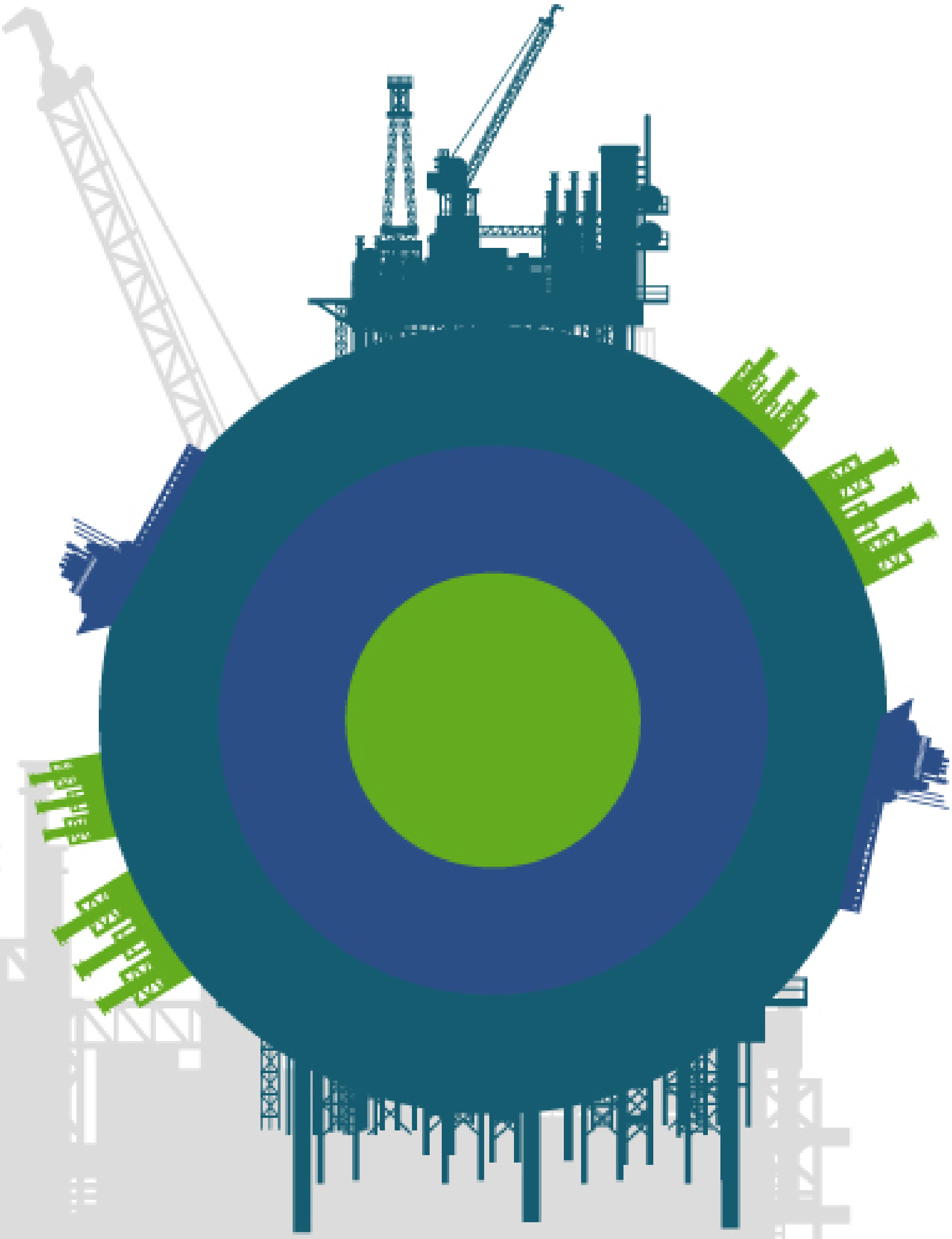
FIPI

# October 2018



# Policy & Economic Report - Oil & Gas Market


## Federation of Indian Petroleum Industry (FIPI)

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# Policy & Economic report – Oil & Gas market

## Economy in Focus

**Deepening economic impact due to US-China trade battle**

Intensifying trade war across US and China have resulted in weakening factory activity and export orders. Manufacturing surveys show marginal growth in China, contraction in activity in Malaysia and Taiwan and a slowdown in South Korea and Indonesia.

The prospects for higher US rates could result in adding worries of vulnerable economies such as Indonesia, India and the Philippines which have already under pressure, been forced to raise rates to slow down a sell-off in currencies, stocks and bonds.

The slowdown in Chinese economy is not only due to external factors. Economic growth saw a low 6.5 percent growth since the global financial crisis, demonstrating a less than attractive domestic demand by Chinese standards. The worry remains that things can actually get worse than this. With Washington having imposed tariffs worth $250 billion on Chinese goods and China having retaliated with duties worth $110 billion on US goods, fears of absent deal indicate that the recently introduced 10 percent tariffs on $200 billion of Chinese goods will be raised to 25 percent and other tariffs may be placed on the remaining $250 billion-or-so of Chinese products which escaped the initial rounds.

Outliers of this doldrum remain India, which since its reliability is more on domestic demand than outside, defied expectations for a slower expansion in activity in October and grew at the fastest pace in four months. Another economy which showed acceleration in manufacturing activity was Vietnam. This is mainly due to the fact that the country’s labour force is still reasonably cheap and its ties with United States remain less turmoiled as compared to its Asian peers.

**Impact of the Iran sanction on the Global Economy**

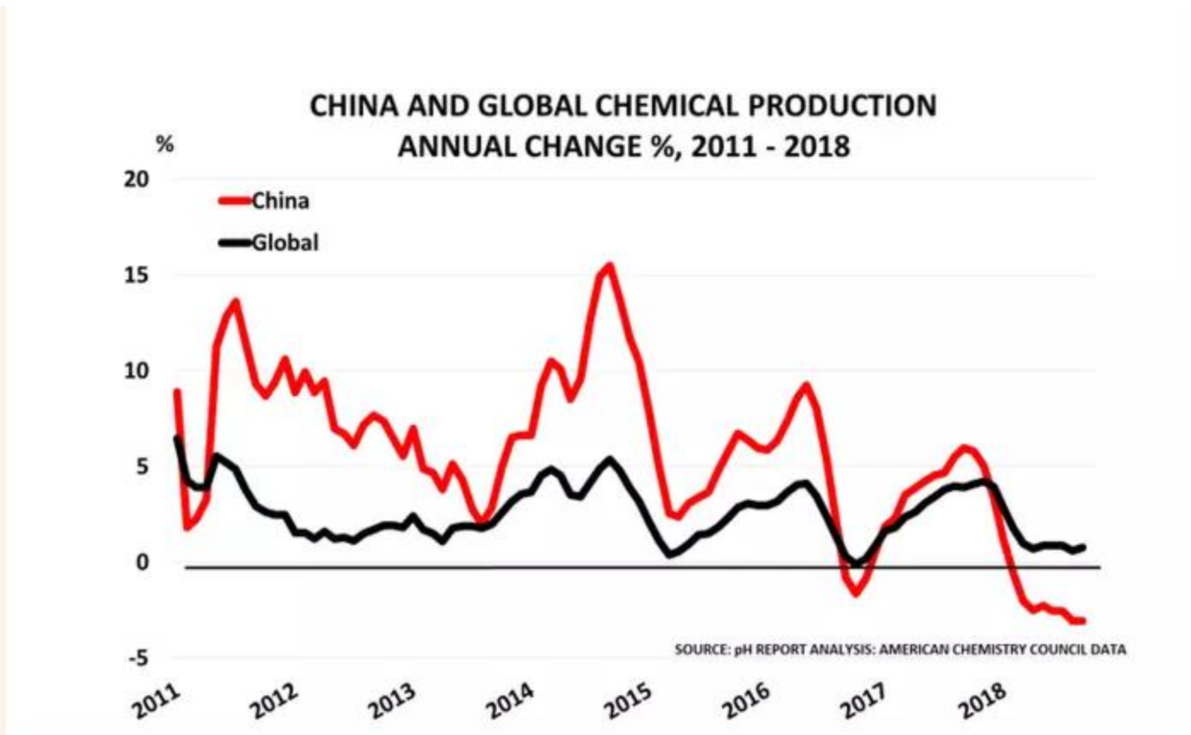
President Donald Trump’s administration on November 02, 2018, stated that it will reinstate all sanctions on Iran that were removed under Barack Obama’s presidency as part of a 2015 nuclear deal. It also named eight countries that will not be penalised if they continue to import Iranian oil, including South Korea, Japan and India. The last round of sanctions to be implemented target more than 700 businesses, individuals and other entities primarily involved in Iran’s oil and banking industries. The Iranian rial has seen a collapse of more than two-third since the threats of a pull started looming and the Iranian oil exports have plummeted from 2.7 million to 1.6 million barrels a day in just six months sending oil prices surging.

Iran's economy has taken a hit and has shrunk by more than 6 percent since 2012, the last time sanctions were imposed.

The effects on the global economy, however seemed to have been softened by waivers. The huge range of products and services that may have been affected by the sanctions will not be as badly impacted as envisaged, with the primary global oil price benchmark, Brent crude, having fallen by about 15 per cent from more than $85 a barrel last month as speculation grew that some countries would be exempt.

**Chemical output indicates global economy turmoil**

Chemicals are considered to be the best indicator for the global economy. Both Chinese and global chemical production, however, show signs of the world heading into recession.




While initially the impact was concentrated in emerging markets, the scale of downturn now, however is starting to hit the wider economy as well.

Since 2008. China's demand has been the growth engine for the global economy. China's shadow banking bubble has been a major source of speculative lending helping finance property bubbles in China and other major global cities. But with the lending bubble now bursting, the extent of downturn this year is quite evident, with shadow banking down by 84 percent in the year to September.

The chemical industry has been showing a decline since February. While the initial decline was linked to government's efforts to reduce pollution, there however has been no recovery since summer.

**5G technology – Fuel to Technological Change and Transformed Global Economy**

Bank of America Merrill Lynch (BofAML) claims that the five most influential themes that will shape the future of the global economy are big data and artificial intelligence; the rise of electric vehicles; demographics; climate change; and privacy and cyber threats.

The amount of global data, with the amount of doubling every two to three years, could swell from 1% today to 37% by 2025, implying up to US$5 trillion in annual benefits. BofAML states that 5G will power the fourth industrial revolution and 2025 will see 30bn more connected by devices.

These developments will have a heartening impact on sectors such as technology, e-commerce and payments, along with capital goods and consumer durables, while significant head winds will be realized by apparel, retail and old media sectors along with energy sector.

**EU Asks Italy to Revise Proposed Budget Plan**

EU's Executive arm, The European Commission has asked the Italian Law makers to revise their draft budget proposal. The recent draft budget submitted by Italy to European Commission proposed for a deficit of 2.4 per cent of the country's annual output, against a promised deficit goal of 0.8 per cent committed by the previous administration. Italy presently has a debt of over USD 2.6 trillion, the second largest in the Euro Zone. The recent decision to revise the budget proposal has come in light of European Commission's impending fears that the country's fiscal plan derailing the reduction of its debt pile.

**Nigeria, South Africa bogging down African economy?**

The International Monetary Fund (IMF) states that the African economies combined growth rate is being brought down by the continent's three largest economies - Nigeria, South Africa and Angola which are major underperformers. The aggregate growth of close to 4 percent in Africa is despite the three large economies not performing well.

With Nigeria growth at 1.9 percent, South Africa's at 0.8 percent this year and Angola contracting by 0.1 percent this year, it is deemed that the continent would fare much better once these major economies recover especially since they are really large and affect a number of countries in their neighborhood.

**China forcing African companies out of business**

The unfair competition being presented by Chinese firms has resulted in many African companies to drop out of market. With recent research showing that 31 percent of Chinese firms in Africa are involved in manufacturing, 25 percent in services, 22 percent in trade and 15 percent in construction and real estate, the freedom to operate in all sectors and with access to capital and better technology has resulted in Chinese firms gaining market power and dominance over African companies in recent times.

**An imminent BRAXIT?**

The BRICS high table will soon see a far-right populist in the form of President-elect, Jair Bolsonaro.

Formed in 2009, BRICS bloc has build a set of institutions to enhance trade between countries that are outside the old core of Europe, North America and Japan which is consolidated around the Organisation for Economic Cooperation and Development (OECD).

The election of Jair Bolsonaro to the presidency of Brazil has raised eyebrows about the future of BRICS since it is widely believed that his policies are the virtual antithesis of the trajectory BRICS as a grouping was moving towards.

**NBFC liquidity crisis to have Long Term Impact on Indian Realty Sector: Anarock Report**

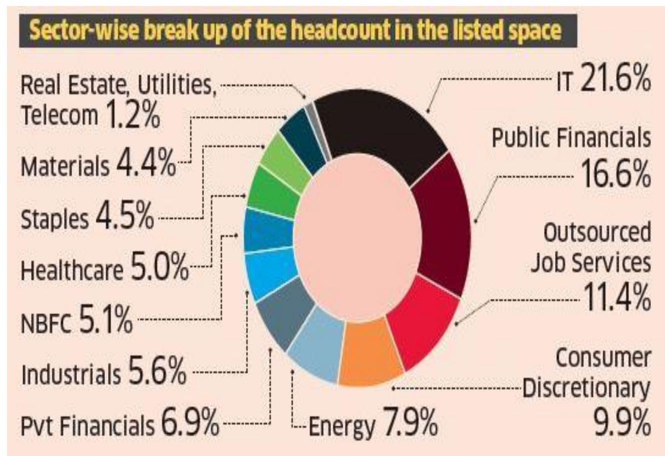
Real estate consultant Anarock has stated that the ongoing liquidity crisis in Non-Banking Financial Corporations (NBFCs) has "rattled" realty sector as this could hit fund inflows to developers as well as home buyers, and lead to slowdown in housing demand-supply. The NBFC sector in India has been under crisis for over a month now since it came into light that IL&FS group defaulted on short-term loans. According to Mr Anuk Puri, Chairman, Anarock, the ongoing crisis will not only freeze funds to the real estate sector but also impact private equity (PE) funds flowing into the sector. Mr Puri also went on to caution that if the present real estate crisis is not resolved soon the much-anticipated recovery of the real estate sector might get prolonged by a couple of quarters.

**India’s image to improve, with a jump in the rank of Ease of Doing Business**

The huge jump in India’s ranking in the World Bank’s Ease of Doing Business Index to 77 from 100 will result in a marked improvement in key port infrastructure resulting in improvement in external trade. It is considered to especially commendable since a nation of over 1.25 billion have achieved this rise of 65 ranks in a short period of four years.

**FY'18 Records the lowest job growth in 3 fiscals**

FY 2017 – 18 recorded the lowest job growth rate in last three years. According to a CLSA report, jobs in the country grew at the rate of 3.3 per cent during the last fiscal year compared to 3.7 per cent and 4.2 per cent in the last two fiscal years respectively. For the financial year 2017 – 18, the outsourced jobs services sector and the Non-Banking Financial Companies (NBFCs) witnessed the highest growth in employment. The outsourced jobs services companies accounted for 21 per cent of the job growth while NBFCs contributed 16 per cent. The power and telecommunication sectors witnessed highest deceleration in job creation at 8 per cent and 3 per cent, respectively. During the year, IT and the public financial companies remained the largest employers in the listed space, employing 21.6 per cent and 16.6 per cent respectively.

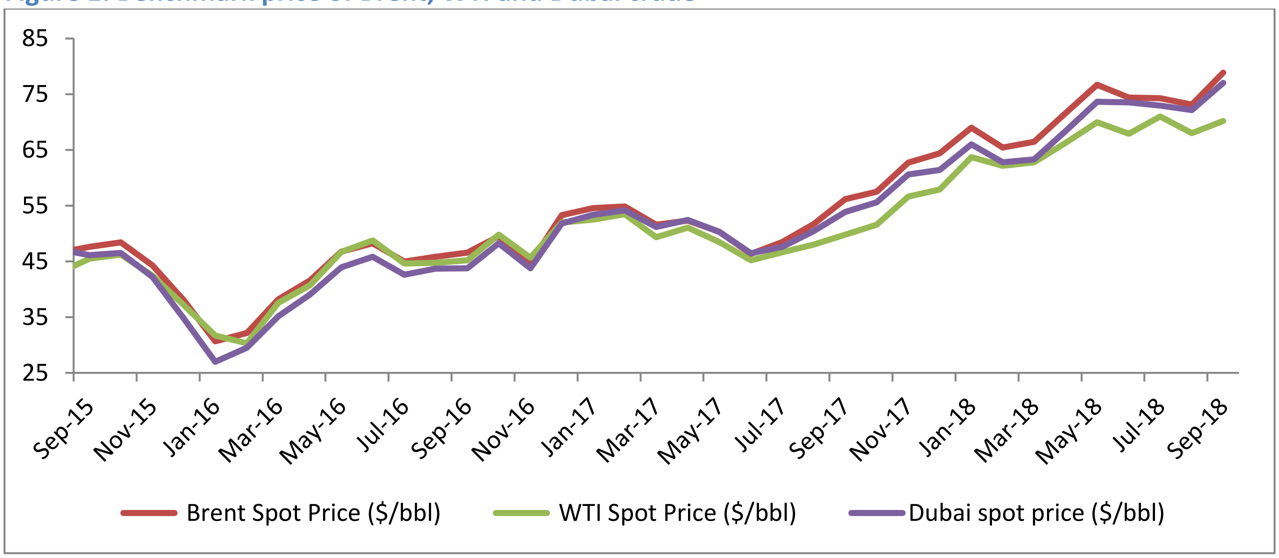
# Oil & Gas Market

## Crude oil price

Oil prices hit a four-year high of $82.01 a barrel during September after Saudi Arabia and Russia appeared to reject calls from the US to increase production amid looming sanctions against Iranian oil. Notably, oil prices were fueled further by concerns over U.S. sanctions on Iran, supply bottlenecks in the United States and strong global demand. The International Energy Agency ("IEA") has issued a warning of a tight global oil market toward the end of the year.

At present, combined oil supply from Iran, Libya and Venezuela are at their lowest since January. Venezuela is plagued with economic instability and its oil production is not anticipated to reach normalcy till the end of 2018. Libya is yet to recover from civil war which drastically reduced its oil productions. For the last five consecutive weeks, the Energy Information Administration ("EIA") has been reporting decline in U.S. crude inventories in September. It is currently at its lowest level since early 2015.

**Figure 1: Benchmark price of Brent, WTI and Dubai crude**




*Source: WORLD BANK*

- Brent crude price averaged $78.86 per bbl in September 2018, and was up 7.8% and 40.4% on a month on month (MoM) and year on year (YoY) basis, respectively.
- WTI crude price averaged $70.21 per bbl in September 2018, and was up 3.3% and 40.9% on a month on month (MoM) and year on year (YoY) basis, respectively.

- Dubai crude price averaged $77.02 per bbl in September 2018, and was up 6.8% and 43.0% on a month on month (MoM) and year on year (YoY) basis, respectively.

**Table 1: Crude oil price in September, 2018**

| Crude oil | Price ($/bbl) in September 2018 | MoM (%) change | YoY (%) change |
|---|---|---|---|
| **Brent** | 78.86 | 7.8% | 40.4% |
| **WTI** | 70.21 | 3.3% | 40.9% |
| **Dubai** | 77.02 | 6.8% | 43.0% |

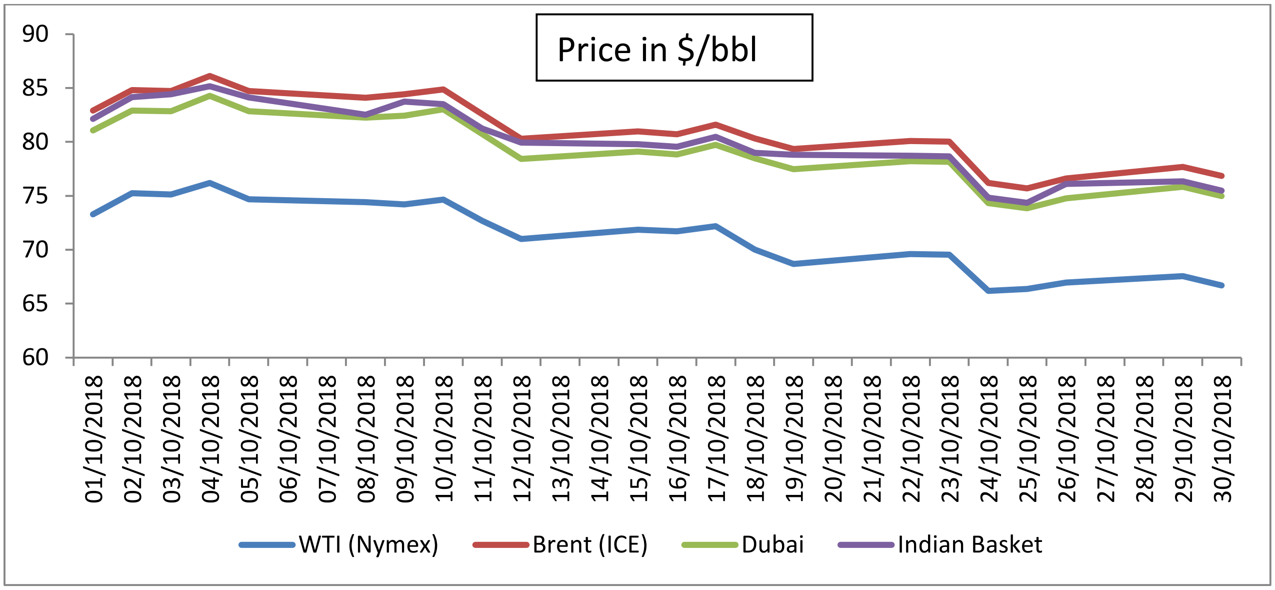
*Source: WORLD BANK*

## Crude oil prices softened in October from their high in September 2018

At the start of October, oil prices were on an upward trend on signs that U.S. sanctions are shrinking Iran's crude exports faster than anticipated, potentially leaving the world with a shortage of oil. The sanctions are expected to cut crude exports from Iran by about 1 mbpd, but concerns over faltering demand and increase in output from OPEC and Russia my lead to a market with oversupply.

Along with increase in output and high oil inventory levels, the global fall in equities across major stock markets also resulted in fall in commodity prices. One of the main reasons that triggered this volatility was when concerns over rapidly rising U.S. Treasury yields fueled a steep drop in U.S. equity markets. This sent volatility to heightened levels which spread across all markets including currencies and commodities. Other factors contributing to the increase in volatility were lingering concerns over the U.S.-China trade dispute, and various geopolitical issues. Commodity traders and money managers liquidated their long positions in oil in October and cashed in on profit after the recent price rally, which led to a correction in prices. Brent, WTI and Indian basket crude prices declined by around 7%, 9% and 8% respectively from the prices at start of the month.

**Figure 2: Crude oil price in October 2018**

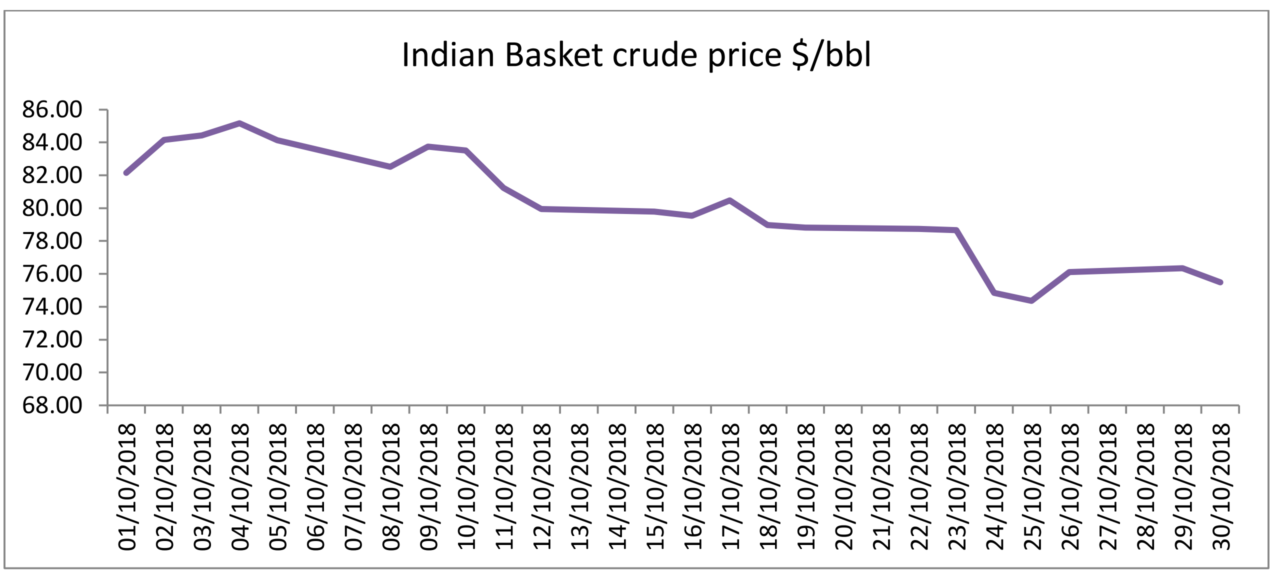



*Source: EIA, PPAC*

## Indian Basket Crude oil price

- 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 72.38:27.62 during 2016-17.

**Figure 3: Indian crude oil basket price in $ per bbl**




*Source: Petroleum Planning & Analysis Cell*

- Indian crude basket price averaged $80.14 per barrel in October, up 2.9% Month on Month (MoM) basis and 43.0% on a year on year (YoY) basis, respectively.

## Oil demand & supply

- According to OPEC, World oil demand is expected to grow by 1.58% in 2018* to 98.79 mbpd from 98.25 mbpd in 2017. India's demand for oil in 2017 was 4.53 mbpd and is projected to increase to 4.75 mbpd in 2018.

**Table 2: World Oil demand in mbpd**

| | 2017 | 1Q18 | 2Q18 | 3Q18 | 4Q18 | 2018 | Growth | % |
|---|---|---|---|---|---|---|---|---|
| **Total OECD** | **47.38** | **47.69** | **47.24** | **47.93** | **48.22** | **47.77** | **0.39** | **0.83** |
| **Dev. Countries** | **32.13** | **32.44** | **32.63** | **33.08** | **32.71** | **32.72** | **0.59** | **1.83** |
| *~ of which India* | *4.53* | *4.83* | *4.74* | *4.40* | *5.02* | *4.75* | *0.22* | *4.76* |
| **Other regions** | **17.74** | **17.68** | **18.03** | **18.33** | **19.15** | **18.30** | **0.56** | **3.15** |
| ~ of which China | 12.32 | 12.28 | 12.84 | 12.71 | 13.12 | 12.74 | 0.42 | 3.40 |
| **Total world** | **97.25** | **97.80** | **97.90** | **99.35** | **100.08** | **98.79** | **1.54** | **1.58** |

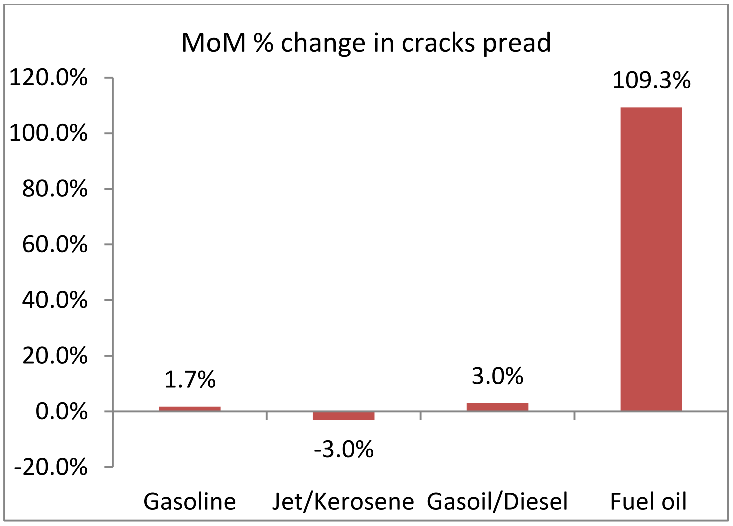
*Source: OPEC monthly report, October 2018*

*Note: *2018 = Forecast*

## Global petroleum product prices

The Asian gasoline 92 market remained flat in the month of September as the losses generating from a weaker regional demand were offset by gains attributed to the robust exports from the region. Additional demand in the region came from India, Indonesia and Japan where intakes fall due to outages leading to lower product output.

The Jet/Kerosene over supplies in Asia weighed on cracks on the back of ample volume arrivals from South Korea and India. The weakness was further worsened by healthy jet fuel inventory levels in the US, resulting in arbitrage opportunities for the country. In the coming months, the impact of declining travel from aviation sector in the northern hemisphere will be partly offset by the kerosene related support from space heating requirements.

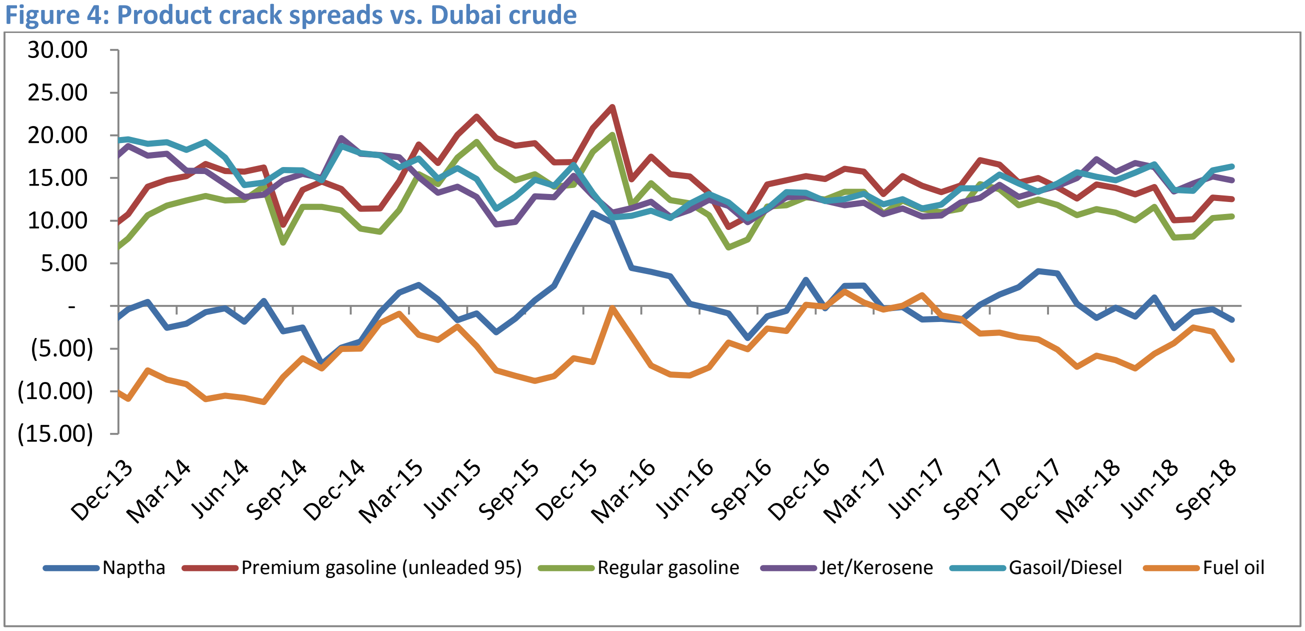



*Source: OPEC monthly report*

The Gasoil crack spreads strengthened over the last month and averaged at a multi-year record high in September 2018 as compared to the previous year. The tightness witnessed in the Asian markets in September coupled with maintenance related refinery outages in the region prompted flows originating in India and Middle-East to be diverted to Singapore instead of Europe. As a result gasoil deliveries to Europe dropped by a half compared to the previous month

The fuel oil market in Singapore remained well supplied by regular deliveries coming from West of Singapore and Europe. The lengthening balance at a global level and declining demand from Pakistan during last month contributed to the negative performance recorded during the last month.

**Figure 4: Product crack spreads vs. Dubai crude**




*Source: OPEC, FIPI*

**Table 3: Singapore FOB, refined product prices ($/bbl)**

| Products | Price ($/b) in September 2018 | MoM (%) change | YoY (%) change |
|---|---|---|---|
| **Naptha** | 75.39 | 5.1% | 36.6% |
| **Premium gasoline (unleaded 95)** | 89.53 | 5.5% | 27.1% |
| **Regular gasoline (unleaded 92)** | 87.51 | 6.1% | 29.5% |
| **Jet/Kerosene** | 91.75 | 5.1% | 34.8% |
| **Gasoil/Diesel (50 ppm)** | 93.38 | 6.1% | 34.8% |
| **Fuel oil (180 cst 2.0% S)** | 70.72 | 2.3% | 39.4% |
| **Fuel oil (380 cst 3.5% S)** | 70.54 | 2.9% | 39.5% |

*Source: OPEC*

## Petroleum products consumption in India

- With the push by government on promotion of LPG, its Consumption has steadily decreased in India. In September, LPG consumption decreased 2.4% on MoM basis.
- Consumption of gasoline increased (4.4% YoY) driven by higher demand from transport segment.
- Demand for diesel also witnessed robust decrease of 0.7% on YoY basis in the month of September.

**Table 4: Petroleum products consumption in India, September 2018**

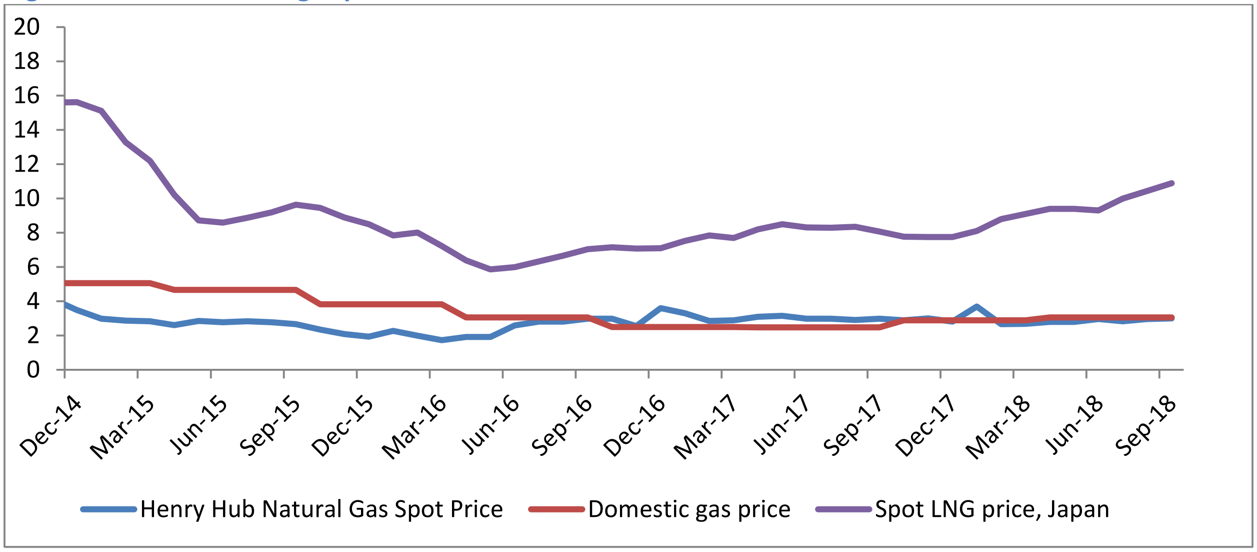
| Petroleum products | Consumption in '000 MT September 2018 | MoM (%) change | YoY (%) change |
|---|---|---|---|
| **LPG** | 2,057 | -2.4% | 6.4% |
| **Naphtha** | 1,133 | 3.7% | -4.3% |
| **MS** | 2,232 | -5.5% | 4.4% |
| **ATF** | 664 | -1.0% | 8.0% |
| **HSD** | 6,030 | -2.3% | -0.7% |
| **LDO** | 43 | -6.9% | 0.5% |
| **Lubricants & Greases** | 351 | 4.7% | 8.8% |
| **FO & LSHS** | 560 | -0.6% | 1.3% |
| **Bitumen** | 397 | 57.5% | 44.1% |
| **Petroleum coke** | 2,000 | -5.4% | -12.0% |
| **Others** | 787 | 34.4% | 44.8% |
| **TOTAL** | **16,536** | **-0.4%** | **1.5%** |

*Source: PPAC*

## Natural Gas Price

Natural gas prices in US remained low due to higher US production. LNG prices saw an upswing over previous year due to higher natural gas demand.

**Figure 5: Global natural gas price trends**




*Source: EIA, WORLD BANK*

**Table 5: Gas price**

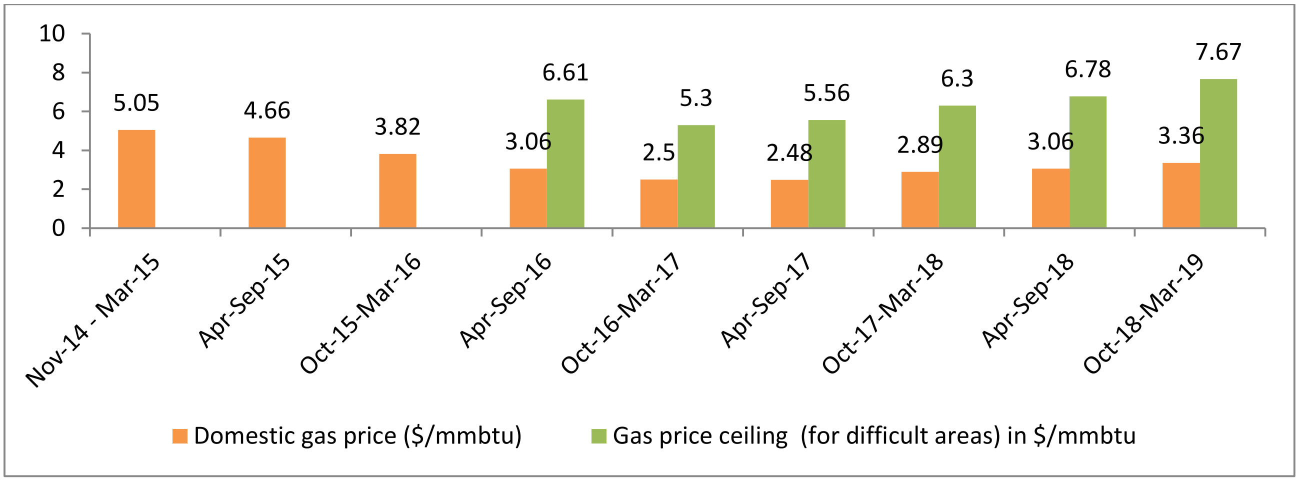
| Natural Gas | Price ($/MMBTU) in September 2018 | MoM (%) change | YoY (%) change |
|---|---|---|---|
| **India, Domestic gas price** | 3.36* | 9.8% | 16.3% |
| **India, Gas price ceiling – difficult areas** | 7.67* | 13.1% | 21.7% |
| **Henry Hub** | 3.00 | 1.4% | 0.7% |
| **Liquefied Natural Gas, Japan** | 10.88 | 4.2% | 34.8% |

*Source: EIA, PPAC, *October 2018*

Domestic natural gas price which takes into account international benchmarks including Henry Hub, Alberta hub, Russia and UK National Balancing Point, has increased around 23% as compared to a year before, thus capturing the international gas price trends.

A notification was issued by MoP&NG on 21st March 2016, for marketing including pricing freedom for gas to be produced from discoveries in deep water, ultra-deep water, and high pressure high temperature areas. For the October to March 2019 period, the price of gas from such areas has been notified at $7.67 per MMBTU.

**Figure 6: Domestic natural gas price**

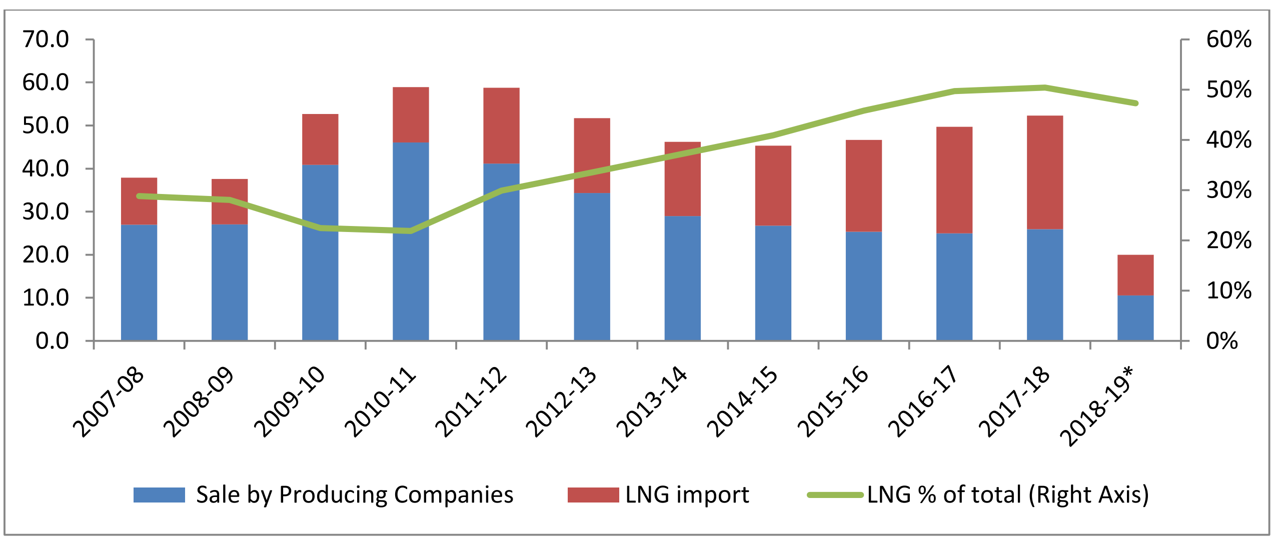



*Source: PPAC*

## Natural gas production, consumption and import in India

- Natural gas constitutes for 6.5% of total energy primary mix of India
- Natural gas consumption in India has grown at a very slow pace in the past 3 – 4 years, with share of LNG imports increasing in the overall consumption mix

**Figure 7: Domestic natural gas consumption, domestic production and LNG import in BCM**




*Source: PPAC*

**Figures for 2018-19 are for the period of April – July only. Sale by producing companies includes internal consumption*

## Key developments in Oil & Gas sector during the month

- **Contract Signing under First Round of Open Acreage Licensing Policy Bidding**

On 1 October Government of India signed the contracts of the blocks awarded under the Open Acreage Licensing Programme (OALP) Bid Round-I with the awardees at New Delhi. Initially, 110 e-bids were received for 55 blocks on offer with participation from 9 companies, singly or in consortium, contracts have been signed for all 55 blocks with 6 companies. This will add a huge accretion of 59,282 sq.km to the exploration area, which is about 65 per cent of the area presently under exploration in the country. This will lead to significant increase in E&P activities in India and in long run discoveries from these fields may significantly boost domestic production.

Mr. Pradhan, Union Minister of Petroleum and Natural Gas & Skill Development and Entrepreneurship congratulated the awardees and assured them of complete support and assistance from the Government. He reiterated the relentless efforts of the government to enhance domestic hydrocarbon production by putting forth new policy initiatives and new offers so that the true potential of Indian sedimentary basins is realized. The Minister said that the Companies have committed investment of about Rs 6000 Crore for exploring under this round.

- **Road Show for Phase II of Indian Strategic Petroleum Reserves**

Government of India's key initiative towards energy security of the country - the strategic petroleum reserves program, envisions creation of additional crude oil reserves facilities in Private Public Partnership (PPP) mode and the road show for the same was launched by Mr Dharmendra Pradhan, Minister, Petroleum and Natural Gas and Skill Development and Entrepreneurship.

Speaking at the occasion, Mr. Pradhan said that on world energy landscape, India is the 3rd largest consumer of energy and also the 3rd largest importer of crude oil in the world. With Indian economy growing rapidly, energy demand is forecasted to grow more than any other country in the world in the next two decades. India has a very large requirement of petroleum fuels. Demand for petroleum products has been increasing at a CAGR of 5.5 per cent from 2013 to 2017. He said that our domestic production will be unable to meet our ever increasing domestic demand of petroleum fuels and petrochemicals and India will continue to depend on imports for foreseeable future.

With the objective to meet the energy security, Government of India formed Indian Strategic Petroleum Reserves Limited (ISPRL), a SPV under Ministry of Petroleum and Natural Gas. To further improve strategic reserve, the union cabinet granted approval for establishing additional 6.5 MMT of strategic petroleum reserve which will be able to provide extra 12 days of supply. After a detailed study considering technical and commercial factors, two locations - Chandikhol in Odisha and Padur in Karnataka have been selected as the optimum location for these SPRs. These two SPRs will add strategic petroleum reserves of 12 days in addition to 10 days of reserves achieved in Phase I. Indian refiners maintain 65 days of crude storage, and when added to the storage planned and achieved by ISPRL, takes the Indian crude storage tally to 87 days. This is very close to the storage of 90 days mandated by IEA for member countries. On the issue of

Phase-II, he said that these are large investments requiring more than 1.5 billion US dollars of capital, and the Government plans to develop this under PPP framework.

- **Odisha Governor Lays Foundation Stone for Second Generation (2G) Ethanol Bio-Refinery in Bargarh**

The foundation stone for Second Generation (2G) Ethanol Bio-refinery of Bharat Petroleum Corporation Limited being set up at Bargarh district, Odisha has been laid by the Hon'ble Governor of Odisha Professor Ganeshi Lal. The Bio-refinery, the first of its kind to be set up, will have a capacity to produce three crore litres of fuel grade Ethanol annually using Rice straw as the feedstock. Ethanol produced from this plant will be blended with Petrol. The cost of the project is around Rs 100 Crore.

Biofuels have assumed importance recently due to the growing energy security needs and environmental concerns. Several countries have put forth different mechanism and incentives to encourage production and use of biofuels to suit their domestic requirements. India has surplus biomass availability of about 120-160 MMT annually which if converted, has the potential to yield 3000 crore litres of ethanol. The National Biofuel Policy of India 2018 targets 20% Ethanol blending to Petrol by year 2030. However, due to non-availability of Ethanol, the current Ethanol blending in Petrol is about 3 to 4%. Setting up of 2G Ethanol plants will help achieve the target of Ethanol blending in Petrol. The Bargarh Bio-Refinery will utilize about two lakh tonnes of Rice straw annually as feedstock which will be sourced from nearby locations like Bhati, Ambabhona, Sohela, Burla, Lakhanpur, etc.

The Bio-Refineries will contribute to cleaner environment due to usage of waste Rice straw for Ethanol production thereby reducing waste straw burning in fields. Blending of Ethanol in Petrol will reduce Green House Gas emissions as compared to fossil fuels. The plant is based on Zero-liquid discharge plant technology where all water will be recycled back into the plant. In addition to cleaner environment, the project will also help improve the socio-economic conditions of the farmers due to additional income from sale of Rice straw to the bio-refinery. Also, this will generate employment for approximately 1200 persons (both direct and indirect) during construction, operation of plant and supply chain management of biomass. This will boost the infrastructural development in the area and overall improvement in livelihood of people. Further, blending of ethanol enhances self-sufficiency of the Nation by reducing oil imports, thereby saving foreign exchange.

- **Petroleum Minister Launches SATAT Initiative to Promote Compressed Bio-Gas as an Alternative, Green Transport Fuel**

Mr. Dharmendra Pradhan, Union Minister of Petroleum and Natural Gas & Skill Development and Entrepreneurship launched an innovative initiative, with PSU Oil Marketing Companies (OMCs) inviting Expression of Interest (EoI) from potential entrepreneurs to set up Compressed Bio-Gas (CBG) production plants and make available CBG in the market for use in automotive fuels. The EoI are available on the websites of the OMCs and can be filled from 1st October, 2018 to 31st March, 2019.

Speaking on the occasion, the Petroleum Minister mentioned that Gas is clean and cheaper mode of fuel and the Government has taken several steps to promote its production and usage. Mr. Pradhan said that the Government is keen to set up 5000 CBG plants in next 5 years, and for this purpose, and production off take guarantee is being given for such plants. There will be no restriction on the technology choice and Government is incurring Rs 75,000 Crore capital expenditure for setting up infrastructure for City Gas distribution network. Besides the potential to boost availability of more affordable transport fuels, better use of agricultural residue, cattle dung and municipal solid waste, the CBG plants will provide an additional revenue source to farmers, and 75,000 direct job opportunities and lakhs of indirect jobs. He said that not only OMCs, but also other Gas distribution companies and other concerned departments should also take part in it. The Minister said that currently 42 lakh households are getting PNG supply, and there is a commitment to cover 2 crore households in 300 districts by the suppliers after the implementation of 9th round of CGD bids.

Titled SATAT, the initiative is aimed at providing a Sustainable Alternative Towards Affordable Transportation as a developmental effort that would benefit both vehicle-users as well as farmers and entrepreneurs. This initiative holds great promise for efficient municipal solid waste management and in tackling the problem of polluted urban air due to farm stubble-burning and carbon emissions. Use of CBG will also help bring down dependency on crude oil imports and in realising the Prime Minister’s vision of enhancing farmers’ income, rural employment and entrepreneurship.

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