price).

The traded volume for Brent Crude Oil Futures at NSE in FY 22-23 was NIL.

c. Correlation between exchange futures & domestic spot prices along with ratio of standard deviation.

The traded volume for Brent Crude Oil Futures in FY 22-23 was NIL.

d. Correlation between international futures & international spot prices along with ratio of standard deviation (wherever relevant comparable are available).

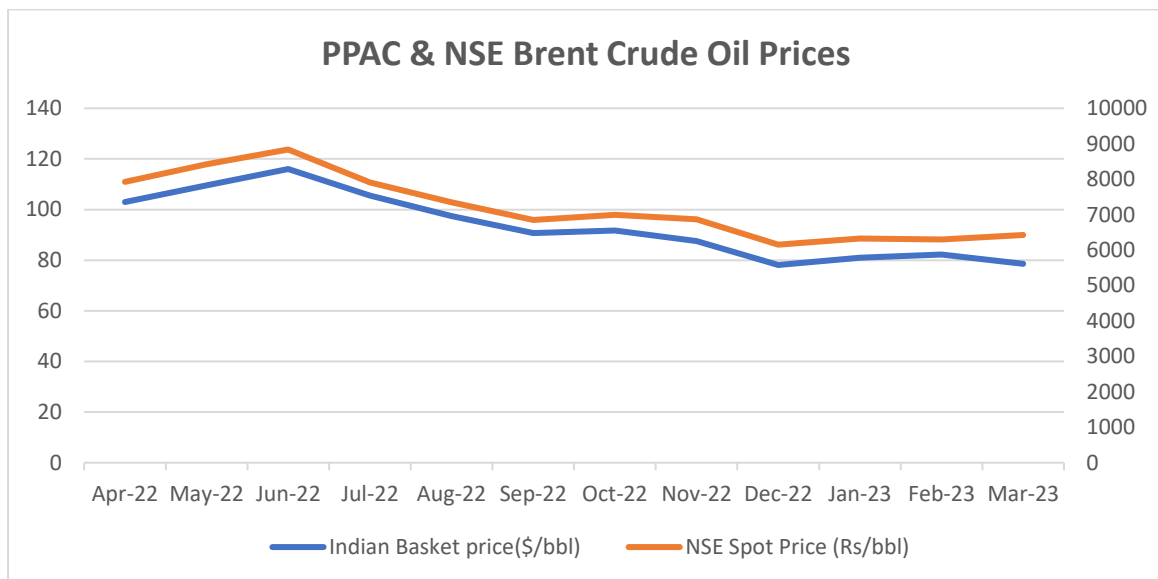


PPAC (Indian Basket prices): The Indian basket of Crude Oil represents a derived basket comprising of Sour grade (Oman & Dubai average) and Sweet grade (Brent Dated) of Crude oil processed in Indian refineries in the ratio of 75.62: 24.38.

Correlation: 99.42%

Standard deviation: 12.46

e. Comparison of Exchange polled price and mandi price (in case of agricultural commodities) / other relevant price (in case non-agricultural commodities) at basis centre.



f. Maximum & Minimum value of daily futures price volatility and spot price volatility along with disclosure of methodology adopted for computing the volatility.

The traded volume for Brent Crude Oil Futures in FY 22-23 was NIL.

Commodity	Max Volatility in Futures Prices (%)	Min Volatility in Futures Prices (%)	Max Volatility in Spot Prices (%)	Min Volatility in Spot Prices (%)
Brent Crude Oil	NA	NA	9.15	0.014

Volatility calculation: $(\text{Day} - \text{Previous day's price}) / \text{Previous day's price}$

g. Number of times the futures contract was in backwardation/contango by more than 4% for the near month contract in the period under review.

The traded volume for Brent Crude Oil Futures in FY 22-23 was NIL.

4. Other parameters

a. Qualitative and quantitative measure for Hedge effectiveness ratio and basis Risk (Volatility of Basis) along with disclosure of methodology adopted for such calculations.

The traded volume for Brent Crude Oil Futures in FY 22-23 was NIL.

b. Details about major physical markets of the commodity vis-à-vis market reach in terms of availability of delivery centers (information to be provided state-wise and UT-wise).

In the case of crude oil, apart from major refiners, industries related to Plastic, Tyres, Rubber, Petrochemicals, Paint, Glass, etc. across the country, have exposure to Crude Oil as they use its refined products extensively. Brent crude oil futures contract is offered as a cash settled product which such industry players can use to hedge their exposures without the necessity of taking physical delivery of Crude oil.

c. Details about major physical markets of the commodity and average Open Interest for each month generated from those regions.

Major physical markets information is provided in the point 4b. The traded volume for Brent Crude Oil Futures in FY 22-23 was NIL.

d. Details, such as number and target audience, of stakeholders' awareness programs carried out by the exchange.

For education initiatives the exchange has conducted 583 Investor Awareness campaigns across INDIA covering all the commodities available on the NSE platform from April 2022 till Mar 2023.

e. Steps taken / to be undertaken to improve hedging effectiveness of the contracts as well as to improve the performance of illiquid contracts

NSE is constantly striving to encourage hedgers to participate in the Brent Crude Oil contracts. We have value chain participants such as Bharat Petroleum Corporation Ltd (BPCL), Oil & Natural Gas Corporation (ONGC), Indian Oil Corporation (IOCL), Hindustan Petroleum Corporation Ltd (HPCL), Chennai Petroleum Corporation Ltd (CPCL), Almus Risk, Tata Asset Management, etc. as part of our Energy PAC, who guide us on how to get more participation from physical as well as other market participants.

Additionally, the exchange has conducted 583 Investor Awareness campaigns across INDIA covering all the commodities available on the NSE platform from April 2022 till Mar 2023.

5. Any other information to be disclosed as deemed important by the exchange or as suggested by the PAC.