MANAGEMENT DISCUSSION & ANALYSIS REPORT

Economic Developments : Surging Ahead

As the world economy surges ahead, leaving behind the legacy of the global financial crisis of the past decade, it provides policy makers world over, a welcome opportunity to focus on the long-term issues pertaining to economic, social and environmental dimensions of sustainable development. While growth has been fuelled, primarily by increased investment and world trade, in many parts of the world, there is anxiety over the sustainability of the current trends. This stems particularly from the apprehensions around protectionism, trade wars, unconventional fiscal and monetary policies of advanced economies, debt conditions in emerging economies, declining labor supply in many countries due to changing demographic profiles, sudden surge in oil prices, security concerns in many geographies, geopolitical strains, cyber-security breaches and climatic changes.

With supportive financial conditions, new patterns of trade, increased global demand for commodities and services (especially from emerging economies) and rapid adoption of technological advancements, it is expected that the global growth remains steady at around 3% over the next couple of years. However, it is interesting to observe that the interplay of contradictory forces is ushering in a new era of technological disruptions in world economics.

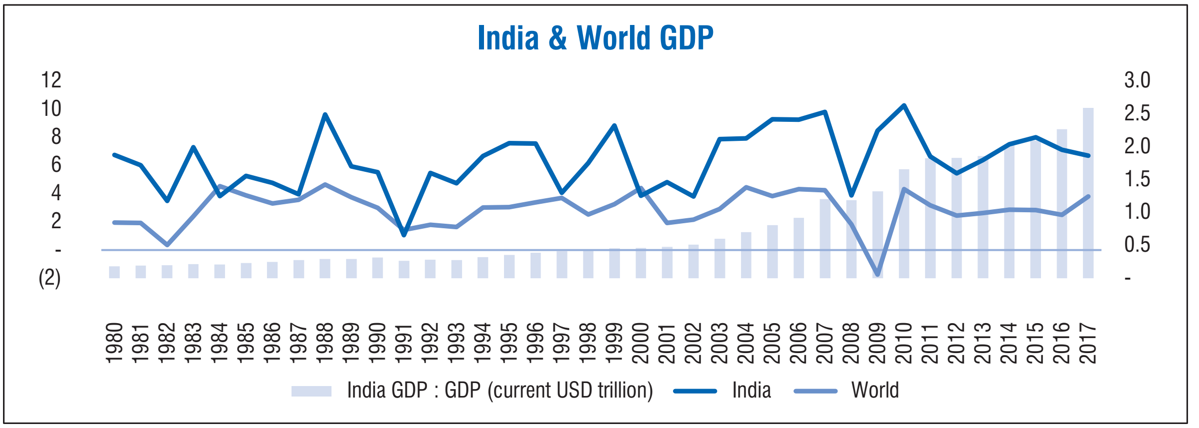
World growth is predominantly influenced by the firm growth in developed economies, but it is the dynamism of East and South East Asia that has accelerated global recovery.

Advanced economies like the United States (US) have experienced impressive growth characterized by domestic demand, especially investment, and aided by fiscal stimulus, improving labor markets, enhanced capacity utilization and inflation expectations. The Euro Area has witnessed the highest growth since the financial crisis, primarily due to strong consumption, investments and exports. Japan too, benefited from an accommodative monetary policy, positive economic conditions, strong exports, declining unemployment levels with increased participation of women and stable wages and inflation expectations. China remained resilient, even though growth in China is gradually slowing. Growing consumption contributed to growth, while investment growth rate reduced. Financial sector vulnerabilities (increased debt) and intensification of trade tensions due to increased protectionism in key trading partners will be a challenge that China will have to effectively deal with.

Though this has been the year for advanced economies, there is much in store for them given the challenges around calibrating their fiscal, monetary and trade policy standpoints to elongate recovery and avoid disorderly financial adjustments. Additionally, there is an urgent requirement to review the structural reforms that will boost productivity, labor force participation and fiscal sustainability amid rising demographic pressures. It is expected that growth in advanced economies will gradually decline given the waning effects of policy expansion, decelerated capital spending and increased energy prices, adversely affecting consumption.

Emerging and developing economies have been leveraging access to cheap credit that has aided consumer sentiment and accelerated consumption and investment. Rapid growth in emerging economies has contributed immensely to boost the global demand for commodities over the past several years. While Asia continues to be the most promising market, the outlook is less impressive and challenging for Latin America, the Middle East and sub-Saharan Africa.

While potential to grow is maximum in the emerging and developing economies, they are saddled with risks that



can have a significant impact on their growth. Policy shocks from advanced economies top the list as they would have a direct correlation to the interest costs and consequent debt positions of most emerging / developing economies. Average corporate debt in these economies has been steadily increasing and any normalization/ rationalization in the monetary policy of advanced economies would affect their financial stability and growth prospects. Building monetary and fiscal buffers will provide some relief to deal with the monetary policy tightening in advanced economies. Socio-economic issues such as poverty and unemployment will also have to be effectively dealt with. Further, concerns pertaining to consumption are also heightened, due to increasing oil prices that have a spiraling effect on developing economies.

The year gone by has been an eventful one for India in several ways. India witnessed a number of key structural initiatives fortifying major economic parameters for ensuring sustainable growth in the coming years. The conscious efforts taken by the Government of India towards fundamental shifts in the economic architecture of the country have started affecting yield. Chief amongst these have been the Goods & Service Tax (GST) launched in July 2017 to consolidate all forms of indirect taxes (except a few) and form a harmonized tax structure, the Insolvency & Bankruptcy Code, launched in December 2016, for easy and quick insolvency resolution, the proliferation of Jan Dhan Yojana, to ensure financial inclusion, especially in the rural areas, the Ayushman Bharat scheme launched in the health sector, covering prevention, cure and insurance, aimed primarily at the poor and vulnerable families and Recapitalization of public sector banks to aid the recognition of stressed assets and hence the resolution of non-performing loans, in order to enhance the quality of the banks' portfolio and support the recovery in investments.

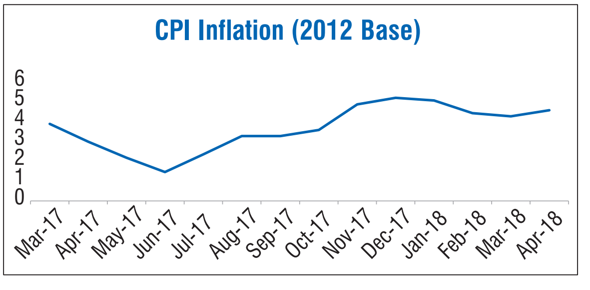
Data reveals that slowly, but surely, hovering around 7%, India's growth is decoupling from that of the world.

With a GDP exceeding USD 2.5 trillion, India is the world's sixth largest economy and as per estimates from the World Economic Forum, India is expected to be the world's second largest economy by 2050, second only to China.

India's growth has been driven mainly by the agricultural industry, service industry and manufacturing activity. Agriculture is expected to grow higher than current estimates, on the back of a bumper harvest, and the Government's thrust on rural housing and infrastructure. This coupled with increase in private consumption, especially improved rural demand, and Government spending has been a major stimulant for growth.

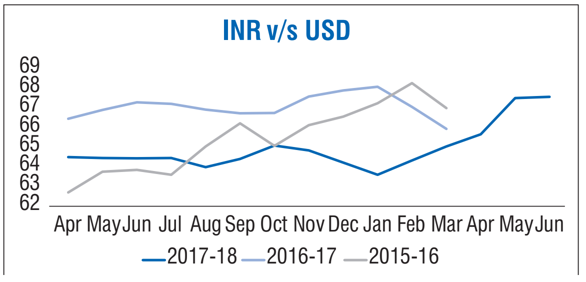
Financial year 2017-18 saw Indian CPI inflation touch multi-year lows of 1.46% in June 2017, primarily due to stable global commodity prices. However, the index started rising sharply, touching 5.21% in December 2017, mainly on account of implementation of pay revision in the public sector and gradual increase in crude prices.

Going forward, it is expected that inflation will rise, given the guidelines for Minimum Support Price (MSP) of agricultural produce, increase in customs duty for a number of items, and impact of increasing crude/oil prices in Q1 of the current fiscal. This can further be aggravated in the event of fiscal slippages, especially



when combined with an increasing demand trend. It is estimated to hover around RBI's long term target of 4%.

The Indian Rupee performed remarkably well during fiscal 2017-18 averaging ₹ 64.45 against the US dollar, thus appreciating by almost 4% over the previous year. This could have been prompted by buoyant capital inflows, proactive policy initiatives and a relatively weak dollar.



However, starting February 2018, the rupee started to depreciate, in the light of stronger than expected US wage data suggesting interest rate increase by the US Federal Reserve, concerns over the impact of higher crude oil prices on India's trade deficit and introduction of long term capital gains tax in India. This was further aggravated by strengthening of the US dollar and exit of capital funds from the Indian equity and debt markets. The Indian rupee finally touched levels of the previous fiscal. It is expected that the Indian rupee is likely to witness a certain degree of stability in the near term, while it will depreciate gradually over the year.

India will continue to be the fastest growing economy in the world. However, the sustainability of this growth is largely dependent on effective implementation of structural and financial policies, resilience of the Indian rupee, a stable political scenario and stability in oil prices.

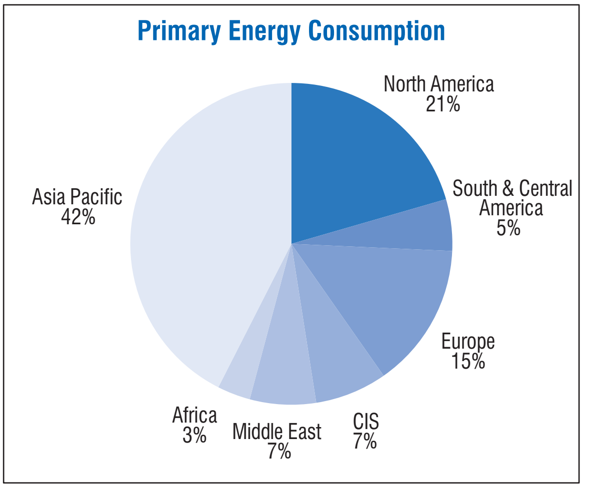
Albeit the above, in many parts of the world, strong economic growth, improving labor markets, low to acceptable levels of inflation, positive consumer sentiment, increased consumption and enhanced investments, have created near perfect opportunities for businesses to thrive.

The current scenario also provides an opportunity to review policies and reforms and create a natural resilience to several pressures opposing growth in the medium and long term. Chief amongst these would be to strengthen and encourage more inclusive growth to deal with issues of poverty, unemployment and demographic pressures, hedge against financial risks (especially monitoring exposure to foreign currency debt), foster cooperation amongst advanced and emerging / developing countries to create and enhance prospects for low-income economies, strengthen financial architecture, tackle institutional deficiencies pertaining to governance, build resilience against climatic changes and restrict the pace of environmental degradation.

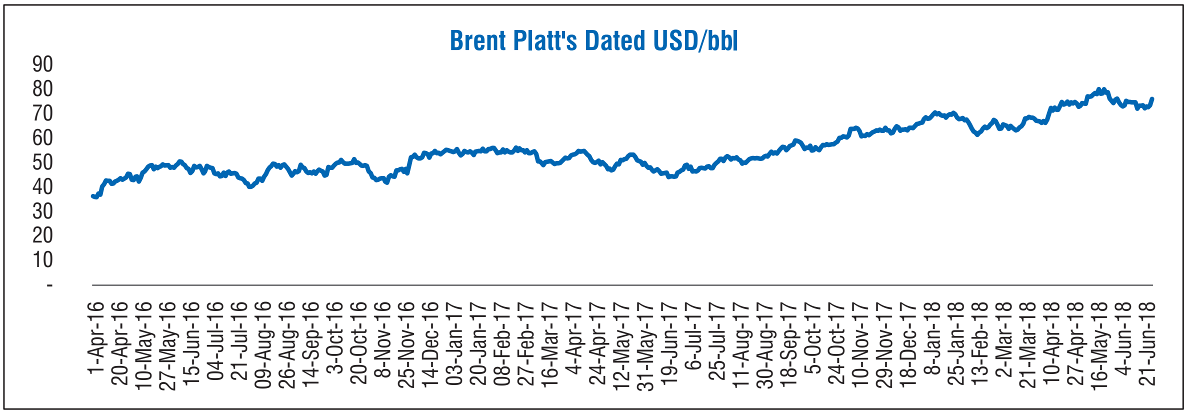
Trends in the Oil and Gas Sector

The last few years have been characterized by technological advancements leading to energy efficiency, enhanced acceptability and growth of renewable energy and reduction in coal consumption across the world. This had resulted in improvements in the fuel mix and consequently, a muted or zero growth in carbon emissions from energy consumption. The year 2017, however, signaled a reversal in these trends. Gains from energy efficiency peaked and hence slowed down, consumption of coal increased, especially due to markets such as India, and carbon emissions from energy consumption started recording an increase. However, the structural shifts made in the renewable energy space continued to make inroads with notable gains in solar energy, indicating a diversified fuel mix.

Global primary energy consumption recorded a robust growth of around 2.2%, led primarily by growth in natural gas and renewables. While the share of coal continues to decline in the energy mix, 2017 witnessed an increase in the consumption of coal, for the first time in four years.



China continued to be the largest market for energy consumption growing at around 3%, followed by the US, growing by less than 1% and then by India, growing by almost 5%. China, US, India and Russia consume more than half of primary energy world over. China's share in the energy consumption stood at around 23%, followed by the US at around 16%, India at 5.5% and Russia at 5%. Overall about 42% of the energy consumption is attributed to the Asia Pacific region, with North America contributing about 21% and Europe 15%.



During 2017-18, the benchmark Brent hovered around USD 57 per barrel, 18% more than the average in the previous year. From a low of USD 44.80 per barrel in June 2017 to a high of USD 70.71 in January 2018, oil prices surged almost 60% in a 7 month period. Prices did stabilize at USD 60 levels in February 2018, only to rise to highs of USD 80 levels in May 2018.

The Brent-Dubai differential during 2017-18 averaged around USD 1.70 per barrel in favour of Brent, marginally lower than the USD 1.73 recorded in the previous year. The highest differential was registered in March 2018 at USD 5.08 per barrel, marginally higher than the USD 4.98 of the previous year. The Dubai benchmark surpassed the Brent prices in the first quarter of the financial year, with the differential peaking at USD 1.78 per barrel in favour of Dubai.

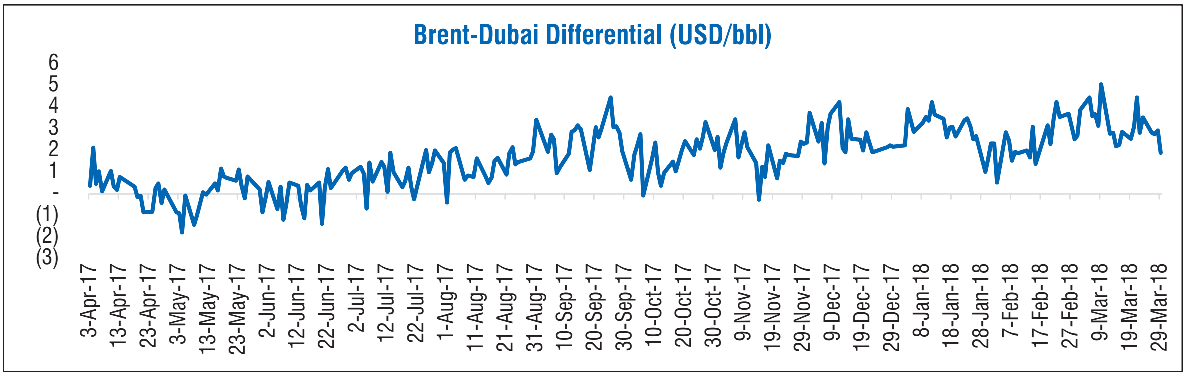
Product prices have increased during 2017-18 as compared to the previous two years. The average prices of Motor Spirit (MS) (Unleaded Singapore Platts) recorded an increase of close to 17% as compared to the average prices in the previous year. Prices of Naphtha too increased by almost 20% over the previous year. Jet Fuel / Kerosene (SKO) and High Speed Diesel (HSD) witnessed an increase of around 19% as compared to the average prices in the previous year.

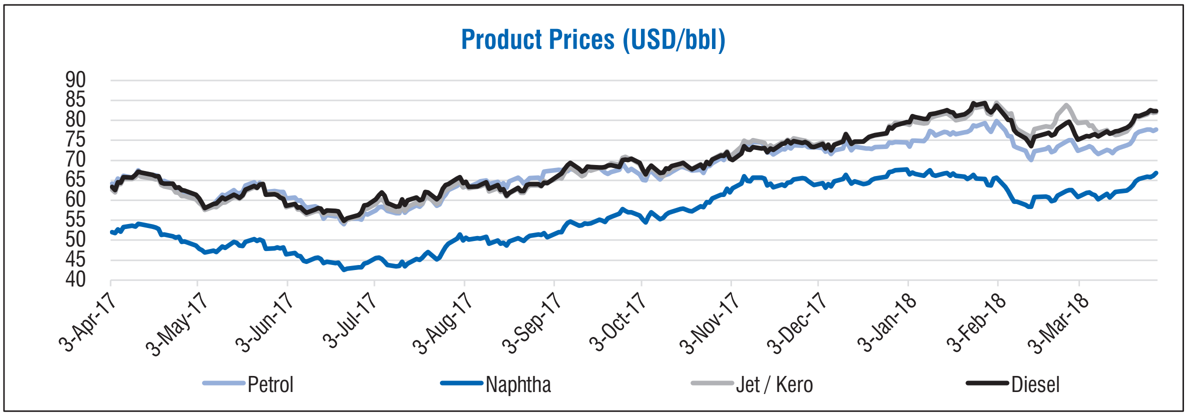
2017-18 witnessed an increase in product cracks as compared to the previous year. MS cracks averaged almost USD 12 per barrel, 7% more than the average cracks of the earlier year. Naphtha cracks averaged at around USD 0.29 per barrel as against the average of only USD 0.04 per barrel in 2016-17. The average of Jet Fuel / Kero and HSD cracks hovered around USD 13 per barrel, 16% and 19% more than the average of the earlier year, respectively.

During 2017, the oil prices witnessed significant volatility. Conscious efforts by the OPEC to control supplies in the earlier parts of the year, in order to curtail free fall of oil prices, did result in oil prices stabilizing. However, due to increasing geopolitical risks, especially in Venezuela, Iran, Libya and Nigeria and aggravated by the inventories declining to 5 year averages, oil prices started increasing rapidly over a very short period of time. While the recent intervention by OPEC and non-OPEC suppliers to enhance oil output is expected to yield the desired impact of stabilizing prices, much will depend on the outcome of US sanctions on Iran that will take effect by November 2018 and the impact of increasing demand for oil and oil products that continues to witness robust growth.

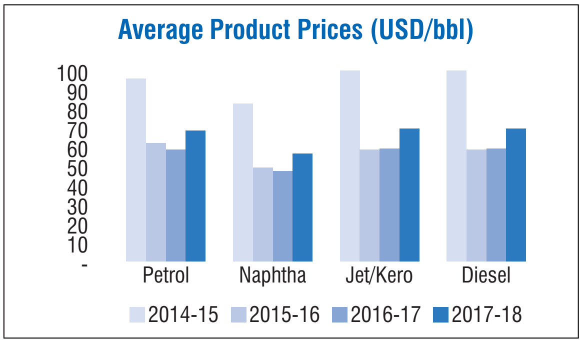
Indian Petroleum Sector

While low and stable energy prices will always be welcome for a growing country, India has effectively



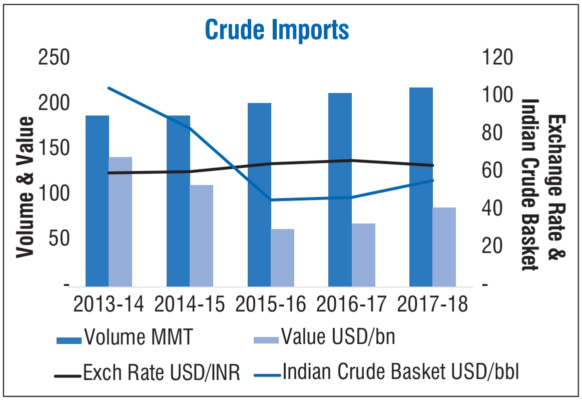


absorbed the recent volatility in international oil prices. The third largest consumer of primary energy and one of the fastest growing economies in the world, India renders itself as the perfect example of resilience, structural robustness, political stability and strong economic fundamentals. With a per capita consumption of primary energy of only 0.57 ton of oil equivalent (toe), India is

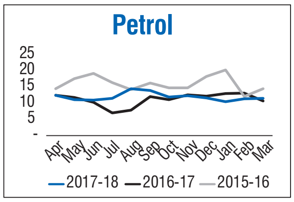


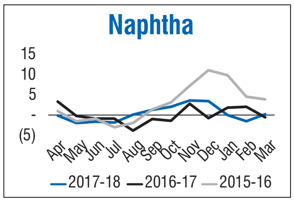
way behind the per capita consumption in the US of 6.92 toe and the world average of 1.82 toe. Interestingly, if the world average per capita consumption were to be applied to the Indian population, total world primary energy consumption would increase by 12% and India's share would increase to 16%. As trends suggest, India offers tremendous potential and has positioned itself as the world's fastest growing energy market for years to come.

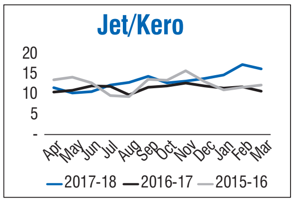
India produces less than 1% of the world's crude oil but consumes almost 5% of the world's crude oil. With more than 80% of the crude processed being imported, India's import bill has increased by 25% from USD 70 billion in the previous year to almost USD 88 billion in 2017-18. While the increase in crude volumes has been only 3%, higher crude prices are the reason for an increased import bill. The Indian crude basket was at around USD 56 per barrel during 2017-18, 19% higher than the USD 47 (approximate) per barrel during the previous year. A 4% appreciation in the Indian rupee vis-à-vis the US dollar has aided in containing the import bill for the 220 MMT imported during 2017-18.

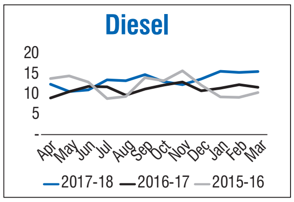


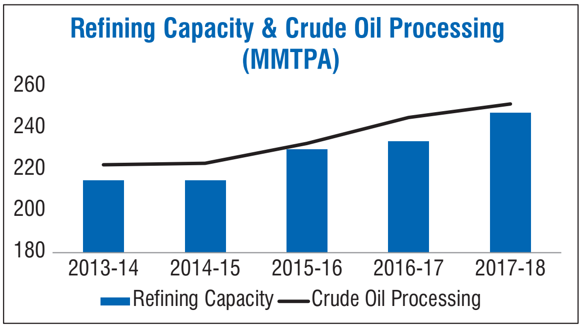
Indigenous crude oil production during 2017-18 stood at 35.7 MMT, marginally lower than the 36 MMT of last year. While the contribution from onshore fields has been declining over the past several years, contribution from off-shore fields has also started declining in the past two years, causing an overall decline in the share of indigenous crude in the crude requirements of the country.









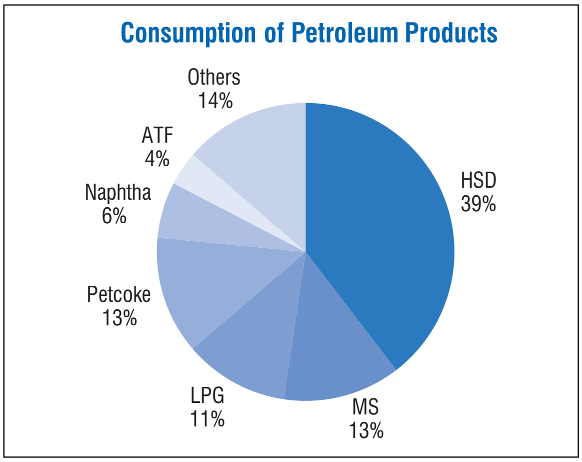


As the Indian economy grows, so does its appetite for energy. Over the past decade, India has added refining capacity of close to two thousand barrels per day, increasing its share in the world's refining capacity to 5%. As on 1st April, 2018 India's installed capacity stands at 247.6 MMTPA, an increase of 6% over the previous year. The increase in refining capacity is primarily due to capacity enhancement and stabilization at BPCL's Kochi Refinery, HPCL-Mittal Energy Limited (HMEL)'s Bhatinda Refinery and Reliance Industries Limited (RIL)'s Jamnagar Refinery. The Indian refineries processed crude close to 252 MMTPA, 3% up from the previous year, with almost 75% of the crude processed being high sulphur crude.

The consumption of petroleum products increased by 5.3% to 204.90 MMT with LPG, petrol, diesel and petcoke accounting for almost 77% of the total consumption. Diesel contributed 50% to the increased consumption, followed by petrol that contributed 23%.

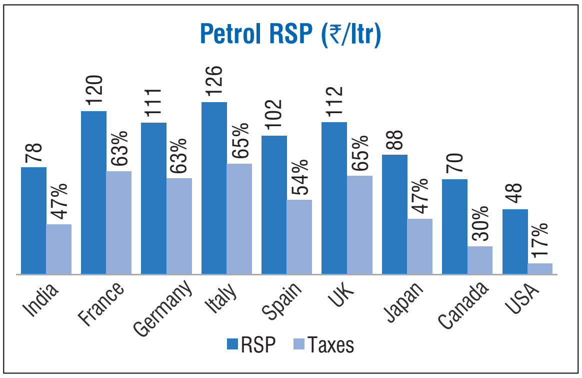
Comparing the retail selling prices (RSP) of petrol and diesel in various countries in Indian rupees (INR), reveals that the tax structure for petroleum products in India is a healthy average of the tax structures in the European and North American markets.

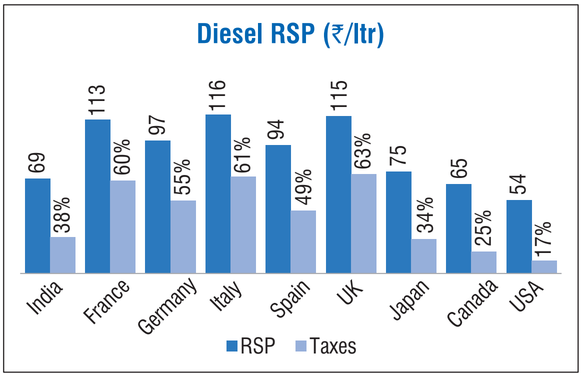
In the case of petrol, the Indian RSP includes taxes of 47% as compared to the 54%-65% range prevalent in Europe, 30% in Canada and 17% in the US. Similarly, in the case of diesel, the Indian RSP includes 38% of taxes, as compared to the 50%-63% range in Europe, 25% in Canada and 17% in the US.



Energy Access, Energy Efficiency, Energy Sustainability and Energy Security are the cornerstones identified by the Government of India in prioritizing its plans for the oil & gas sector in India.

With the huge growth in India's future energy demand and rising climatic concerns, it will be imperative for India to balance the twin objectives of expanding energy supplies and sustainable development by promoting the use of cleaner





energy sources and development of a green transportation network. The flexibility of Natural Gas as a fuel, together with its energy security and environmental attributes, makes it an attractive fuel option for sustainable growth.

The future gas market, globally as well as in India, is poised to become both complex and competitive. Particularly for India, the Government of India has undertaken the objective of reducing the carbon emission intensity of its GDP by 33% – 35% by 2030 and to increase the share of Natural Gas in the country's overall domestic energy mix from the present 6.5% to 15%. This would require major investments in development of gas infrastructure (Pipelines, Terminals and City Gas Distribution (CGD) Networks). Petroleum & Natural Gas Regulatory Board

(PNGRB) is expected to come up with bidding for around 140 geographical areas for CGD Networks in 2018.

In order to promote a gas based economy and enhance the share of Gas in the energy basket, the Government has made aggressive plans of developing a Gas pipeline network. At present, the Natural Gas grid in the country predominantly connects the western, northern and south-eastern Gas markets with major Gas sources. Attempts are being made to provide clean energy in the eastern parts of the country through capital infusion and grants. Further, the Government is promoting the usage of CNG as an environment friendly transportation fuel.

As a next step towards protecting the environment, the Government had decided to leapfrog directly from BS-IV to BS-VI fuel standards which were to be implemented in the country w.e.f. 1st April, 2020. However, with increasing levels of pollution being recorded in Delhi and the National Capital Region (NCR), supply of BS-VI has already been made available in the National Capital Territory of Delhi with effect from 1st April, 2018. A detailed schedule covering various pockets of the country has been drawn up for speedier implementation.

The Pradhan Mantri Ujjwala Yojana (PMUY) launched in May 2016 to empower millions of poor women in India, who are forced to inhale unhealthy emissions from burning coal, wood and other unclean fuels while cooking, continues to make good progress. Under PMUY, 5 Crore LPG connections will be provided to below poverty line (BPL) families with a support of ₹ 1,600 per connection by 2018-19 and ₹ 8,000 Crores is being earmarked for the scheme by the Government of India. More than 4 crore LPG connections have already been released across the country since the scheme was launched. With this scheme, LPG has been made available to the hinterlands of the country. To extend the opportunity to Indian citizens to contribute to the welfare of the country, an initiative termed “Ujjwala Plus” was launched. Under this, any Indian could donate an LPG connection to the under privileged sections of rural India. Further, since PMUY focuses largely on BPL households, it is imperative to focus on the safety and security of first-time LPG users. Accordingly, the concept of LPG Panchayat was introduced in order to bring together around 100 LPG customers in the immediate vicinity on an interactive platform, to discuss the safe and sustainable usage of LPG, its benefits and the linkage between use of clean fuel for cooking and women empowerment. It is proposed to conduct one lakh LPG Panchayats across India before 31st March, 2019. With an LPG penetration of more than 80%, India is well on its path towards a healthier, cleaner and safer environment.

In an attempt to ensure the quality and quantity of fuel dispensed from petrol pumps, the Oil Marketing Companies (OMC) have automated 92% of their petrol pumps selling more than 100 kl per month. This has been an important endeavor to enhance customer confidence and minimize the likelihood of fraudulent transactions.

On the same lines, there has been rapid expansion of digital infrastructure at retail outlets, covering more than 95% of the sales volumes. OMCs continue to absorb 0.75% of the transaction value as digital cost and support the country’s initiative of a cashless economy.

As a measure of energy security and insulation of the economy from supply side disruptions, the Indian Government had decided to establish Strategic Petroleum Reserve facility (SPR) at three locations, namely, Visakhapatnam (Andhra Pradesh), Mangalore and Padur in Karnataka with a total capacity of 5.33 MMT, managed by Indian Strategic Petroleum Reserve Limited (ISPRL). These strategic storages would be in addition to the existing storages of crude oil and petroleum products with the oil companies. While the facility in Visakhapatnam is operational, ISPRL has firmed up definite agreements with ADNOC for Oil Storage and Management. In addition, the Government has also announced SPR facilities at two more locations with a combined capacity of 10 MMT - at Chandikhole in Odisha and at Bikaner in Rajasthan. The locations have been decided based on technical, geological, security and commercial aspects.

In order to reduce oil dependency by 10% by 2021-22, several studies have been undertaken in consultation with various stakeholders. The final outcome has been a roadmap proposing a five-pronged strategy, which broadly comprises of increasing domestic production of oil and gas, promoting energy efficiency and conservation measures, giving thrust on demand substitution, capitalizing untapped potential in biofuels and other alternate fuels/ renewables and implementing measures for refinery process improvements.

While India’s energy consumption might seem to be high in absolute terms, it is one of the lowest per capita primary energy consuming countries among the developing economies of the world. With economic activity picking up across various sectors, the Indian economy is expected to benefit from increased infrastructure spending and easing policy norms. It is expected that India will overtake China as the largest growth market for energy by the late 2020s and have a share of 11% in global energy consumption by 2040. With rising global energy demand, the oil and gas industry has a wide range of challenges and opportunities.

Opportunities and Threats

The oil & gas sector, the world over, is in a constant state of complexity. Geopolitical forces are influencing the sector in an unprecedented manner. Moreover, the simultaneous impact of unrest in Venezuela and Libya causing supply disruptions, coupled with US sanctions on Iran requiring oil importing countries to realign their import plans, are resulting in a rapid rise in prices. The lowering of global inventory levels and healthy global demand has further pressurized the market equilibrium. While conscious attempts by oil producing nations to enhance output and compete for market share does balance the trend of rising prices, the uncertainty in the markets seems to be intense. This, by far, is the most powerful threat that the oil & gas sector has to manage.

One significant element that has started taking effect is that of inadequate infrastructure supporting the sector. Even though certain countries have surplus product that can be exported to maintain oil prices, lack of infrastructure prohibits this intervention. A classic example that may be cited is that of the US being unable to enhance its oil exports due to inadequate port infrastructure. Natural disasters such as Hurricane Harvey in Texas further magnified this infrastructure deficit. While investments in this area have become crucial, cost reductions achieved and sustained by oil and gas producers have been remarkable. Notwithstanding this, another factor to be recognized is that a healthy industry needs a robust ecosystem of producers, service providers, manufacturers, financiers and others. While producers in the ecosystem may be surviving, or even growing and flourishing, many service providers continue to strive for sustenance, pushing towards a new equilibrium.

Another ostensible situation that the oil & gas sector is compelled to deal with is that of renewable energy. Consumption of renewables recorded the highest increase in the world's energy basket as compared to the previous year. Renewables increased by 17% from 417.40 mtoe in 2016 to 486.80 mtoe in 2017, constituting 3.6% of the global energy mix.

India has taken several steps to encourage proliferation of renewables. Many regions in India have potential to generate both solar and wind energy. Locations have been identified for bids for solar-wind hybrid projects. India has Waste to Energy (WTE) units with installed capacity of around 300 MW. Under the Swachh Bharat Mission, the Government has set a target to achieve scientific solid waste management in 4041 cities/towns by FY 2019. The National Tariff Policy has also made it mandatory for utilities to procure 100% of power generated from waste-to-energy projects. Further, the environmental concerns around NCR have prompted companies to plan investments in bio-power in neighboring states.

While increase in consumption of renewables indicates migration towards cleaner and more efficient forms of energy, there is a concern with respect to leveraging large investments in conventional energy to their full potential.

Today, digital is a key enabler for cost reduction, enhanced decision making and increased workforce productivity. Despite a deluge of digital advancements, the Oil and Gas sector has been slow to seize the opportunity. Efficiency, flexibility and predictability are the most important tools required by this sector in the current business environment. With miniscule levels of equipment connectivity and utilization of data in decision making, companies have significant potential to optimize assets and operations. As the industrial world becomes more connected, the ever-increasing amount of information presents an opportunity to improve safety, reliability, asset health, operational efficiency and profitability.

India is home to more than 17% of the world's population, but stands at a primary energy consumption level of merely 5.5%, with the world's average per capita primary energy consumption being more than thrice that of India. Owing to growing impetus on infrastructure development and manufacturing, India is expected to remain one of the fastest growing economies of the world. Increased economic activity, urbanization and industrialization will enable India's energy consumption to grow at the fastest rate amongst all major economies. Natural Gas demand in India is poised for robust growth. 6-10% CAGR demand growth is projected across end consumers and industries. At the same time, domestic gas supply is also projected to grow in the range of 6-12% CAGR. To cater to this demand, major investments in development of gas infrastructure (Pipelines, Terminals and CGD Networks) will be required. These avenues together form an attractive pool of greater profitability by 2025.

Petrochemicals is another industry set to boom in India. World over, consumption of petrochemicals is benchmarked in terms of polymer per capita consumption. India's per capita polymer consumption of approximately 8 kg, is far below the world average of 35 kg, USA's 90 kg and China's 46 kg, indicating high potential for growth of Petrochemicals in India. India's Petro Chemical Vision 2030 envisages investments to the order of USD 40 – 60 billion to meet the growing Petrochemical demand in India. As a strategy, expansion plans of most refineries entail production of Petrochemicals producing both commodity and niche derivatives.

Carbon emissions from energy consumption increased by 1.6%, after little or no growth for three consecutive years. Consumption of coal too, grew for the first time in four year Increasing demand for oil and oil products has caused environmental degradation at several levels. While technological advancements and improved efficiency in vehicle performance does reduce the burden on the environment, it does little when compared to the ecological imbalance created in previous years. Threat to the environment is possibly one of the most severe forms of challenges that the oil & gas sector needs to effectively manage.

Threats and challenges notwithstanding, the oil & gas industry, world over is inundated with opportunities that very few industries can boast of. With a value chain covering a gamut of activities that support multiple ecosystems, the oil & gas sector has the propensity to alter scales in global economics. Considered to be the world's largest sector in terms of dollar value, the oil and gas industry is a global powerhouse of technology, talent and capital, so vital that it often contributes a significant amount towards national GDP in most large economies.

Risks, Concerns and Outlook

The recent increase in price trends has signaled towards a regime of reduced operating costs, enhanced efficiencies and increased interest in renewable sources of energy. After several years of oversupply, the oil and gas industry could very well be moving headlong into a supply crunch. While the OPEC and other oil producing nations have committed to enhanced production to ensure supply outages caused by geopolitical factors do not raise prices to exceptionally high levels, the uncertainty prevailing in the oil markets cannot be undermined. Further, though the high oil prices will provide a stimulus to the oil & gas sector, in the form of renewed interest in upstream investment, an aspect that cannot be ignored is that continuously increasing prices would eventually result in demand destruction, pushing down the price to equilibrium levels.

2017 witnessed the growing status of the US as an energy exporter. With the ban on crude oil export being lifted by the US in late 2015 / early 2016, American crude has become freely available in the international oil markets. Daily exports have already exceeded 2 mbpd with Asia accounting for approximately 50% of the volumes. It is expected that with the existing infrastructure, exports can reach a level of 3mbpd in the near future and will increase significantly in late 2020 with the commissioning of augmented infrastructure. In the coming years, it is anticipated that the US will be a significant player in oil.

The oil & gas sector is in dire need of improved integration, enhanced infrastructure and a conducive fiscal and regulatory landscape. This would be a key to attract investments across the value-chain. India has made significant strides in this regard. The previous year witnessed the integration of two of the largest domestic oil companies into an integrated major - the ONGC–HPCL deal. This is expected to be the first step in the consolidation of the oil & gas sector in India. Further, with India's improved rating in the 'Ease of Doing Business' index and active steps in improving the country's oil & gas infrastructure through fiscal incentives and policy reforms, the coming era is expected to be that of augmented growth in energy consumption coupled with increased investments in the Indian oil & gas sector.

Growing urbanization and evolving demographics in the Indian economy are likely to play a critical role in the socio-economic development of the country, thereby having a positive impact on the Indian oil & gas sector.

The trend depicting urbanization, resulting in enhanced purchasing power is one of the growth engines. There has been considerable growth in urbanization over the last two decades and approximately 33% of the Indian population is currently urban. Economic growth coupled with increased employment opportunities across industries is likely to accelerate the process of urbanization. Going forward, it is expected that the urbanization rate will reach 50% for many states in the country.

In the coming decade, India is likely to contribute more that 50% of the increase in Asia's workforce, having a considerable impact on the disposable income of the already burgeoning middle class. This is likely to result in growth in white goods and vehicle penetration, ultimately leading to growing energy demand.

In order to ensure safe, reliable, affordable and sustainable energy systems for the future, it is important to encourage and incentivize energy efficient standards. Not only would this be the quickest route towards easing environmental concerns, but it would also go a long way in addressing challenges pertaining to rising costs of energy. The Indian Government has committed to ensuring conducive regulatory and policy reforms for fostering innovative and sustainable business models for strengthening the case for energy efficiency.

With paradigm shifts in the technology space and advancement in digitization, there is an urgent need to address the changing talent profile required by the oil & gas industry. While traditional disciplines will continue to hold their ground, they will have to be complemented by expertise in analytics and digital operations. A fine balance between technical skills and technological proficiency will necessarily have to be maintained for the growth and profitability of the sector.

The outlook for the oil & gas sector in the country and the world over indicates a positive inclination towards reduced costs, enhanced efficiency, increased investments, cleaner fuels and greater likelihood of sustainability, supported by an evolving energy mix with an increasing share of renewable energy.

PERFORMANCE

REFINERIES

Mumbai Refinery

Mumbai Refinery (MR) achieved the highest ever crude processing of 14.1 MMT and total throughput of 14.29 MMT (crude oil and other feedstocks) as against crude processing of 13.54 MMT & total throughput of 13.60 MMT achieved in 2016-17. This represents a capacity utilization of 119%, as compared to 113.3% in the previous year.

The distillate yield achieved was 84.3 wt% on total throughput. The sulphur content and API of crude mix processed during the year were 0.81 wt% and 38.0 in comparison to the previous year's figures of 0.67 wt% and 39.1 respectively.

MR achieved its highest ever production of Motor Spirit (MS) (2467 TMT, higher by 10.6% than the previous year), Aviation Turbine Fuel (ATF) (983 TMT, higher by 6% than the previous year) and High Speed Diesel (HSD) (6560 TMT, higher by 6% than the previous year) during the year 2017-18. With optimized crude mix and successful commissioning of the Diesel Hydrotreater Unit (DHT) & Tail Gas Treatment Units (TGTU), MR has demonstrated its constant endeavour to meet market demand and strive for emission reduction.

MR achieved the highest ever Gross Refining Margin (GRM) for the year 2017-18 at USD 7.26 per barrel, as compared to USD 5.36 per barrel realized in 2016-17. The overall gross margin for the refinery in 2017-18 amounted to ₹ 5,023 Crores (37% higher), as compared to ₹ 3,671 Crores in 2016-17.

MR adopted several initiatives to improve refining margins in 2017-18 like higher capacity utilization of secondary process units such as the Hydrocracker Unit (HCU) and Continuous Catalytic Regeneration Reformer Unit (CCR), commissioning of DHT in a record time of 23 months from environmental clearance and implementation of Advanced Process Control (APC) in process units and High Efficiency Boilers. Apart from crude processing and crude throughput, the major achievements during 2017-18 are the highest ever production of transportation fuel (73.5% on throughput against 71.7% in FY 2016-17).

The highest ever record of 31 million man-hours without Lost Time Accident was completed on 30th January 2018 and all targets related to safety were met. MR bagged the 2nd position in the Swachhata Index Award instituted by MOP&NG to recognise cleanliness measures. A total of 3070 HSSE man-days training was imparted to BPCL employees during the year. Implementation of safety audit recommendations was 96.2% as against the business plan target of 95.3% during the year.

As a part of its Integrated Management System, MR was recertified on ISO 9001:2015, 14001: 2015 and OHSAS 18001:2007 standards for Quality, Environment & Occupational Health and Safety Management Systems, which are valid till November, 2019.

The MR Quality Assurance laboratory is equipped with state-of-the-art facilities and strives to achieve the highest quality standards through meeting the requirements/ standards of reputed external certifying agencies and accreditation bodies like National Accreditation Board for Testing and Calibration (NABL), ISO/IEC 17025, Directorate General of Civil Aviation (DGCA), Directorate General of Aeronautical Quality Assurance (DGAQA), Centre for Military Airworthiness Certification (CEMILAC) etc. The Refinery laboratory continued to perform well in the international laboratory proficiency testing scheme run by M/s ASTM International USA.

The Quality Assurance Laboratory commissioned and installed the equipment and instruments required to carry out testing Pharma grade and Polymer grade Hexane as a part of the Isomerization project. The Lab has upgraded the Laboratory Information Management System (LIMS) to the higher version with various new features.

Paramount importance was accorded to energy conservation efforts and MR has in place, a sound and effective Energy Management System (EnMS), accredited with ISO 50001:2011 certification by M/s DNV. Continuous monitoring of energy performance and keeping abreast of the latest technologies for energy conservation have helped MR achieve robust energy performance during the year. The relentless efforts of energy conservation, which includes 36 energy conservation schemes implemented across the refinery, resulted in reduction of specific energy consumption from 71.4 in 2016-17 to 66.7 in 2017-18.

MR has been adjudged as the winner of the Refinery Performance Improvement Award 2016-17, which was presented during the Refining & Petrochemicals Technology Meet at Bhubaneswar. This award by CHT is based on refinery performance parameters like crude throughput, MBN, specific energy, water and steam consumption, carbon emission intensity and operating cost.

On the environmental conservation front, a number of significant environmental projects were undertaken as part of the Environmental Management System (EMS) in 2017-18. The following are the major highlights of various environment conservation and protection activities undertaken:

- Tail Gas Treatment Units have been installed for improving efficiency of the Sulfur Recovery Unit (SRU) from 99% wt to 99.9% wt.
- As a part of the Environment monitoring system, Ambient Benzene Monitoring GC Analyser Systems have been installed on 23.3.2018 at 11 locations in the ARU Complex to monitor the Benzene concentration levels inside the plant and strengthen awareness towards environment protection.
- Effluent Treatment Plant Analyzer (COD, BOD, TSS & PH) was installed at the ETP outlet line and the output of these analyzers has been connected to the Central Pollution Control Board (CPCB) server in June 2017.
- Bio-remediation was completed for 1200 m^3 of oily sludge in Tk-114 pit.
- As a part of compliance to CPCB guidelines, output from stack analysers (CO, SOx, NOx & SPM) of Isomerization & DHT was connected to the CPCB/ Maharashtra Pollution Control Boards (MPCB) server.
- Volatile Organic Compounds (VOC) monitoring was carried out inside BPCL MR (i.e. Process Plant & Off-site) with the help of MOE&F approval and NABL accredited third party M/s Netel (India) Ltd. VOC monitoring was carried out for 24 hrs at 50 locations, 21 parameters were checked and it was within the prescribed limit at all the 50 locations.
- The Toluene loading bay was connected to the existing Benzene Vapour extraction system on 8.8.2017 so that Toluene emissions were recovered while lorry filling is carried out along with existing Benzene Vapour Recovery.
- MR installed a state-of-the-art waste water treatment plant based on Powdered Activated Carbon Treatment (PACT) and Wet Air Regeneration (WAR) with a design capacity of 240 m^3/hr. The process eliminates chemical and biological sludge formation. The activated carbon is regenerated and there is no pollution caused by this treatment method. The treated water from ETP is being recycled as make up water to various cooling towers in the Refinery and has helped in reducing intake of fresh water from the Municipal Corporation.
- Flare Gas Recovery system (FGRS) for emission reduction and energy conservation is in operation. Ultrasonic Mass Flow Meters are installed for continuous monitoring of flare.

Other Significant “Go Green Initiatives” by MR are :

- On 1.7.2017, BPCL participated in a tree plantation drive with Maharashtra Government’s mission to plant four crore trees in 2017-18 to celebrate ‘Vanmohotsav’. BPCL’s Environment Dept. & HR Team actively participated in the drive and planted 5000 saplings at Village Kolshet, Thane. Also, on the occasion of “World Environment Day” celebration, 200 saplings were planted in BPCL Staff Colony, Chembur.
- Fully utilizing rainwater harvesting facilities, more than 66,000 KLs were achieved in 2017-18.

Under the Government of India Start-up initiative, which is aimed towards a pragmatic approach to promote development through innovation and entrepreneurship, BPCL has been collaborating with many start-up companies which are incubated by renowned institutes like IIT. Some of the key initiatives taken up with IIT Chennai include inspection of furnace/flare stacks, pipes, jetty under water structure; Laser Optic Tube Inspection System (LOTIS), an advanced NDT technique was used for the first time to inspect Reformer Heater tubes; Advanced NDTs like Time of Flight Diffraction (TOFD) and Phased Array Ultrasonic Testing (PAUT) was carried out on High Pressure Reactors in Hydrocracker and LOBS units.

MR has proven its capability to train overseas personnel by successfully imparting training to 30 Chemical Engineers from M/s Dangote Oil Refining Company Ltd. (DORC,) Nigeria for 3 months on Field / Panel operations in the Crude unit (CDU), Catalytic Cracking (CCU) and Continuous Catalyst Regeneration Reforming Unit (CCR).

Mumbai Refinery Learning Centre (MRLC) has aggressively pursued a “Suggestion Scheme” to encourage employees to generate ideas for innovation and improvement. During 2017-18, MRLC received a record number of 1,246 suggestions.

In order to encourage development of vendors from SC/ST category, MRLC, MR (HR) along with CPO (Refineries) conducted a unique training and mentoring program for budding SC/ST entrepreneurs i.e. Entrepreneurship Development Program. 24 candidates were selected and given one month free residential training with specific modules to equip them with hard and soft skills. MSME Udyog Aadhar Certificates were presented to candidates who completed their MSME registration.

MR has organized several learning and development initiatives based on individual, functional and organizational needs viz. strategy workshops, functional programs, MDP programs, people management skills, and on the job training. A total of 9,562 man-days of training were organized catering to all sections of employees, to upgrade their learning and skills during the year. Employees were also exposed to various technical programs and seminars organized by premier institutions in India & abroad to enhance their personal, managerial and functional expertise. A learning opportunity was provided for operating personnel by arranging a comprehensive educational program through BITS, Pilani. In addition to bi-monthly Movie Mantra that is now open to all management and non-management staff, Guest speaker series was also introduced at MRLC.

With 40 projects, MR has achieved its highest ever CSR spending of ₹ 6.56 Crores, which is approx. 330% increase over the previous financial year. Some of the major interventions are: Women's empowerment initiative for Mahul Gaon - enabling Self Help Groups of women for a Bakery Project - Vijima Bakers; 13 community sanitation projects in Refinery and Thane District; Linear Accelerator Machine at Tata Memorial Centre for treatment to cancer patients; Thousand Cataract surgeries at Palgarh and Thane districts; Computer Assisted Learning (CAL) and "Amchi E Shala" projects for promoting Digital education for children in neighbourhood; Free MRI scan to patients at Sion and KEM Municipal Hospitals; Rainwater harvesting project at ITI Karjat and Family Medical Insurance for Mahul fishermen; Kohinoor Scheme - a BPCL education sponsorship project for bright students of Govt./Govt. aided schools at Chembur.

KOCHI REFINERY

Kochi Refinery achieved the highest ever crude processing of 14.1 MMT and total throughput of 14.25 MMT (crude oil and other feedstocks) with the successful commissioning of all the process units of the Integrated Refinery Expansion Project (IREP) as against crude processing of 11.82 MMT & total throughput of 11.79 MMT achieved in 2016-17. This represents a capacity utilization of 115% as compared to 107.5% in the previous year.

The distillate yield achieved was 83.94 wt% on total throughput and production of transportation fuel was 76.2 vol% on crude oil charge.

KR has achieved the highest ever production of Liquefied Petroleum Gas (LPG) (954.6 TMT higher by 60.6% than the previous year), MS (2386.9 TMT-10% higher than previous year), ATF (622.8 TMT higher by 11.5% than the previous year) and HSD (7001.4 TMT higher by 26.6% than the previous year). Two new products viz. Pet-coke and Polymer grade Propylene were added to KR's portfolio.

The GRM for the year also increased to USD 6.44 per barrel as against USD 5.16 per barrel realized in 2016-17. The gross margin for the Refinery in 2017-18 is ₹ 4,333 Crores (41.5% higher), as against the previous financial year figure of ₹ 3,061 Crores.

Apart from crude processing and crude throughput the major achievements during 2017-18 were seamless and successful commissioning of IREP by September 2017 (it started operating at 15.5 MMT equivalent capacity from October 2017) and commissioning of Asia's largest single mounded LPG storage facility. The sulphur content and API of crude mix processed during the year were 1.83 wt% and 33.45 in comparison to the previous year's figures of 0.66 wt% and 39.32 respectively.

Sticking to its core value of 'Safety first, Safety must', KR surpassed yet another milestone by achieving 4,475 days without Lost Time Accident till 31st March 2018, which is equivalent to 53.57 million man-hours. There was no reportable accident during the year.

The old Fluid Catalytic Cracker Unit (FCCU) control room was retrofitted and made blast resistant in compliance to OISD recommendations. Safety audits were conducted and 100% compliance with both, Internal and External audit recommendations was achieved.

The LPG product pipeline from KR to IOCL's bottling plant at Udayamperoor was commissioned during the year, contributing towards safe movement of LPG.

While Fire & Safety training was imparted to 2,153 employees, HSSE training was imparted to 8,856 contract employees in the Refinery area and 18,898 contract employees at the project site during the year.

KR has embarked on an inspiring initiative to implement Occupational Health and Safety Assessment Series (OHSAS) / Risk Based Process Safety (RBPS) – Process

Safety Management (PSM) principles throughout the Refinery. Implementation of PSM will help to set new benchmarks in process safety at par with global standards. This would also give an opportunity to balance safety and process, which in turn could enhance profitability.

During the year, KR adopted innovative and state-of-the-art technologies for the inspection and health monitoring of its plant facilities. A few among them are Direct Assessment, to ascertain the health of all old non-piggable jetty pipelines, development and successful implementation of an in situ repair and stress relieving procedure for an amine vessel of 102 mm thickness for the first time in BPCL refineries, on-stream monitoring of amine vessels using Phased Array Ultrasonic Testing, implementation of protection guard in place of insulation to eliminate corrosion under insulation (CUI), health assessment of non-accessible pipelines using Long Range Ultrasonic Testing, on-stream inspection of flare stack using drone and inspection of SPM buoy and under water hoses using a Remote Operated Vehicle (ROV).

KR also has an Integrated Management System certified under ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2007. The system was recently recertified for a period of three years starting October 2017.

KR Quality Control (QC) Lab repeated its excellent performance in the International Laboratory Proficiency Testing Scheme run by M/s ASTM International USA. The QC lab complies with requirements of NABL, ISO/ IEC 17025, DGCA, DGAQA and CEMILAC. The CEMILAC approval got extended for ATF produced from DHDT commissioned as part of IREP. Apart from process stream testing, the QC Lab also monitors effluent quality and blend header performance and extends analytical support for corrosion monitoring, additive quality evaluation and raw material inspection.

In pursuit of excellence, a dedicated Quality Assurance facility and crew started functioning during the year. The QC Lab is now equipped for testing Polymer grade Propylene and is in the process of setting up a segregated Laboratory for Petrochemicals.

The energy conservation and loss control measures taken up by KR during the year have given thrust to newly commissioned IREP units and the Crude Distillation Unit 2 (CDU2). Through various schemes, steam and power consumption could be reduced from design conditions. The major initiatives towards energy conservation and efficiency improvement implemented during the year resulted in specific energy consumption of 79.2, which is superior to the previous year's 86.17.

KR also continued its efforts in enhancing usage of solar energy by installing more natural day lighting systems at the Main Workshop and Main Warehouse. A new solar power plant of 85,000 KWHr capacity was inaugurated during April 2017.

The IREP which has been fully commissioned during the year has the following salient features for environment protection:

- Sulphur Recovery Unit (SRU) and Tail Gas Treating Unit (TGTU) with 99.9% efficiency to minimise the SO2 emissions.
- DHDT, VGO, HDT units were commissioned to meet BS IV and partly BS VI norms for HSD/ MS.
- Petro Fluidised Catalytic Cracker unit is provided with 3 stage cyclones and Electro-Static Precipitator (ESP) for minimizing the particulate matter emission.
- Delayed Coker Unit (DCU) can handle the entire sludge generated from the Refinery. Fully covered Petcoke handling system commissioned.
- Fuel oil sulphur is maintained below 0.5% to minimize emissions.
- A state-of-the-art Effluent Treatment Plant (ETP) with minimum sludge generation and chemical consumption.
- Reverse Osmosis based De-Mineralised water ((RO-DM) plant, could recycle 70% of the treated effluent, cooling tower blow downs and boiler blow downs.
- Waste heat boilers for heat recovery are added in the new units.

Other significant Go-green initiatives of KR during the year are listed below:

- Rainwater harvesting of around 76,933 KL through roof top collection systems and open quarries
- Waste paper recycling of 69.65 tons equivalent to around 1,161 trees with the assistance of the NGO agency M/s Plan@ Earth
- Planting of 25,000 trees to increase the green cover inside the Refinery
- Safe disposal of E-waste through authorized recycling agency, M/s TEF-AMM India Pvt. Ltd.

KR continued its efforts to build awareness on environment protection among different stakeholders and students though its awareness classes and innovative ENCON clubs instituted in 70 educational institutions spread all over Kerala.

KR stacks are connected to CPCB/ Kerala State Pollution Control Board (KSPCB) servers, updating online SO_2, CO, NOx & PM emission values. KR hosted the CPCB Online Connectivity Emission Monitoring System Meet at its Learning Centre, Kundanoor in November 2017.

KR also conducted World Environment Day celebrations at Chottanikara School with free sapling distribution. Magic shows with the environmental awareness theme were conducted in three schools.

Oil and Gas conservation mass awareness campaign SAKSHAM was observed with various programmes like pollution check-up of vehicles, Nitrogen change over drive in vehicles for better mileage and less pollution, environmental quiz for truck drivers to make them aware about better driving habits for increased mileage and thus, less pollution and various programmes for Encon club members.

KR is certified on Energy Management System, ISO 50001:2011 and its Environmental Management System Standard, ISO 14001:2004 got upgraded to ISO 14001:2015 during the year.

As in the past, KR in its endeavor to nurture its most valuable asset, its human capital, has imparted a series of training programs. During 2017-18, 1,640 employees were given training to upgrade their learning skills and performance, which is equivalent to 7,289 training man-days. This includes external training programs organized by professional bodies /other premier institutions in India.

Out-bound training was conducted for members of the Propylene Derivatives Petrochemical Project and fire crew to bring about a transformation in 'individual behavioural patterns and team processes'.

Other initiatives to benefit external stakeholders were Industry Academia Interaction, in which 425 Engineering/ Management students have done project work/industrial training and there were six industrial visits by officials from the Air force/Navy/College of Defence.

KR has achieved CSR spending of ₹ 14.13 Crores, which is approx. 355% increase over the previous financial year 2016-17. The CSR activities of KR during the year have been mainly focusing on Health, Education, Skill Development, Swachh Bharat and Community Development. The details of activities/ initiatives during the year are given below:

- Support extended to Govt of India's Swachh Iconic project at Kalady, a new initiative called 'First Meal' project was rolled out with a view to improve the intellectual capacity, health and enrollment in schools by providing a healthy and nutritious breakfast to students.
- Bala Janaagraha Civic Learning Programme was carried out through Janaagraha Centre for Citizenship & Democracy to provide civic learning to students and create awareness about their role and Govt.'s role.
- Supported NGO Nanma, which helps poor students realise their innate potential.
- NGO Adarsh, which helps a host of differently abled children who cannot even make it to the special schools
- NGO Friends of Tribal Society to run Ekal Vidyalayas
- Set up Vocational training labs for tribal students through NGO Wayanad Girijana Seva Trust.

As part of the community development initiatives, KR joined hands with Government of Kerala in the Total Electrification Project (for street lighting in the neighborhood) and Marine Ambulance project.

The Skill Development Institute (SDI) established by BPCL along with other oil companies at INKEL Business Park, Angamaly, Kerala is grooming 360 students every year, keeping in tune with our Hon'ble Prime Minister's 'Skill India Campaign'. The courses are aligned to the National Skills Qualification Framework (NSQF) of the Central Government with affiliation to respective sector skill councils and National Skill Development Corporation (NSDC). Certificates are issued at the end of the course after external evaluation and certification by Sector Skill Council / NSDC. The SDI has an excellent track record of placement, having placed the first two batches of students in leading MNCs like IFB Bosch, Schindler, St. Gobain Glass, Concert Pneumatics and Robotics etc. SDI also helped 22 students get placement abroad. A full-fledged institute is in the making on 8 acres of Government of Kerala leased land at ITI Campus, Ettumanoor. It is planned to train 1000 students every year in 20 different trades at this world class institute, which is expected to commence operation by end of 2019.

RETAIL

BPCL Retail sales of petroleum products during the financial year 2017-18 grew at 6.1% while the major products, petrol and diesel, put together grew at 6.5%, with corresponding PSUs growth at 5.7%.

The initial phase of the year witnessed the impact of private player entry into the competitive landscape of the Indian Retail market. The phase was typically characterized by a decrease in market share of existing players as new entrants' gradual opening of Retail Outlets carved out a share from the existing industry size. PSU market share dropped from 94.2% last year to 92.1% this year, due to network expansion by one of the private players and revival of closed Retail Outlets by another private player. Amidst such a business environment, the Retail business of BPCL has relatively performed the best amongst PSUs and consequently, was the growth leader in both MS and HSD. The focus of the BU remained on customer-centricity in existing markets, enabling BPCL to retain its foothold where it is traditionally strong, capture new markets and grow organically.

BPCL's Retail business registered a total sale of 26.5 MMT with an overall growth of 5.4% in the year 2017-18 against PSU growth of 3.7%. The sales volume of MS at 6.9 MMT was 8.9% higher than 6.4 MMT achieved last year. HSD sales volume stood at 18.6 MMT, as against 17.6 MMT last year, reflecting growth of 5.6%. In the alternate fuels segment, BPCL recorded a growth of 11.2% on the sale of Compressed Natural Gas (CNG) and the sales volumes for the year stood at 383 TMT. Auto LPG grew at 3.4%, recording a sales volume of 33 TMT. Government policy linked SKO performance stood at 554 TMT, de-growing at 31.0%.

Focus on sale of core Retail products was coupled with a sustainable focus on environmentally friendly endeavours. Premium branded fuel 'Speed' sales were 567 TKL with a conversion of 5.7%. The 'Speed 97' network was expanded to 40 and the product was repositioned as the highest Octane Unleaded Petrol. 32 CNG stations have been added across the country.

In 2017-18, 464 New Retail Outlets (NROs) were commissioned, 129 of which were in key priority rural markets. The total Retail Outlet network after the annual addition stood at 14,447 at the end of 2017-18. Besides NRO commissioning, 120 Retail Outlets have been revived towards creating a healthier and more effective network.

At the end of 2017-18, 8,046 Retail Outlets across the country offer Pure for Sure (PFS) service standards. These certifications are given by an independent agency to the Retail Outlets, maintaining the business promise of quality and quantity assurance in refuelling. Retail Outlets that not only ensure quantity and quality, but surpass prevalent standards of high-tech facilities are awarded the PFS Platinum certification. As of 31st March 2018, BPCL has 1,506 PFS Platinum Outlets across India, equipped with fully automated and computerized offerings monitored through CCTV, assuring the promise of purity with higher service levels.

BPCL's footprint for enhanced customer convenience extends to over 2,000 Outlets in the Retail network and is ever expanding. It manifests in various ways, primarily through its shopping and food verticals. The convenience stores, under the brand name 'In & Out', operate at 143 Retail Outlets and another 250 small alternate shopping options exist like florist, vehicle repair shops etc. There is a wide network of over 121 Quick Service Restaurants in alliance with leading Indian and International food chains and many dhabas for the convenience of the trucking community. A new tie-up was done with Energy Efficiency Services Limited (EESL) for sale of LED appliances. BPCL actively took part in Government efforts by selling the LED appliances at over 350 Retail Outlets. To give a push to the Agri Sector, tie-ups with Mother Dairy and Amul were entered into with the support of the local farmers and the dairy industry. Towards environment protection, a new product named Adblue has been made available at Retail Outlets for new generation HCVs.

BPCL made a strategic investment of ₹ 251 Crores by acquiring a 21.1% stake in Fino Paytech Limited (FINO) in 2016-17. During 2017-18, BPCL has used this investment to pilot a series of financial inclusion products with a focus on the rural and highway customer. As a first step, over 15,000 dealers and distributors have been brought onto the BPay platform. The platform has now been expanded to include Bhim UPI too. Apart from this, the Fino Payments Bank financial operations are functioning at over 250 ROs and about 100 OSTS Outlets. These include AEPS (Aadhar Enabled Payment System), Micro ATMs and API based DMT (Domestic Money Transfer) and bill payment services. The value of the Retail customer's financial transactions at these Outlets has crossed ₹ 36 Crores. BPCL is also in the process of establishing Fino Payments Bank branches at ROs. About 370 ROs have been shortlisted for possible branch openings and about 100 ROs have already been jointly surveyed for suitability. One branch has already started operating at a BPCL RO, while another two are in an advanced stage of commissioning. FINO is currently building an Integrated Payments Solution for BPCL, which will enable multiple modes of payments from one platform.

The Retail BU achieved an "Excellent rating" in all the MOU parameters for the business. 97.41% RO network was enabled with three modes of digital payments (Debit card & credit card, UPI & USSD) against a target of 95%. Further, there was a focused approach in promoting digital transactions in the forecourt with 24.4% of total transactions being through digital means. Monthly digital transaction value increased by 25.28% and the transactional value jumped to ₹ 4,678 Crores in March '18 from ₹ 3,734 Crores in March '17. 26% ROs have the option of accepting payments through Mobile wallets and the monthly wallet transactions increased to ₹ 55 Crores in March '18 from ₹ 25 Crores in March '17. Customer awareness campaigns were carried out at 12,134 ROs and standees for cashless facilities were displayed at 13,497 ROs to create awareness amongst customers for digital payment.

There are 225 Company Owned and Company Controlled (COCO) Outlets, where the customer experiences supreme quality as well as a wide array of services that are expected of a model BPCL Outlet. The signature brand of COCO Outlets on highways - the One Stop Trucker Shops (OSTSs), are strategically positioned on major highways, to give transporters and drivers an experience of 'a home away from home.' These Outlets, in addition to services of COCO, offer SmartFleet services for a fleet customer, a Customer Care Centre, truckers' air gauge and greasing facility, driver rest rooms and secured parking. There was a lot of focus brought in last year on upgrading the facilities in our OSTSs.

After piloting Daily Price change in five cities, it has been implemented across the country, making the BPCL Retail network fully equipped to respond to daily price changes. In an attempt to reach a step closer to the customer, the mobile app SmartDrive was enhanced for a more user-friendly experience. New & improved Microsites have been developed for veteran products like SmartFleet, PetroCard, Speed and In & Out.

BPCL's existing Loyalty programs - PetroBonus and SmartFleet, operating for over 15 years, have bolstered relations and played an important role in addressing the need of cashless and secured transactions and offering loyalty points which can be exchanged for rewards. The Company offers multiple options like mobile, email, website and Call Centre to stay connected with the members and dealer network. A pioneer in Fuel Loyalty, BPCL Retail has also enhanced its existing loyalty program, SmartFleet, to tailor it to the growing needs of its fleet customers. To further improve repeat buying behaviour, a web-based Driver Loyalty program has been introduced at OSTSs to bring drivers or single truck owners-cum-drivers also into the BPCL envelope. A co-branded credit card with SBI was launched to increase the target group of customers to encompass the urban fueller as well.

Early this year, 'Project Rainbow Rise' was launched to regain and maintain a foothold in our highway markets. The upgradations done throughout the year under this project have been aimed at giving the common traveller a better, more convenient experience on his journey. Further, engagement with all the stakeholders took place by design under this project, which actually rejuvenated the dealership network.

Through the 'Umang' Initiative, BPCL Retail has provided focused services catering to the targeted rural sector. 362 dealerships were enrolled under this initiative and 123 Umang ROs have been commissioned so far.

An Integrated Fleet Management initiative by BPCL was successfully piloted during 2017-18 on National Highway 8. Fleetgenie's six offerings, namely Business Development, Operations Management, Vehicle Maintenance, Finance and Insurance, Driver Verification and Driver Services, were designed to address the pain points of fleet owners. Within a short span, post pilot launch in July 2017, the Fleetgenie team could enrol 1,560 Fleet owners, and 750 shippers. Post the success of its pilot phase, Fleetgenie is all set for pan-India scale-up in association with BPCL Retail in a phased manner.

The automation system in place allows integration of payment with fuelling, translating into customer trust, customer identification and acquisition, good governance, better asset utilization, inventory management and effective Outlet management. All the Multi Product Dispensers (MPDs) display real time Retail Selling Prices, and are enabled with No Print No Delivery (NPND) feature, where the delivery of fuel does not happen without the bill being issued to the end customer. Post the Uttar Pradesh incident 1,237 MPDs have been replaced and the configuration of 11,993 MPDs have been changed to include tamper-proof, self-destructive pulsars.

BPCL has developed a Corporate Safety Management Framework (CSMF) including Life Saving Rules and Technical Guidelines for ensuring the highest level of safety standards. In line with the corporate philosophy of "Safety First and Safety Must", Retail Operations could achieve the targets of Nil LTA. Also, tank lorry in-transit accidents were reduced by a significant 31% over last year and were the lowest in the last six years. Fully equipped ambulances were positioned at ten remote locations.

Retail Operations expanded the implementation of an Integrated Management System (IMS) from Western Region locations to all operating locations across India. Comprehensive Audits, Governance Audits and Interlock Assessment Audits were conducted extensively. On the sustainability front, ISO 50001 was implemented at 22 additional locations, Energy Audit at 36 more locations, and 5S certification at 17 more locations.

Infrastructure has been the focus area for some years now. BPCL signed an MOU with M/s. KPCL for putting up the Krishnapatnam terminal. The works at Ennore terminal are almost complete and it is getting ready for commissioning. Works at Pune terminal have commenced. Tankage augmentation was completed at Gonda, Kanpur, Muzaffarpur, Balasore and Srinagar. New Railway Tank Wagon loading gantry works have commenced at Irugur and Unloading siding work has commenced at Jobner.

A total of 33 transport contracts were finalised for safe and secure transportation of products to Retail Outlets. A pilot has been conducted for implementation of the electronic locking system. RFID tags for payment of toll tax through digital mode was initiated. BPCL has remained the front runner as far as Terminal Automation is concerned and the number of “No Automation No Operation” (NANO) certified locations has increased to 50, which is 85% of the automated locations.

INDUSTRIAL AND COMMERCIAL (I&C)

The year 2017-18 became momentous, as Industrial and Commercial (I&C) business crossed the 5 million tonne mark in sales volume during its journey this year. The SBU recorded an overall sales of 5,301 TMT and registered an unparalleled growth of 24.3% to become the industry growth leader. Further, the BU’s market share in the industry, including private players, saw a quantum leap from 8.9% in 2016-17 to 10.6% in 2017-18, a phenomenal increase of 1.7% in a single year.

During the year, I&C tied up with different organizations and institutions for the sale of fuels and other petroleum products, the most significant being the renewal of supply agreement with Karnataka State Road Transport Corporation. Further, MoUs were signed with major customers like FACT, Larsen & Toubro, Aditya Birla Group, Singrani Collieries, Haldia Petrochem, St. Gobain, ACC, Ultratech Cement, to name a few.

I&C also commissioned 108 consumer pumps for its customers covering core sectors like mining, infrastructure, State Transport Undertakings etc. This also included commissioning of kerbside pumps for the Indian Army in difficult terrains of Yongdi, North Sikkim and Tangtse, Leh at an altitude of 14,500 ft., which is the highest petroleum infrastructure dedicated to the Indian Army by any marketer.

Maintaining a clear focus on the Railways business, I&C introduced Total Fuel Management at Railway Diesel Installation at Jaipur as a tool to effectively optimize the use of fuel at the customer premises. The pioneering initiative, the first of its kind, is a conscious attempt to leverage technology to improve process efficiencies.

The business unit achieved significant milestones in its logistics capabilities this year. With the closure of Furnace Oil production from KR post IREP, the markets in the South and East were catered with coastal movement of the product from Mumbai Refinery using bigger vessels, thus optimizing the cost and retaining the market share at the same time.

In order to augment the storage capacity in the South, additional tankages were hired at Kochi and Ennore. With commissioning of the Bitumen Contract Operated Depot at Muzaffarpur, Bihar and Hexane tankage at Kanpur, Uttar Pradesh, I&C intends to improve the availability of products in these regions as well.

Sourcing of Bulk Bitumen in the east coast was initiated to explore and gain footsteps into the almost virgin markets of the I&C BU in the developing eastern economy. In times to come, I&C intends to establish itself in this geography and contribute to the growing economy.

The BU also converted an additional 0.8 MMT quantity of Petcoke and Sulphur from Kochi Refinery effectively into sales, thereby establishing itself as a major supplier and a name to reckon with in the Southern Region.

BPCL is working consistently towards improving the product offerings to its customers. As a step in this direction, I&C introduced Pharma grade and Polymer grade Hexane to the markets. With a market potential of 80 TMT per year, the Pharma and Polymer grade Hexane market greatly appeals to the BU and I&C is set to differentiate its products from the competition by offering superior quality at comparable prices. A range of petrochemical products are also planned to be added to its portfolio and marketed in the imminent future.

Continuing with its customer-centric approach in business, I&C conducted a major safety campaign across the length and breadth of the country, covering various sectors and industries, engaging major I&C customers and creating awareness on the safe handling of petroleum products. The year also witnessed Corporate Social Responsibility being given a significant thrust, by identifying social issues from a customer perspective and implementing solutions. Convenience to Customer has been at the forefront of innovation in the I&C BU. I&C initiated a B2B interface with premier customers and launched the mobile app, Mob-e-connect, which would empower the customer with in-depth product and business knowledge in times to come.

A new vision has been created to charge I&C's growth, by conceiving powerful ideas, believing and relentlessly working with them to achieve its goals. "Conceive, Believe, Begin and Achieve" is the ideology with which the I&C business continues to grow swiftly amidst new emerging challenges and uncertainties.

GAS

BPCL handled 1,872 TMT of Gas in the year 2017-18, as against 1,371 TMT in the previous year, a growth of approx. 26%. Out of 1,872 TMT, 357 TMT of Gas was supplied to Mumbai Refinery and 479 TMT was supplied to Kochi Refinery to meet their internal requirements. The remaining 1,036 TMT of Gas was supplied to various customers in Fertilizer, Power, City Gas Distribution (CGD), Steel and other industries across the country and for the first time since inception, the Gas BU surpassed 1 TMT in customer sales.

BPCL imported 5 cargoes of LNG in the last financial year at Dahej Terminal in 2017-18. Around 99% of BPCL's supply has been through pipelines to its various consumers. However, to take care of customers who are located at a distance from the pipelines, BPCL has also supplied around 12 TMT of LNG through Tank Trucks from Dahej and Kochi to some of the customers such as Mahindra & Mahindra, Modern Insulators, Tetrapak etc.

This year, BPCL has also started supplying LNG by tank trucks to M/s. Bhuruka Gas, BPCL's second road fed customer from PLL's Kochi Terminal in the Southern Region, where the pipeline infrastructure network is yet to be fully developed.

Continuing efforts to expand the Gas Business, BPCL is developing CGD Networks in the geographical areas (GAs) of Saharanpur (Uttar Pradesh), Yamunanagar (Haryana) & Rupnagar (Punjab). Physical execution work in these GAs are in full swing. As on 31st March 2018, 244 Inch KM of pipeline is laid in GA of Saharanpur, 137 Inch KM pipeline laid and 177 Piped Natural Gas (PNG) (Domestic) connections completed in Rupnagar GA and 105 Inch KM pipeline laid in Yamunanagar GA.

As on date, 90 GAs are authorized by PNGRB, out of which BPCL has a presence in 16 GAs through JVCs and its own projects.

LUBRICANTS

The "MAK" brand delivered a strong performance in FY 2017-18, with a higher growth rate as compared to PSU industry members, with market share increase of 0.9%. Apart from the domestic markets, MAK lubricants have fared well in a challenging and competitive environment by recording a growth of 8.9% in exports during the year. Seamless transition to the GST regime demonstrated the ability of Supply Chain Management (SCM) to overcome challenges and deliver growth in a changing environment.

Network management and expansion ensured that the Reseller channel grew by 4.5% in FY 2017-18. The Retail channel, comprising over 14,000 petrol pumps and the Bazaar channel comprising over 700 active distributors, who further cater to Retailers and Mechanics, ensured spread and reach across the country. Marketing in the Direct channel with supplies to flagship customers like Hero, TVS, Munjal Showa, Marico, Elgi Equipment & TATA Motors and many others further consolidated the presence of "MAK" in the B2B segment. BPCL was awarded as the Best & Consistent Quality Supplier Globally at Bangkok by Showa Japan for supplies to their Indian partner.

The Lubricants market, apart from being highly competitive with more than 30 established players, has now become very dynamic with more advanced products being continually introduced in the market. MAK lubricants is at the forefront of capturing these new opportunities with a very robust and innovative Product and Application Development (P&AD) department. New products like MAK Steel EP100, MAK Knit22 plus, MAK Textrol EE10, MAK EDM Oil, MAK Film bear, MAK Drillol were introduced to tap the potential in the direct market. The new products introduced to OEM customers were KOEL care premium, ELGI Airlube ECO, TVS Tru4 Skutta etc. P&AD has contributed significantly to the business volume and profitability through development of new grades and alternate formulations. This has helped in increasing the product portfolio and reducing input cost.

Value added services to customers was a key focus area in the Retail and Bazaar channels. The Quick Oil Change (QOC) corner has been established as a strong service initiative for 2 wheeler and 4 wheeler customers. "MAK Quik", a mobile application designed to capture customer details during such changes, automatically reminds the customer of his next oil change (through SMS), apart from a host of other value added facilities like information on Lubricants, recommendation of grades, book appointments, current promotional offers etc. In a category of low customer involvement, MAK envisages this combined set of offerings to be a game changer in future.

In the Bazaar segment, Mechanics from Non Franchise Workshops (NFW) are key influencers in the customers' buying decision of Lubricants. A series of programs have been designed at various levels, to educate this set of influencers and enhance their knowledge of Lubricants - MAK Shagun, MAK Milan and culminating with 'MAK Manthan'.

'MAK Manthan', designed with an intention to create a core set of brand advocates, embarks upon a two day journey on the Lubricants blending process and imparting of technical knowledge on lubricants. Witnessing the blending and packaging of lubricants and exposure to the intricacies of lubricants by the experts enhances their knowledge quotient and builds their competency to understand new products as well. With increased technical awareness, these Non Franchise Workshops are a set of brand advocates that the MAK brand will rely upon to influence the customers.

MAK lubricants have been strengthening their presence in the established markets of South Asia. BPCL has been pursuing relentlessly to expand its presence in advanced markets of the Middle East and is also tapping emerging opportunities in Africa, meeting with consistent success in these markets. Subsequent to the foray in Bahrain and Kuwait during the year, the BU has also commenced distribution in the state of Oman. In Africa, inroads have been made into Tanzania, Rwanda, Burundi and Congo.

High end Synthetic products for the personal mobility segment, launched recently in the Middle East as well as South Asian markets, have also been doing well and the Lubricants BU expects to grow aggressively in this segment. MAK has lined up a comprehensive plan to proliferate in the industrial segments in emerging markets.

The consolidation in the domestic and exports market has been backed by a robust SCM department, which has consistently assisted the business in generating value through efficiency initiatives. Health, Safety, Security and Environment (HSSE) practices have been strongly driven across the plants and product delivery interfaces. Extensive Training programs and Safety audits ensured Nil accidents and also, readiness of the personnel to deal with any eventuality.

Leveraging the strength of the MAK brand through effective brand communication has been a key area for the business. Visibility and promotion of the MAK brand was done throughout the year with focus on both Above the Line (ATL) and Below the Line (BTL) activities. Advertisement through radio jingles and print advertisements, with focus on automotive and industrial magazines, was a key Brand initiative. Digital presence through static and animated banners, branding at Retail Outlets, extensive outdoor branding through wall paintings, Retailer boards, glow signs etc. improved the brand visibility at the ground level. Participation in exhibitions (agricultural and industrial), college fests and events, bike events, rural melas and activations promoted customer awareness.

The Indian Lubricants market is expected to grow at a CAGR of 2.5% - 3% as per the KLINE report, a leading consulting firm specializing in market research in the energy sector. Projections for the automotive as well as the industrial sector remain strong. MAK Lubricants has a well thought out strategy to tap into this growth. Offering world class products and top-in-line services at all customer touch points will ensure that MAK remains a leading brand in the lubricants sector.

LPG

The LPG SBU registered a sale of 6 MMT and for the second consecutive year, registered the highest growth of 9.98% amongst the PSU Oil Marketing Companies, thereby increasing market share by 0.36% during the year 2017-18. The year also saw the LPG business creating record performances in the areas of new distributorship commissioning, customer enrolment, commercial sales, plant filling etc. The 'Pradhan Mantri Ujjwala Yojana' (PMUY) this year as well, has continued the momentum of new customer acquisition in rural areas, enabling extensive enrolment of new customers. The use of digital technology and social media on a mass scale enabled the business in expanding LPG footprints across the country.

Making clean cooking fuel available to households in every part of the country assumes topmost priority of the LPG SBU. New customer enrolment of 76 Lakhs during 2017-18 has taken the domestic customer base to 670 Lakhs by the end of the financial year. Second cylinders were supplied to 19.90 Lakh customers during the year. BPCL added 406 new distributorships, taking the total Distributor Network to 5,084 as on 31.03.2018.

Under the successfully accomplished PAHAL project of the Government of India, so far 202.05 million customers have been enrolled on an Industry basis as Cash Transfer Compliant, out of which BPCL enrolled 51.41 million customers. By March 2018, BPCL had transferred ₹ 17,221 Crores directly into customer accounts.

As extending benefits of the PMUY scheme to the entitled BPL women was of prime importance, BPCL released approx. 40 Lakh new connections during the year 2017-18. Propagating safe use of LPG in the rural hinterland through several modes, like Nukkad Nataks, Safety Clinics and House to House safety education by Ujjwala Suraksha Mitra, remained focus areas.

BPCL coordinated the national launch of "Pradhan Mantri LPG Panchayat" in the village Isanpur Mota near Ahmedabad on 23rd September, 2017. LPG Panchayat is a community meeting which would serve as a platform for LPG consumers to interact with each other, promote mutual learning and share experiences. Thus, the concept is based on the premise that peer learning, coupled with looping in of local eminent persons like School Principal, Lady Doctor, Head Panchayat / Sarpanch etc. would help the existing and prospective beneficiaries to switch over to clean cooking fuel.

With a view to provide efficient and friendly services to its customers and to proactively join in the Digital India program of the Government, BPCL embarked upon several customer-centric initiatives under the guidance of the Ministry of Petroleum & Natural Gas:

- Effectively implemented the facility of 24x7 Emergency Helpline 1906 (toll free) to attend to the leakage complaints of LPG consumers.
- SmartLine 1800224344 to attend to all complaints of LPG customers has since been effectively implemented.
- Launched the facility of releasing new LPG connections with online payment and issuance of e-SV. The facility, under the Digital India initiative, was launched in Delhi on 1st May 2015 and it has been rolled across the country since then. Online tracking option with SMS/Email alerts to the customer at each stage enhances system efficiency, besides eliminating multiple visits to the distributor's showroom by the prospective consumers for completing formalities.
- Launched two Mobile Apps – Bharatgas Consumer App and Last Mile App for Distributors enabling consumers to book refills and make payments through these Apps.

LPG Plants in BPCL continue to maintain their record of best practices in HSSE coupled with improvement in productivity and cost leadership. For the 8th consecutive year, BPCL was awarded the 'Best LPG Marketing Organization' by Oil Industry Safety Directorate (OISD).

Vehicle Tracking System (VTS) was installed in the entire fleet of Bulk LPG Tankers for monitoring and avoiding night driving. Creating a pool of trained drivers through imparting training to Bulk LPG Tanker drivers was one of the focus areas of the Safety Initiative.

BPCL is progressing well towards commissioning a 1.0 MMTPA LPG Import Terminal at Haldia that would take care of energy security in the Eastern Region and consolidate its market presence. During the year 2017-18, BPCL achieved Plant bottling of 5,452 TMT recording growth of over 10% and achieving a capacity utilization of more than 100% from the 51 bottling plants across the country. To improve supplies in North Karnataka and Kerala markets, a second carousel was commissioned in Mangalore LPG Plant, thereby doubling its capacity. A Greenfield LPG Bottling plant at Raipur is ready for commissioning post OISD audit anytime during the second quarter of the financial year 2018-19.

AVIATION

The Aviation BU has recorded the highest ever sales of 1,790 TMT in FY'17-18 with an increase in market share to 25.66% from 25.03% in the previous year amongst PSUs. Sales growth of 15.7% was achieved against the PSU growth of 13.0% during FY'17-18.

In the civil segment, BPCL's market share grew from 26.61% to 27.13% with a growth of 26.6% in the domestic segment and 11.0% in the international segment. The defence segment had negative growth due to reduction in flying operations.

All major customers have been retained this year and the BU has expanded its customer portfolio with acquisition of new customers i.e. Alitalia, China Eastern, Air China, KAM Air and Atlas Air. Additional volumes have been gained of Indigo Airlines, Jet Airways and Air Asia (India) in the domestic segment and Lufthansa Group, Turkish Airlines Air Canada in the international segment. These gains compensated the loss of share in Air India and Spice Jet, including loss of Silk Air and Tiger Air business.

During FY'17-18, a new Aviation Fuelling Station at Varanasi was commissioned with commercial operations. At Ranchi airport, mechanical completion has been done and statutory approvals are in progress. Under the ambit of UDAN – "Ude Desh Ka Aam Naagrik" scheme of Government of India, BPCL has commenced ATF supplies with Into Plane Services at 7 new locations out of 12 locations awarded i.e. at Nanded, Kandla, Diu, Mysore, Salem, Shillong and Bhavnagar.

In FY'17-18 the highest capital expenditure of ₹ 36 Crores was achieved with the major portion of Capex being on account of procuring new refuellers to cater to the growing demand of the domestic airline business. A pilot project on automation at AFS and refuelling vehicles is in progress. It is proposed to be implemented at all locations in a phased manner.

ATF tanks of capacity 4 x 9000 KL were commissioned at Piyala installation leading to ATF movement from Bina Refinery to Delhi through the Bina Kanpur (BKPL) pipeline. Construction of ATF tanks of 2 x 2000 KL capacity at Kanpur depot & 1 x 5000 KL capacity at Devangonthi have been mechanically completed.

The first phase launch of the Account Receivable Cell was implemented at Noida office towards creation of a centralized cell wherein invoicing, submission of invoices to customers, payment collection, SOA reconciliation etc. for pan India operations will be dealt with.

Various training programs were conducted on Quality Control/HSSE/Aviation Operations for officers in the Aviation BU. Senior officials of the Indian Air Force were imparted training at BPCL's Centre of Excellence in Kochi. Members from the Aviation BU also attended specialized training programs abroad on aviation topics benchmarked to international standards by aviation experts.

The Aviation BU accords the highest priority to safety and the environment. Nil LTA has been recorded during FY '17-18. Live fire fighting training was conducted for 13 officers of the BU at the designated training center in Vadodara.

CORPORATE STRATEGY AND BUSINESS DEVELOPMENT (CS&BD)

CS&BD has been set up to track the strategy implementation and explore new strategic opportunities across the value chain to enhance efficiencies, find new business models and act as a catalyst for innovation and excellence in execution. The set-up has been continuously working along with BUs to analyze long term trends and suggest requisite interventions to overcome the imminent business challenges, use digital innovations and disruptions to stay connected with all customers and ultimately, deliver performance on a sustained basis.

Along with charting out strategies for BPCL to ensure sustainable growth, CS&BD is also strengthening a few of the initiatives like Analytics, Project Nishchay, Customer Care System and BPCL Start-up.

Analytics, Big Data and Machine Learning are now considered to be strategic trends in the corporate world and are considered critical for making a difference in the market. In this context, BPCL has taken a lead and has embarked upon a new journey in the field of "Predictive Analytics". The project was initiated in 2017 and is being driven by a joint project team from BPCL and Accenture. As on date, user-friendly dashboards showing BU performance across various dimensions, actionable insights to BUs using statistical models and building a secured cloud-based data warehouse, consolidating information from various data sources, have been made operational. The team is also working on few advanced analytics projects, based on various challenges faced by businesses while remaining competitive in the marketplace.

Project Nishchay (a non-fuel initiative) was launched in 2015-16 with a vision to create multiple non-fuel businesses and achieve disruptive growth through pathbreaking business ideas. Four non-fuel offerings were identified for different customer segments viz "Umang" – a rural marketplace for rural customers, "Fleetgenie" - an Integrated Fleet Management Solution for the unorganized fleet segment and "Happy Roads" for NextGen holiday trippers for scaling up and "Shopongo" a one shop - Omni channel solution for regular grocery needs of urban households.

Through **"Umang"** BPCL aspires to bring to the rural population a wide range of services round the clock through technology, thereby making their lives easier as well as meeting the corporate vision of financial inclusion. During the year, Umang has been expanded across Maharashtra, Uttar Pradesh, Madhya Pradesh, Rajasthan, Tamil Nadu and Odisha. The result has shown a good traction for various offerings, leading to increased footfalls at all Umang Retail Outlets. BPCL is now expanding this offering to other states and enrolled another 500 dealers and distributors during 2018-19.

A technology driven Integrated Fleet Management (IFM) platform under the brand name **"Fleetgenie"** – was rolled out as a solution to address various pain points of fleet-owners with its bouquet of integrated services and aims to be a unique one stop shop for all stakeholders. It is a freight management marketplace for fleet owners, shippers and drivers with services like return load, road-side assistance, vehicle maintenance, cash management, advanced telematics, insurance, telemedicine etc.

"Happy Roads" is designed as an end-to-end travel guide for the weekend road traveller. Post market research's positive response on the core propositions of Destination Discovery and Trip Assurance, the Happy Roads app went live on Google Play Store in May 2017. With more than 80,000 downloads, it has reached an audience of over 8 lakhs and has more than 40,000 followers on social media till March'18. The platform has helped to remain connected with urban customers and provided a tool to Retail and Lubricants to disseminate information about marketing campaigns more effectively, making the campaigns more successful than ever in the past. Around

56 weekend destinations in 7 states namely Karnataka, Kerala, Himachal Pradesh, Uttarakhand, Jammu & Kashmir and Rajasthan are presently being featured with many more being curated to be added where avid road travelers would like to go.

Based on the learnings from the pilot projects of above three initiatives, corrections have been applied and BPCL is now on the cusp of scaling up the activities to cover and extensive pan-India footprint.

The Urban Household solution **"Shopongo"**, after the pilot in Pune, had to be discontinued after the existing partner had expressed their inability to continue with the partnership due to a shift in their business strategy.

BPCL's **Customer Care System (CCS)** is a technology driven initiative for providing a single window to address the concerns of its customers across all BUs and geographies. It is an integrated platform for customer interactions across all channels such as email, website, social media, Vigilance, National Consumer Helpline as well as walk-ins. CCS has registered its highest ever 0.9 million (with 38% CAGR) interactions during 2017-18. It has now evolved into a robust platform and certainly the most preferred choice of customers, resulting in substantial improvement in the Customer Satisfaction Index.

BPCL's Start-up initiative "Project Ankur" aims to develop a supportive ecosystem that nurtures entrepreneurship in the country, by backing innovative ideas and concepts that have the potential to grow and become a successful commercial venture. During the year 2017-18, twenty proposals have been shortlisted by the steering committee for funding, out of which six start-up initiatives have been provided with a cumulative funding of ₹ 4.2 Crores. Also, to build the ideas pipeline, BPCL has entered into MOUs with Incubation hubs such as KSUM (Kerala Start-Up Mission), Invest India, IIT Madras and KIIT Bhubaneshwar.

BPCL is charting out the growth trajectory and developing a business case for future investment by working on key areas of future growth such as Petrochemicals, Gas marketing etc. and creating a robust business plan for each of the identified areas. Strategies in these areas have been finalised and processes have been initiated for execution.

One of the most significant developments in recent years is Government's commitment to reduce pollution levels across cities in the coming years and Electric Vehicles (EV) are expected to play a significant role in achieving this target. The world is also fast moving from fossil fuels to alternative energy in mobility, especially on the electric vehicle front. In order to grab this opportunity and enjoy the first mover advantage, BPCL has been deliberating on various options to play in the EV value chain.

BPCL is also working on scenario planning to visualize and plan for the changed macro-economic environment 15 years into the future. Several scenario-planning workshops have been conducted to identify future scenarios affecting the energy business, BPCL's strategic choices in various scenarios and making BPCL future ready.

HUMAN RESOURCES

With a vision of being the most admired global energy company leveraging talent and technology, the Human Resources Function endeavors to be a strategic business partner, building organizational capabilities to deliver breakthrough performance and create sustained value.

To translate the Company's vision into reality, significant investments have been made to create a robust leadership pipeline and build organizational capabilities aligned to business goals. All the people processes are based on the core value of 'Development of People'. The same philosophy is reflected in the commitment of senior leadership to nurture talent. To build a robust leadership pipeline across all levels and be future ready, multi-pronged leadership development interventions were rolled out during the year, covering 596 staff across mid and senior levels. These include BPCL's flagship 3-Tier Leadership Programs, customised high quality domain specific programs at premier Institutes like IIMs/ IITs, Executive Management Programs and leadership development programs abroad at reputed global business schools like Harvard, Wharton and INSEAD.

Taking the employee development agenda forward, to empower employees to take charge of their development, 'CATALYZ', a first of its kind initiative, was launched in 2017-18. 500 'Leadership Group Facilitators' (LGFs) were mapped to 2,900 staff across mid and senior levels. The LGF is a development coach assigned to each staff to provide integrated developmental feedback with inputs from the robust potential assessment process (ASCEND) and Talent Review Panels (TRPs). This process culminates into a meaningful individual development plan created and owned by each employee. 1,888 employees who have completed the LGF process shared extremely encouraging feedback; 95% believe that the development areas identified will enable them to achieve their goals/ aspirations in the Corporation.

Leveraging talent to sustain competitive advantage, 'IDEAS' is an innovation platform providing employees an opportunity to unleash their potential and fuel organisation's growth. During 2017, an overwhelming 1,832 ideas were received from across different levels within the Company. Several institutionalized platforms aimed at building organizational capability and agility have run through the year, attracting active participation from employees all over the country. These include 'Mercurix' – inspiring leadership through the art of storytelling, 'Socratix' – The Case Study Challenge & Business Simulation challenges to build strategic thinking and problem-solving capabilities, 'Rytink' – Write a winning case, capturing critical success stories of BPCL, and 'YouNGAGE' – an engagement initiative designed exclusively for Gen Y officers.

In addition, 'VIZDOME', a video learning platform was launched in 2017, to create and share learning videos, thus creating a rich repository of educational videos based on critical organizational themes such as Standard Operating Practices, Safety, Brand and Customer Service. During the year, 118 video learning repositories were created through this unique initiative.

To continue to engage and energize young employees in various business units, many interventions were anchored at the SBU level. These include 'U-RISE'- an initiative in LPG for new employees to foster collaboration, innovation and engagement, 'LIA (Leadership In Action) Incentive Scheme Awards'- an initiative in Retail, where awards were instituted in sales, engineering, performance of locations etc. to recognize and energize employees; INIZIO (Passion Club), an initiative in Kochi Refinery that provides opportunities for employees to pursue their passion, thereby creating an overall positive impact and energy.

BPCL's initiatives in Learning and Development have been acknowledged and recognized, with the ISTD award for "Innovative Training Practices" and Skillsoft Perspectives award for "Creating an impact through e-learning" in the PSU category.

For playing a strategic partnering role, recognizing the importance of building capabilities within the HR team, 'CONFLUENCE' and 'TRANSCEND' were two interventions organized during the year. 'CONFLUENCE' was a workshop that brought together leading Learning & Development practitioners from the industry and academicians to share the best practices, while 'TRANSCEND – Leading Beyond Boundaries' was an HR competency building workshop aimed at facilitating development of new age HR competencies based on Dave Ulrich's HR Competency Model.

The total manpower strength as at 1.04.2018 was 12,019. During the financial year 2017-18, 555 employees were recruited in the Corporation.

EMPLOYEE SATISFACTION ENHANCEMENT

The Employee Satisfaction Enhancement (ESE) Cell continued its endeavors towards its vision 'to be an active facilitator towards a healthy, productive, vibrant and energized workforce by working towards 360 degree wellness and living up to the core purpose of energizing lives to make "BPCL – a great place to work". ESE followed a plan of enhancing employee satisfaction through employee wellness, employee connect and prompt grievance redressal.

A total of 34 grievances were received and all were redressed in time. There were no open cases from the past year. Towards proactive grievance identification and resolution, ESE conducted 70 awareness sessions and visited 40 locations to proactively interact with employees.

Championing Employee Wellness

International Yoga Day was celebrated by ESE at all regional offices, refineries and locations, in association with HRS with quality programs and practical demonstrations. More than 1100 employees participated in the yoga programs. A 'Dance Movement Therapy' program was organized on the occasion of Mothers' Day.

On World Mental Health Day an 'ESE Fest' was celebrated to connect with employees, add joy and energize their lives. To drive home the theme of emotional fitness, a campaign on 'Stress Proof Yourself - Build Resilience' was conducted, with counselling sessions. A thought provoking program, 'Rendezvous with Dr. Vikas Amte', the renowned social entrepreneur, was conducted to learn and share the joy of giving.

Interdependence of emotional and physical well-being was highlighted through various programs on pilates, strokes, trancendental meditation, diabetes, etc. Programs were also organized to create positivity and improve engagement. Yoga sessions were held at CO with focus on stress management, specific ailments, personality development and meditation. The program 'It takes two to Tango - Building Relationships' was held at Bina Refinery and "Reboot and Recharge" – a team building workshop was organized at Lonavala for the WR LPG Ops team. Apart from exhibitions on books and organic products, sale of products from "Maithree" and "Kripa" Foundation, which are products made by specially abled children, was organized.

Establishing Employee Connect

World Earth Day and World Environment Day were celebrated to create awareness on water conservation, planting trees, recycling of kitchen waste/E-waste and conservation of natural resources. The project, Zero Waste at Zero Cost, was executed at Sinnar LPG plant, wherein all the biodegradable waste is being converted to good quality manure at no cost.

A Peer Counselors network was created at MR, KR, NR, WR & ER as an emotional first aid at plants/locations. Motivational talks on a happy retired life were organized at ER. A session on 'Professional Image & Positive Networking" was held at Mumbai. ESE organized awareness camps on National Pension Scheme (NPS) at CO, Sewree & Regional Offices – NRO, ERO, SRO, MR & KR in association with M/s Stock Holding Corporation of India, to assist employees on the tax saving options available under NPS.

ESE is connecting with employees in many ways. Employees are sent greetings along with positive messages on special occasions such as their birthday, long service, promotion and retirement. The quarterly e-magazine, 'ESE CONNECT' had themes of "Power of Positivity to Change your Life", "Gratitude", "Building Resilience to Stress" & "Building Positive Relationships". EAP registrations crossed 5600, 231 counselling sessions and 10 manager referrals took place and 6 suicidal tendency cases were handled. To motivate employees positively, ESE organized quizzes and published many good write-ups through Corporate Broadcasts. A pilot project, WE CARE for field officers wellness was anchored and executed for 50 sales officers from Retail and LPG SBUs. All the ESE activities received an enthusiastic response from employees.

HEALTH, SAFETY, SECURITY & ENVIRONMENT

The oil industry is one of the most challenging and vulnerable industries prone to hazards due to operational conditions, chemicals and volatile products. Thus, management of health and safety for the workforce becomes one of the most indispensable constituents. 'Safety First, Safety Must' is the vital principle at BPCL, to which all its Business Units and Entities adhere.

The business processes in the petroleum industry are very complex. To ensure smooth and safe operations across locations, the implementation methodology and system of each critical process is thoroughly reviewed. In addition to that, bringing in coherence in responsibilities and accountabilities, the governance practices and monitoring systems are also enhanced.

Asset Integrity and Process Safety are of paramount importance to BPCL. The assets are carefully examined, monitored during operations, regularly inspected and maintenance is carried out periodically to secure their integrity. For all assets to render safe operations, there is strict adherence to the standard operating procedures and guidelines across all locations.

In BPCL, at the Corporate level, there is a standard procedure for incident reporting. This system is investigated, analysed and reviewed thoroughly for the current financial year's internal and external incidents. Recommendations from the periodic mock drills conducted are also captured regularly. Detailed Root Cause Analysis is carried out of major incidents and reported accordingly. These analyses lead to deriving a comprehensive procedure and organization wide adherence, which helps prevention of any recurrence of minor or major incidents.

Knowledge sharing is another eminent factor at BPCL. Implementation of suggestions given on external and internal audits is considered to be very important. The HSSE workshops conducted serve as a forum for capacity building, sharing of best practices, and discussion on the adoption of systematic improvements in aspects related to safety and security. There is an initiative to increase the collaborative learning for safer operations across locations where the incident Root Cause Analysis is shared along with the best practices.

Climate change has become a cause of global concern and the trend lines for increase in temperature will spur it further. BPCL comprehends the fact that intensive actions are required to minimize and adapt to the impacts of climate change. BPCL feels that the use of innovative technology to improve energy efficiency and find more carbon neutral solutions is imperative.

BPCL uses an online sustainability development software which is used to capture data parameters like energy, water and waste across all locations and refineries in India. BPCL is expanding its capacities for rainwater harvesting.

The total catchment area under rainwater harvesting was 7,22,800 Sqm. which has been increased to 7,73,427 Sqm. during the year. Energy efficient lighting capacity has been increased from 6.2 MW to 7.54 MW in the year 2017-18. Similarly, Renewable Energy capacity has increased from 22.17 MW to 26.36 MW by March 2018. These initiatives have resulted in an annual reduction of emission by 43,660 Metric Tons of CO_2 equivalent.

The fresh water consumption and waste water generated is monitored regularly. Effluent treatment plants are installed at all the locations of BPCL; the treated water is used for floor cleaning, gardening and other utilities. BPCL in its aspiration to reduce its environmental impact, is participating in initiatives to convert solid municipal waste to electricity and use the waste water recycled by the Municipal Corporations.

It has been a decade for BPCL, publishing its Sustainable Development Report. The journey of sustainability started since 2007-08, by adopting to Global Reporting Initiative (GRI) - G3, then transitioning to GRI - G4 and now to GRI Standards. BPCL is one of the first Oil and Gas companies to publish its report in accordance with the latest framework. All these reports were assured by an independent third-party Assurance Provider as per Accounting Ability (AA) 1000 Assurance Standard (AS) 2008 and International Standards of Assurance Engagement (ISAE) 3000.

Sustainability has been an integral part of BPCL's philosophy. BPCL has put forth sustained efforts towards making its Sustainability Development performance visible in the public domain with increased transparency.

Biofuels

In order to cut Greenhouse Gas emission and advance closer to cleaner fuels, Ethanol blending in Petrol has been increased to 10% by the Government, but the total blending has reached only 3.3%. It is also planned for 20% Ethanol blending in Petrol by 2030.

To meet the above requirement, BPCL is setting up Ethanol producing plants using multi-feed stocks like lignocellulose feedstocks viz. rice straw, cotton stalk, wheat straw, soya stalk and using indigenous technologies for production of Second Generation (2G) Ethanol.

The objective of setting up 2G Ethanol Bio-refineries is to reduce environmental pollution. Greenhouse Gas emission saving from farm (burning), Ethanol production and Ethanol blending shall be 1,21,000 MT of CO_2 equivalent per year for a 100 KLPD 2G ethanol plant.

As part of a Biofuel venture, BPCL is setting up three agricultural biomass based Ligno-cellulosic 2G Ethanol Plants at Bargarh (Odisha), Bina (Madhya Pradesh) and Khamgaon (Maharashtra). The technology for the 2G Ethanol process is evolving and indigenous technologies are being encouraged for the project.

Surplus Biomass assessment for all three locations is completed and location and feed of the Bio-refinery has been finalized based on availability of Biomass feed in the region. Subsequently, the Feasibility Reports for Bargarh and Bina projects are completed.

The Bargarh 2G Ethanol Project has been progressing on a fast track basis. The Technology Licensor and PMC have been selected. Land has been allotted in June 2018. The Basic Engineering Design Package (BEDP) has been received from the technology licensor. Environment Clearance has been applied for the project and EIA/RRA study has been completed. Other tendering activities for the project are in an advanced stage.

INTERNATIONAL TRADE & RISK MANAGEMENT

The International Trade and Risk Management (ITRM) set-up is responsible for sourcing crude oils from indigenous as well as imported origins through term and spot contracts for BPCL refineries. ITRM also bridges gaps in supply and domestic demand of petroleum products by importing deficient products and exporting surplus products, charters ships for imports as well as carries out commodity price risk management activities.

During the year 2017-18, ITRM procured 4.38 MMT of crude oil from indigenous sources, as compared to 4.92 MMT in 2016-17. After completion of expansion of Kochi Refinery, with increased appetite for high sulphur crude oils, the crude oil processing requirement of BPCL's refineries increased to 28.49 MMT during 2017-18, as compared to 25.10 MMT during the previous year. ITRM therefore, imported the deficit quantity of 24.11 MMT of crude oil during 2017-18, as compared to import of 20.17 MMT of crude oil during 2016-17. Most of the high sulphur crude oils were imported on FOB (Free on Board) basis from the Middle East Gulf region through term and spot contracts. Consequently, import of low sulphur crude oils on FOB basis from the Far East and West Africa regions decreased somewhat, while that from the Mediterranean region remained nearly unchanged. The ratio of term to spot procurement was 69.3:30.7 in the year 2017-18 as compared to 72:28 in 2016-17, which is indicative of increased flexibility in sourcing.

In order to enhance cost effective sourcing of crude oils and improve refining margins, BPCL has entered into a strategic alliance with M/s. Shell to gain competency in international trading and is in the process of opening a trading arm in Singapore, as a wholly owned subsidiary.

In addition to import of crude oil, ITRM also imported LPG to meet domestic demand. Import of LPG was 2.81 MMT during the year 2017-18, as compared to 2.71 MMT during the previous year. The total import of LPG (including high sea sales and excluding high sea purchases) during the year 2017-18 was 2.68 MMT, as compared to 2.82 MMT during 2016-17. ITRM also imported 75 TMT of HSD BS IV during 2017-18, to meet the shortfall between the market demand and availability of the product from indigenous sources, as compared to nil import of HSD BS IV in 2016-17.

ITRM in-charters vessels for import of crude oil and LPG on FOB basis. In order to attain shipping security and optimize freight costs, a mix of ship chartering options were used. Out of the total 23.71 MMT crude oil imported on FOB basis during the year 2017-18, Contract of Affreightment vessels transported 2.91 MMT (12%), Time Charter (TC) vessels transported 4.27 MMT (18%) and Voyage Charter (VC) vessels transported the remaining 16.53 MMT (70%). In case of import of LPG, out of the total 2.17 MMT of LPG imported on FOB basis, during the year 2017-18, TC vessels transported 1.12 MMT (52%) and VC vessels transported the balance 1.05 MMT (48%).

The freight cost incurred for import of crude oil during the year 2017-18 was lower at USD 165 million (₹ 1,061 Crores) as compared to USD 190 million (₹ 1,274 Crores) during the previous year. The freight cost incurred on import of LPG, on both FOB and CIF basis, was also lower at USD 99 million (₹ 636 Crores) during 2017-18, as against USD 146 million (₹ 978 Crores) during 2016-17. The reduction achieved in freight costs for crude oil imports were due to subdued freight rates, more cargo liftings through VLCCs from the Middle East Gulf, reduced cargo liftings from West Africa and Far East and continual efforts by ITRM to optimize freight costs by exploiting market opportunities.

ITRM exports surplus refined petroleum products after meeting domestic demand. During the year 2017-18, ITRM exported 1,877.72 TMT of refined petroleum products, as compared to 2,398 TMT during the previous year. Naphtha exports decreased marginally to 1,138.73 TMT during the year 2017-18, as compared to 1,175 TMT in 2016-17, due to increase in domestic sales of Naphtha, higher conversion to Gasoline and lesser processing of light sweet crudes. Fuel oil exports decreased significantly to 407.99 TMT in the year 2017-18 as compared to 805 TMT in the previous year 2016-17 due to higher conversion into value added distillates. Export of Benzene decreased to 10.71 TMT in the year 2017-18, as compared to 40 TMT in the previous year, due to higher domestic sales. During the year 2017-18, export of HSD was 209.08 TMT, as compared to 233.55 TMT during the previous year. ITRM also exported 85.22 TMT of Vacuum Gas Oil (VGO) and 25.99 TMT of Gasoline during the year 2017-18, against nil exports of these two products in the previous year 2016-17.

As domestic prices of petroleum process are benchmarked to international prices, BPCL is exposed to the highly volatile prices of crude oil and petroleum products. BPCL is also exposed to volatile shipping freight rates for its imports. In order to protect BPCL from such adverse price movements, the commodity derivatives team in ITRM follows a Committee based, structured approach to carry out commodity hedging activities by hedging price risks in the international market through various instruments of hedging. Commodity hedging activities carried out during the year 2017-18 were within the approved mandate, in compliance of regulatory guidelines and resulted in hedging objectives being fully achieved.

RESEARCH AND DEVELOPMENT

During 2017-18, BPCL-R&D centres continued to offer novel, cost effective solutions for business development and sustainability. As a part of this, efforts were made to commercialize R&D products/processes.

In this context, commercial trials of the indigenous dewaxing catalyst, Bharat-HiCat, at the LOBS unit in Mumbai Refinery (MR) were initiated. Such effort has helped BPCL to become the third company in the world to develop such niche catalyst technology and also added impetus for development of improved versions of the catalyst for its commercialization. On similar lines, commercial use of Gasoline Sulfur Reduction additive, developed with patented know-how, is initiated on a continuous basis in the Fluid Catalytic Cracking Unit at MR. Further, commercial trials for cost effective Diesel Lubricity Additive and Drag Reducing Additive have been successfully completed. Additionally, novel additive development for liquid yield improvement in the Delayed Coker Unit has been accomplished and its demonstration is planned during next year.

Furthermore, the use of BPMARRK®: a tool developed for rapid crude assay, is popularized within the Corporation and its features have been further enhanced. These efforts have been recognized by MoP&NG by conferring the “Innovation Award 2015/16 – Best Innovation in R&D” for development of BPMARRK® during the 21st Refinery Technology Meet (RTM) at Visakhapatnam. The continuous improvements in unique features of BPMARRK® also brought its commercialization step closer. In this regard, discussions are in progress with a leading software provider.

As a part of disruptive innovation, efforts have continued to develop novel process technologies based on the process intensification principle. In this context, work on cross flow reactor technology for the hydroprocessing application, Higee Deaerator for one of the Crude Distillation Units at MR has continued. Such an approach is envisaged to offer a platform for process unit miniaturization with moderate process conditions leading to substantial savings in CAPEX and OPEX. Further, novel configuration based on the divided wall column concept for the Naphtha Splitter column at KR has been developed and its implementation has been initiated.

Efforts have been made to foster new business development through valorization of refinery streams namely Benzene and Light Diesel Oil for lithium ion battery and mosquito repellent application respectively. Likewise, focused collaborative efforts have been made to develop process know-how for production of Super Absorbing Polymer (SAP). In this context, potential hygiene SAP recipes, as per requisite specifications, have been developed.

During the year, as a part of green initiatives, Biodegradable Metal Cutting Oil: Mak®-Biocut has been developed in collaboration with Sewree-R&D and its field trials have been successfully completed. In order to improve the environment, a novel concept of waste plastic utilization in road pavements has been successfully demonstrated by laying roads at MR and KR.

The requisite technical support to set up a Bargarh Lignocellulosic refinery for 2G Ethanol production under the biofuel program has been continuously provided and in-house process development for the 2G Ethanol process continued. During the year innovative indigenous bio-remediation solution was provided to MMBPL to facilitate soil rehabilitation at the HSD leak affected site near Nashik (Maharashtra).

On similar lines, focused efforts have been made to develop niche and novel lubricant product segments. In this context, R&D activities have been carried out to develop a) High performance Engine Oil for 4 Stroke 2 wheelers, b) Synthetic Engine Oil for high performance passenger cars, c) High performance energy efficient Hydraulic Oil, d) Synthetic transmission fluid and e) Water resistant grease for industrial application.

All the aforementioned activities have been performed by adhering to safety compliance and all requisite measures have been performed to ensure implementation of Corporate HSSE guidelines.

These activities have been carried out through financial support, with total expenditure of ₹ 83.23 Crores (₹ 32.40 Crores-CAPEX and ₹ 50.83 Crores- REVEX, unaudited figures including salaries) against a target of ₹ 83 Crores. The implementation of Dewaxing catalyst, Bharat Ecochem for Ethanol MS blend, support on analytical / technical within the Corporation and outside and Solar plant operations have led to total savings of ₹ 15.24 Crores.

EXPLORATION AND PRODUCTION OF CRUDE OIL AND GAS

Bharat PetroResources Limited (BPRL) has participating interest (PI) in 24 blocks, of which 12 are located in India and 12 overseas, along with equity stake in two Russian entities holding the licence to four producing blocks in Russia. Seven of the twelve blocks in India were acquired under different rounds of New Exploration Licensing Policy (NELP) and five blocks were awarded under the Discovered Small Fields bid round 2016. Of the overseas blocks, six are in Brazil and one each in the United Arab Emirates (UAE), Mozambique, Indonesia, Australia, Israel and Timor Leste. The blocks of BPRL are in various stages of exploration, appraisal, pre-development and production. The total acreage held by BPRL and its subsidiaries is around 25,359 km^2 of which approx. 77% is offshore.

The PI in respect of Blocks in India and Australia are held directly by BPRL. BPRL has wholly owned subsidiary (WOS) Companies in the Netherlands, Singapore and India. The PI in Block-JPDA 06-103 in Timor Leste is held by BPRL's WOS Company in India, i.e. Bharat PetroResources JPDA Limited. The WOS in the Netherlands, i.e. BPRL International BV, in turn has four WOS Companies in the Netherlands, i.e. BPRL Ventures BV, BPRL Ventures Mozambique BV, BPRL Ventures Indonesia BV and BPRL International Ventures BV. BPRL Ventures BV has 50% stake in IBV Brasil Petroleo Limitada, which currently holds PI ranging from 20% to 40% in six blocks in offshore Brazil. BPRL Ventures Mozambique BV has PI of 10% in a block in Mozambique, and BPRL Ventures Indonesia BV holds PI of 12.5% in a block in Indonesia. In the Financial Year 2017-18, BPRL, through BPRL International BV has formed a WOS in the Netherlands, i.e. BPRL International Ventures BV. BPRL International Ventures BV, along with the respective subsidiaries of the Indian Consortium partners comprising ONGC Videsh Ltd. (OVL) and Indian Oil Corporation (IOC) formed a Special Purpose Vehicle (SPV), i.e. Falcon Oil & Gas BV in the Netherlands, to hold 10% stake in the offshore producing concession in UAE, i.e. Lower Zakum Concession. BPRL, through BPRL International Ventures BV, has 30% stake in Falcon Oil and Gas BV. Further, BPRL's Singaporean subsidiary, i.e. BPRL International Singapore Pte Ltd (BISPL), along with respective subsidiaries of Oil India Ltd (OIL) and IOC have two Special Purpose Vehicles (SPV) i.e. Taas India Pte Ltd and Vankor India Pte Ltd. These, in turn hold 29.9% and 23.9% stake respectively in two Russian entities holding license to four producing blocks in Russia. BPRL International Singapore Pte Ltd holding 33% stake in each of the SPVs, to hold stakes in the Companies in Russia.

In Russia, BPRL along with OIL and IOC, jointly referred to as the Indian Consortium (IC), through their Joint Venture Companies formed by their wholly owned subsidiaries in Singapore, completed two transactions on 5th October 2016. One was acquisition of 23.9% shares of the charter capital of JSC Vankorneft, a Company organised under the laws of the Russian Federation, (which is the owner of Vankor and North Vankor Field licenses), from Rosneft Oil Company (Rosneft), a National Oil Company of Russia. The second was acquisition of 29.9% of the participatory share in the charter capital of LLC Taas Yuryakh Neftegazodobycha ("TYNGD"), from LLC RN Razvedka I Dobycha, a wholly owned subsidiary of Rosneft.

In Vankorneft, Rosneft holds about 50.1% shares in JSC Vankorneft, OVL (through its subsidiary) holds 26% shares of JSC Vankorneft and IC (through subsidiary companies) holds the remaining 23.9%. In TYNGD, Rosneft (through its subsidiary) holds 50.1% shares, BP (through a subsidiary) holds 20% shares and IC (through subsidiary companies) holds the remaining 29.9% shares. The Vankor field, located in East Siberia is Russia's second largest field by production and accounts for around 4% of Russian production. During the year 2017, the Vankor field produced approx. 17.6 MMT of oil and 8.5 BCM of gas (BPRL's effective share being 1.38 MMT oil and 0.67 BCM gas). During the year 2017, TYNGD produced approx. 1.24 MMT of oil and 0.2 BCM of gas (BPRL's effective share being 0.12 MMT Oil and 0.02 BCM Gas). TYNGD is expected to ramp up the oil production to 5 MMTPA by 2021. IC has started receiving dividends from the Vankor field. During the year 2017, IC received dividend amounting to approx USD 220 Million (with BPRL's effective share of approx. USD 72 Million).

In the UAE, BPRL along with OVL and IOC as a consortium, acquired 10% stake in the offshore producing oil asset, Lower Zakum Concession. IC's share in the Lower Zakum Concession is held through Falcon Oil & Gas B.V, a SPV incorporated in the Netherlands where BPRL holds 30% shares through its step down subsidiary BPRL International Ventures B.V in the Netherlands. IC's share in the concession was awarded by the Supreme Petroleum Council (SPC), on behalf of the Abu Dhabi government, to Falcon Oil & Gas B.V. Falcon Oil & Gas BV executed the transaction documents with respect to the Lower Zakum Concession on behalf of IC. The Concession has a term of 40 years effective from March, 2018.The international shareholders in the Lower Zakum concession are the IC represented by Falcon Oil & Gas B.V (10%), JODCO (10%, a wholly owned subsidiary of Japan's INPEX Corporation), China National Petroleum Corporation (10%), Italy's ENI (5%) and France's Total (5%). ADNOC retains a majority 60% stake in the concession. The Lower Zakum field is located in Abu Dhabi Offshore shallow water and has been producing since 1967, with a cumulative oil production of 4.1 billion barrels till 2016. The current production of this field is about 400,000 barrels of oil per day and IC's share is about 40,000 barrels of equity oil per day (approx. 2 MMTPA), with BPRL's entitlement approximately 12,000 barrels of equity oil per day being marketed as Das Blend. With this acquisition, BPRL has entered into UAE, which is a very attractive geography for sourcing oil for India and also into a producing field with a 40-year old track record, having supporting infrastructure for production and evacuation already in place.

In Mozambique, BPRL, through its Netherlands based subsidiary company, i.e. BPRL Ventures Mozambique B.V, holds 10% PI in the Rovuma Offshore Area 1 concession in Mozambique. Anadarko Mocambique Area 1 Limitada, a wholly owned subsidiary of Anadarko Petroleum Corporation, USA, is the Operator with 26.5% PI and the other consortium partners are Mitsui E&P Mozambique Area 1, Limited (20%), ENH Rovuma Área Um, S.A. (15%), OVL (10%), Beas Rovuma Energy Mozambique Limited (10%) and PTTEP Mozambique Area 1 Limited (8.5%). With the discovery of approximately 75 trillion cubic feet of recoverable natural gas, the Area 1 partnership is going ahead with the plan for development of an initial onshore LNG project consisting of 2 LNG trains with total nameplate capacity of 12.88 MMTPA (2x6.44 MMTPA) in the Cabo Delgado province, northern Mozambique. During the year 2017-18, the consortium has continued to advance towards a Final Investment Decision (FID) and further reinforced its position as a future global energy leader. The focus of the Area 1 partnership has been on the key elements required for FID i.e. Legal and Contractual Framework, Resettlement, Marketing and Project Financing. During the year, the partnership has successfully completed the core components of the Legal and Contractual Framework with the execution of the Marine Concession Agreements with the Govt. of Mozambique. Following the Mozambican Government's announcement of the Moratorium in November last year, the partnership commenced the implementation of the Resettlement program and onshore site preparation activities to de-risk the project schedule as much as possible ahead of FID. The focus of the partnership remains on carrying out the resettlement program safely, efficiently and with the utmost respect for the affected people. The partnership has, till date, executed a long-term LNG Sale and Purchase Agreement (SPA) for 1.2 MMTPA. Additionally, the partnership is in advanced negotiations with several buyers to secure the remaining volume to reach FID. With respect to project financing, Lenders are keenly engaged and have indicated willingness to support the initial project with the necessary levels of project finance commitments. The partnership is at present actively negotiating the terms and conditions of the project financing. During the year, two-train Golfinho-Atum Field Development Plan has been approved by the Govt. of Mozambique in the month of March, 2018. This Development Plan outlines the integrated onshore LNG project from the reservoir to the LNG market and is a culmination of the progress made to date on the technical and commercial aspects of the LNG development. This marks the achievement of a critical milestone which positions the Area 1 consortium and Mozambique as a strategic global LNG supplier. With the approval of the Development Plan on the back of other recent achievements, including completion of the core components of Legal & Contractual framework agreements and commencement of the implementation of resettlement program, the Area 1 consortium continues to progress towards a FID on the LNG project. This is anticipated once sufficient SPAs and financing arrangements are concluded for the Area 1 project.

In Brazil, IBV Brasil Petroleo Limitada (incorporated in Brazil), a JV Company of BPRL Ventures BV, and Videocon Energy Brazil Ltd, a foreign subsidiary of Videocon Industries Limited, holds PI in 6 blocks in 3 concessions in Brazil. Five out of six blocks are operated by Brazil's National Oil Company Petrobras, and one block is operated by Anadarko Petroleum Corporation, USA. In Sergipe Alagoas basin, all the minimum work program activities for the two exploration periods in these blocks have been completed. During the exploration periods, four discoveries of Oil & Gas i.e. 'Barra', 'Farfan', 'Cumbe' and 'Barra#1' have been made in this concession. Presently, the consortium is carrying out activities in four appraisal plans namely "Barra", "Farfan", "Cumbe" & "Verde" and the area under the "Papangu" appraisal plan, in SEAL-M-569 block has been relinquished after completing the firm activities. During appraisal, two additional oil and gas discoveries have been made. ANP has approved the proposal for extension of all BM-SEAL-11 appraisal plans up to 1st December 2020. The Operator i.e., Petrobras is taking steps for assessing reservoir extent including extended well testing in Farfan and based on the results of the appraisal, further development activities would commence. Petrobras has formed a Joint Working Team to interact closely for expediting the Sergipe Project development.

In Potiguar basin, during the first exploration period (2006-mid 2014), the minimum commitment activities have since been completed, including drilling of an exploration well called "Ararauna" in POT-M-760. Based on the oil and gas shows observed in the Ararauna well, ANP has approved the Ararauna appraisal plan, covering both the blocks in BM-POT-16 concession, consisting of firm commitment of drilling one well & G&G studies. The Regulator ANP has approved the extension of the Ararauna Appraisal Plan till November 2021. There are a number of sizable prospects identified based on the old 3D seismic data interpretation. To mature these prospects to drilling, the consortium has completed acquisition of new 3D seismic data and the same is being analyzed for better understanding of fault entrapment. The new 3D seismic study will help to reduce the risk/ uncertainty involved in fault entrapment.

In the Campos basin, during the exploration periods, the Wahoo discovery was announced. After completion of the exploratory periods in November 2010, the consortium decided to move on to the Appraisal phase. Under the Appraisal plan, the drilling of two firm Appraisal wells, screening of Development concepts and Pre-FEED engineering studies on identified facility options have been completed. In March 2016, ANP has approved the extension of the Wahoo Appraisal Plan from 30th September, 2015 to June 2022 with commitment of a Long Term Test (LTT) by 30th November, 2018. The consortium is in the process of studying various available options, including a possible tie back arrangement with nearby developed oil fields, before any firm commitment is made towards field development. The objective is to address all the uncertainties involved in the project to facilitate a commercially viable field development option.

In Israel, the BPRL led consortium comprising OVL designated as Operator, OIL and IOC submitted a successful bid for the offshore exploration block in Israel leading to award of Block 32. The block is located in the Eastern Mediterranean Sea where large gas discoveries have been made in the recent past. The total area is approximately 356.98 km^2 and the license is for an initial period of 3 years. The work program envisaged during this period consists evaluation by re-processing of available data. BPRL holds 25% PI in Block 32.

In Indonesia, a subsidiary of BPRL, i.e. BPRL Ventures Indonesia BV, has PI of 12.5% in Nunukan Block PSC. Other Joint Venture (JV) partners are PT Pertamina Hulu Energi with 64.5% PI as Operator; and Videocon Indonesia with 23% PI. There has been discovery of oil and natural gas in the Badik 1 well and hydrocarbon discovery confirmed in all appraisal wells. The Plan of Development (POD) for the Badik & West Badik prospects have been approved by the Ministry of Energy and Mineral Resources, Indonesia. The exploration work program for the Parang-1 well was completed in 2017-18 with the tests resulting in gas in five zones and oil in one zone. The Parang-1 discovery was also ranked amongst the Top Ten Discoveries of the World for 2017 by IHS Markit. The Operator proposes to carry out the appraisal of the Parang discovery and further exploration in the adjoining prospects.

In Timor Leste, BPRL through its wholly owned subsidiary, Bharat PetroResources JPDA Limited currently holds 20% PI in this block. The other consortium members are Videocon JPDA 06-103 Limited & GSPC JPDA Limited, both holding 20% PI, Pan Pacific Petroleum (JPDA 06-103) Pty Limited holding 15% PI, Oilex Limited (as Operator) holding 10% PI and Japan Energy E&P JPDA Pty Limited holding 15% PI in the said block. The Joint Venture (JV) had submitted its request to ANP for termination of PSC without claim or penalty. ANP, however rejected the claim of the JV and delivered its notice to terminate the PSC imposing Contractors Liability upon Termination. The JV, while accepting the termination, requested for negotiation for amicable settlement of contractor's liabilities upon termination, which is still under consideration.

In Australia, BPRL currently has a PI of 27.803% in Block EP - 413 (on land) in consortium with Norwest Energy NL, (Operator) and ARC Energy, 100% subsidiary of Australia Worldwide Exploration. This Block is being explored for Shale gas/tight gas. As a part of the Renewal Phase work commitment, acquisition of 3D seismic data has been carried out over 105 sq kms of the block area. The processing and interpretation of 3D Seismic data that was acquired earlier has been completed during the year. The work commitments of permit year 3 have been swapped by the work commitment of permit year 4. The permit is currently due to expire on 22nd February 2020.

In India, under NELP-IX bid round, the BPRL led consortium has been awarded on-land block CB-ONN-2010/8, in the Cambay basin. BPRL is the Lead Operator with 25% PI and the other consortium partners are GAIL (India) Ltd - 25% PI (Joint Operator), Engineers India Ltd (EIL) - 20% PI, BF Infrastructure Ltd (BFIL) - 20% PI and Monnet Ispat & Energy Ltd (MIEL) - 10% PI. At present, the Consortium has completed drilling of six wells and testing of five wells in the Initial Exploration Period. During testing, Pasunia#01 (PA#01) and Pasunia#02 (PA#02) wells flowed oil of about 25-30 barrels of oil per day with approx. 290 API to the surface on self-flow and were accepted by DGH as discovery wells. The Field Development Plans (FDP) for the above two discoveries were submitted to DGH on 27.11.2017 for approval. DGH has approved the said FDP on 11.06.2018. Further, BPRL has started conducting Environmental Impact Assessment (EIA) studies in the block for carrying out development activities and would be submitting the application to Ministry of Environment & Forests (MOEF) for granting Environmental Clearance (EC).

BPRL has also been awarded five contract areas (two offshore and three onshore) through the Discovered Small Field (DSF) bid rounds of 2016. The two offshore blocks (B15 and B127E) are in the Mumbai Offshore basin, two in Rajasthan (Bakhri Tibba & Sadewala) and one in the Karaikal – Cauvery Basin, Tamil Nadu. Petroleum Mining Leases (PML) have been received for all fields except for Karaikal. Based on the discoveries and the G&G data available, commercial viability on further developing these fields is being evaluated.

BPRL has a PI of 40% in on land Block CY-ONN-2002/2 in the Cauvery Basin wherein ONGC is the Operator. The consortium has been successful in drilling three exploratory wells under the exploration phase of the field development and has flown an oil @ 115 cubic metre per day and gas @ 11,500 cubic metre per day. The block then moved to the appraisal phase and drilled two appraisal wells, which also produced hydrocarbons during testing. Accordingly, the Field Development Plan (FDP) was prepared by the Consortium and was approved by the Management Committee (MC) on 16.10.2015 based on which the block has entered into the Development Phase. The Consortium has been successful in completing five producing wells as of now and is currently producing oil with a combined daily average of 270 m^3 per day from these wells under the block. As part of the ongoing field development activities, drilling of the sixth one along with the other developmental activities like Construction of Crude Processing Facilities, pipeline works are currently in progress.

The Government of India (GOI), during 2004, awarded on-land block, CY-ONN-2004/2, to the joint consortium of ONGC and BPRL. A PI of 20% is held by BPRL in this block, with ONGC as the operator of the block. The consortium has completed drilling of four exploratory wells and two appraisal wells as on date. Out of the four exploratory wells drilled, one well (PN#8) produced oil and gas during testing and was declared as a discovery well. During the year, based on the testing results of PN#8 Well, the Consortium has prepared a FDP, which was submitted to the MC. FDP submitted was approved by the MC and the block has accordingly entered into the Development Phase effective 13.7.2017. As per the approved FDP, a total of eight development wells are proposed to be taken up along with facilities required for handling oil and gas produced from the field. The drilling of the first development well has already commenced and is under progress.

BPRL has a PI of 33.33% in RJ-ONN-2005/1, an onland block in Rajasthan, as Joint Operator with Hindustan Oil Exploration Corporation (HOEC). IMC is the other partner in the block. Phase I of the exploration period including all granted extensions expired on 12.10.2015. The drilling of exploratory wells was delayed because of inordinate delay in obtaining Ministry of Defense (MoD) clearance and Environmental Clearance (EC). A relinquishment proposal was submitted by the Operator to DGH seeking waiver of MWP commitment without Liquidated Damage under the revised policy framework released by MOP&NG on 10.11.2014, which was turned down by DGH. The Consortium Partners are in discussion with DGH for the way forward in the block.

In the Cambay basin, CB-ONN-2010/11, an onland block was awarded by GOI to a Consortium consisting of GAIL, BPRL, EIL, BFIL and MIEL. GAIL with 25% PI is the Operator of the block. and BPRL with 25% PI is the Joint Operator of the block. The block is currently in the exploration phase. Drilling of seven MWP wells has been completed. DGH has approved hydrocarbon discovery made in two wells. BPRL has agreed to join the Operator for appraisal work Program of both the discovery wells, i.e. Dugari#1 and Galiyana#1.

In the Assam basin, AA-ONN-2010/3, an onland block was awarded by GOI to a consortium consisting of OIL, ONGC and BPRL. OIL with 40% PI is the Operator of the block. BPRL has 20% PI in the block. Pre-drilling activities for the committed MWP well are currently in progress.

MB-OSN-2010/2, a shallow water offshore block was awarded by GOI to a consortium consisting of OIL, HPCL and BPRL. OIL with 50% PI is the Operator of the block. BPRL has 20% PI in the block. The Seismic Data, which was interpreted in-house as well as by independent consultants, showed that the prospectivity of the block is not encouraging to proceed with further exploration in the block; hence, it was decided to relinquish the block. The proposal for relinquishment of the block along with applicable LD was submitted by the consortium to DGH and the same has been approved.

BUSINESS PROCESS EXCELLENCE CENTRE

During FY 2017-18, BPEC processed 4.3 Lakh invoices amounting to ₹ 11,000 Crores. There was a marked improvement in the processing cycle, with almost 80% of the invoices being processed within 15 days of receipt at BPEC. The last financial year brought about the biggest change in the Indian Tax Regime with introduction of GST. This presented a new challenge for the BPEC team with respect to collection of GST registration details of suppliers/ contractors. However, the team rose to the challenge and successfully collected GST Registration details for 21,568 suppliers/ contractors. Introduction of GST also brought a sunset clause for the erstwhile Service Tax Regime. Input Tax Credit for Service Tax could be availed only till June 2017. With the focused approach and dedicated efforts, BPEC managed to avail Service Tax Credit worth ₹ 255 Crores in the period April-June 2017, as compared to ₹ 289 Crores for the entire FY 2016-17. BPEC showcased its state-of-the-art infrastructure, process as well as technology to officials from IOCL and HPCL who visited BPEC during the year.

To take forward its quest for digital transformation, BPEC has undertaken a project to take over various transactional processes in the Order to Cash cycle i.e. Accounts Receivable (AR) process. The project is one of a kind in BPCL, since the data and processing will be hosted on the Cloud platform. The activities undertaken as a part of the project include matching and clearing of customer open items, customer credit management, processing of debit – credit notes, collections & dispute management, processing of customer refund requests and meeting inter/intra customer/SBU requests.

BRAND & PUBLIC RELATIONS

BPC Tarang

The main objective of BPC Tarang, our customized In-house Radio service, is to engage, entertain and energize our employees across the country. This powerful medium has been utilized to communicate various initiatives and corporate messages across the country. With a view to enlighten young officers about our corporate culture, we have broadcast interviews of some of our senior management. Opportunities were also provided to retiring staff to express their thoughts and memorable experiences through this medium. The latest addition in BPC Tarang was the series under the banner ‘BPC’s Got Talent’ that was launched on 6th November 2017. The purpose of this initiative was to unleash the latent talent of our staff across the country - both management and non-management. We have received a huge response of performances in various Indian Regional languages besides Hindi. Staff have participated in the categories of singing, instrumental music, poetry, mimicry, storytelling and dialogues.

Fleet Visual Manifestation

BPCL operates through a fleet of over 22,000 transport vehicles in different businesses - Retail, LPG, Lubes and Aviation. These vehicles carry petroleum products from supply locations to Retail Outlets, bottling plants, LPG distributors, direct customers and Aviation Fueling Stations, covering the length and breadth of the country. In order to strengthen BPCL's corporate brand equity, a common branding for the entire BPCL fleet has been developed. While preparing the new VM design, due consideration has been given to flexibility for adapting the artwork for various sizes and shapes of vehicles, ease of application and above all, creating a distinct and unique identity for the entire BPCL fleet. In the new branding world class paint and vinyl specifications have been incorporated which would give the BPCL fleet a grand and attractive look. The new age customers would also see Bharat Petroleum in a new light. From the Corporate Branding perspective, it is important to have a standard and uniform look of the BPCL fleet across businesses.

Active Social Media Presence

Various digital initiatives and campaigns have helped Bharat Petroleum enhance and amplify its presence on social media. BPCL owned social media assets like Twitter, Facebook, LinkedIn and YouTube were leveraged to promote digital content for enhancing Brand BPCL. Major campaigns like 'Jaanchen Parkhein Phir Bharein' for Quality and Quantity awareness, MAK Lubricants for product awareness, BPCL Maharatna and Star PSU were launched on social media and they generated more than 68 Lakh impressions. BPCL could develop a positive and active social media culture with a strong follower base of over 2.9 Lakhs.

Online Reputation Management

With customers shifting to the conveniences of digital and social media, resolutions of complaints raised via these modes have to be given top priority. Online Reputation Management is a powerful online listening and responding tool to improve the equity of Brand BPCL. With the robust ORM tool, BPCL is equipped to monitor and respond to around 20,000 conversations across the Internet every month. The ORM tool helps in monitoring feedback, suggestions and complaints and also generates reports on parameters like demographics and sentiment analysis. The ORM assures 24x7 tracking of conversations and ensures resolution within 48 hours. Competitor information and insights are also tracked on a daily basis with the ORM tool.

MoPNG e-Seva

BPCL has been chosen to coordinate a Digital Initiative 'MoPNG e-Seva', a Social Media based grievance redressal platform of Ministry of Petroleum & Natural Gas to resolve Oil & Gas complaints. A total of 17,148 queries were received and resolved on MoPNG e-Seva as on 31st March 2018.

Exhibitions

Urja Utsav - a major event and exhibition for development in the areas of Biofuel was organised at Pune on 7th July 2017. The Bio-fuel model at the BPCL Pavilion was a major attraction.

'Advantage Assam'- the Assam Global Investors' Summit scheduled during 3rd/4th February 2018, was the largest ever investment promotion and facilitation initiative by the Government of Assam. The Summit aimed at highlighting the state's geostrategic advantages offered to investors by Assam. The MoP&NG pavilion at the exhibition showcased the Hydrocarbon Vision 2030 for the Northeast and opportunities available in the upstream and downstream sectors. BPCL signed a MoU with the Government of Assam for a POL Terminal and LPG Bottling Plant at Sonapur, Dist. Guwahati.

Pradhan Mantri Ujjwala Yojana (PMUY) and PM LPG Panchayat Campaigns

Various campaigns were launched to disseminate information and create awareness about PMUY and PM LPG Panchayat. These effectively helped to achieve release of over 4.5 Crore LPG Connections under PMUY since 1st April 2016.

Community Building

The following activities were undertaken during the year :

As a good corporate citizen, BPCL has sponsored many events like the North East ASEAN Summit, SCOPE Communications Summit, NDE 2017 Conference & Exhibition on Non- Destructive Evaluation, International Customs Day, CII Industrial Relations Summit, 14th National Competition for Young India by AIMA, Half Marathon by Border Security Force and PASBAN E ADAB by Maharashtra Police, among several others.

BPCL has also participated in many major conferences like NIPM's 36th Annual National Conference; 22nd Refinery Technology Meet (RTM) by Centre for High Tech, FIPI International Energy Conference, 17th London Global Convention, Petrochemical InvestorsConclave, Foundry Technology Event and National Level Vendor Development Program NATCON 2017.

As a corporate working towards uplifting the weaker sections of society, BPCL regularly contributes to various fund-raising events organized by NGOs and cultural events organized by various associations like The Blind Welfare Organization, Tamana Fashion show for the specially abled, Indian Trust for Rural Heritage and Development, National Society for the Blind, India Deaf Society, HURT Foundation, Antarchakshu by Xavier's Resource Centre for the visually challenged and Umeed 2018 Fund raising for cancer patients by Medigene Homeopathic Research & Development.

On the sports front, BPCL has sponsored various tournaments such as the Federation Cup Kabaddi Championship, National Carrom Championship, FIVC Forza International Veteran Cup Table Tennis Tournament Goa amongst others.

In addition, BPCL has sponsored many college festivals to encourage the youth to participate in cultural activities and organize such events on campus such as Moneta Fest by Podar College, Lokmanya Tilak Municipal Medical College & General Hospital for Trinity Conference 2018, Symphony by K.J. Somaiya College of Engineering, Prarambh by Hinduja College, International Research Conference by Jamnabai Bajaj Institute, Unmaad by IIM Bangalore, Cycle to Change by Sydenham Institute of Management Studies, Bitotsav 2018 by Birla Institute of Technology, Media Mahakumbh by Indian Institute of Mass Communication, amongst many others.

AWARDS & RECOGNITION

BPCL has been conferred with the coveted Star PSU Award at the Business Standard Annual Awards for Corporate Excellence 2017. Apart from financial metrics and competitive advantage, the criteria for selection included scale, sustainability, leadership and innovation, bearing testimony to BPCL's capabilities in these diverse spheres.

In the prestigious Fortune Global 500 list for 2017, BPCL's rank is 314 and in the Forbes Global 2000 list for 2018, BPCL's rank is 672. For its outstanding global, financial and industry performance, BPCL has been ranked among the top 20 Oil and Gas Refining and Marketing companies in the Platts Top 250 Global Energy Company Rankings for 2017. BPCL ranks 5th in Oil & Gas Refining and Marketing in the Asia/Pacific Rim, 7th in Oil & Gas Refining and Marketing globally and 10th in overall performance in the Asia/Pacific Rim. On an overall global performance, Bharat Petroleum has been ranked 27th.

BPCL was honoured with the prestigious Federation of Indian Petroleum Industry (FIPI) 'Project Management (₹ 500-2,000 Crore) Company of the Year – 2016' Award for completing the CDU-4 Project of Mumbai Refinery within the time schedule and cost while maintaining quality and safety standards during implementation.

Supply Chain Optimization obtained the Winner Award in the Category, "Strategy Excellence in Raw Material Procurement" at the Manufacturing Supply Chain Summit 2018, conducted by KamiKaze B2B Media. Internal Audit has been conferred with the Award of Excellence under the category of 'Agile Technology in Internal Audit' for their innovative initiative: - "Project Smart Watch – Continuous Assessment of Risk".

Mumbai Refinery bagged the Refinery Innovation Award 2016-17 for being the first in India in the history of refining, to produce world class quality hexane as a byproduct along with isomerate – a MS blend component - from its Isomerization unit. MR has been adjudged as the winner of "MQH – Best Practices Competition", under the Manufacturing Category, conducted by IMC Ramkrishna Bajaj National Quality Award Trust (RBNQA), Mumbai. In recognition of its commitment towards Business Excellence and Sustainability, Mumbai Refinery was conferred the 'Gold Award' (Special category) under the prestigious 'National Awards for Manufacturing Competitiveness (NAMC) 2016-17' conducted by the International Research Institute for Manufacturing (IRIM).

For the second consecutive year, Kochi Refinery has been declared winner of the National Institute of Personnel Management (NIPM) Kerala Chapter Best Corporate Citizen Award in recognition of their efforts in integrating and internalizing CSR into their core business operations. For the 12th consecutive year, Kochi Refinery has won the Kerala State Pollution Control Excellence Award instituted by Kerala State Pollution Control Board (KSPCB) for pollution control measures in the category of very large industries. Kochi Refinery bagged the Construction Industry Development Council (CIDC) Viswakarma Award for the second consecutive year for the "Best Construction

Project for the year 2017-18” for the Integrated Refinery Expansion Project.

Kochi Refinery also secured the CIDC Green Performance Award for its numerous environment friendly initiatives. Kochi Refinery has been adjudged winner of the FACT MKK Nayar Productivity Award for Large Scale Industries for 2015-16 instituted by the Kerala State Productivity Council (KSPC). Kochi LPG plant was awarded first for Outstanding Performance in Industrial Safety, under Category – III, Sub Category-I (Medium Factories) from Department of Factories & Boilers, Government of Kerala. Kochi LPG plant was also awarded Runner-Up for Outstanding Safety Performance, under the category of Medium Sized Chemical Industries from National Safety Council (Kerala Chapter).

BPCL won the Silver Award for its In-house Magazine, Petro Plus, at the Annual Awards of the Association of Business Communicators of India (ABCI). BPCL received the Best Corporate Communication Campaign / Program - (Internal) for the Brand Quiz Baadshah initiative and the Best Annual Report at the SCOPE Corporate Communication Excellence Awards 2017.

While Integrated Data Center’s (IDC) case study - “Advanced Racks and Energy Management in Data Center” was adjudged as the Winner in the ‘Data Center – Energy Efficiency’ category organized by UBS Transformance, their case study - “Enhancement of Data Center Electrical Redundancy System with Modular UPS Architecture” was declared the Winner in the “Data Center – Power Management” category. BPCL was also awarded the Leader Dx – IDC Digital Operational Transformation Award for successfully planning and executing the digital transformation (DX) of one or multiple areas of their business through the use of digital and disruptive technologies within Asia/ Pacific.

Bhubaneshwar AFS was awarded by Odisha State Safety Award Committee as winner of the Government award for the ‘Lowest Weighted Frequency Rate of Accidents in 2017, in man-hours worked between 20,000 to 1,00,000 category’ for maintaining the highest level of safety management system.

INTERNAL CONTROL SYSTEMS AND THEIR ADEQUACY

The Corporation has a robust internal control system (including Internal Financial Controls over Financial Reporting) that facilitates efficiency, reliability and completeness of accounting records and timely preparation of reliable financial and management information. The internal control system ensures compliance with all applicable laws and regulations, facilitates in optimum utilization of resources and protects the Corporation’s assets and investor’s interests. The Corporation has a clearly defined organizational structure, well documented decision rights and detailed manuals and operating procedures for its business units and service entities to ensure orderly and efficient conduct of its business. The internal control systems (including Internal Financial Controls over Financial Reporting) are reviewed on an ongoing basis and necessary changes are carried out to align with the changing business/statutory requirements.

The state-of-the-art ERP solutions (SAP) and Business Information Warehouse in the Corporation has inbuilt controls including the authorization controls. This further enhances controls and seamless exchange of information with access controls. The SAP systems will provide an audit trail of the transactions. The Corporation has a whistle blower policy and anti-fraud policy to address fraud risk.

The Corporation’s independent Audit function, consisting of professionally qualified persons from accounting, engineering and IT domains, review the business processes and controls to assess the adequacy of the internal control system through risk focused audits. The Internal Audit Department plans the annual audit plan to cover each and every aspect of the business. The audit reports published by the Internal Audit Department are shared with the Statutory/Government Auditors, who review the efficacy of internal financial controls. Key business process changes have been reviewed by the internal team before implementation.

The Audit Committee of the Board regularly reviews significant findings of the Internal Audit Department covering operational, financial and other areas and provides guidance on internal controls.