

Management Discussion and Analysis Report

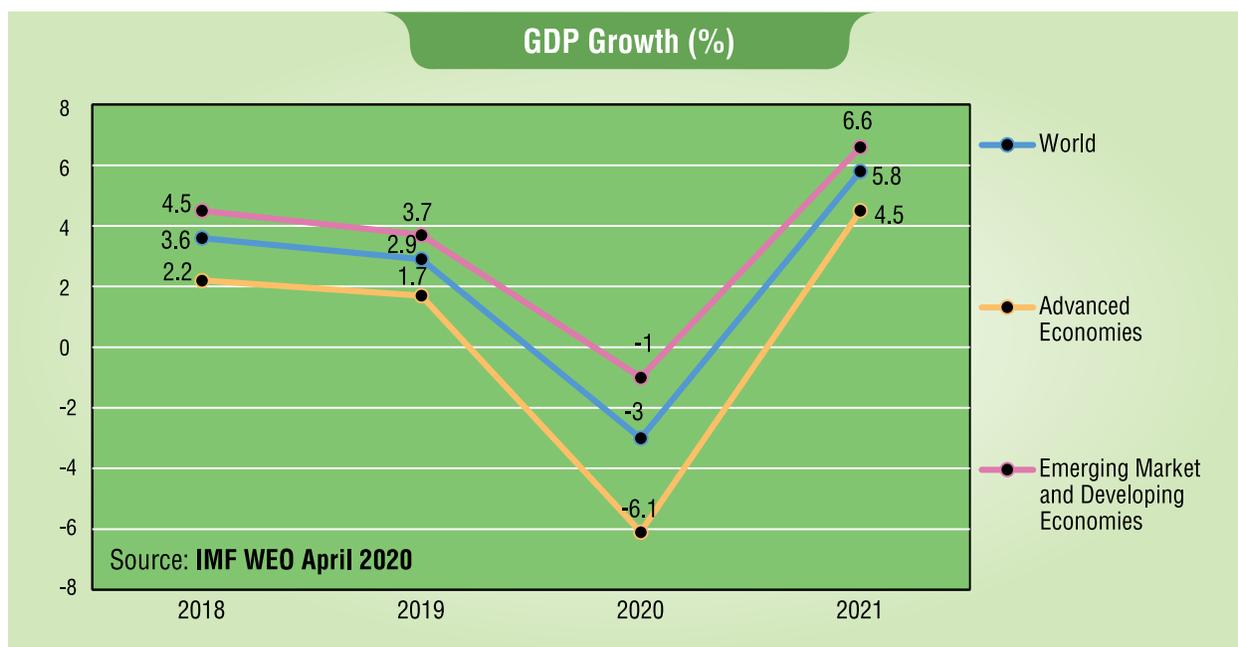
The 'New Normal', is a term that has, of late, become the go-to euphemism to convey potentially irreversible shifts and movements in the status quo, ushering in new realities, aspirations and concerns. Indeed, change has been a constant feature of civilizational progress. However, when change comes thick and fast, completely unforeseen, it comes at the existing systems like hurricanes, brutally disrupting all sense of what has counted as 'normal' till then. COVID-19 is one such hurricane – a quintessential 'black swan' event that is likely to radically alter the paradigm of modern society and economy in more ways than one. A novel coronavirus infection that originated in China in late 2019, COVID-19, spread quickly and with serious consequences, and within the first quarter of this year, it engulfed the entire globe. The World Health Organization (WHO) declared it as Public Health Emergency of International Concern (PHEIC) in January 2020 and the International Monetary Fund (IMF) in its World Economy Outlook (WEO) April 2020 release termed it 'a crisis like no other'. The coronavirus pandemic has resulted in a hitherto unexperienced scale of human fatalities and countries, big and small, in order to contain the disease spread undertook the radical decision to place vast segments of their populations under a state of 'lockdown', involving strict stay-at-home orders, quarantines and social distancing protocols. As per the International Energy Agency (IEA), about 4.2 billion people or 54 percent of the global population, representing almost 60 percent of global GDP, were subject to complete or partial lockdowns towards the end of April. Quite realistically, COVID-19 is arguably the greatest disaster that humanity has faced since the end of the World War 2, but it could also potentially be a watershed moment for human history, affecting the way the world charts its future and selects its growth priorities. Therein also lie opportunities for the world in the aftermath of COVID-19, amid all the tragic and unfortunate developments. Once it has passed, COVID-19 will have been the sternest test for human ingenuity, courage and resilience – essentially, the human spirit – and like all obstacles and challenges

that mankind has overcome in its fabled trajectory of evolution and progress, COVID-19 too shall be overcome and that will mark a breakthrough milestone for generations to come. But for now, in 2020, the world is still grappling with the significant implications of this global pandemic that has both immediate and long-term effects on the state of the global economy, and in particular, the energy industry.

1. Global Economy

The global economy was already in deceleration in 2019, much before COVID-19 came onto the horizon. Global GDP growth in 2019 was 2.9 percent, its slowest pace since the global financial crisis, on account of trade policy uncertainty, geopolitical tensions, and idiosyncratic stress in key emerging market economies, as per the IMF's WEO. Advanced economies grew at 1.7 percent, while Emerging Market & Developing Economies grew at 3.7 percent. Now with the evolving and pervasive crisis with the COVID-19 outbreak, prospects of a rebound in 2020, which was articulated in its WEO January 2020 release, instead has transmuted into grim projections of an inevitable economic recession, in the agency's most recent outlook in April 2020. It projects global economy to shrink in 2020 by as much as 3 percent. This is a downgrade of 6.3 percentage points from January 2020, a major revision over a very short period, making it the worst economic downturn since the Great Depression, and also far worse than the Global Financial Crisis of 2008.

Growth, however, is projected to bounce back to 5.8 percent in 2021 as economic activity resumes, underpinned by policy support. But there is considerable uncertainty around the forecast, as IMF admits, based on factors such as the pathway of the pandemic, pace of economic recovery and shifts in consumer behaviour among others.



Indian Economy:

As per the Central Statistics Office (CSO) data published in May 2020, the domestic economy slowed down to a 11-year low with GDP growth slipping to 4.2 percent, with fourth quarter GDP growth for FY'20 coming in at a 40-quarter low of 3.1 percent. This aligns with IMF's forecast for the economy in its WEO April 2020 release.

The hard impact of Coronavirus has left almost no major country unscathed, but its consequences in India could be quite damaging given the inherent complexities – large population, inadequate health infrastructure and high percentage of workforce employed in MSMEs/informal sector. The Hon'ble Prime Minister, in view of the potential ramifications, executed possibly the hardest of lockdowns, with complete suspension of all non-essential industries, business and commercial travel/public transport, for a 21 day period beginning March 25, 2020 in a deliberate push to contain the virus' spread. The original 21-day lockdown was subsequently extended in phases with graded relaxations with a view to not completely haemorrhage the domestic economy as well as avert a runaway surge in infections. A much

needed economic stimulus package, worth ₹20 Lakh Crore or USD 266 bn (10 percent of domestic GDP), was also announced as part of the policy measures to combat the impending economic turmoil.

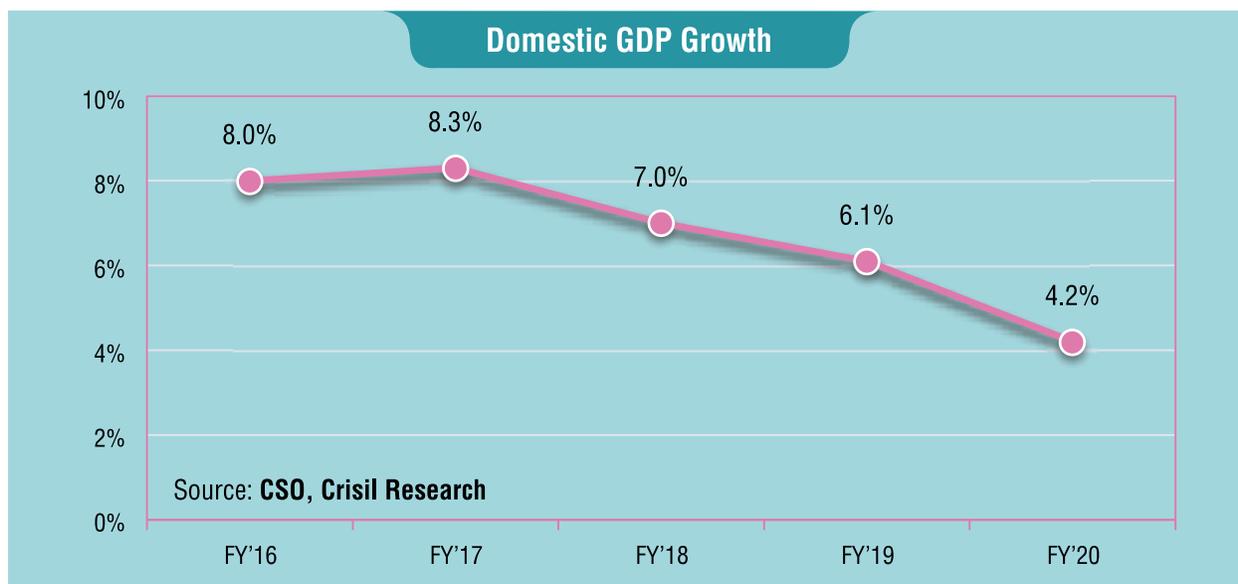
Despite the prompt nationwide containment strategy and the subsequent policy support, the inevitability of a major downturn in the domestic economy on account of COVID-19 is a given. In June 2020, IMF projected a GDP contraction of 4.5 percent in FY'21, reversing its 1.9 percent growth projection in its April Outlook. Domestic industry body FICCI also echoes an identical de-growth of the economy in its Economic Outlook Summary.

In this bleak context, the plunge in crude oil prices comes as a healthy relief and provides that much-needed fiscal buffer to the government in its plans to kickstart the economy. The gain would be particularly large to India, as it also imports substantial amounts of industrial metals, the prices of which seem to co-move with oil price. As per an estimate by UBS, India's crude import bill is likely to fall to US \$ 50 billion in FY'21. Low crude prices will also ease inflationary pressures, which

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otherwise would have further compounded the troubles for a vast segment of the population. On the flip side, sustained low energy prices imperil the health of the domestic energy sector,

especially upstream oil and gas, as projects are challenged on commerciality, thereby dimming prospects of oil import reduction through higher indigenous output.



2. Global Energy Sector

For a long time now, fossil fuels – viz, coal, oil and natural gas have played a predominant role in the energy basket. In 2019, the three together combined for over 80 percent of the total global energy demand. However, the rapid growth of renewables, spurred by a global consensus on a cleaner energy ecosystem, particularly post the historic COP-21 agreement in Paris in 2015, and rapid technology advances, is expected to eat into the share of fossil fuels. This is what the industry calls the 'Energy Transition'. But, fossil fuels are still expected, as per most industry and independent estimates, to be relied upon significantly for catering to a majority of the planet's energy needs.

COVID-19 Impact: While the long-term implications of the pandemic on the energy sector cannot yet be surmised with the situation still alive and dynamic, the near-term impact has been quite drastic. According to the IEA, the impact of COVID-19 on energy demand in 2020 would be more than seven times larger than the impact of the 2008 financial crisis on global

energy demand. April 2020 is now referred to as 'Black April' for the world of oil as the impact of lockdown measures was most severely felt in this period – with more than half of the world under lockdown. The situation triggered the greatest collapse ever in the demand for oil – demand was down 22 Million BPD for the second quarter as per IHS-Markit. Crude Prices, which already were trending lower under oversupply and a sluggish world economy, hit rock-bottom. The dire circumstances also paved way for the historic OPEC+ production cut agreement of almost 10 Million BPD for May-June 2020. The E&P sector has responded to this expanding crisis by employing cuts in its outlays for the year – and the cuts have come steeper and quicker than those in the aftermath of 2014 price crash. Wood Mackenzie's early estimates predict current year investments to be 25 percent lower than in 2019. Demand for oil is however expected to rebound later in the year with gradual resumption of economic activity, aided by reasonably successful disease containment efforts in most of the major economies. Not surprisingly, renewable energy



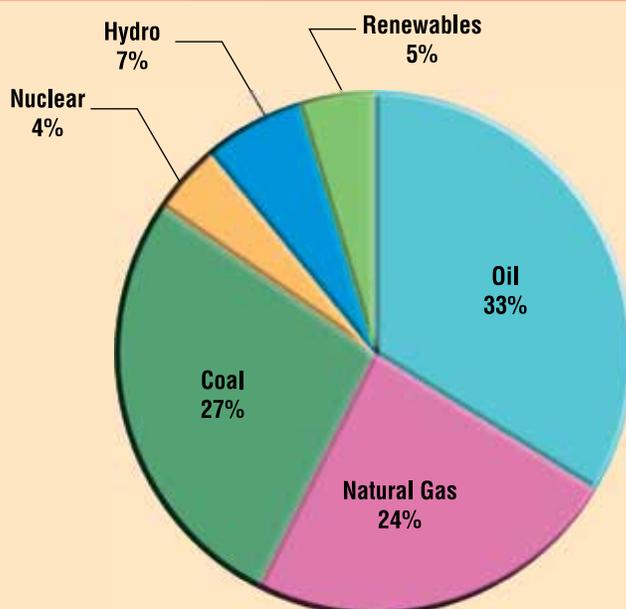
is the only sector that is expected to weather the storm without much damage incurred, and may even come out of it stronger. In Q1 2020, the global use of renewable energy was 1.5 percent higher than in Q1 2019, as per IEA's Global Energy Review 2020 report.

Global Economy Basket

As per BP Statistical Review of World Energy 2020, energy demand growth slowed down to 1.3

percent, less than half of what was registered in 2018 (2.8 percent). China was by far the biggest driver of this growth, accounting for more than three quarters of net global growth. India and Indonesia were the next largest contributors to growth, while the US and Germany posted the largest declines. Carbon emissions also declined in step with energy consumption – growing at 0.5 percent, significantly less than the over 2 percent growth in 2018.

2019 Global Primary Energy - Total Consumption : 584 Exajoules or 13943 MMTOE



Source: BP Statistical Review of World Energy 2020

Within the energy basket, increase in energy consumption was driven by renewables and natural gas, which together contributed three quarters of the expansion. All fuels grew at a slower rate than their 10-year averages, apart from nuclear. Oil demand growth was 0.9 Million BPD (0.9 percent) while Natural gas consumption increased by 78 billion cubic metres (BCM), or 2 percent, much below the exceptional growth seen in 2018 (5.3%). Share of gas in the mix rose to a record high of over 24 percent. Renewable energy (including biofuels) posted a record increase of 12.2 percent in 2019 (~76.4 MMTOE), the largest increment for

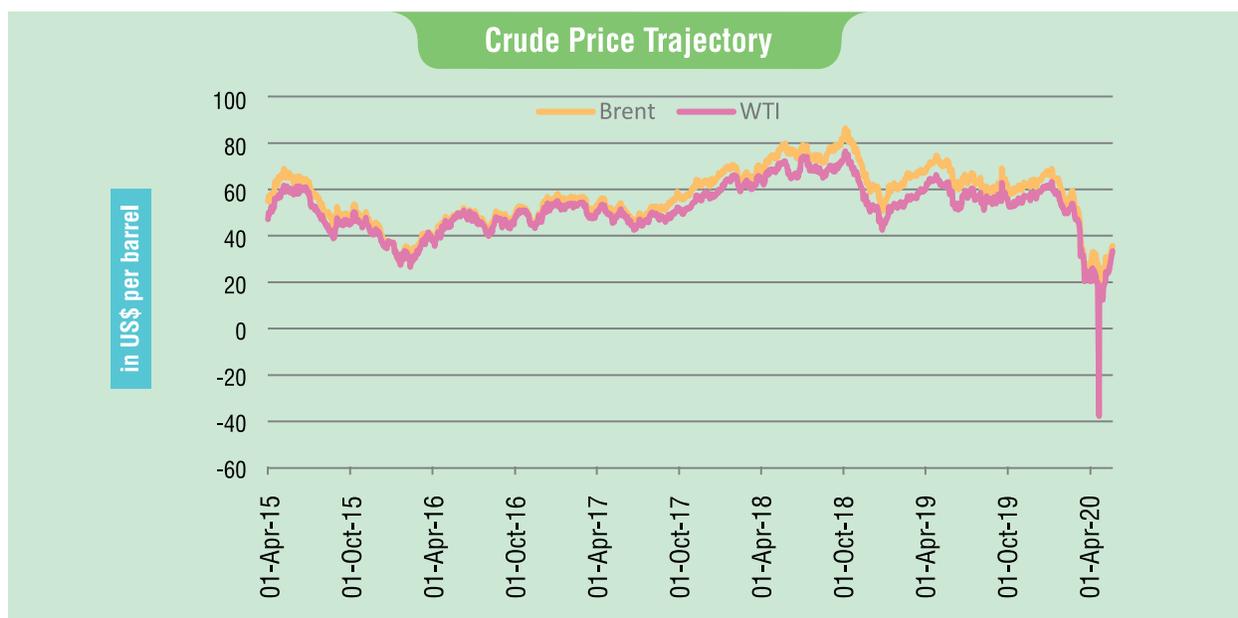
any source of energy in 2019. Wind provided the largest contribution to renewables growth followed closely by solar.

Crude Oil Prices: From a high of over \$100/bbl in 2014, the price of a barrel of crude plummeted to as low as \$30/bbl in early 2016. This episode of low prices was brought on by a global overhang of supply, largely on the back of staggering growth in US shale output and tepid global macro-economic environment. With gradual strengthening of demand, prices recovered subsequently and Brent crude averaged \$64/bbl in 2019. But prices dropped again, quite calamitously, in H1 2020 in reaction

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to the ongoing global COVID-19 pandemic that brought most of the major economies and energy powerhouses to a screeching halt in the second quarter of 2020. The current slide

is even more severe than the one in 2014-16 with global benchmark Brent dropping to under \$20/bbl and US benchmark WTI going negative (-\$37/bbl) at their worst.



A period of sustained low oil prices strains the balance sheets and affects the profitability of upstream operators. On the other hand, low prices are a boon for importers. India's import bill saw a reduction of over 50 percent in a period of 3 years in the price crash of 2014 – from \$144 bn in FY'13 to \$64 bn in FY'16. While earlier in 2019, a price-point of \$60-\$65/bbl was considered a sweet spot by ONGC – a level that allows for a healthy level of project activity without exerting undue sovereign financial stress on the import side, that view, in the wake of the havoc wreaked on the energy sector demand by COVID-19 looks highly improbable, at least in the medium term. ONGC is now pivoting towards an oil market where prices are range-bound within \$40-\$50/bbl in view of the uncertainty about the pace of economic recovery and potential demand destruction arising out of changes in consumer behaviour.

Crude Oil Demand and Supply: Global oil demand was already on a downward trend, even before COVID-19. In 2019 total liquids

demand growth slid down to 0.9 Million BPD, a steep drop-off of 600,000 BPD from the 1.5 Million BPD growth registered in 2018, as per IHS-Markit. The first sub-Million BPD average annual demand growth since 2012 came on the back of a broad-based global economic slowdown, a contraction in global trade and manufacturing, and escalation in the global trade war(s). The demand outlook is dismal for 2020: IEA projects a decline of 9.3 Million BPD. India's crude demand growth for 2019 was a mere 100,000 BPD – a reflection of a broad-based economic slowdown, which affected the auto and industrial sectors particularly badly.

Supplies declined by 300,000 BPD in 2019. On the growth side, US was, by far, the largest producer with a cumulative output of 12.2 Million BPD, growing by 1.2 Million BPD over 2018 volumes. But this growth was negated by the production cuts engineered by the OPEC+ group, led by Saudi Arabia, as well as the Iranian barrels that did not enter the market due to US sanctions. Iran's crude output declined



by 1.2 Million BPD and Saudi Arabia reduced production by 500,000 BPD in 2019. Crude Supply in 2020 is expected to be vastly lower – by about 9.2 Million BPD as per IHS-Markit – in view of dismal demand scenario in the wake of COVID-19.

US tight oil, the largest contributor to global supply growth over the last decade, will have tough time surviving in the current price environment. As per IHS-Markit analysis, at WTI under \$35/bbl, US oil output falls to 9.3 Million BPD by December 2020, from 12.8 Million BPD in December 2019.

OPEC+: A significant part of the anticipated supply cutbacks will come from the OPEC+ agreement in mid-April. The group, comprising of OPEC members and select non-OPEC producers, had famously disintegrated early-on in 2020 following disagreements between key participants (Saudi Arabia and Russia) on production cuts but then came together again, at the behest of G-20 states, as the world of oil faced an unprecedented crisis with the outbreak of COVID-19 and its damaging impact on the global oil demand. This resulted in a landmark agreement that aims to cut-off as much as 9.7 Million BPD of crude from oil markets for the month of May and June 2020. It will be followed by another 7.7 Million BPD for another six months, and then 5.8 Million BPD for a further 16 months. It is the largest output cut since OPEC was founded 60 years ago. This unprecedented cut, paired with the expected declines and shut-ins likely to occur in the United States, Canada and some other countries, promises to remove up to 17 Million BPD in the second quarter of 2020 from the first quarter, as per an IHS-Markit report on this development.

Global Gas and LNG

Among the fossil fuels, gas is positioned more securely, relative to the other fuels, as part of the evolving 'Energy Transition' paradigm as the world shifts to a less carbon-intensive energy basket. While the near-term demand has been

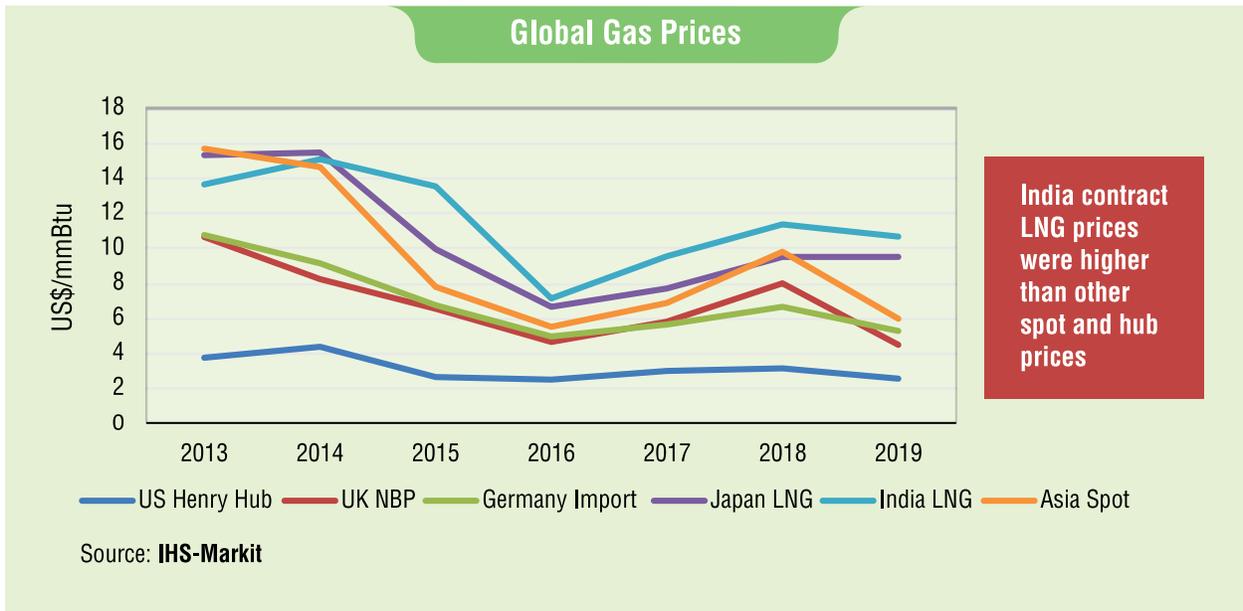
affected on account of COVID-19, on the longer term, demand looks robust. Demand for gas grows across all the three scenarios of Wood Mackenzie's post-COVID energy world. The expansion of the gas market is also a result of the growth in LNG trade that has allowed producers and consumers the flexibility of storage, transportation and access. LNG has helped position Gas as a strong competitor to other energy sources as in LNG form, gas is no longer a hostage to specific geographies and gas produced anywhere in world can now be consumed in more and more countries across the world as LNG trade picks up. This trend of "internationalization" of gas has caught on and is expected to shape the energy mix over the next decade in many countries.

The market though is in a state of oversupply, as key players like US, (with its abundant production), Russia, (a traditional heavyweight in European markets), as well as the likes of Qatar, Norway and Australia jostle for market share. As per BP Statistical Review 2020, global natural gas consumption reached 3929 BCM in 2019, with a volume growth of 78 BCM.

Gas production grew by 132 BCM (3.4 percent) outpacing growth in consumption. The US accounted for almost two thirds of net global growth, with the volumetric increase of 85 BCM. LNG project startups in US, Australia and Russia also boosting gas' growth. Total liquefaction capacity added during 2019 was 38.8 MMTPA, the highest ever. In 2019, net global LNG trade rose by 42.4 MMT to 358.9 MMT, a 13 percent YoY expansion, as per IHS-Markit. Australia surpassed Qatar to become the leading LNG exporter with total traded volumes of 80.2 MMT.

Gas prices – both hub-based and spot LNG rates – plunged to record lows in 2019 and are expected to trend even lower in 2020 because of COVID-19. Henry Hub prices averaged USD 2.52/MMBTU while Asian Spot LNG rates averaged USD 5.95/MMBTU in 2019. IHS-Markit expects Henry Hub prices to average under USD 2/MMBTU and spot LNG in Asia at just over USD 3/MMBTU for 2020.

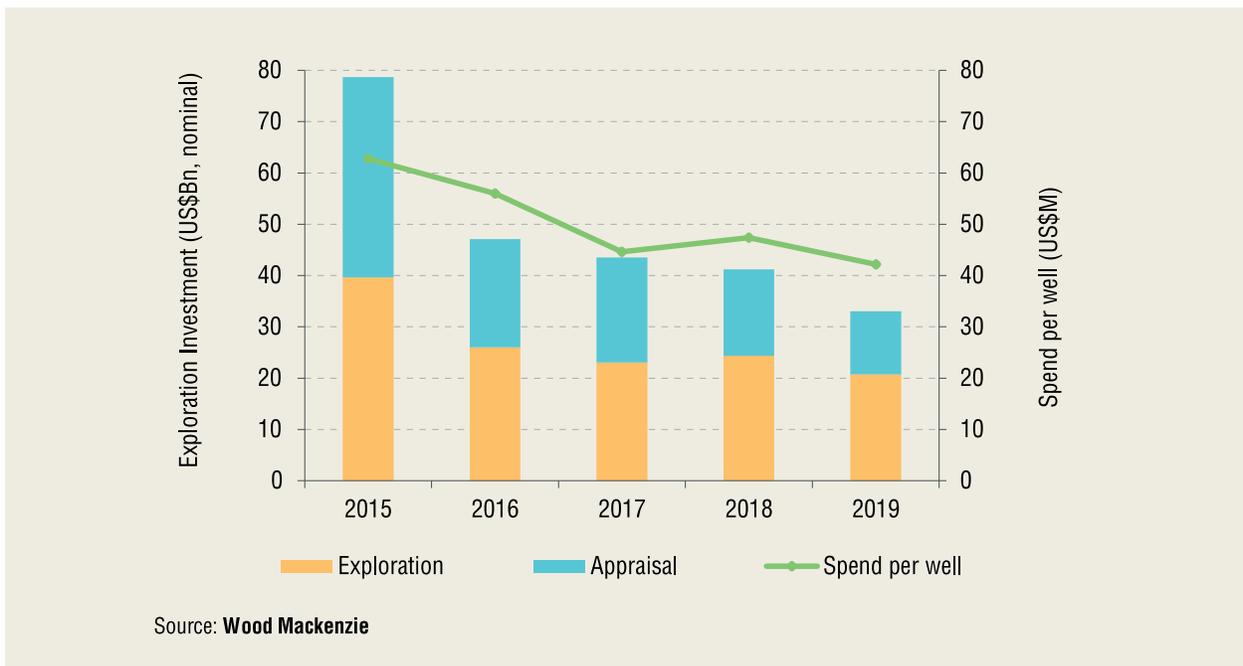
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Exploration

2019 was a solid year for global exploration. Exploration & Appraisal Spends globally totalled just over USD 33 billion, compared to USD 41 billion in 2018 – yet discovered volume of 21.2 billion BOE, was more than double that of 2018, as per Wood Mackenzie. It reflects

the capital discipline and high-grading of exploratory efforts (prospects) deployed by the industry since the 2014 price crash, resulting in lower discovery costs per BOE as well a higher percentage of commercially viable finds. It also marked the third year in a row that conventional exploration has been profitable.





Many explorers are targeting gas. Nearly two-thirds of 2019 discovered volumes were gas (82 TCF). Three quarters of volumes concentrated in the top 20 finds. Although, liquids still offer higher economics and contribute to 50 percent of initially-estimated development value.

Just as in the previous price downturn, exploration budgets will be pared in 2020 as the oil sector reacts to the huge ramifications of the COVID-19 outbreak – this means already lean exploration budgets will become leaner still. Wood Mackenzie expects cuts of around 25 percent. Frontier exploration that was already cut post-2014 will be relegated further while exploration continues shift decisively towards maturing Basins.

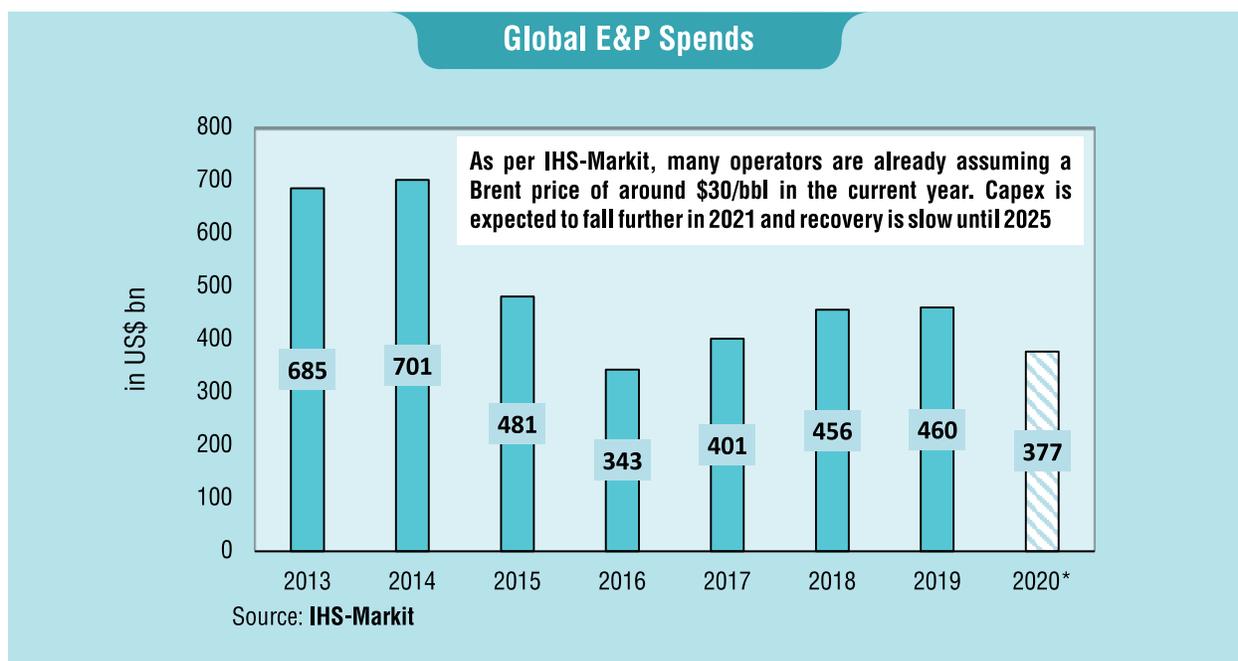
While the focus on mature areas is understandable, in India, there is a definite need to expand the exploratory footprints outside the mature plays in view of their untapped potential and the country's escalating energy needs. The Government has provided the requisite policy thrust in this aspect with its fiscal and contractual incentives for exploration in under-explored areas.

Upstream Investments and Project FIDs

Capital investments in upstream projects remained strong in 2019, albeit lower than in 2018 – reflecting lower crude prices and an uncertain demand outlook. As per Wood Mackenzie, total major project (reserves > 50 MMBOE) Final Investment Decisions (FIDs) in 2019 stood at 43, compared to 54 in 2018, with cumulative capital commitments of around USD 100 billion and targeting 20 billion BOE of reserves. 70 percent of it was gas-based, driven primarily by major integrated-LNG projects, with two LNG projects – Arctic LNG 2 and Mozambique Golfinho Area LNG – making up for almost 40 percent of the investments.

Upstream investments are likely to witness steep cuts in 2020. From an expected 50+ number of upstream FIDs pre-COVID 19, Wood Mackenzie now expects sanctions not exceeding 10 for the year. Although more than half of the pre-FID projects breakeven at under \$50/bbl, most struggle at \$30/bbl, as per Wood Mackenzie.

IHS-Markit expects E&P industry capex to decline by over 25 percent in 2020 – from



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USD 317 billion in 2019 to just over USD 235 billion in 2020. Rystad Energy said in a report that USD 100 billion could be cut away from Exploration and Production companies' budgets in 2020 and the reduction could grow further to USD 150 billion in 2021 in a USD 30 scenario.

M&A

Global M&A activity in 2019 mirrored the path of global crude prices – deal activity strengthened in the first half as oil breached the USD 70/bbl mark, but slumped significantly towards the end as the year ended with lower crude prices, so much so that deal count fell to a two decade low and more than 40 percent below its longer-term average, as per IHS-Markit report.

Although total global upstream M&A transaction value increased by more than 20 percent from the prior year to USD 154 billion, it was boosted significantly by Occidental's USD 65 billion takeover of Anadarko. With survival at the top of the priority stack for most oil and gas operators in the aftermath of COVID-19, M&A activity is likely to be at a standstill – but the situation also opens up scope for consolidation benefitting well-capitalized companies with a clear future portfolio strategy.

In view of the ongoing uncertainty in the wake of the global breakout of COVID-19 pandemic, M&A activity is expected to be tepid in 2020, but it still does leave enough room for interest as financially solid and cash-rich operators look for potentially value-accretive and 'cheaper' acquisitions. Chevron's USD 5 billion acquisition of Noble Energy in July 2020 is one such example.

Renewables

Renewable Energy sources continued their momentum of strong growth in 2019, adding 176 GW. Total installed capacity stood at 2,537 GW globally, as per the International Renewable Energy Agency. Wind and solar

power accounted for 90 percent of the world's newly added capacity. Renewables represented 72 percent of total capacity additions in 2019, continuing to outpace fossil fuels by a wide margin.

The global consensus and policy effort to promote renewables and other non-carbon sources as the principal element of a greener energy ecosystem, and by extension, a greener world, comes at a critical period for the fossil fuel industry as the latter grapples with record low oil and gas prices. Policy actions are also backed up by investments in the sector - the years 2010-2019 witnessed USD 2.6 trillion invested in renewable energy capacity (excluding large hydro), more than treble the amount invested in the previous decade, as per a UNEP-BNEF report. In a recent global Emerging Markets Survey by Bloomberg New Energy Finance, India tops the rankings in its capacity attract capital for low-carbon energy sources while building a greener economy. With an installed capacity of 87 GW, renewables account for 23.5 percent of the total installed power capacity of the country.

Remarkably, in 2020, demand for renewables is expected to increase even as global demand for electricity contracts by 5 percent, according to IEA. Fantastic cost reductions, especially in solar PV, over the last decade have also bolstered Renewable's commercial potential. As a counterpoint, the clean-energy pathway may be negatively impacted by regulatory focus on combating pandemic recession in the short-term and high debt-incurrence at this point may affect long-term climate ambition.

Geopolitics: Even at its most placid, geopolitics always has a tendency to evoke a sense of uneasy calm in global energy markets with each day's events bringing with them the potential for sudden and tangible impact. The last few years, however, prior to the scourge of COVID-19, the narrative of global energy markets, particularly



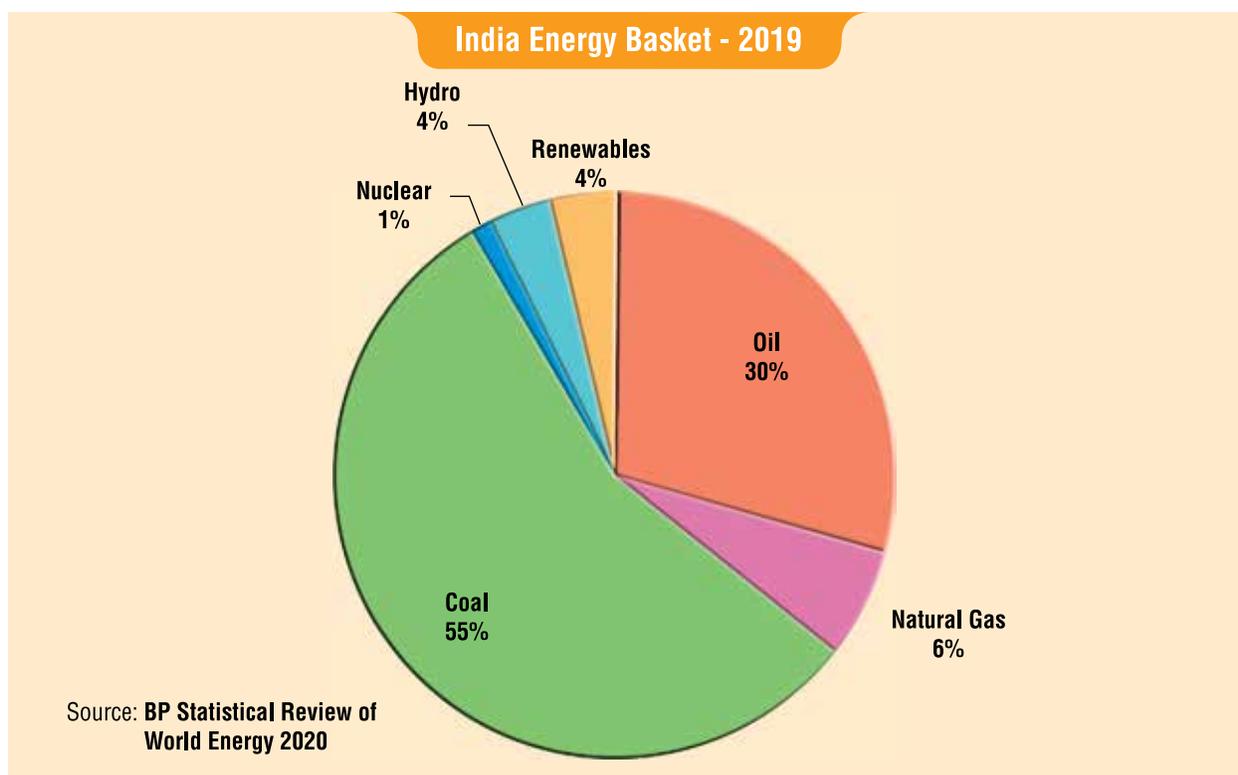
for oil and gas, was essentially defined by fundamental market levers of supply-demand and prices despite the occasional disruptive events such as the drone attacks on Saudi oil installations or the killing of a prominent Iranian military general. But the emergence of COVID-19 pandemic as a 'once-in-a-lifetime' disruption, one that could radically alter the fate of international oil and gas ecosystem, the face and tenor of global geopolitics could transform drastically, at least for the next few years. Moreover, as IHS-Markit observes the current health and economic crisis could push the world into more unstable terrain as nations and businesses, in fear of their vulnerabilities, will react against globalization, tending toward nationalism and protectionism.

At the centre of the geopolitical discourse will be two primary poles of the modern global order – the US and China. The Middle-East, never quite completely immune from any geopolitical upheavals, is likely to face increased stress in the face of extremely low energy prices,

considering how fundamental energy receipts are for the region's economies. Most of the Gulf States are estimated to need USD 70–80/bbl to balance their budgets:

3. India Energy Snapshot

With an economy that has grown consistently over the past two decades, underpinned by robust domestic demand, world's largest youth population and increasing urbanization, India remains vitally important to global energy markets. In step with its economic heft, the country's energy demand graph has also charted a similar course – in the past decade, energy demand has grown at a pace of 5.3 percent CAGR versus a world average of 1.6 percent. As per the IEA World Energy Outlook 2019, the country will be the hub of global energy demand growth for the next two decades. The country's primary energy demand grows from a level of 916 MMT0E in 2018 to 1841 MMT0E in 2040, under the Stated Policies Scenario, contributing over 27 percent of the energy demand growth



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during the period. Despite the healthy outlook for renewables the energy mix, fossil fuels still account for 75 percent of the energy basket in 2040, with the share of oil and gas share at 32 percent (oil 23 percent and gas 9 percent).

Oil import reliance has become a problem area for the country's energy strategy. Cumulative forex outgo on account of crude imports have exceeded USD 1 trillion over the past decade. In FY'20, import dependency touched 85 percent, based on domestic consumption of petroleum products. The country does therefore benefit during a low price period as prevailing now. That being said, increasing domestic output remains key to better mitigating the external supply risks and price volatility. The Government is also bullish on long-term prospects of gas and has set a clear mandate of achieving a 15 percent share for gas in energy mix by 2030. The upstream sector, thus, assumes critical significance in expanding the country's domestic resource availability while generating significant employment opportunities and industrial activity.

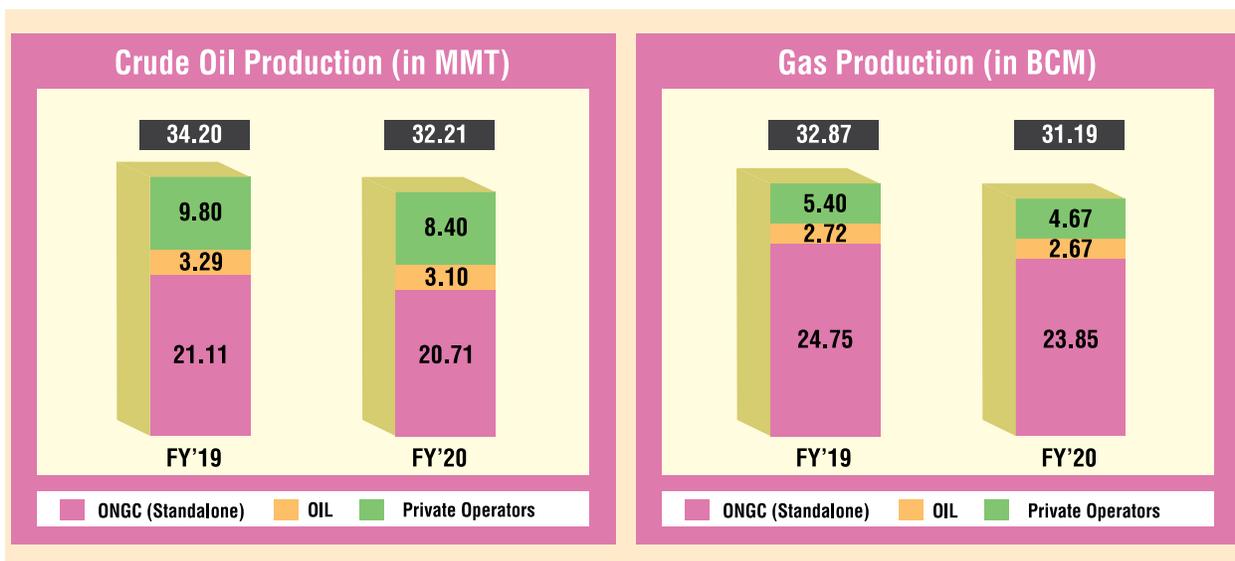
The COVID-19 pandemic, just as in the rest of the globe, has hit the domestic energy markets hard, and it will be difficult at this juncture to clearly assess total long-term implications of the disruption caused by pandemic. However,

demand has been hit and crude prices have cratered. The imposition of the countrywide lockdown which began in the last week of last fiscal year did not have a massive impact on FY'20 production numbers, but it certainly has impaired the outlook for the current year – FY'21 – mainly due to losses in the month of April and May and the residual impact that the world 'learning to live with pandemic' may have. The story on the consumption side was worse with steep drops in fuel consumption for March, which is now gradually picking up with removal of lockdown and resumption of economic activities. Having seriously dented operational profitability, COVID-19 has emphatically foregrounded the need to rethink business models.

Crude Oil & Natural Gas Production

As per Petroleum Planning and Analysis Cell (PPAC) data, Domestic crude oil production in FY'20 stood at 32.20 Million Metric Tonnes (MMT) versus 34.20 MMT during FY'19. ONGC's standalone production was 20.71 MMT vs 21.11 MMT in FY'19. Production from Oil India Ltd and PSC/JVs was 3.10 MMT and 8.40 MMT respectively.

Natural Gas output in FY'20 was 31.80 Billion Cubic Metres (BCM), versus 32.87 BCM in FY'19. ONGC's standalone domestic output





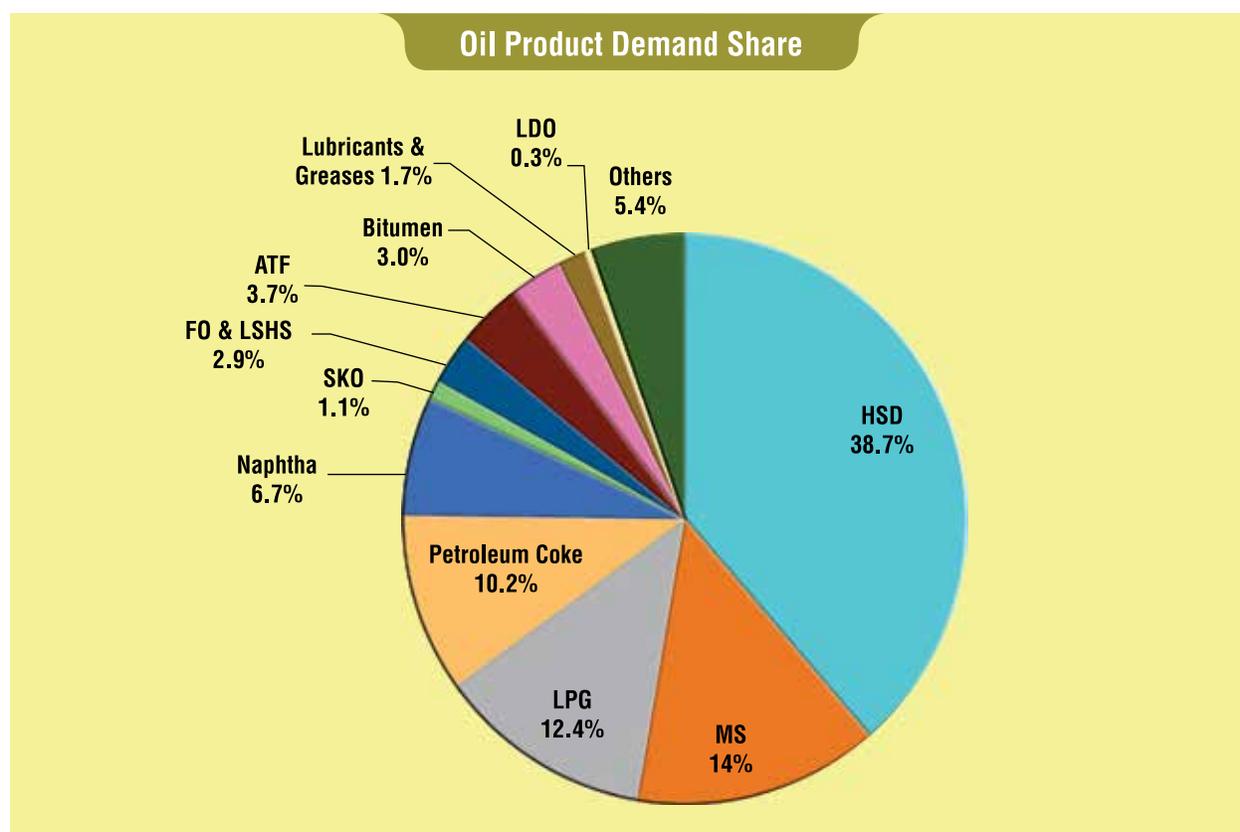
stood at 23.85 BCM. Oil India produced 2.67 BCM and other private operators 4.67 BCM.

Consumption of Petroleum Products

According to PPAC figures, Domestic petroleum products consumption in FY'20 totalled 213.7 MMT, growing by just a measly 0.2 percent from FY'19, recording its worst ever growth. The downtrend in consumption was largely attributable to the countrywide lockdown measures implemented in late-March to contain the spread of Coronavirus resulting in significant demand cutbacks in large segments of the economy, especially in transportation and industry. Consumption of petroleum products during March 2020 was 16.1 MMT as against 19.6 MMT in March last year. Consumption

growth was slowing down even before COVID-19. For the 11-month period till February demand grew at just 2 percent relative to the corresponding period in FY'19. Compare this sluggish pace with the average decadal annual growth rate of 4.7 percent, and it indicates the negative demand impact arising out of a broader slowdown in the economy. Further, the current demand slump is counter-cyclical as crude oil prices have trended lower through FY'20.

Looking ahead as per CRISIL Research, domestic petroleum product demand is expected to grow at 3.0-3.5 percent CAGR in the next five years to close to 250 MMT. This is against the robust growth of 5.6 percent in the past five years.



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Import and Export

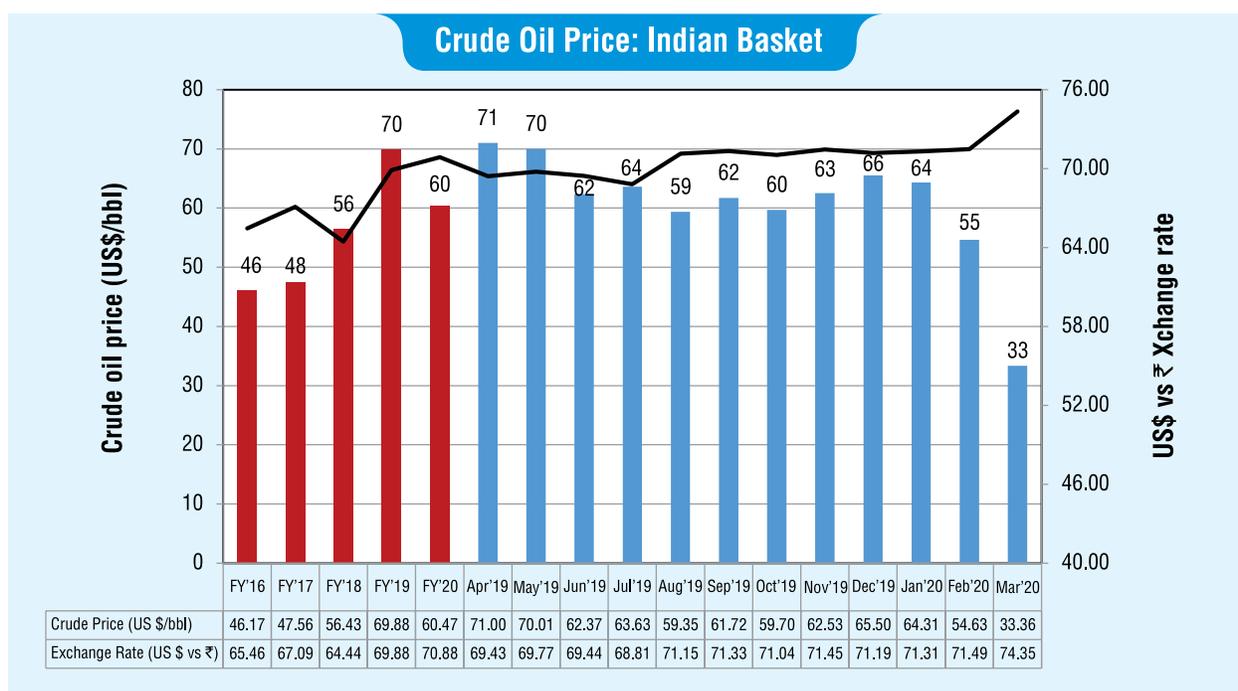
Growth in crude oil imports also stalled in FY'20 – 226.95 MMT versus 226.49 MMT in FY'19, a historic low growth, as per PPAC data. So, the overall import growth decline is reflective of unenthusiastic demand within the economy throughout the year. Import outlook for 2020 remains largely stagnant at 4.4 Million BPD, as per IHS-Markit, with definite downside risks due to COVID-19. Petroleum product export for FY'20 stood at 65.66 MMT, against 61.09 MMT in FY'19.

The drop in crude prices had a positive impact on the country's import bill. Crude import bill for FY'20 was ₹ 7,166.27 billion (USD 101.38 billion) against ₹ 7,831.83 billion (USD 111.91 billion) during FY'19. With crude prices expected to stay low through 2020-21 (USD 34/bbl in 2020 and USD 44/bbl in 2021 as per IHS-Markit), a direct fallout of COVID-19 pandemic, the country stands to gain in terms of its trade as well as fiscal deficit.

Crude oil Price: Indian Basket

Crude Oil price of the Indian basket averaged USD 60.47 per barrel (₹ 4,286 per barrel) during FY'20 compared to USD 69.88 per barrel (₹ 4,884 per barrel) in the previous fiscal (FY'19). The intra-year drop in crude prices – from USD 71/bbl in April 2019 to USD 33.36/bbl in March 2020 – on the back of COVID-19 is steeper than that in FY'15 in percentage terms.

Cognizant of the challenges of operating in a low-priced energy world, ONGC is shaping up its future strategy focused on higher operational efficiencies, cost optimizations, aggressive technology induction and energy sector diversification. The company anticipates USD 40-USD 50/bbl price range as the 'new normal' of the oil markets – however, without requisite policy and fiscal support, any price point below USD 30/bbl seriously endangers the commercial viability and sustenance of even its core business.





Domestic Gas Prices

Gas has been the focus of most upstream reforms in the past few years as the Government is keen on transforming the country into a gas-based one, particularly along its industrial and manufacturing corridors. The emphasis on gas is also borne out by the ambitious target of doubling pipeline infrastructure and expansion of re-gas facilities as part of a future pan-India gas grid providing equitable and transparent access to all producers and customers.

With the aim of spurring indigenous gas production and increasing transparency, the Government brought in a new pricing framework in 2014, replacing the erstwhile regulated pricing regime with a pricing formula linked to international prices. The Government had also implemented a special pricing regime to incentivize gas development in more difficult terrain (deepwater/ultra-deepwater/HP-HT). But drastic drop in global gas prices have become a source of continuous anxiety for upstream gas players as current prices are even lower than the pre-existing Government-determined gas price for nomination-era fields. This has a negative impact on the commerciality of gas-based projects. After posting a recovery through the first half of FY'20, gas prices have edged lower again in the recent past, and a situation of global over-supply worsened further by the COVID-19 pandemic has dimmed any scope of recovery in the near-term.

Gas Prices before Revision (NCV basis)	USD 4.2/MMBTU
Gas Prices FY'18 – FY'20 (on GCV basis)	
1 st Apr' 17 – 30 th Sep' 17	USD2.48/MMBTU
1 st Oct' 17 – 31 st Mar' 18	USD2.89/MMBTU
1 st Apr' 18 – 30 th Sep' 18	USD3.06/MMBTU
1 st Oct' 18 – 31 st Mar' 19	USD3.36/MMBTU
1 st Apr' 19 – 30 th Sep' 19	USD3.69/MMBTU
1 st Oct' 19 – 31 st Mar' 20	USD3.23/MMBTU

Domestic gas prices for the first 6 months of FY'21 has been set at USD 2.39/MMBTU.

Ceiling Prices for Gas from HP-HT/Deep/Ultradeepwater (GCV basis)	
1 st Apr' 17 – 30 th Sep' 17	USD5.56/MMBTU
1 st Oct' 17 – 31 st Mar' 18	USD6.30/MMBTU
1 st Apr' 18 – 30 th Sep' 18	USD6.78/MMBTU
1 st Oct' 18 – 31 st Mar' 19	USD7.67/MMBTU
1 st Apr' 19 – 30 th Sep' 19	USD9.32/MMBTU
1 st Oct' 19 – 31 st Mar' 20	USD8.43/MMBTU

Price ceiling for the first 6 months of FY'21 has been set at USD 5.61/MMBTU.

With LNG available cheap in Asian spot markets, it is understandable that a sustained period of low gas prices has set in, and it poses an acute dilemma around indigenous gas development. However, any stable economic corridor built around gas must always first lean on the stability and security afforded by domestic gas resources while using LNG imports as a useful alternative. Moreover, the volume of the country's proved gas resources is also further validation of the need for continuous support to domestic gas producers.

Setting up of a gas trading hub, helping the domestic market discover the 'right price' for the fuel, which already is one of the key energy sector goals for the Government, could be the most desirable solution to this current bind of price vulnerability which the gas sector finds itself in. In a positive development, India's Gas Exchange, the first nationwide online delivery-based gas trading platform, was launched on 15.06.2020. It potentially paves the way for a more transparent, fair and locally discovered pricing mechanism, essentially eliminating formula-driven pricing control and motivating greater participation from companies, sellers and buyers alike, as well as accelerating the pace of infrastructure creation (pipelines, storage, re-gas facilities etc.). Such a transition

alone, will create necessary conditions for a take-off towards a gas based economy.

Key Domestic Upstream Reforms and Initiatives

Progressive policy measures and reforms are a necessary catalyst in enhancing the attractiveness and scope of any sector of the economy. Over the past few years, the Government has executed a raft of measures geared to advance the prospects of the upstream hydrocarbon sector, a sector that is of critical importance to the larger aspirations of growth and development of society and economy. While complete energy independence may be a distant reality considering the country's scale of energy needs, higher domestic supplies will certainly go a long way in bolstering the stability of the domestic energy system.

The reforms are a step forward in unlocking the domestic upstream segment by making it more open, business-friendly and remunerative for upstream players of varying sizes and competencies, national or international, state-owned or private entities.

The Hydrocarbon Exploration and Licensing Policy (HELP): The Government of India formulated and approved a new exploration and licensing policy named Hydrocarbon Exploration and Licensing Policy "HELP" vide resolution dated 30.03.2016 whereby it has been determined to provide a uniform license to enable E&P operators to explore and extract all hydrocarbons resources including conventional and non-conventional oil and gas resources. Some of the key aspects of this new licensing regime are Open Acreage Licensing, uniform license for all types of hydrocarbons, revenue sharing model, marketing and pricing freedom, low royalty for offshore fields, continuous exploration under contract period etc.

Open Acreage Licensing Policy (OALP): To operationalize the HELP framework, Government

of India launched the Open Acreage Licensing Programme (OALP) wherein upstream operators are allowed to put in offers for blocks of their choice for contracting based on the data available in the National Data Repository (NDR) at any time by submitting an Expression of Interest (EOI) indicating the area.

Four Rounds of Bidding under OALP have been completed till date and 5th round of bidding was launched on 14.01.2020. Till the culmination of 4 rounds of bidding under OALP, 94 blocks have been awarded under the new exploration policy in last two and a half years. These 94 blocks cover an exploratory area of approximately 1,36,800 sq. km over 16 Indian sedimentary basins. This is expected to generate investment to the tune of USD 2.35 billion (about ₹ 16,450 crore) over the next 3 to 4 years in the exploratory activities alone. ONGC was awarded 17 blocks as an operator in onshore and offshore areas falling in 3-tier category Indian sedimentary basins, adding exploration acreage of 33,572.73 Km².

Discovered Small Fields (DSF) Policy: Launched in 2016 as Marginal Field Policy, it was rechristened as Discovered Small Fields (DSF) Policy under HELP. Broad features of DSF policy are 'Single License' for conventional and non-conventional resources, pricing and marketing freedom, waiver of oil cess for crude oil and condensate, and exploration activity allowed during entire contract duration. It also allows upto 100% participation by foreign companies.

Two rounds of bidding under DSF have been completed till date. 31 Contracts (23 Onland & 8 Offshore) were awarded under First Round covering 43 discoveries on 27th March, 2017 while 23 Contracts (14 Onland + 9 Offshore) were awarded under Second Round on 7th March, 2019 covering 57 discoveries. DSF bid rounds have paved way for entry of 23 new players in Indian E&P industry and are expected to bring in fresh investments in the upstream sector of the country.



ONGC was awarded 5 contract areas (1 onland block and 4 offshore blocks) as part of DSF-II. During FY'20, FDP of all these blocks were submitted by your company to DGH and the approval of onland blocks have been received. Further, FDP of CA and D-33 offshore contract areas has been signed on 16.3.2020 in 1st Management Committee (MC) meeting.

Marketing and Pricing Freedom for Difficult

Gas: In order to provide impetus to production of gas from difficult plays, Government of India has provided marketing and pricing freedom for gas produced from Deepwater, Ultra Deepwater and High Pressure-High Temperature (HP-HT) fields vide policy dated 21.03.2016. It was on the back of this measure that ONGC progressed with its USD 5 billion deepwater project in Eastern offshore. The formula retains an element of a ceiling. Time has come that the limit of ceiling be removed and prices are left to be discovered through fair play of market forces.

Enhanced Oil Recovery (EOR) Policy:

Government of India approved a new policy framework on 10th October, 2018 to promote and incentivize Enhanced Recovery (ER)/Improved Recovery (IR)/Unconventional Hydrocarbon (UHC) production methods/techniques. Incentives will be available for a period of 10 years from the date of commencement of Enhanced Recovery (ER) or Unconventional Hydrocarbon project. Fiscal incentives include waiver of 50% of cess on oil production and 75% of applicable royalty on gas production on the eligible quantum of production volume. ONGC, under this policy has planned commercialization of 5 EOR schemes and implementation of 3 EOR pilots. Further, it has initiated process for fast-track pilot design of Chemical EOR in 12 onshore reservoirs of 7 fields.

Recent Changes to Upstream Policy Framework

In February 2019, the Government came out with further changes to the upstream policy framework, with a view to bolstering the attractiveness of the domestic upstream business. These new moves are an update to the HELP and OALP policy framework and have come into effect from OALP-IV round onwards. Some key features are: –

- Categorisation of sedimentary basins by maturity
- Tiered royalty incentives to encourage faster project execution
- Abolishment of government revenue share for emerging or frontier basins and introduction of windfall gain revenue sharing
- Capped government revenue share bids with less weightage
- Gas marketing and pricing freedom for all new gas discoveries
- NOCs (ONGC and OIL) allowed to retain fields where discoveries have been made, and induct partners through JV, farm-out or bidding out

Operational Performance:

For FY'20, oil & gas production of ONGC Group, including PSC-JVs and from overseas Assets has been 63.21 MMTOE (against 64.88 MMTOE during FY'19). ONGC-operated domestic fields accounted for bulk of the oil and gas production – 63 percent and 80 percent respectively.

Oil and gas production profile from domestic as well as overseas assets during last five years are as given below:

MAKING A STRATEGIC MOVE

Oil and Gas Production	FY'20	FY'19	FY'18	FY'17	FY'16
Crude Oil Production (MMT)	33.11	34.33	34.79	33.97	31.44
ONGC	20.71	21.11	22.31	22.25	22.36
ONGC's share in JV	2.64	3.12	3.13	3.29	3.57
ONGC Videsh	9.76	10.10	9.35	8.43	5.51
Natural Gas Production (BCM)	30.12	30.55	29.42	27.64	25.94
ONGC	23.85	24.75	23.48	22.09	21.18
ONGC's share in JV	1.04	1.06	1.13	1.18	1.35
ONGC Videsh	5.23	4.74	4.81	4.37	3.41

Proved Reserves

Position of proved reserves of your company is as below:

Proved Reserves (MMTOE)	FY'20*	FY'19*	FY'18	FY'17	FY'16
Estimated Net Proved O+ OEG Reserves	960.82	991.37	982.01	928.16	909.34
ONGC	602.55	625.52	683.46	696.47	691.28
JV share	17.82	20.07	11.42	14.46	18.59
ONGC Videsh**	340.45	345.78	287.13	271.23	199.47

*FY'19 onward Reserves are based on PRMS basis; earlier years were reported based on SPE-classification

**Includes Mozambique (Developing Asset) and CPO-5-Colombia (Discovered Asset) as compared to Note 58.1 of Notes to the Consolidated Financial Statements for the year ended March 31, 2020.

Financial Performance: ONGC (Standalone)

(₹ in Million)

Particulars	FY'20	FY'19*	% Increase/ (Decrease)
Revenue:			
Crude Oil	648,363	775,729	(16.42)
Natural Gas	193,556	188,389	2.74
Value Added Products	115,095	128,881	(10.70)
Other Operating revenue	5,122	3,547	44.40
Total Revenue from Operations:	962,136	1,096,546	(12.26)
Other Income	61,050	72,652	(15.97)

EBIDTA	467,083	579,773	(19.44)
PBT	203,687	400,291	(49.12)
PAT	134,445	267,646	(49.77)
EPS	10.69	20.90	(48.85)
Dividend per share	5.00	7.00	(28.57)
Net Worth **	1,943,381	2,017,896	(3.69)
% Return on net worth	6.92	13.26	(47.81)
Capital Employed	1,141,830	1,091,861	4.58
% Return on capital employed#	22.44	36.10	(37.83)
Capital Expenditure	295,385	294,498	0.30%

*Restated

**Includes reserve for equity instruments fair valued through other comprehensive Income

#Return on capital employed is calculated without reducing exceptional item from PBIT. In case exceptional item is reduced from PBIT, ROCE would be 18.15% for 2019-20 and 36.10% for 2018-19.

ONGC Group

(₹ in Million)

Particulars	FY'20	FY'19*	% Increase/ (Decrease)
Revenue from Operations	4,250,014	4,536,828	(6.32)
Other Income	85,316	77,299	10.37
EBIDTA	606,769	825,488	(26.50)
PBT	190,681	548,456	(65.23)
Profit after Tax for the year	115,601	339,380	(65.94)
- Profit attributable to Owners of the Company	109,071	305,460	(64.29)
- Profit attributable to Non-Controlling interests	6,530	33,920	(80.75)
EPS	8.67	23.85	(63.65)
Net Worth **	2,069,677	2,169,347	(4.59)
% Return on net worth	5.27	14.08	(62.57)
Capital Employed	2,047,548	1,950,175	4.99
% Return on Capital employed#	16.18	29.39	(44.94)

*Restated

**Includes reserve for equity instruments through other comprehensive income

#Return on capital employed is calculated without reducing exceptional item from PBIT. In case exceptional item is reduced from PBIT, ROCE would be 11.77% for 2019-20 and 28.58% for 2018-19.



Details of Key Changes in Ratio: ONGC (Standalone)

Details of significant change in ratio (i.e. 25% or more from previous year):-

Particulars	2019-20	2018-19*	Change in %
(i) Interest Coverage Ratio (Note 1)	9.95	17.06	(41.68)
(ii) Debt Equity Ratio (Note 2)	0.07	0.11	(36.36)
(iii) Operating Profit Margin (%) (Note 3)	29.20	38.78	(24.70)
(iv) Net Profit Margin (%) (Note 4)	14.00	24.40	(42.62)
(v) Return on Net Worth (%) (Note 5)	6.92	13.26	(47.81)

* restated

Notes:

1) Change in Interest Coverage Ratio:

The Interest Coverage ratio for current FY'20 is 9.95 against 17.06 in FY 2018-19 i.e. decrease of 41.68%, which is mainly due to decrease in Profit Before Interest & Tax (PBIT) and increase in Finance cost. The decrease in Profit Before Interest & Tax (PBIT) is on account of decrease in revenue from operations by ₹ 134,410 Million mainly due to reduction in crude oil sales revenue by ₹ 127,366 Million as a result of decrease in crude oil prices.

Further the increase in finance cost of ₹ 3,316 Million is mainly due to increase in unwinding of decommissioning provisions by ₹ 3,969 Million and unwinding of lease liabilities by ₹ 2,021 Million which has been partly offset by decrease in interest on borrowings by ₹ 2,681 Million.

2) Change in Debt Equity Ratio:

The Debt Equity ratio for FY'20 was 0.07 against 0.11 in FY'19 i.e. decrease of 36.36%, which is on account of decrease in borrowings by ₹ 76,445 Million and decrease in net worth by ₹ 74,515 Million. The decrease in borrowings is mainly due to decrease in current borrowings by ₹ 98,896 Million which is partly offset by increase

in non-current borrowings by ₹ 22,451 Million. Further decrease in net worth is mainly due to decrease in total comprehensive income for the year by ₹ 239,822 Million.

3) Change in Operating Profit Margin Ratio:

The Operating Profit Margin Ratio for FY'20 was 29.20% against 38.78% in FY'19 i.e. decrease of 24.70% mainly due to substantial decrease in Operating Income Before Interest & Tax by 33.94%. The decrease in Operating Income Before Interest & Tax is mainly due to decrease in revenue from operations by 12.26%, increase in Depreciation, Depletion, Amortisation & Impairment by 20.45% and increase in Provisions and Write-offs by 15.13%.

4) Change in Net Profit Margin Ratio:

The Net Profit Margin Ratio for FY'20 was 14% against 24.40% in FY'19 i.e. decrease of 42.62%, mainly on account of substantial decrease of 49.77% in Profit After Tax. The decrease in Profit After Tax is mainly due to decrease in Operating Income Before Interest & Tax by 33.94%, increase in finance cost by 13.31% and a charge of ₹ 48,990 Million towards an exceptional item - impairment during FY'20.

5) Change in Return on Net worth:

The Return on Net Worth Ratio in FY'20 was 6.92% against 13.26% in FY'19 i.e. decrease of 47.81% mainly on account of substantial decrease in Profit After Tax by 49.77% and marginal decrease of 3.69% in net worth.

4. Opportunities & Threats

Oil and gas markets have always flirted with uncertainty. However, the degree of uncertainty and the frequency of disruptions that the industry has had to contend with over the past decade is quite staggering. The industry continues to be a mainstay of the global energy system but the landscape is in a state of inevitable transition where viability of even the most robust of businesses is being questioned and challenged

MAKING A STRATEGIC MOVE

as multiple forces are converging to force the sector to respond and adapt to the emerging reality.

Price volatility, particularly low prices, remains a serious threat to the long-term sustenance, profitability and investment plans of oil and gas companies. Upstream companies are particularly hit hard here. Always a risk-intensive sector, historically it had the potential for robust returns that outweighed its risk quotient. The industry had aggressively cut costs in response to 2014 price crash and optimism was returning to the upstream segment – characterised by value-accretive exploration, healthy FID numbers and production growth. However, the COVID-19 pandemic has derailed that momentum quite abruptly. As per Wood Mackenzie, despite cashflow breakevens falling dramatically since 2014, most companies require more than \$40/bbl to cover spend and distributions. So, low prices in the wake of from COVID-19 presented a worrying situation to almost all companies.

ONGC remains committed in its quest for energy security of the country. However, extremely low crude prices will hurt the company's balance sheet and could force it to take extraordinary measures to tide over the situation. Despite its globally competitive cost structure, the company is exploring further ways, including rationalising project expenses, to bring down its costs further in anticipation of an energy era where low prices are a norm and not an exception. Under the current price regime, the Company has planned an expenditure reduction to the tune of ₹ 60,000 Million. Cost optimization is a key lever for enhancing productivity and profitability. Keeping the same in focus, various initiatives like VED (Vital, Essential & Desirable) analysis of projects, both future and ongoing, exploring cost effective technical solutions for immediate implementation, issuance of guidelines wrt austerity measures to all Key Executives, review of financial powers in BDP, re-negotiations of large value long term contracts, etc. have been undertaken to combat disruptions related

to COVID-19 and ever volatile crude prices. Despite the cutbacks in our planned spends for FY'21, your Company could still stare at cashflow deficit if prices do not improve. In light of this distressing business scenario, your Company is pursuing with the Government for possible remedies by way of cess and royalty exemptions/concessions/rationalizations, which if agreed upon, will ease the impending liquidity pain to a large extent.

Considering the damaging impact that COVID-19 has had on oil demand and the more likely scenario of a stuttered recovery, the cutbacks on investments and lower exploration spends may not raise the spectre of a supply crunch in the next 3-4 years in global markets. But the need for higher domestic oil output remains as pressing as ever. ONGC, as such, remains focused on maximizing recovery from its aging fields - a total cumulative gain of over 200 MMT of oil is envisaged from the 31 approved IOR/EOR schemes. Low crude prices significantly dent the commerciality of such schemes which are usually higher on the cost-curve. In this respect, the policy framework for improved recovery in domestic fields is a positive step – it is especially encouraging for EOR projects as it allows for fiscal incentives to be applicable from the date of commercial production.

The threat of renewables, in combination with electrification of the mobility sector, has assumed centrestage in the boardrooms and strategy units of most oil and gas operators. In fact, with USD 35 crude, average returns from renewables projects could actually be higher, as per Wood Mackenzie. Most estimates still predict the relevance of fossil fuels 20 years out – but with most major conventional oil and gas companies clearly committing to time-bound sustainability and climate-related future goals it does strongly indicate the inevitability of transition – a matter of how and when and not 'if'. 2020 has been a moving year in terms of ambitious climate-related commitments among major players with the likes of BP, Royal Dutch



Shell and Total having announced 'net zero' emissions goals by 2050.

The share of Electric Vehicles in the global automobile fleet is still insignificant but it is growing rapidly. BNEF, early on in 2020, predicted 10 Million EVs on the road at the end of the year (1 Million in 2015). Sales may, though, suffer as a consequence of larger auto-sector slowdown in a post COVID-19 world, but long-term growth outlook looks promising – sales will accelerate once storage (battery) costs come down to USD 100/Kwh when it hits cost-parity with conventional ICE vehicles. By 2040, electric vehicles could displace as much as 6.4 MBPD of oil demand, as per BNEF.

Furthermore, in global capital markets more and more fund houses and investors are employing the Environment, Sustainability and Governance (ESG) criteria in making investment decisions. This is an area of action for most E&P players as even to support a very modest level of demand growth, capital requirements for the sector are substantial. BlackRock, the world's largest fund manager, recently announced sustainability and climate-risk will be important parameters for deciding all future investments in energy domain, effectively pressuring companies in carbon-intensive businesses to double down on emissions.

Way back in 2015, ONGC had embraced the target of becoming a 'Carbon-Neutral' company in acknowledgment of the need to be at the vanguard of sustainable energy within the country. Since then it has taken conscious steps in that direction – CDM projects, LED lighting across all locations, paperless office, banning single-use plastics among others. ES 2040 places special importance on non-fossil fuel investments as part of the company's envisioned transformation into a truly diversified energy-major.

As oil and gas companies tackle the holy trifecta of challenges: low prices, energy transition and heightened safety standards, especially in

the wake of COVID-19, technology becomes a strong opportunity area. While oil and gas has always been a technology-forward sector in its operational aspect, aggressive adoption of technology across all facets of the business is likely to become a norm sooner than later with potentially remarkable results in productivity, safety and costs. Costs and productivity become vitally important in a low-price era where companies struggle to protect their balance sheets. While finding costs for ONGC have come down noticeably in recent years, the same does not hold for our production costs because of a mature portfolio with legacy contracts. It becomes critical while implementing complex and capital-heavy projects such as KG-DWN-98/2 deepwater project.

The E&P sector is witnessing a fundamental and irreversible change in the way it runs its business and manages its operations as part of the Industry 4.0 ecosystem as digitalization and technologies like AI become more and more mainstream. While prior to the COVID-19 pandemic the general consensus was on a 'gradual and considered' transition, the massive disruption that the industry has had to weather due to the pandemic has effectively ensured that the transition will be faster, more aggressive and more pervasive.

Digital technologies might also prove invaluable for Scope 1 and 2 emissions (internal emissions), according to a report by BNEF. Drones, sensors, satellite and camera data are essential in tracking potent methane emissions at oil wells and from pipelines, while machine learning is valuable in optimizing energy use in refining. The potential for technology's positive impact on cost control becomes even more pronounced during periods of low prices – such as the current COVID-19 situation, when the size of the workforce in oil and gas tends to shrink. Remote monitoring and automation technologies now mean that oil fields can be operated by fewer people and algorithms can take over the work of certain technicians or supervisors. Use of analytics for

MAKING A STRATEGIC MOVE

predictive maintenance and energy efficiency are other possible areas of technological impact.

ONGC is fully cognizant of this emerging reality where digital technologies like AI are likely to have an outsized impact on business health. Even before the pandemic struck, ONGC had already operationalized an organization wide paperless-office approach – DISHA. We also are aggressively assessing and inducting cutting-edge technologies to ensure the company is future-ready. During FY'20, ONGC implemented technologies such as Advanced Remote Sensing and Imaging tool (ERDAS Imagine), Big Data Analytics and Broadband Processing among others.

During nation-wide lockdown, remote access of existing ERP framework (SAP-ICE) through VPN have been provided to executives concerned for maintaining the continuity of operations which has worked quite satisfactorily and provided excellent results.

Further, ONGC has embarked on its journey for upgradation of existing ERP framework to S4 HANA. It offers unique advantages to each stakeholder like enhanced performance, reduced cycle time of report generation, lower maintenance costs, increased contextual awareness, democratized data access and enabling organization to be ready for the “digital core”.

ONGC is in the process of setting up of a Digital Centre of Excellence (DCOE) which will spearhead the use of Artificial Intelligence in diverse fields of company like Production, Drilling, Exploration and support functions like HR, Finance and MM. We are also actively considering an organization-wide rejig focused on shared services and centralisation of support-services activity in the next few months to reflect this new normal of a digital business ecosystem.

Closer to core business area, the domestic

hydrocarbon province is likely to offer plenty of exciting opportunities for oil and gas explorers over the next few years. The Government's prioritization of the oil and gas sector, particularly the domestic upstream segment evidenced by its impressive pace of key reforms in the area, lends credence to that outlook. Our prognosticated resource base already stands expanded (42 BT versus erstwhile 28 BT), as per the latest reassessment exercise. Out of this about 12 BT has already been discovered, with a large potential of about 30 BT yet to be discovered. The Government's move to allow greater incentives for exploration in under-explored areas is indicative of its emphasis on expanding the domestic resource availability. Further, the completion of the National Seismic Project, led by ONGC, should improve information on our basins.

As the country's leading energy explorer with an extensive in-house support infrastructure, ONGC is well positioned to take advantage of the upcoming opportunities in the space and is focused on maximize its reserves base as well as oil & gas production in the domestic acreages in pursuit of economic sustenance, value creation and market dominance. Some of the opportunity areas are: Deeper synrift plays in different basins especially in onshore/transitional/SW areas in KG, Cauvery, Cambay, Kutch, Saurashtra and Mumbai offshore Basins; Field growth in existing fields in Cambay, Mumbai, Kutch, KG, Cauvery and A&AA Basins; Acceleration of efforts for exploration in Bengal, Vindhyan, Mahanadi and other newly discovered basins; Exploration for sub-basalt/Mesozoic play especially in Cambay, Kutch and Saurashtra offshore & Kerala Konkan basins; and unconventional resources. Primary hurdles to achieving the desired results in these areas come by way of them being technology-intensive and complex, their economic viability in a low price regime, and timely environmental and state clearances.



5. Risks and Concerns

Price: As with any industry, the risk of price is foremost in terms of impact on business. Aversion to price swings is particularly severe in the upstream oil and gas segment because of the high-risk quotient involved in its operations and the capital-intensive nature of its projects. COVID-19 has pushed the possible trajectory of crude oil price into the complete unknown – demand has crashed spectacularly, yet it is hard to be certain of V-type recovery even though the factors were completely outside of the industry's sphere of influence. The room for further optimisation of costs and efficiency is possibly lower because it comes right on the back of hard but difficult implementation of the same routine post 2014 – as Wood Mackenzie confirms, more than half of advanced pre-FID projects break even below USD 50/bbl, but almost all struggle at USD 30/bbl. The figure for some regimes could be still higher because of adverse fiscal regime, higher amount of royalty, cess or other leakages. Most major operators are using this difficult period as a sign of things to come. BP, for example, said it aims to reduce underlying breakeven to below USD 35/bbl in 2021. Global benchmark Brent averaged USD 64/bbl in 2019 – but that is projected to drop to USD 34/bbl in 2020 and has been projected to rise to USD 44/bbl in 2021, as per IHS-Markit.

Domestically, the extremely low gas prices are a cause of anxiety for gas producers. After a period of recovery, gas prices have started to trend south in recent months – gas price for H1 FY'21 is USD 2.39/MMBTU. At that price point most gas projects are running cash-negative. Without the necessary policy support and fiscal incentives the prospect of a gas-based economy looks difficult. It would be prudent to set a price floor for gas – allowing companies to plan projects in advance with a worst-case scenario factored into investment consideration. Although marketing and pricing freedom has been granted to new gas projects, it is not yet

extended to legacy gas which constitutes bulk of the country's gas output.

Furthermore, the level of cess imposed on domestically produced crude oil is another limiting factor to improved earnings performance. The 20% ad-valorem at today's price levels seems too high, essentially defeating the entire purpose of modifying the cess levy. Moreover, cess incurred by producers is not recoverable from refineries and thus, forms part of cost of production of crude oil.

Extraordinary circumstances on account of the emergence of COVID-19 as a major health threat have also heightened the risk of operational disruptions. While ONGC's production did not suffer drastically in the wake of the nation lockdown, sustaining operations and critical supply volumes during the period was an extremely difficult exercise, given the associated risks to our manpower as well as the significant logistical challenges. At the peak of lockdown impact in mid-April, over 60 percent of our drilling rigs were stalled – effectively bringing to a halt all development projects that were underway with resources focused exclusively on maintaining base output. Besides production, exploratory drilling and seismic acquisition, processing of seismic data as well as G&G interpretation projects were also significantly affected. The lockdown has resulted in non-fulfilment of the annual targets both in respect of exploratory drilling and seismic API. The disruption of scheduled exploration activities was more severe in onland sectors compared to offshore areas - seismic acquisition in Assam & Assam-Arakan, Cambay, Frontier Basins and Jaisalmer Basin were affected with a cumulative loss of about 10-15 LKM of 2D and about 100-150 SKM of 3D seismic data acquisition.

Geopolitics and Sovereign Fiscal Policies:

There is a possibility that crisis like the one unleashed on the globe by COVID-19 will make global collaboration a reasonable choice for countries as they devise a response framework to the situation, but it could also precipitate

MAKING A STRATEGIC MOVE

greater rivalries among major powers and regional blocs leading to potential geopolitical distress in the energy arena. With US hit hard by the infection, and China the origin of the virus and the economies of the petroleum-rich economies badly hurt, there are a lot of moving pieces that could result in disturbing developments in the next few years with tangible impact on the oil and gas business. An offshoot of such a situation could be a return to hard resource nationalism and protectionist tendencies among sovereign governments further heightening the risk quotient to the upstream investment decisions overseas. If early signs are an indication of shape of things to come, such tendencies are already manifesting across the globe, country after country. Stability of sovereign systems is of particular importance to ONGC in relation to its exposure to overseas markets through ONGC Videsh' participation.

Risk of Human Capital: While the anticipated retirement of the past generation of 'oilmen' was at the heart of the 'big crew change' scenario, today the challenge is all about attracting and retaining talent in an industry that is fighting a battle to retain its relevance not just as a lucrative but also an aspirational sector for the younger generation. Further, this has come at a time when the fundamentals of the traditional energy business are also being affected by the low energy prices. However, while in the past, oil and gas companies mostly considered people from specific disciplines, now as companies themselves undergo transformation there is also the opportunity to engage people with skillsets in the digital domains or cleaner energy areas. Also, with digital technology at the core of this new-age energy company, manpower requirements are also not likely to be at the level it was years ago.

HSE Risk: Operational safety is a high-risk element for most upstream operations. In fact, along with Safety, current industry emphasis on Sustainability requires companies to adopt

a more holistic approach through a well-designed and strong HSE framework. ONGC has implemented updated OISD Standards to improve contingency combat capabilities. International underwriters, enabling a lower-than-peer insurance premium for these assets, have rated ONGC offshore assets under 'acceptable risk'.

Finally, Safety around Health has become the topmost priority for everyone in the age of COVID-19. The current year has been a test for the best of us – it has also been a lesson in how to respond and adapt under extreme and unforeseen situations. The very physical nature of upstream operations does not lend itself well to social distancing measures required to fight the disease – but ONGC has managed to deliver as a business without jeopardizing the health of its energy soldiers. We can say that we are now in a much better position to tackle emergencies of this nature. It also has given us reason to further explore all possible areas where we can use technology as a useful intervention – not merely as a replacement – where lives are not risked, but business marches on.

Energy Strategy 2040:

Energy Strategy 2040 is the strategic blueprint of ONGC for its future. It is a necessary step towards imagining the possibilities and potential in tomorrow's energy ecosystem. While the 'Energy Transition' was one of the fundamental drivers of the roadmap – it was also a clear acknowledgement of the company's capacities and appetite for growth outside its core business. We adopted it in 2019 – which means COVID-19 whirlwind has come quite early on in its journey. While the damage to the global economy and energy markets has been unprecedented, the message remains the same: Change.

COVID-19 has not in anyway altered our view of the future, nor has it constrained the organization's ambitions for transformation into a future-ready entity with strong presence across



the gamut of energy business, and squarely focused on sustainability and meaningful value-creation. It has, in fact, added a much-needed lever of urgency and sharper focus for its implementation. The goals in each of the growth areas remain unchanged but there is a definite need to reassess the risk profile of investments in view of drastic reduction in profitability of core upstream business. The key milestones of Energy Strategy 2040 across different business areas are as follows:

- **Upstream:**

- o Expand group production from 65 MMTOE to 110 MMTOE in 2040.
- o Priority accorded to select difficult plays (HP-HT, Ultradeepwater) with high-prospectivity and low stretch from current core, development of in-house EOR solutions to maximize legacy production, exploration-focussed technology partnerships
- o Internationally, focus shifts to plays with volume in host regimes with a positive G2G relationship with India to secure stable energy long-term supplies
- o Focus on shorter business cycles and avoidance of high breakeven projects

- **Downstream (Refining & Petchem):**

- o Total refining capacity is expected to triple from 35 MMTPA to 100 MMTPA
- o Expansion in petchem to 9.5 MMT from current 3.8 MMT - based on the robust demand and outlook of 8%-9% CAGR for the country as well as ONGC's significant presence in the market through OMPL, OPAL and HPCL's petchem investments
- o Significant room for deriving operational synergies through integrated crude sourcing, centralized trading, capability and infrastructure sharing etc.

- **Beyond O&G:**

- o Power and Renewables capacity expansion to 5 GW
- o Gas business: Expand into CGD/re-gas through group entities at scale with strong technology and trading capabilities
- o Venture fund corpus of ~\$1 billion in select frontier themes such as Clean energy, AI or Reservoir/field services technology etc.; a hedge against disruptions

We have set a timeline till 2025 to also achieve a strategic restructuring of the group businesses keeping in mind internal synergies and best-case scenario for growth. A completely separate entity focused on Power and Renewables is being explored in view of the remarkable business diversification opportunity that the space presents, Government's priority focus and ONGC's strategic fit as a proven player in the domestic energy arena.

6. Outlook

Your Company's outlook for the future remains positive on the basis of its fundamentally strong core business of E&P. Presented below is a brief overview of our current exploration status as well as efforts in emerging areas and production enhancement efforts.

A. Exploration

I. Exploration Acreage & Mining Lease

Your Company holds the largest exploration acreage in India as an operator. As on 31.03.2020, ONGC holds a total of 7 Nomination PEL blocks (5106.05 Km²), 358 Nomination PML blocks (Long Term: 327 and Short Term (7 year): 31) having an acreage area of 54,321.75 Km² and 1 Pre-NELP block (892.0 Km²). In NELP regime, your company has 23 active NELP blocks comprising 21,126.17 Km² of PEL area and 10 PMLs carved out from NELP

MAKING A STRATEGIC MOVE

blocks with an acreage area of 1380.78 Km² (5 PMLs in Gujarat, 1 PML in Andhra Pradesh, 3 in shallow water and 1 deep-water PML). Besides, ONGC as non-operator has participative interest (PI) in 2 blocks having acreages area of 567.00 Km².

In addition, ONGC also holds 17 OALP blocks (13 on-land, 3 shallow water and 1 deep-water areas) covering an area of 33,572.73 Km² awarded till the end of OALP-IV bidding round. Also as non-operator, it has 3 OALP acreages covering an area of 1558 Km². In DSF-II round, your company was also awarded 5 contract areas with PML acreage area of 946.81 Km².

II. Exploration Performance

During the year 2019-20, your Company has notified 12 discoveries (7 New Prospects and 5 New Pools) in its nomination acreages.

A significant discovery R-12-6 discovery was made during the year in the reverted field "Ratna and R-Series fields", in Mumbai Offshore (SW) which was handed over to ONGC in 2016. This discovery has resulted in substantial reserve accretion in Bassein Pay and opened up area for further exploration. Also, the hydrocarbon indication in Panna play is an additional lead for exploration of the play in the area. YS-6-2 (Sub) discovery in KG Offshore is a significant stimulus for HP-HT synrift exploration in KG Offshore and has established the commercial potential of the Lower Syn-rift play corridor continuing from Deen-Dayal field in KG Shallow water. VN#3 discovery in Cauvery onland is also a noteworthy finding in Andimadam formation and has brought rising flanks around Nagapattinam graben into exploration focus and also opening up large area. This discovery will help in its conversion into long term PML.

During the year 2019-20, Sundalbari field of West Tripura has witnessed two significant discoveries (SD-12 and SD-15) in new sands of Middle and Upper Bhuban Formations respectively. These leads have given impetus for targeting deeper

prospects in vast area for further exploration of new play in Sundalbari field.

During FY'20, ONGC has monetized 22 discoveries. Out of these, 4 discoveries were made in the current year and remaining 18 belong to preceding years. As on 01.04.2020, accretion of In-Place Hydrocarbons (3P-Proved, Probable and Possible), from the Company operated fields in India, stood at 98.99 MMTOE, out of which more than 55 % accretion has been due to exploratory efforts. Total In-Place Reserve Accretion during 2019-20 in domestic basins, including the Company's share in PSC JVs, stands at 106.14 MMTOE (07.14 MMTOE from JVs).

As on 01.04.2020, total In-Place Hydrocarbon Volume of ONGC Operated and JV (Domestic) Fields stands at 9,997.22 MMTOE against 10,002.63 MMTOE as on 01.04.2019. The Estimated Ultimate Recovery (3P) at the end of FY'20 has been estimated at 3,286.63 MMTOE against 3,251.60 for FY'19.

III. Unconventional & Alternate sources of energy

a) Shale Gas/Oil exploration:

Your Company has assessed shale gas/oil potential in 24 blocks from 50 nomination PML blocks identified for shale gas/oil exploration in the country. As on 31.03.2020, ONGC has completed drilling of 29 wells (of which 10 are exclusive shale wells and 19 are dual objective wells) in four basins viz. A&AA, Cambay, Cauvery and KG Basins. During 2019-20, 2 exclusive shale wells (NJSQA in Cambay Basin and MDSSA in KG Basin) and one dual objective well PGAE (KG Basin) were drilled. Currently, one dual objective well LKEAA in KG Basin is under drilling. Efforts are on to establish the shale gas/oil potential in the identified blocks. Indications of presence of shale oil have been recorded in some wells namely JMSQA, NSGB and NJSQA in Cambay Basin and WGSQA in KG Basin during activation after hydro-



fracturing. One zone within Nawagam Middle Pay (Tight Reservoir) of shale well NGSGA of Cambay Basin was hydro-fractured and on activation produced oil. The shale well WGSGA in KG Basin requires further activation whereas another well GNSGC in Cambay Basin is waiting for hydro-fracturing.

b) Coal Bed Methane (CBM):

Of the 9 original blocks that the company was awarded as part of the CBM bidding rounds including nomination, the Company relinquished 5 blocks on the basis of data generated from exploratory efforts and currently is operating 4 blocks (Jharia, Bokaro and North Karanpura in Jharkhand and Raniganj in West Bengal) where exploration activities have been completed. Developmental activities are at an advanced stage in three of these blocks viz. Bokaro, Jharia and North Karanpura.

c) Gas Hydrate Exploration:

Your Company has been an active participant in gas hydrates exploratory research in India under National Gas Hydrate Program (NGHP) of Gol since its inception in 1997. With the focus on the pilot production testing, the gas hydrate reservoirs discovered during NGHP-02 (Block KG-DWN- 98/5) have been delineated and Geocellular modelling for the gas hydrate rich reservoir has been completed to get detailed cell wise geophysical/reservoir parameters around the proposed site for pilot production test during next NGHP-03 expedition. Your company is also working on identification of gas hydrate prospective areas in part of CY-DWN-2004/1 and MNDWN-2002/1 block in Cauvery and Mahanadi Basin respectively for future field expeditions. Besides, your company is working on pre-stack seismic data analysis for Gas hydrates characterization/delineation in part of KGDWN 98/2 Block in KG offshore.

Gas Hydrate Research & Technology Centre (GHRTC) at Mumbai, your Company's dedicated Gas Hydrates research hub, this year

acquired QMS-ISO 9001-2015 certification and has also been recognized as an R&D unit by Department of Scientific and Industrial Research (DSIR) which for the first time enables GHRTC to claim weighted deduction in Income Tax (150%) against the expenditure towards R&D activities.

d) Basement Exploration:

To continue its efforts towards Basement Exploration, during the year 2019-20, your company has characterized basement reservoirs in different basins through various initiatives including fracture characterisation and fracture distribution modelling including drilling of 22 wells together with 11 exploratory wells with Basement as a main objective in different acreages of ONGC falling in A&AA, Cambay, Cauvery, KG and Western Offshore Basins. An innovative work flow has been adopted for the first time in Fracture Characterisation of intrusive bodies within Mesozoic Sequence in different blocks viz. GK-28/42, GK-OSN-2009/1, GK-OSN-2010/1, GS-OSN-2004/1, falling in Kutch-Saurashtra area in Western Offshore. The entire study was carried out on facies model of Trap by preparing GCM and fracture modelling supplemented with stochastic porosity mapping and calibrations. The study helped in identification of five prospects in GK-28/42 area for future exploration. Basement prospectivity analysis based on Automatic Fault Extraction and Vector Analysis around B-45, B-192 and WO-24 fields, South west of Mumbai High area has also been completed during the year with identification of two more prospects. Your company has been deeply involved in successful planning and monitoring basement reservoir in Thirunagari, Pundi and Panadanallur fields of Cauvery Basin. This year wells Padra-132,135,136 in Cambay basin produced oil and gas and in totality the production curve has shown a sharp rise in the Trap section in last five years in the Padra area due to optimal placement of wells in the fractured zones. Twenty three new locations have been firmed up in Padra area for targeting specific fractures.

e) Exploration in HP-HT & Tight Reservoir:

HP-HT and Tight reservoirs have been an exploration and development challenge for your company. Despite the challenges, your Company has successfully established hydrocarbon in Bhuvnagiri, Malleswaram, Periyakudi, Kottalanka, Bantimulli South, Yanam shallow offshore, GS-OSN-2004, G-4-6 and certain areas of Assam Arakan Fold Belt.

During the year 2019-2020, the HP-HT and tight gas plays had a mixed bag of success and failure. Exploration in Yanam shallow offshore in KG basin has discovered gaseous hydrocarbons from the lower synrift sequence in the well YS-6-2 sub (drilled in the year 2018-19) indicating development of sweet spots. Your company has notified YS-6-2 sub gas discovery as a new prospect. The successful testing of the well using the state-of-the-art technologies and testing fluids endorsed the capabilities of the company. On the other front, the wells in Deendayal block, where testing with multiple HP-HT hydro-fracturing did not yield the desired results and continue to be a challenge in developing the complex HP-HT reservoirs.

Geocellular Modelling, dynamic modelling and reservoir simulation studies of Nagyalanka field were undertaken and 9 development locations were identified out of which three locations are prioritised for drilling and multistage hydro-fracturing where an incremental oil production from these locations is around 300 m³. Multiple hydro-fracturing in the DDW-D5 has been completed and during the year two wells DDW-D6 and DDW-D7 have been taken up for drilling. Another well B-41-2 in Mumbai Offshore basin has been drilled which on testing did not give any encouraging results.

Your company is producing from many of the HP-HT fields viz. Periyakudi in Cauvery Basin, Bantumilli South, Nagayalanka field in KG Onland and Deen Dayal-West field in KG Offshore.

B. Development of new fields

Despite the slowdown in domestic oil demand, higher indigenous oil and gas supplies is an imperative for the country given its significant energy deficit. In pursuit of greater energy security for the country in the arena of oil and gas, your Company continues to commit substantial resources in shoring up output from its upstream assets. It covers investments in green field projects as well as projects to maximize production from our legacy fields.

As on 01.04.2020, 17 major projects are under implementation with a total projected cost of around ₹ 625,925 Million with envisaged gain of ~121 MMTOE. Among these is ONGC's mega offshore deep-water project in East Coast, Cluster-2 Development of KG-DWN-98/2, is in advanced stage of implementation. Gas production commenced from 5th March 2020 onwards from its first well U3-B of U-field. Also, during FY'20, eleven major projects (9 development & 2 Infrastructure) costing around ₹ 249,302.00 Million were completed.

7. Internal Control Systems

To manage this large portfolio, your Company has institutionalized robust internal control systems to continuously monitor critical businesses, functions and operations; particularly field operations.

The top management of your Company monitors and reviews various activities on continuous basis. A set of standardized procedures and guidelines has been issued for all the facets of activities to ensure that best practices are adopted and those percolate even up to ground level. Performance of every business unit is monitored by the respective directorates for suitable corrective measures, if any, in time.

Your Company has a dedicated Performance Management and Benchmarking Group (PMBG) which monitors the performance of each business unit against the Key Performance



Indicators (KPIs) defined in the Performance Contracts between the top management and the Key Executives. These performance contracts are aligned to the goals and objectives of the organization.

As part of its push for systemic transformation and strengthening of control systems, your Company has placed adequate emphasis on institutionalization of tools, practices and systems that facilitate greater operational efficiencies and workplace productivity. The 'Integrated Material Management Manual' of the Company has been revamped to ensure procurement of quality materials and services and identification of world-class vendors. 'Book of Delegated Powers' (BDP) was revamped with the objective to empower working level officers and to place commensurate accountability on all decision makers and the same is being reviewed periodically to align with business needs. Your Company has also introduced E-Grievance handling mechanism for quick redressal of grievances of its various stake-holders.

Occupational Health, Safety and Environmental protection are the adopted motto of your Company. Achieving highest standards in these areas remains a priority for your Company. Internal and external audits have been institutionalized and are conducted on a continuous basis to ensure compliance to various industry norms and benchmarks.

Your Company has dedicated Internal Audit (IA) group which carries out audits in-house. At the same time, based on requirement, specialized agencies are engaged to carry out audit in the identified areas. Statutory auditors are appointed by Comptroller and Auditor General (CAG) of India for fixed tenures. Audit committee of the Board oversees the functioning of Internal Audit and control systems.

Third party safety audits are conducted regularly for offshore and onshore installations by established national and international HSE agencies such as Oil Industry Safety Directorate

("OISD"), an organization under the control of the MoPNG, which issues safety guidelines. Further, subject to the safety regulations prescribed by the Directorate General of Mines and Safety (DGMS), each work center has teams dedicated to HSE, which execute the safety guidelines prescribed by OISD as well as DGMS. HSE teams are also responsible for obtaining necessary licenses and clearances from the State Pollution Control Boards.

All transactions in the company are carried out on SAP R/3 ERP based business portal. Proper and adequate system of internal control exists to ensure that all aspects are safeguarded and protected against loss from unauthorized use or disposition and that each transaction is authorized, recorded and reported. The system further ensures that financial and other records are fact-based and reliable for preparing the financial statements.

During the FY'20, 375 Process Level Controls were tested at 26 locations and 89 Entity Level Controls were tested at HQ level. Total 57 gaps were observed during such testing. Gaps are taken up with process owners for remedial action and its closure. Remedial action is in progress for balance 2 controls only and is being monitored closely for early closure. Besides, system controls have also been strengthened to avoid recurrence of such gaps.

Outcome Budget analysis: Your Company has established the linkages of budget expenditure with anticipated outcomes to have clear sight on the future growth orientation parameters. Survey and Exploratory Drilling Expenditure is linked with the target of Reserve Accretion along with analysis of past trend of the outcomes based on these expenditure. Reserve Replacement Ratio trend inclusive of the Budget targets is also made part of the analysis. Expenditure proposed in Budget towards Development drilling and creation of Capital Facilities is correlated with the incremental gain in Oil and Gas production targets for next 5 years. Some of the other parameters included for outcome budget

MAKING A STRATEGIC MOVE

analysis are profitability variation analysis, budgeted Balance Sheet and Cash Flow, sensitivity analysis on profitability and cash flow as a result of changes in Crude Price and Exchange Rate.

8. Human Resource Development

While the success of every organization is critically predicated on the competency and motivation of its workforce, the significance of 'human capital' is even more pronounced in a sector that is inherently high risk, capital intensive and technology-led. Your organization has always valued its most important resource, its competent manpower. Due to the sincere efforts of a vast pool of these experienced and talented scientists, engineers and professionals, the Company is able to passionately take care of the energy needs of the country. 'Strengthen capabilities' has been the focus area all along in the Company's pursuits towards structured Human Resource Development. COVID-19 has brought with it a different technology driven world where more can be generated through less. The new scenario offers efficient discharge responsibilities with least movement with technology offering additional advantage of implementing tools to ensure transparency and objectivity of decision making. The organisation aspires to deliver more and better under this technology enabled New Normal. Manpower transition is a critical issue keeping in view crew change in next few years. The basic principle revolves around grooming younger generations as future 'energy leaders'. Talent replenishment and bridging competency gap become crucial aspect for human resource development. Further, your Company believes that continuous development of its human resource fosters engagement. There are multifaceted efforts for grooming technical talent and develop

managerial competence. Structured training programmes have been developed to impart required skills to the people in identified critical areas. In the post COVID-19 landscape, the Company has seamlessly moved most of its training regimen onto digital platforms, thereby minimizing any disruption to the knowledge upgradation of its workforce.

Besides training, work association with industry leaders in the challenging areas of business is yet another attempt to improve capabilities. Your Company also took structured initiatives to provide a desirable work-life balance to the employees as well as improving the living and working conditions. The endeavours of your Company, towards Human Resource development, are well recognized in the industry.

9. Corporate Governance

The initiatives taken by your Company are detailed in the Corporate Governance report, a part of the Annual report.

10. Corporate Social Responsibility (CSR)

Initiatives taken by your Company towards CSR are detailed in Board's Report.

11. Cautionary Statement

Statements in the Management Discussion and Analysis and Directors Report describing the Company's strengths, strategies, projections and estimates, are forward-looking statements and progressive within the meaning of applicable laws and regulations. Actual results may vary from those expressed or implied, depending upon economic conditions, Government Policies and other incidental factors. Readers are cautioned not to place undue reliance on the forward looking statements.

