



April  
2018

# Policy & Economic Report - Oil & Gas Market



**Federation of Indian Petroleum Industry (FIPI)**

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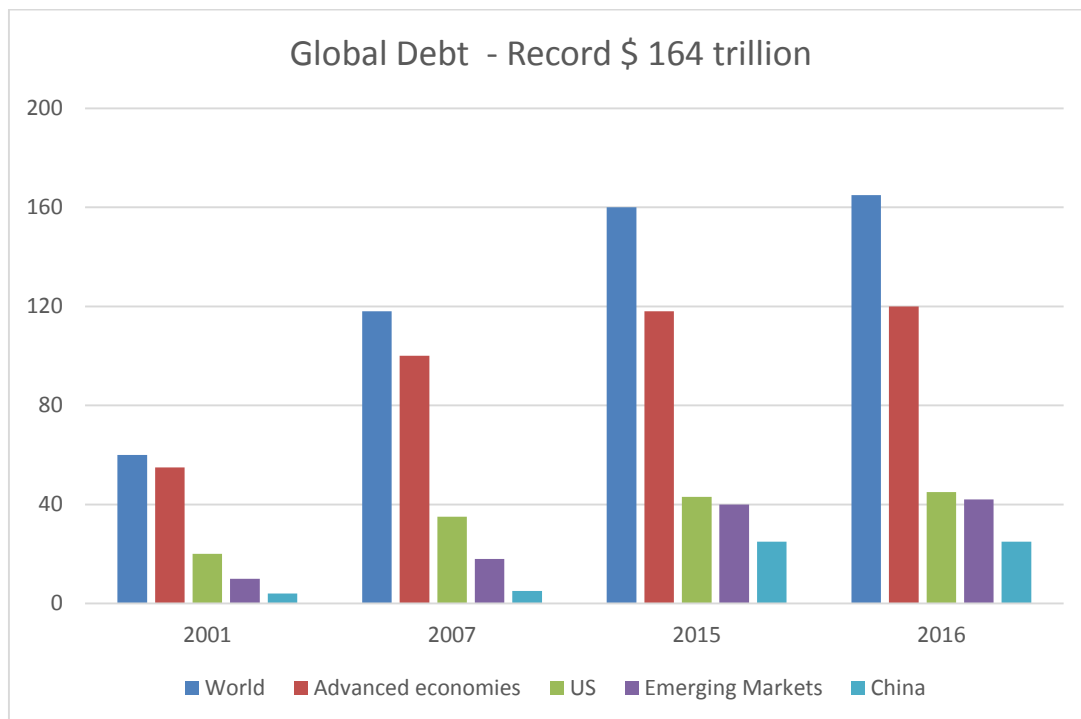
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# Policy & Economic report – Oil & Gas market

## Economy in Focus

### Global debt at a record \$ 164 trillion



Data refers to the global gross debt (both public and nonfinancial private) for an unbalanced sample comprising 190 countries

Source: Bloomberg

- IMF forecasts for global growth this year and next at 3.9% as estimated in January. However, record debt was highlighted as a threat to financial stability and as central banks tighten monetary policy, US fiscal stimulus subsides and China's slowdown continues, the growth is bound to fade.
- Fund stated that the risks to financial stability have risen over the past six months. With the worry that the markets might be underestimating the threat of an inflation shock in the US, where the Trump administration is increasing fiscal stimulus with the economy at or near full employment, a surge of this kind might force Federal Reserve to raise interest rates faster than expected, a move that might cause turbulence in emerging market. The global public and private debt has

reached a record \$ 164 trillion and a spike in interest rates would challenge the ability of borrowers to refinance all debt.

- Rising protectionism, escalating political and trade tensions and diminishing popular support for global economic integration could drag on global growth.

### **Global economy in a conundrum**

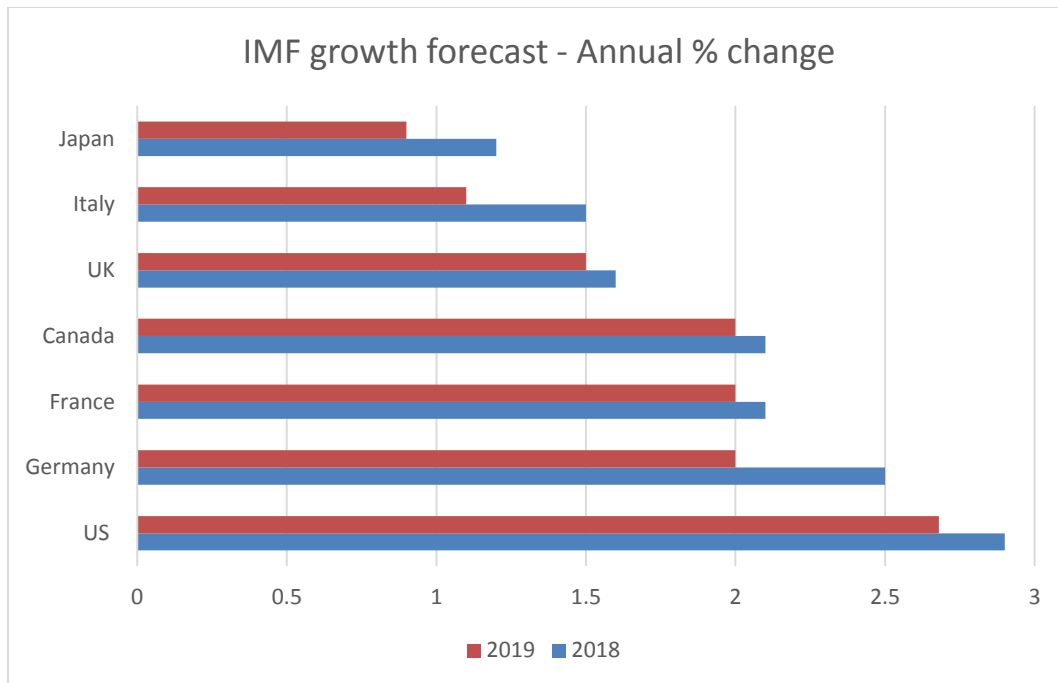
- 2018 was initiated with a speculation that global economic expansion was to overheat. However, this has been met with underwhelming results.
- Missile strikes and trade wars have resulted in an unexpected loss of economic momentum particularly in Europe, frightening investors.
- Rising oil prices have added inflation to the economic mix and the confusion of booming or busting reigns heavy.

### **Higher Oil prices shifts the balance of the global economy**

- Petrodollar inflows due to recent oil price rally could flow in to the global markets if oil producing countries boost investments in various asset classes, the only impediment being that this rise could be used by oil producers to patch budget deficits caused by the oil price rout of 2014-2016.
- The increase in oil prices is generating a shift in flows and incomes across the world, thereby reversing the previous big shift seen during 2014 and 2016.
- Rise in oil prices will create a positive flow in the equity market.
- Higher oil prices could mean turbulent times for Asia's most externally vulnerable economies - India, Indonesia and the Philippines. With the oil prices hitting a 3-1/2 year high, the biggest worry is not just that these countries run the biggest current account deficits of Asia's major economies, but they are also among region's most voracious oil importers.
- In the event that the oil prices remain steep, projections of inflation, growth, budget and trade deficits could be missed, increasing selling pressure on the trio's currencies, stocks and bonds - already among Asia's worst performers - and potentially forcing their central banks to raise interest rates sooner than they otherwise would. Higher rates in turn would impact growth and budgets creating a vicious circle that further erodes confidence in local assets.

### **Euro Area Economy in Low Gear**

- Potential growth in trade and global growth threatened by the new U.S. steel and aluminum tariffs.
- Composite Purchasing Manager's Index remained unchanged at 55.2. While activity in services picked up, growth in manufacturing slowed to the weakest in more than a year.
- Risks surrounding global trade have caused prudence in normalizing monetary stimulus. Output is expected to decelerate further in coming months due to weakened optimism about the business outlook. Easing price pressures and stronger euro contributed to damping export demand.

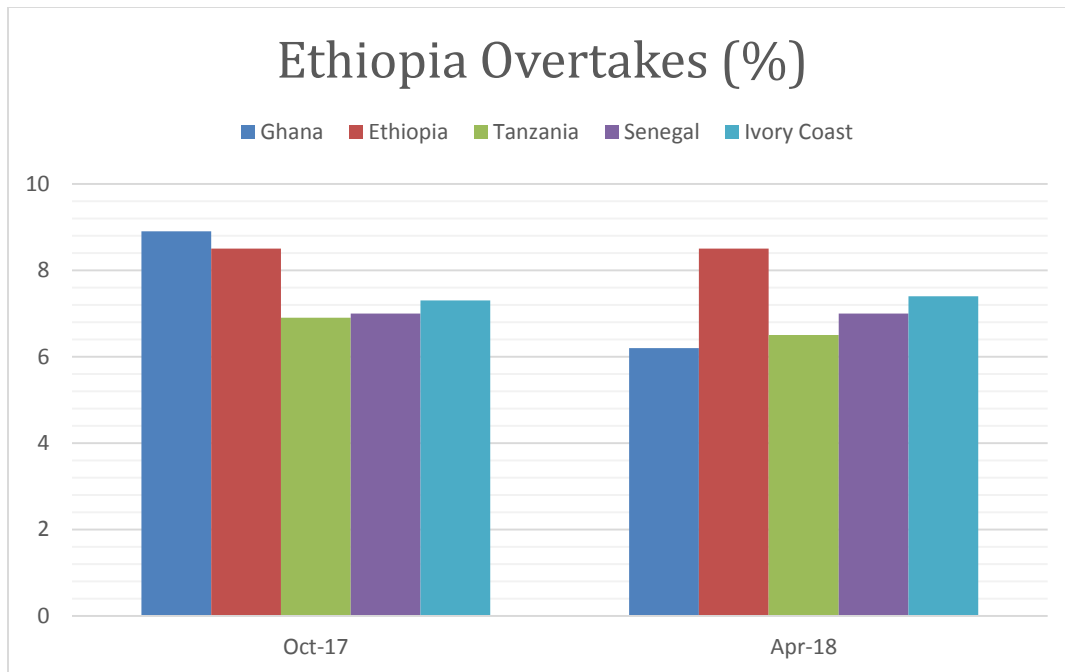


Source: IMF

- As it navigates Brexit, Britain’s economy is expected to perform worse than the rest of Europe, except Italy.
- High barriers to trade and lower foreign direct investment following Brexit have prevented UK from performing better. In spite of this sluggish outlook, the IMF has recommended that the Bank of England raise interest rates to lid high inflation.

#### West African darling Ghana loses Africa’s top spot to East African giant, Ethiopia

- West Africa’s second biggest economy is now expected to grow at 6.3 per cent this year as compared to the 8.9 per cent predicted in October 2017. In fact, this revised forecast of Ghana is lower than the 7.4 per cent now projected for Ivory Coast and 8.5 per cent expected for Ethiopia.
- While Ghana’s \$43 billion economy relies on commodities, including oil, gold, and cocoa, and expanded 8.5 percent last year as it’s Sankofa crude field opened in May, Ethiopia, ranked as the third poorest country in the world in 2000, today is almost as big as Ghana and is heavily in services and agriculture.
- Sub-Saharan growth rate now pinned at 3.4 per cent this year and 3.7 per cent in the next.
- Nigeria, most-populous nation and top crude producer, will grow 2.1 percent and South Africa, the world’s biggest source of platinum, will expand at 1.5 percent. It’s growth rate for 2018 was pinned at 0.9 percent in January.



Source: IMF

#### Congo's contest against 'blood cobalt' concerns

- Demand for cobalt going through the roof as the key metal required for batteries in electric cars. Last year alone saw the prices surging from \$25/lb to just over \$41/lb.
- A fifth of cobalt exported from Congo comes from artisanal mines, where child labor is common. Increased demand for cobalt fueling exploitation and environmental degradation.
- Demand for cobalt as a part of promoting green lifestyle in the form of Electric Vehicles has contradictorily turned parts of Congo into an environmental disaster. Not only are working conditions extremely brutal and miners' lives too short, the toxic chemicals used to extract cobalt are discarded into rivers, thereby poisoning water supply.
- Pilot scheme to trace the world's first "ethical cobalt" from small-scale mines in the Democratic Republic of Congo all the way to consumers of electric cars and iPhones, potentially allowing companies such as Apple to assure customers their products are free from child labor and other human rights abuses.
- Unheard of in artisanal mining context, this level of data generation will red-flag incidents such as child labor and mine cave-in which would be instantly visible on a dashboard available to participants along the supply chain, including the final cobalt purchaser.

### India to tread carefully

- If the oil prices remain stubborn this could be a triple whammy for Asia's No. 3 economy in the form of wider trade deficit, a worsening of stretched government finances and slower economic growth.
- Estimates state that Brent crude at \$75 a barrel could lower growth estimate for India to about 7.3% from 7.5% for the year through March 2019.
- Costly crude could stoke inflation by 30 basis points, underpinning expectations that monetary policy will turn more hawkish.
- Fears of weaker rupee become more prominent since India imports more than two-thirds of its crude requirements. Estimates state that every \$10 per barrel rise would result in India's current-account to deteriorate by 0.4% of GDP, hurt growth by 15 basis points and worsen the fiscal balance by 0.1% of GDP.
- Becoming a \$2.5-trillion economy will not be enough for India, since it is a laggard when it comes to per capita GDP levels in the world. India also does much worse compared to many smaller countries on the Human Development Index, which takes into account life expectancy at birth and average years of schooling. All this means that average living standards of the people continue to be low.
- Changing geopolitics is essential to understand large economies. Factual analysis states that in 1980, GDPs of India and China were 6.6% and 10.7% of the US's GDP. Things have changed drastically in the last 37 years. China's 2017 GDP is 62% of the US GDP, while India's GDP is just 13.5% of this figure. By 2023, IMF expects Chinese GDP to reach 88% of the US GDP, while India's would still be less than one-fifth of the US figure.

#### Something to muse about....

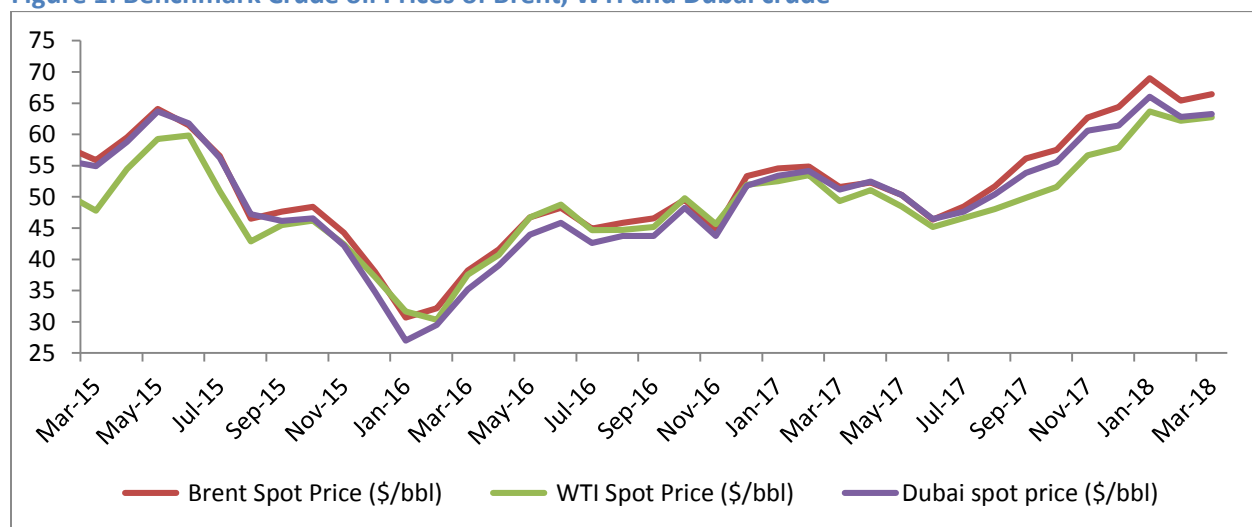
- Studies claim that economies in the Asia Pacific region could boost their collective GDP by \$ 4.5 trillion by 2025, if they could improve gender equality. This means to say that hiring more women could supercharge Asia's economies!!
- In spite of Euro being more used than the dollar it can never be the dominant currency. The reason behind this is the very fundamental of the creation of Euro as a currency. Euro was launched as a currency that represented a very disparate range of countries with very different fortunes. This meant that one interest rate was to represent all countries and hence all economies started doing wildly different things. Eventually economies started pulling in all different directions which damaged initial confidence in the Euro.

# Oil & Gas Market

## Crude oil price

Crude oil prices showed an increasing trend in the month of March 2018. Global benchmark crudes such as Brent, WTI and Dubai increased in the range of 0.8% - 1.6% due to geopolitical risks in middle east, curb on production by OPEC and rising demand in Asia.

**Figure 1: Benchmark Crude oil Prices of Brent, WTI and Dubai crude**



Source: EIA, World Bank,

- Brent crude price averaged \$66.5 per bbl in March 2018, and was up 1.6% and 28.8% on a month on month (MoM) and year on year (YoY) basis, respectively.
- WTI crude price averaged \$62.8 per bbl in March 2018, and was up 0.9% and 27.2% on a month on month (MoM) and year on year (YoY) basis, respectively.
- Dubai crude price averaged \$63.3 per bbl in March 2018, and was up 0.8% and 23.7% on a month on month (MoM) and year on year (YoY) basis, respectively.

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

Crude oil	Price (\$/bbl) in Mar 2018	MoM (%) change	YoY (%) change
<b>Brent</b>	66.5	1.6%	28.8%
<b>WTI</b>	62.8	0.9%	27.2%
<b>Dubai</b>	63.3	0.8%	23.7%

Source: EIA, World Bank,

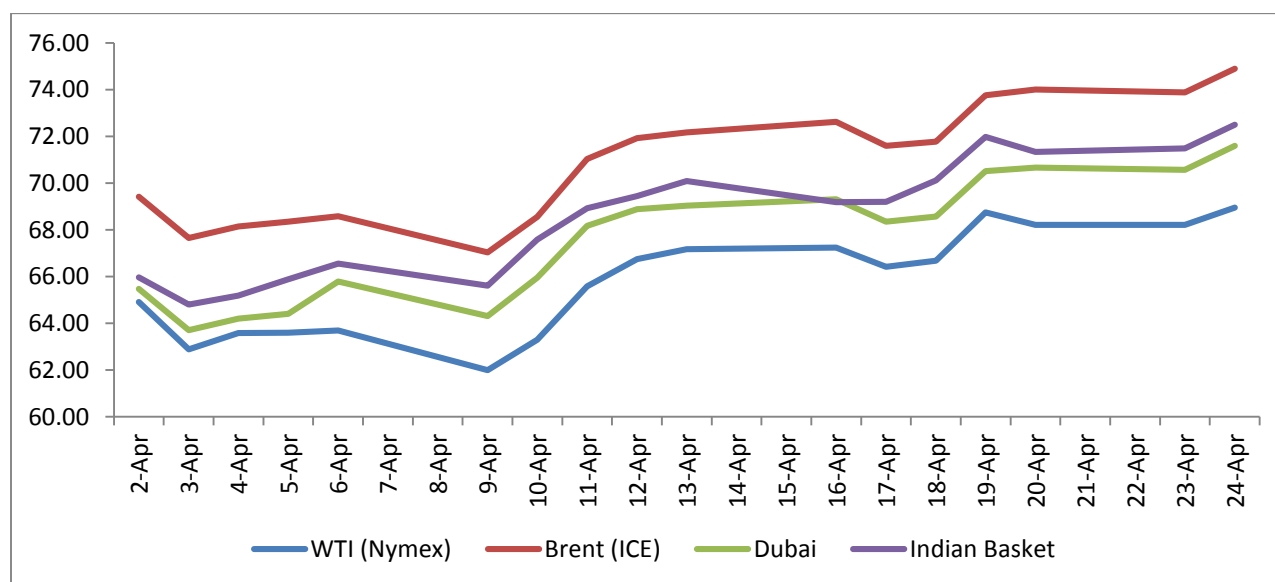


## Oil Prices at 3 year high in April 2018

Crude oil prices have been trading at a 3 year high in the month of April. Brent crude has been trading over the \$ 70 per barrel mark in the recent past and has even touched \$ 75 per bbl. Indian crude basket price has also followed the global trend and is currently priced at around \$ 72.5 per barrel. Key fundamentals that drove prices during the month were:

- **Drop in US crude oil inventories:** An EIA report has indicated another 1.1 million barrel drop in U.S. crude oil inventories. This has now moved crude oil inventories down into the lower half of the range for this time of year. In addition to the drop in crude oil inventories, the EIA also reported that gasoline and diesel inventories each dropped by at least 3.0 million barrels in April, bringing the total drop in commercial inventories to 10.6 million barrels for the week. That's an unusually large (and bullish) draw on inventories.
- **OPEC's efforts to tighten markets:** OPEC's efforts to tighten markets are being led by top exporter Saudi Arabia, where state-controlled oil firm Saudi Aramco is pushing for higher prices ahead of a partial listing planned for later this year or 2019.
- **Sanctions on Iran:** The United States has until May 12 to decide whether it will leave the Iran nuclear deal and re-impose sanctions against OPEC's third-largest producer, which would further tighten global supplies.
- Prices have been further bolstered by rising demand in Asia, the world's biggest oil consuming region, where demand has risen to a record as new and expanded refineries start up from China to Vietnam.

Figure 2: Crude oil price in April 2018

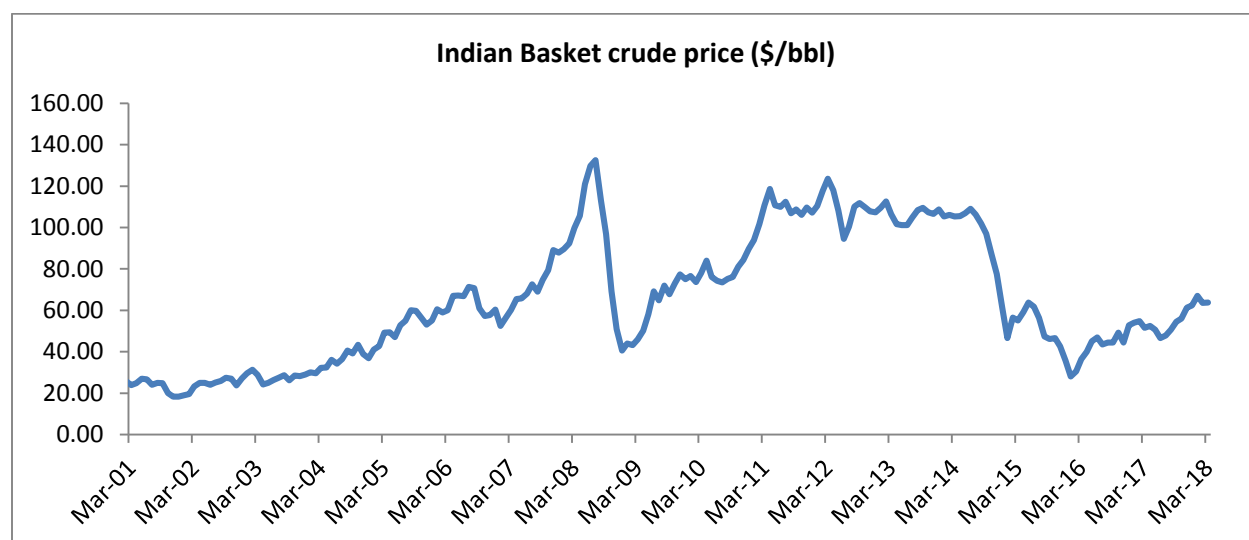


Source: EIA, PPAC

## 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 \$63.8 per bbl in March 2018, and was up 0.4% and 24.0% on a month on month (MoM) and year on year (YoY) basis, respectively.

## Oil demand & supply

- According to OPEC, World oil demand grew by 1.67% in 2018\* to 98.70 mbpd from 97.07 mbpd in 2017. India's demand for oil in 2017 was 4.47 mbpd and is projected to increase to 4.66 mbpd in 2018.

Table 2: World Oil demand in mbpd

	2017	1Q18	2Q18	3Q18	4Q18	2018	Growth	%
<b>Total OECD</b>	<b>47.40</b>	<b>47.51</b>	<b>47.22</b>	<b>48.01</b>	<b>48.27</b>	<b>47.76</b>	<b>0.36</b>	<b>0.76</b>
<b>Dev. Countries</b>	<b>31.93</b>	<b>32.21</b>	<b>32.61</b>	<b>33.04</b>	<b>32.71</b>	<b>32.64</b>	<b>0.71</b>	<b>2.23</b>
~ of which India	4.47	4.70	4.66	4.32	4.97	4.66	0.20	4.39
<b>Other regions</b>	<b>17.74</b>	<b>17.68</b>	<b>18.01</b>	<b>18.33</b>	<b>19.15</b>	<b>18.30</b>	<b>0.56</b>	<b>3.13</b>
~ of which China	12.32	12.38	12.82	12.71	13.12	12.73	0.42	3.37
<b>Total world</b>	<b>97.07</b>	<b>97.40</b>	<b>97.84</b>	<b>99.38</b>	<b>100.13</b>	<b>98.70</b>	<b>1.63</b>	<b>1.67</b>

Source: OPEC monthly report, March 2018

Note: \*2018 = Forecast

## Global petroleum product prices

The Asian gasoline market weakened on supply side pressure due to ample deliveries that arrived in Singapore.

The jet/kerosene crack spread in Asia fell as jet/kerosene demand came down from the high levels reached in the previous month. Furthermore, lower heating oil demand due to the end of winter season likely contributed to the pressure on cracks.

The Asian fuel oil market lost ground as ample arbitrage shipments arrived in Asia, lifting stocks to their highest levels seen in 2018.

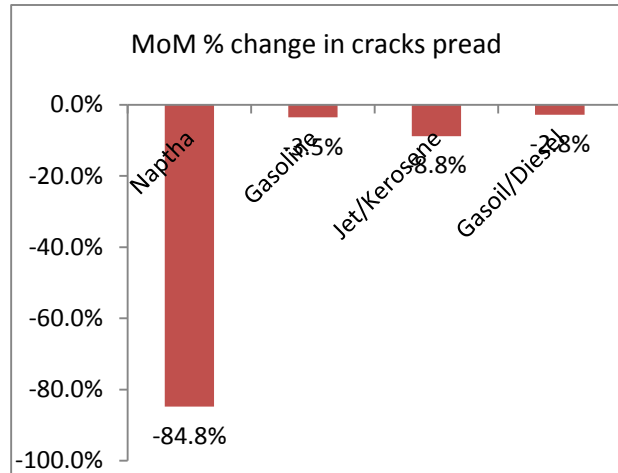
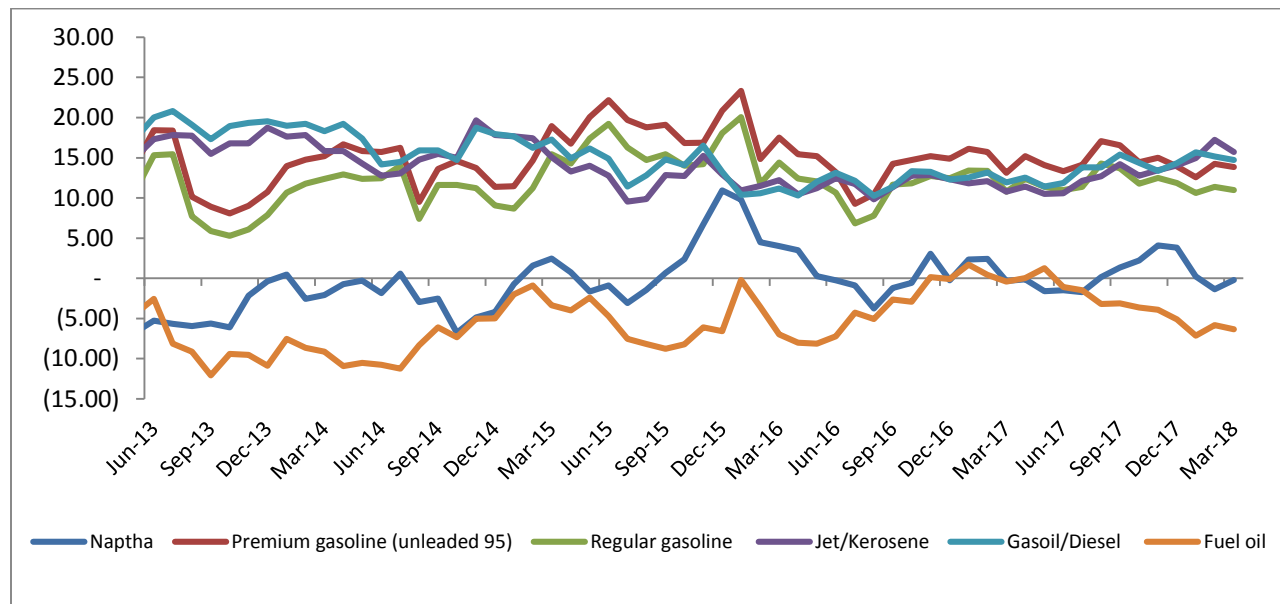


Figure 4: Product crack spreads vs. Dubai crude



Source: OPEC, World Bank, FIPI

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

Products	Price (\$/b) in Mar 2018	MoM (%) change	YoY (%) change
Naptha	63.08	2.7%	24.1%
Premium gasoline (unleaded 95)	77.12	0.1%	20.0%
Regular gasoline (unleaded 92)	74.25	0.1%	19.9%
Jet/Kerosene	79.00	-1.3%	27.6%
Gasoil/Diesel (50 ppm)	78.03	0.1%	23.7%
Fuel oil (180 cst 2.0% S)	56.94	0.0%	12.2%
Fuel oil (380 cst 3.5% S)	56.56	0.0%	23.9%

Source: OPEC

## Petroleum products consumption in India

- With the push by government on promotion of LPG, its Consumption has steadily increased in India. In March, LPG consumption increased by 8.9% YoY basis.
- Consumption of gasoline increased significantly (14.2% YoY) driven by higher demand from transport segment.
- Demand for diesel also witnessed robust growth of 8.0% YoY in the month of March.

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

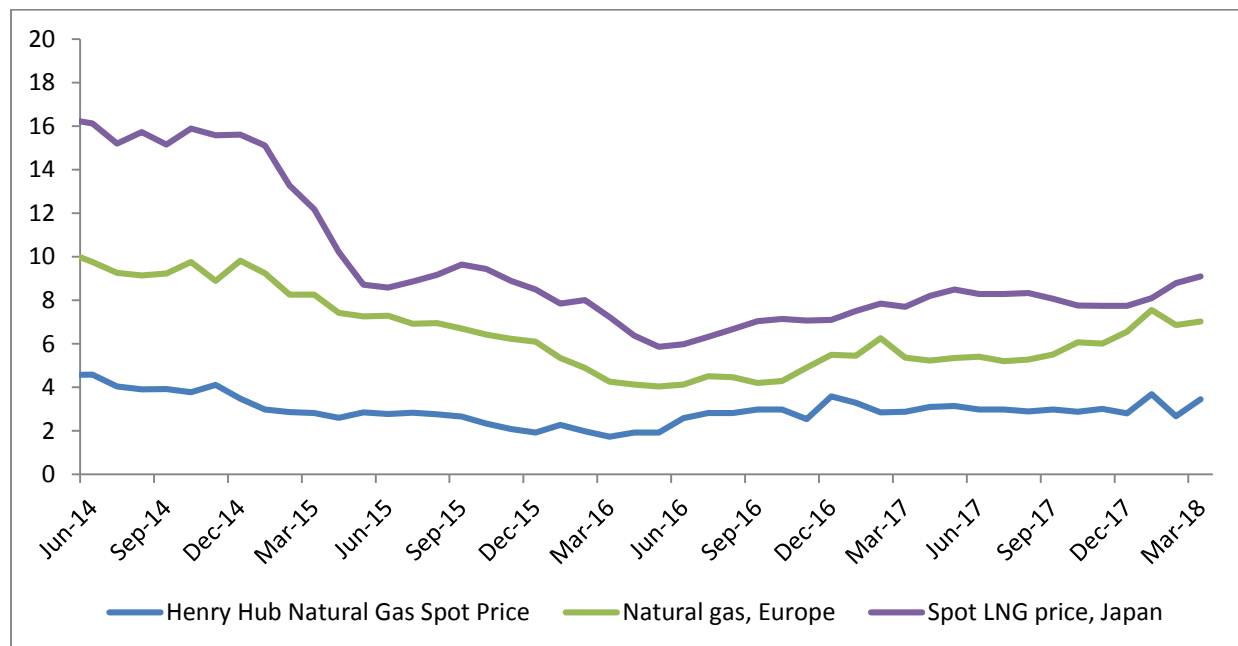
Petroleum products	Consumption in '000 MT Mar 2018	MoM (%) change	YoY (%) change
LPG	2,055	5.6%	8.9%
Naphtha	1,126	17.8%	2.8%
MS	2,404	15.9%	14.2%
ATF	685	9.6%	11.1%
HSD	7,347	12.5%	8.0%
LDO	51	10.1%	45.0%
Lubricants & Greases	357	22.2%	19.0%
FO & LSHS	591	12.2%	6.3%
Bitumen	762	20.6%	5.9%
Petroleum coke	2,328	5.8%	6.5%
Others	627	6.0%	-3.7%
<b>TOTAL</b>	<b>18,617</b>	<b>11.3%</b>	<b>7.2%</b>

Source: PPAC

## Natural Gas Price

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

Figure 5: Global natural gas price trends



Source: EIA, World Bank

Table 5: Gas price

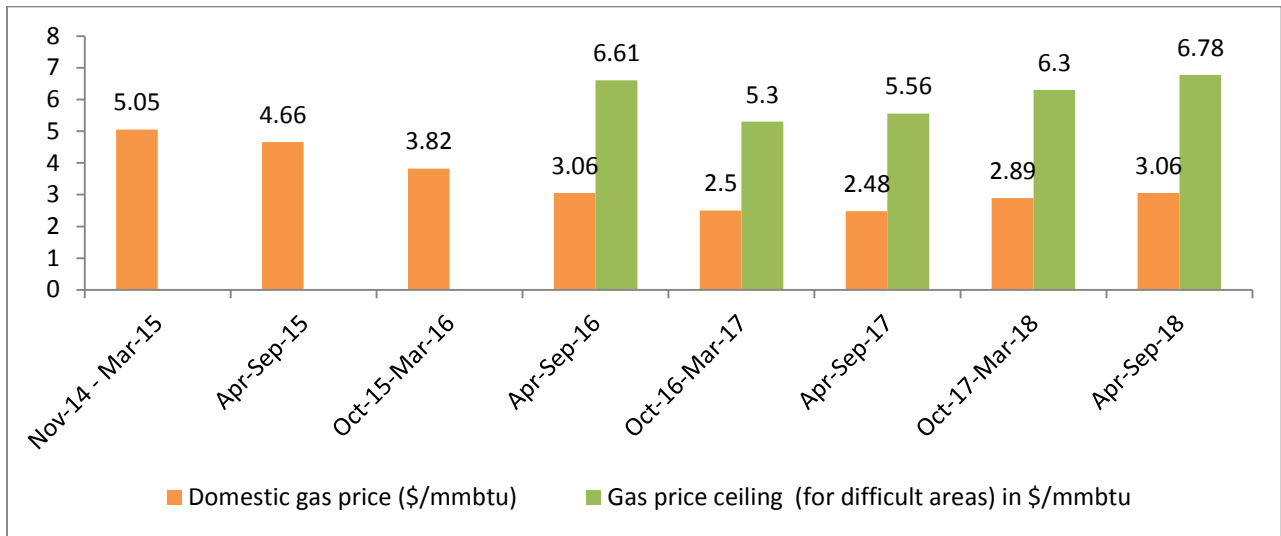
Natural Gas	Price (\$/MMBTU) in Mar 2018	MoM (%) change	YoY (%) change
India, Domestic gas price	3.06*	5.9%	23.4%
India, Gas price ceiling – difficult areas	6.78*	7.6%	21.9%
Henry Hub	3.46	29.6%	20.2%
Natural Gas, Europe	7.03	2.3%	31.2%
Liquefied Natural Gas, Japan	9.10	3.4%	18.2%

Source: EIA, World Bank, PPAC, \* Gas price has been revised from 1<sup>st</sup> April 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 16% as compared to a year before, thus capturing the international gas price trends.

A notification was issued by MoP&NG on 21<sup>st</sup> 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 Apr-Sep-18 period, the price of gas from such areas was notified at \$6.78 per MMBTU.

Figure 6: Domestic natural gas price

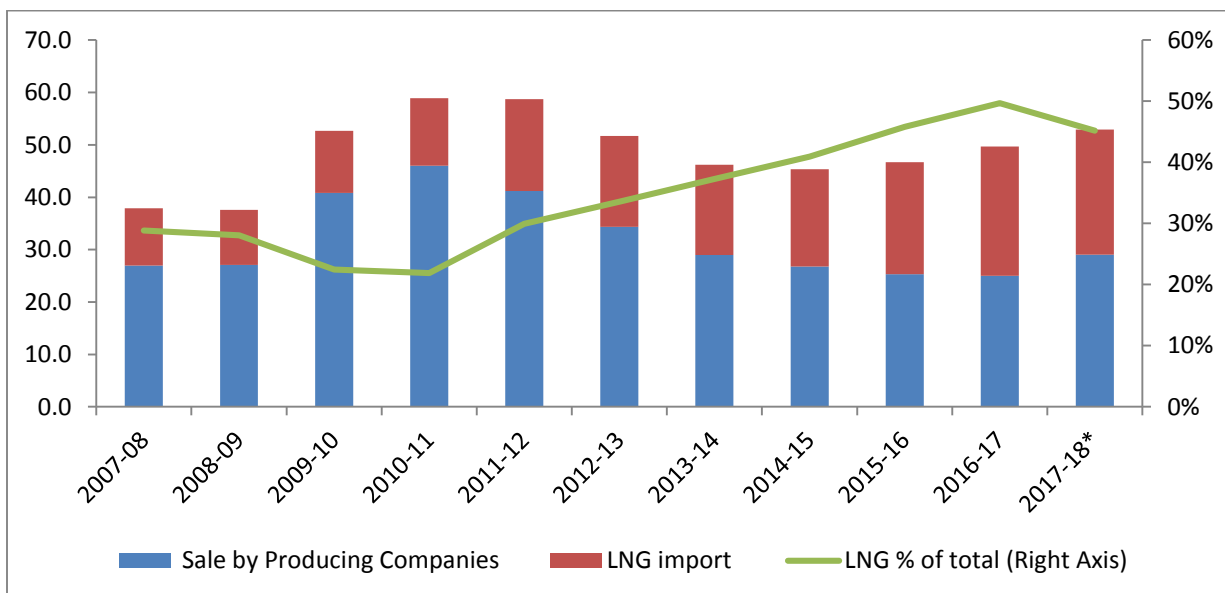


Source: PPAC

## 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 2017-18 are for the period of April to February only

## Key policy developments in energy sector during the month

- **Tripling of natural gas demand in next 25 years**

In order to meet the demand of natural gas in the country, as well as to reduce the dependence on imports Government has taken several steps to enhance domestic natural gas production through several policy initiatives. As per British Petroleum (BP) Energy Outlook 2018, India's natural gas consumption will rise and almost triple by 2040 and projected energy consumption will reach 1921 MTOE by 2040 as the largest growth market for global energy by 2040. The following measures have been taken by Government of India:

- I. Marginal Field Policy - Discovered Small Field Policy
- II. Uniform Licensing Policy-Hydrocarbon Exploration and Licensing Policy
- III. Policy for Grant of Extension to small and medium sized discovered fields
- IV. Policy for Marketing and Pricing freedom for Coal Bed Methane (CBM).
- V. Government has granted marketing, including pricing, freedom for the gas produced from difficult areas.
- VI. Marketing freedom has also been provided under Discovered Small Field budding rounds as well as under Hydrocarbon Exploration and Licensing Policy (HELP).

- **Inauguration of PM Ujjwala Yojana in Delhi**

In order to prevent pollution and facilitate the healthy atmosphere in the families of poor people Pradhan Mantri Ujjwala Yojana was launched by Prime Minister Narendra Modi two years ago said Union Minister for Petroleum and Natural Gas and Skill Development, Dharmendra Pradhan. On the side lines of inauguration of PM Ujjwala Yojana at Delhi Shri Pradhan asked the rich families to sacrifice Gas Subsidy so as to enable the poor families to get gas connection. After distribution of gas connections to the house wives of poor community, Mr. Dharmendra Pradhan said that so far 9 crore people are having LPG gas connections. Out of them 3.5 crore people are the beneficiaries of PM Ujjwala Yojana.

Mr. Pradhan told that it is the objective of the central government to give gas connections to 5 crore families by 2019.

- **Boost to ease of doing business in oil & gas sector**

In line with the Government initiative of ease of doing business, the Union Cabinet chaired by Prime Minister Shri Narendra Modi has given its approval for delegating the powers to Minister of Petroleum and Natural Gas and Finance Minister to award the Blocks/Contract Areas to successful bidders under Hydrocarbon Exploration and Licensing Policy (HELP) after International Competitive Bidding (ICB) based on the recommendations of Empowered Committee of Secretaries (ECS). Under HELP, Blocks are to be awarded twice in a year. Therefore, this delegation

of powers will expedite the decision making process on awarding blocks and give a boost to the initiative of ease of doing business.

Under the NELP Policy, ECS considers the Bid Evaluation Criteria (BEC), conducts negotiations with the bidders wherever necessary and make recommendations to CCEA on award of blocks. The CCEA approves the award of blocks. The entire process, including Inter Ministerial Consultations (IMC) is quite lengthy and time consuming. In consonance with the Government initiative of 'Ease of Doing Business', it is desirable to shorten the duration of time taken forward of the Blocks / Contract Areas. Under the New Hydrocarbon Exploration and Licensing Policy' the competitive bidding will be continuous and blocks will be awarded twice a year.

- **Approval given to Exploration and Exploitation of Coal Bed Methane (CBM) from areas under Coal Mining Lease allotted to Coal India Limited (CIL) and its Subsidiaries**

The Cabinet Committee on Economic Affairs chaired by the Prime Minister, Shri Narendra Modi today gave its approval for issuing a notification amending clause 3(xiii) of the notification dated 03.11.2015 issued by the Ministry of Petroleum & Natural gas under Section 12 of the Oil Fields (Regulation and Development) Act, 1948 (ORD Act, 1948).

Due to this amendment relaxation is granted under the Petroleum & Natural Gas Rules 1959 (PNG Rules, 1959), to Coal India Limited (CIL) and its subsidiaries for not applying for grant of license/lease under the PNG Rules, 1959 for extraction of Coal Bed Methane (CBM) under their Coal Bearing Areas.

The decision is in line with the Government's initiatives of 'Ease of Doing Business'. It will expedite the exploration and exploitation of CBM, enhance the availability of natural gas and reduce the gap in demand and supply of natural gas. The increased development activities for exploration and exploitation of CBM gas reserves in-and-around the block will generate economic activities which in turn has potential to create employment opportunities in CBM operations and in the industries.

- **Indian Consortium and Saudi Aramco Sign MoU for Ratnagiri Mega Refinery in Maharashtra**

An Indian Consortium consisting of IOCL, BPCL and HPCL and Saudi Aramco signed a Memorandum of Understanding (MoU) here today to jointly develop and build an integrated refinery and petrochemicals complex, Ratnagiri Refinery & Petrochemicals Ltd. (RRPCL) in the State of Maharashtra. Saudi Aramco may also seek to include a strategic partner to co-invest in the project.



The strategic partnership brings together crude supply, resources, technologies, experience and expertise of these multiple oil companies with an established commercial presence around the world.

A pre-feasibility study for the refinery has been completed, and the parties are now finalising the project's overall configuration. Following the signing of the MoU, the parties will extend their collaboration to discuss the formation of a joint venture that would provide for joint ownership, control and management of the project.

The refinery will be capable of processing 1.2 million barrels of crude oil per day (60 million metric tonnes per annum, or MMTPA). It will produce a range of refined petroleum products, including petrol and diesel meeting BS-VI fuel efficiency norms. The Refinery will also provide feedstock for the integrated petrochemicals complex, which will be capable of producing approx. 18 million tonnes per annum of petrochemical products.

In addition to the refinery, cracker and downstream petrochemicals facilities, the project will also include the development of associated facilities such as a logistics, crude oil and product storage terminals, raw water supply project as well as centralized and shared utilities.

- **India-US Strategy Energy Partnership**

Minister of Petroleum and Natural Gas Dharmendra Pradhan and U.S. Secretary of Energy Rick Perry co-chaired the inaugural meeting of the U.S.-India Strategic Energy Partnership, which President Donald J. Trump and Prime Minister Narendra Modi had announced during their June 26, 2017 Summit in Washington, D.C.

Through the Partnership, the United States and India collectively seek to enhance energy security, expand energy and innovation linkages across our respective energy sectors, bolster our strategic alignment, and facilitate increased industry and stakeholder engagement in the energy sector. In the High-level discussions, senior U.S. and Indian government officials outlined their vision for the Strategic Energy Partnership and key areas of engagement. Under the Partnership, the United States and India will pursue four primary pillars of cooperation: (1) Oil and Gas; (2) Power and Energy Efficiency; (3) Renewable Energy and Sustainable Growth; and (4) Coal. Both parties may consider establishing additional pillars of cooperation based on mutual agreement.

As a first step in realizing the full potential of the Strategic Energy Partnership, the United States and India jointly announced the U.S.-India Natural Gas Task Force. The Task Force provides a team of U.S. and Indian industry experts with a mandate to propose, develop, and convey, innovative policy recommendations to Government of India in support of its vision for natural gas in the economy of India. The work of the Task Force is expected to advance the strategic and economic interests of both the United States and India.

## Excerpts from the 16<sup>th</sup> International Energy Forum ministerial meet, 10-12, April 2018, concluding remarks

The government of India hosted IEF energy ministers and industry leaders alongside heads of international organizations and invited guest countries at the 16th biennial International Energy Forum Ministerial Meeting (IEF16) in New Delhi on 10-12 April 2018 with the support of the People's Republic of China and the Republic of Korea as IEF16 co-hosts. The meeting was held under the theme "The Future of Global Energy Security –Transition, Technology, Trade and Investment".

On behalf of the IEF16 host country, Shri Narendra Modi, Prime Minister of India inaugurated IEF16 Ministerial meeting. Prime Minister Modi shared his energy vision comprising of 4 pillars – energy access, energy efficiency, energy sustainability and energy security. He called for a mutually supportive relationship between producers and consumers if the world has to grow as a whole. He called for optimal use of the neutral platform of the IEF to build a global consensus on 'responsible pricing', that serves the mutual interests of both producers and consumers. H.E. Dharmendra Pradhan, Minister for Petroleum and Natural Gas and Minister for Skill Development and Entrepreneurship of India, HE Khalid Al Falih, Minister of Energy, Industry and Mineral Resources of the Kingdom of Saudi Arabia, and H.E. Sun Xiansheng, Secretary General, International Energy Forum addressed the Inaugural Session.

IEF16 delegations met when, on one hand, world oil demand and supply patterns show signs of re-balancing. An upswing in world economic performance and subsequent recovery in energy demand growth in both the OECD and non-OECD regions accompanied by high compliance with the voluntary output adjustments the Organisation of Petroleum Producing Countries agreed with non-OPEC Producing Countries at their Ministerial Meeting on 10 December 2016. On the other hand, growing uncertainties, relating to how new policies and technologies will affect investment and trade in sustained and healthy energy demand and supply balances and fuel sustainable and inclusive growth in the wider world economy, underscored the importance of ministerial energy dialogue at the time of the convening of IEF16.

Ministerial dialogue was structured in four thematic plenary sessions, four parallel roundtables alongside bilateral meetings taking place on the sidelines of IEF16 proceedings. Discussions were focused on:

- **Global shifts: The Future of Global Energy Security – Finding New Balances**

Meeting at a time of uncertainty, dynamism and change IEF16 ministers acknowledged that global energy security is taking on new meanings that have just as much to do with adaptability as energy access, affordability, and inclusive and sustainable growth. IEF16 ministers noted that their presence in New Delhi manifests that, through open dialogue, energy market stakeholders can move forward faster and farther when embracing shared value propositions that benefit all.

Noting from contributions by both, the International Energy Agency and the Organisation of Petroleum Exporting Countries that the fossil fuel sector shall continue to provide around three-quarters of energy demand in 2040, as projected in their main scenarios, IEF16 delegates focused dialogue on the mutual reinforcing role of fossil fuels and clean energy technologies, including renewables calling for:

- Reliable, and realistic transformations that all can afford, and
- Rational responses to the global energy challenges we face together

- **Sustainable and Inclusive Growth – Energy Access and Affordability**

IEF16 ministers, industry leaders, and heads of international organizations took note of the contributions by the OPEC Fund for International Development, and the Gas Exporting Countries Forum. Acknowledging that global agreements on shared goals, and energy access in particular concluded under the aegis of the United Nations in 2015, are in the early phases of implementation and that despite progress, collective efforts must be stepped up to achieve universal energy access and alleviate energy poverty by 2030. IEF16 delegates appreciated the role that the OPEC Fund for International Development continues to play in advancing energy access on the international energy agenda in collaboration with the IEF and encouraged further action beyond the IEF15 mandates adopted in Algiers culminating in the 3rd IEF-OFID Symposium on Energy Poverty hosted by Tunisia.

IEF16 ministers, industry leaders, and heads of international organizations recognized that universal access to modern energy services is central to economic growth and human welfare and, as such, an enduring factor in the socioeconomic development of humanity through the ages. Noting that energy poverty is one root cause of migration, IEF16 delegates placed emphasis on affordability and making energy supply chains more efficient and sustainable acknowledging the indispensable role of new financing mechanisms, clean energy technologies, including natural gas, and micro grids for heartland inclusive growth.

- **Oil and Gas Market Stability and Change – Investment in a New Era**

IEF16 delegates focused on the limited volume of upstream oil and gas sector investments as a consequence of the downward price cycle and the risks and opportunities that new unconventional production resilience brings to the stability of oil and gas markets globally. Ministers and industry leaders welcomed enhanced dialogue on the role of new and existing energy producers and innovative cooperative arrangements to collectively shoulder the responsibility of maintaining oil and gas market stability and ensure investment moves forward in a timely and cost effective manner in both short and longer cycle of oil and gas projects.

Noting that oil demand growth will not ease the burden on the oil and gas producers to mobilize investment in new supply, and that investment needs are exacerbated by the backlog of stalled investments over the past four years, IEF16 delegates noted that more widely diverging views on

future energy policy and market trends further delay investment from moving forward expeditiously.

- **Uptake of Clean Technologies: Disruption and Coexistence of New and Existing Technologies – The Way Ahead**

IEF16 ministers, industry leaders, and heads of international organizations welcomed the rapid development of new energy technologies and the competitive disciplines in a more diverse and vibrant market environment creates for the industry at large. To ensure successful energy sector transformations, IEF16 delegates acknowledged that more dialogue is needed on new policy and technology deployment to facilitate cost effective transitions between new and existing technologies. Delegates recognized that failure to protect investments in existing assets in favour of new technologies will deter the effective mobilization of capital in new projects as well.

Delegates shared experiences on how innovation and new energy technologies can best be promoted and deployed without disrupting market stability or endangering inclusive and sustainable economic growth. IEF16 ministers welcomed new collaborative initiatives on the IEF platform to foster more dialogue on the introduction of new policies and energy technologies in the interest of overall energy market stability and predictability to timely unlock the significant amount of long term investments needed.

IEF16 ministers, industry leaders, and heads of international organizations applauded the leadership of the government of the Republic of India in taking the IEF Energy Dialogue forward as host of the IEF16 International Energy Forum Ministerial. Thanking the government of the Republic India for its generous hospitality, and the People’s Republic of China and the Republic of Korea for their support as IEF16 cohosts, IEF16 delegates took note of the productive outcomes of their dialogue reflected in this concluding statement that H.E. Dharmendra Pradhan, Minister for Petroleum and Natural Gas, and Minister for Skill Development and Entrepreneurship on 12 April 2018 on behalf of the government of India.

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