Management Discussion and Analysis

Business Environment

Global Economic Outlook

The global slowdown of the Calendar Year ('CY') 2019, caused by the US-China trade war, Brexit concerns and region-specific crises in Asia and Africa, has been exacerbated by the novel coronavirus outbreak of early CY 2020. Protecting lives and allowing health care systems to cope with the Covid-19 pandemic has required isolation, lockdowns and widespread closures of non-essential services, including the manufacturing of most goods. As a result, the global economy is projected to contract sharply by around 3% in 2020, worse than it fared during the Financial Year ('FY') 2008-09 financial crisis, as per the World Economic Outlook ('WEO') of April 2020 released by the International Monetary Fund ('IMF').

The growth forecast is marked down by more than 6% relative to the October 2019 and January 2020 projections by IMF – an extraordinary revision over such a short period of time. However, global growth is expected to rebound to 5.8% in CY 2021, well above the trend, reflecting the normalisation of economic activity based on inherent strengths.

Growth in the Advanced Economies group, where several nations are experiencing widespread outbreaks and are deploying containment measures, is projected at (6.1)% in CY 2020. The Advanced Economies group is forecast to grow at 4.5% in CY 2021.

Growth in the United States ('US') is expected to drop from 2.3% in CY 2019 to (5.9)% in CY 2020, before recovering to 4.7% in CY 2021. In the first quarter of FY 2019-20, GDP growth could show a significant impact of Covid-19 due to a complete shutdown of economic activities from March 2020. The second and third quarter of FY 2019-20 are expected to reveal a large adverse impact from falling consumption, business investment and exports.

The United Kingdom ('UK') economic growth is expected to slow sharply in CY 2020 amid disruption caused by the coronavirus. Growth is expected to be (6.5)% in CY 2020 as against 1.4% in CY 2019. The figure is expected to rebound to 4% in CY 2021.

Most economies in the group are forecast to contract this year, including Japan (5.2%), Germany (7%), France (7.2%), Italy (9.1%) and Spain (8.0%).

Among Emerging Market and Developing Economies, all countries face a health crisis, severe external demand shock and a plunge in commodity prices, which will have a severe impact on economic activity, including commodity exports. Overall, the group of Emerging Market and Developing Economies is projected to contract from 3.7% in CY 2019 to (1.0)% in CY 2020 before picking up to 6.6% in CY 2021.

India and China are the only two countries in the world to maintain a positive growth rate in CY 2020, though at a low 1.9% and 1.2%, respectively. In CY 2021, China is expected to lead the global rebound with 9.2%, following by India with 7.4% and the Asean 5 (Indonesia, Malaysia, the Philippines, Singapore and Thailand) with a collective 7.8%.

In China, indicators such as industrial production, retail sales and fixed asset investment suggest that the contraction in economic activity in the first quarter could have been about 8% year-on-year ('YoY').

India's GDP decelerated to its lowest in over six years in the third quarter of FY 2019-20 as per KPMG April 2020 report on the 'Potential Impact of Covid-19 on the Indian Economy'.

Key considerations for the outlook:

- **Amplification channels:** Financial markets are sharply repricing due to an increase in uncertainty and the sudden materialisation of extensive disruptions to economic activity. The flight to safe assets and rush to liquidity have put significant upward pressure on borrowing costs and credit has become scarcer, aggravating financial strains.

- **Early indications of severe economic fallout:** The economic impact of Covid-19 is already visible in the countries most affected by the outbreak. For example, in China, industrial production, retail sales and fixed asset investment dropped dramatically in January 2020 and February 2020.

- **A sharp drop in commodity prices:** The fast deterioration of the global economic outlook following the pandemic and the breakdown of the OPEC+ (Organization of the Petroleum Exporting Countries including Russia and other non-OPEC oil exporters) agreement have weighed heavily on commodity prices. Base metal prices, natural gas prices and crude oil prices dropped drastically since mid-March 2020.

- **Tight financial conditions**: Equity markets have sold off dramatically; high-yield corporate and emerging market sovereign spreads have widened significantly; and portfolio flows to emerging market funds have reversed, particularly in the case of hard currency bonds and equities. Signs of dollar funding shortages have emerged amid the general rebalancing of portfolios towards cash and safe assets.

Risks

Even after the severe downgrade to global growth, downside risks to the outlook persist.

The key risks are:

1. The effects of the health crisis on economic activity and financial markets could turn out to be stronger and longer lasting than initially estimated, testing the limits of central banks to backstop the financial system and further raising the fiscal burden of the shock.
2. As of mid-May 2020, the path of the Covid-19 pandemic remains uncertain. Strong containment efforts to slow the spread of the virus may need to remain in force for longer than first half of CY 2020 if the pandemic proves to be more persistent than assumed in the WEO baseline.
3. For several reasons, the recovery of the global economy could be weaker than expected even after the pandemic recedes for now. These reasons include lingering uncertainty about the return of the contagion, confidence failing to improve, establishment closures, massive job losses and purchasing power erosion and structural shifts in business and household behaviour, leading to more supply chain disruptions and weak aggregate demand.
4. Related to the uncertainty around Covid-19, an extended risk-off episode in financial markets and tightening of financial conditions could cause deeper and longer-lasting downturns in a number of countries.

Nevertheless, governments could help stabilise the economies through the following interventions:

- Framing effective policies such as shared economic policy objectives across countries, substantial targeted fiscal, monetary and financial market measures to help affected households and businesses in advanced economies, emerging markets as well as developing economies.
- Provision of liquidity and credit guarantees, loan restructuring, broad-based fiscal stimulus where financing constraints permit (such as public infrastructure investment or across-the-board tax cuts). This may pre-empt a steeper decline in confidence in economies facing financial constraints, help lift aggregate demand, curb bankruptcies and avert an even deeper downturn.
- Restrictions in free trade or domestic policy measures, leading to import restrictions and providing an opportunity to boost domestic industry.

Source: IMF World Economic Outlook (WEO), April 2020 released on April 14, 2020; KPMG report on Potential Impact of Indian Economy-April 2020, OECD Interim Economic Assessment, March 2, 2020

Domestic Economic Outlook

The January 2020 growth forecast of FY 2020-21 for the Indian economy has slashed to 1.9% from 5.8%. This comes at a time when the global economy has hit the worst recession since the Great Depression as a result of the collapse in economic activity due to the coronavirus-induced lockdown.

In its latest World Economic Outlook report, the IMF projects a rebound in the growth of the Indian economy in CY 2021, at a rate of 7.4% and FY 2019-20 growth at 4.2%, down from 4.8% as estimated in January 2020. India has been placed among the fastest-growing emerging economies of the world.

India is among the handful of countries which is projected to cling on to a positive growth rate at 1.9% and this is the highest GDP growth rate among the G-20 economies, as estimated by the IMF.

GDP in India is expected to reach US$ 2,950 billion by the end of CY 2020, according to Trading Economics global macro models and analysts' expectations. In the long term, India's GDP is projected to trend around US$ 3,100 billion in CY 2021 and US$ 3,200 billion in CY 2022.

India's foreign exchange reserves slumped by US$11.98 billion during the week ended March 20 and stood at US$ 469.9 billion as the central bank sold to arrest the slide of the rupee, but it was still better compared to US$ 447.8 billion at end-March 2019.

India's Foreign Direct Investment (FDI) equity inflows reached US$ 436.47 billion between April 2000 and June 2019 with maximum contribution from services, computer software and hardware, telecommunications, construction, trading and automobiles.

Merchandise exports and imports (in US$ terms) declined by 1.9% and 8.1%, respectively, in April 2019-January 2020.

Oil imports declined by 9.2% and non-oil imports declined by 7.7% in April 2019-January 2020. During April 2019-January 2020, merchandise trade deficit was US$ 133.3 billion, lower as compared to US$ 163.3 billion in April 2018-January 2019.

The fixed investment rate (ratio of gross fixed capital formation to GDP) is estimated at 27.5% in FY 2019-20 against 29.0% in FY 2018-19. The growth in real fixed investment is estimated to decline at 0.6% in FY 2019-20 compared to 9.8% in FY 2018-19.

The Index of Industrial Production ('IIP') registered a growth of 0.5% in April-December 2019, as compared to 4.7% during April-December 2018. IIP of the manufacturing sector declined by 1.2% in December 2019, as compared to a growth of 2.9% in December 2018.

Growth of bank credit was 7.1% (YoY basis) as on January 31, 2020, as compared to 14.5% in the corresponding fortnight end of the previous year.

The Budget Estimates of the fiscal deficit as percentage of GDP for FY 2019-20 have been set at 3.3%, as compared to 3.4% in FY 2018-19 (Provisional Actual or PA).

The Rupee exchange rate (Re/US$) stood at 71.3138 at the end of January 2020, compared to 71.2328 at the end of December 2019.

India's current account deficit (CAD) was 0.9% of GDP (US$ 6.3 billion) in the second quarter of FY 2019-20 as compared to 2.9% GDP (US$ 19 billion) in the second quarter of FY 2018-19.

External debt stood at US$ 557.5 billion at end-September 2019, recording an increase of 0.5% over the level at end-June 2019. Long-term debt was US$ 448.4 billion at end-September 2019, while the remaining US$ 109.1 billion was short-term debt.

Sectoral Information

The Chemicals industry in India contributes 1.34% to the nation's Gross Value Added *(Source: National Investment Promotion & Facilitation Agency)* and is a highly diversified business, covering more than 80,000 commercial products broadly classified into Bulk Chemicals, Specialty Chemicals, Agrochemicals, Petrochemicals, Polymers and Fertilisers. India ranks 14th in export and 8th in import of chemicals (excluding pharmaceutical products) globally. The demand for chemical products is expected to grow at approximately 9% per annum over the next 5 years.

Specialty Chemicals constitute 22% of total chemicals/ petrochemicals market in India. As of FY 2017-18, the total market size was around US$ 35 billion. The demand for Specialty Chemicals is expected to grow at 12% CAGR during FY 2019-22.

Key sectors such as automobile faced a slowdown that rolled over from the previous year, as sales fell 13.83% YoY in January 2020.

Projects in the construction sector worth more than ₹ 59,000 billion are under development, but severely impacted by Covid-19. India's goal of becoming a US$ 5 trillion economy rests on the completion of critical infrastructure under the National Infrastructure Plan. Enhancing labour health, strengthening and prioritising project governance according to Covid-19 affected regions and leveraging business continuity planning are key to overcoming the situation.

Global Trend: Uncertainty for the world, possibilities for India (as per KPMG Report on Indian Chemicals Industry, February 2020)

- Several global oil and gas majors are turning their sights towards downstream chemical opportunities. This may increase the focus on petrochemicals in India and higher investment in the sector may ease feedstock challenges and boost self-sufficiency.
- The structure of China's chemical industry is changing due to stricter environmental norms, tighter financing and consolidation, which could present opportunities for India's chemical companies in certain value chains and segments, especially in the short term.
- Trade conflicts have erupted around the world, especially among China, the United States and Western Europe. Large chemical markets that remain accessible in this scenario could present opportunities for chemical companies in India.
- Industry-wide, there seems to be a move towards prioritisation of core businesses and consolidation on a greater scale, often through big-ticket mergers and acquisitions. For companies in India, scale will matter even more, as it could help them to fortify any other competitive advantage.
- Digital technology has established itself as a lever to enhance efficiency and productivity. Indian companies could tap into this opportunity to expand their profit margins.
- Chemical companies could prioritise environmental sustainability to protect long-term shareholder value, while continuing to comply with local regulations.

Agriculture

Gross Value Added (GVA) by agriculture, forestry and fishing is estimated at ₹ 18.55 lakh crore (US$ 265.51 billion) in FY 2018-19 as per the IBEF January 2020 report. According to the Department for Promotion of Industry and Internal Trade (DPIIT), the Indian food processing industry has cumulatively attracted FDI equity inflow of about US$ 9.41 billion between April 2000 and June 2019.

The Union Agriculture Ministry has asked the states to plan for a total foodgrain production of 298 million tonnes (149.92 MT kharif plus 148.4 MT rabi) for the crop year FY 2020-21, increasing mainly the output of pulses and coarse cereals. There has also been an increase in targets for oilseeds and cotton to 36.64 million tonnes (against the production estimate of 34.19 million tonnes in

FY 2019-20) and 36 million bales (one bale is equivalent to 170 kg) as against 34.89 million bales in FY 2019-20.

Agriculture has done well and is likely to grow at 3%. Significantly, India, in FY 2018-19, exported crop protection chemicals worth ₹ 22,090.18 crore. The one big opportunity the Indian industry has is to undertake the manufacturing of active ingredients that are scheduled to lose patent protection in the next few years. The current crisis opens a synergetic window for the Indian seed sector to work in sync for the greater benefit of the nation and its farmers. Adequate low-interest working capital and soft loans for building infrastructure and investments in R&D can be upcoming areas of focus.

Other Infrastructure Indicators

As per the Central Electricity Authority, electricity generation grew by 2% in January 2020 (YoY basis). The total installed capacity for electricity generation was 3,68,690 MW at the end of January 2020, of which the share of thermal, hydro, renewable and nuclear sources was 62.4%, 12.3%, 23.4% and 1.8%, respectively.

WPI inflation increased to 3.1% in January 2020 as compared to 2.6% in December 2019. Consumer Price Index (CPI) – combined inflation was 4.5% in April-January 2019-20 as compared to 3.6% in April-January 2018-19. Growth of money supply (M3) (YoY basis) as on January 31, 2020, stood at 10.2%, as compared to a growth rate of 10.4% recorded in the corresponding fortnight end in the previous year.

Source: IMF WEO, April 2020 released April 14, 2020; IBEF-March 2020 update; https://economictimes.indiatimes.com; Government of India Ministry of Commerce & Industry Department of Commerce Economic Division (India's Foreign Trade: February 2020); Mckinsey Report on Indian Chemical Industry; https://www.investindia.gov.in/sector/chemicals

Company Overview and Sustainable, Profitable Growth Strategy

A part of the US$ 113 billion Tata Group, Tata Chemicals Limited ('the Company' or 'TCL') is a global company with interests in businesses that focus on Basic Chemistry Products and Specialty Products. The story of the Company is about harnessing the fruits of science for goals that go beyond business. While the Company's businesses are diverse and varied, they are underpinned by science-led differentiation with digitisation and innovation at the centre of every aspect of business. This year marks the 81st year for Tata Chemicals Limited.

The Company's story began in Mithapur, Gujarat, in western India in 1939, with the creation of a small plant that would raise a wealth of marine chemicals from the ocean. The Company today serves a diverse set of customers across five continents, with interests that focus on Basic Chemistry (soda ash, salt and sodium bicarbonate) and Specialty Chemistry (Agri Sciences, Nutritional Sciences, Materials Sciences and Energy Sciences). Through its Basic Chemistry business, the Company is the world's 3rd largest and most geographically diversified soda ash company, in addition to being the 6th largest Sodium Bicarbonate producer with manufacturing facilities in India, UK, Kenya and the US. The Company supplies to global detergent and glass brands in addition to food, power generation, animal feed, chemicals and pharma brands. It is also a leading manufacturer of edible salt in India. Under its Specialty Chemistry business, it houses the Agri Sciences business in its subsidiary, Rallis India Limited ('Rallis') having a reach of 13 million farmers across 80% of India's districts, with 5 Power Brands. The Companies Nutritional science business offers solutions for microbiome modulation with global scale capacities for scFOS & GOS (Short chain Fructo-oligosaccharide & Galacto-oligosaccharide. Its Material Sciences business has a novel patented technology for manufacturing Highly Dispersible Silica ('HDS') for tyres. Through Energy Sciences, TCL is focussed on energy storage opportunities in India.

In order to maintain sustained economic growth and build an innovative product pipeline, the Company has established world-class R&D facility in Pune, an Innovation Centre ('IC'), which is home to technical knowhow in Material Sciences, Nutritional Sciences and Energy Sciences and two R&D centres in Bengaluru – the Rallis Innovation Chemistry Hub (RICH), focussing on next-generation crop protection and nutrition products and Agri-Biotech R&D Facility for Seeds division of Rallis (erstwhile Metahelix Life Sciences Limited), developing new and functional seed traits. The three R&D centres continue their research for growing new businesses and providing value addition by creating a different approach to its existing businesses backed by science-led differentiation.

The Company's Basic Chemistry Products business has delivered a strong performance, despite a mixed business environment marked by good demand growth on one hand and significant increase in input energy costs and competitive pressures on the other. The Company continued to focus on throughput optimisation of all its key products within the prevailing operational constraints and maintained its leadership position.

The Specialty Products business is high-growth potential business segment comprising four major verticals namely Agri Sciences, Nutritional Sciences, Material Sciences and Energy Sciences. The Company is an established player in Agri Sciences business offering crop protection solutions, seeds, Plant Growth Nutrients (PGNs) and agri input solutions through its subsidiary Rallis. Rallis is amongst one of India's leading crop care companies and hold leadership in products like Acephate, Hexaconazole, Pendimethalin and Metribuzin. The business has a strong distribution network having 13 million farmer connects and over 4,000+ distributors.

The Company's Nutritional Sciences business offers nature-inspired and science-backed ingredient and formulation solutions

catering to human and animal health under the brand Tata NQ. The flagship product lines of Tata NQ – FOSSENCE® and GOSSENCE® are prebiotic dietary fibres that promote the growth of gut microbiome and improve digestive & immune health. Nutritional Sciences business delivered outstanding performance where the revenue increased by approximately 59%.

Under Material Sciences, the Company launched new silica grades for diverse application segments/customers and strengthened channel partner and distribution network across India.

Energy Sciences is the newly seeded business in emerging areas where the Company intends to establish its niche with pioneering solutions.

TCL has invested in nurturing businesses that have emerged from its IC at Pune, such as HDS and Nano-Zinc Oxide products under the Material Sciences portfolio. TYSIL™ is its conventional silica brand for tyres and other rubber goods applications, while TAFOSIL™ specialises with functional modification of silica surface chemistry for rubber applications. TREADSIL™ is HDS for use in Ultra-High and High-Performance tyres. TAVERSIL™ is used for non-rubber applications like food, feed, detergents, oral care and Agri Chemicals. Under Energy Sciences, the Company focusses on building new-age energy materials for Li-ion cell manufacturing, battery recycling and battery active production.

RICH has invested in the development and commercialisation of three new formulations for the benefit of the farming community. Zygant is a granular insecticide formulation targeted at paddy crop protection. Ayaan is a novel fungicide combination formulation, introduced for the first time in India for disease management and yield improvement of paddy. Sarthak is a fungicidal combination formulation proven to be highly effective for vegetable crop protection. The Seeds R&D runs a breeding programme across multiple crops and has a well-established pipeline that includes nursery and trials of new seeds. It has set a 5-year evaluation plan, where the Company periodically monitors the performance of each stage in the pipeline for its commercial viability. The Biotech lab established under the Seeds division continues to support requirements of multiple internal departments such as breeding, seeds supply chains and seeds quality control. It assists in improving operational efficiency and explores new opportunities in the Seeds business. During FY 2019-20, under the biotechnology programme, Genetically Modified (GM) traits were developed for maize and cotton having insecticides and herbicides tolerance. Products are under regulatory trial and would be followed by field trials and lab data generation.

Sustainability as a practice is at the core of all of the Company's activities, including the Corporate Social Responsibility initiatives. The Company integrates environmental, social and ethical principles in all of its business functions.

Impact of Covid-19 pandemic on the Company's operations

The Company has a global presence with manufacturing operations in four continents. The immediate impact of the Covid-19 pandemic with respect to customer and governmental reactions to the crisis have been varied.

In India, the Company was affected by national lockdown in a number of ways but the recovery is fast underway due to the number of steps undertaken by the Company. The Company's largest site in Mithapur, Gujarat continued to produce Tata Salt with no disruptions and are operating at higher than normal volumes in order to supply the market with this essential product. Production of soda ash and sodium bicarbonate is recovering after a lull in the first phase of the lockdown as our customers' own operations come back onstream. Together these three products represent approximately 90% of the revenue from the site.

In India, the Company's two newer operations in Mambattu, Nellore (Andhra Pradesh) and Cuddalore (Tamilnadu) were shut down as per the Government directives and remained shut, except for essential safety and maintenance work. The sites started limited operation in May 2020 following the relaxation of local restrictions and are currently meeting customer demand in full. Given the scale of their current operations, this would not have a material impact on the financials of the Company.

Our service to farmers and the agriculture sector was largely unaffected barring early logistics issues which were quickly resolved.

UK operation has not suffered any disruption in production or sales with customer demand remaining strong. Export markets served by the US operation have witnessed a slowdown in part due to Covid-19 restrictions in the markets serviced. In Kenya, while there was no disruption in production related to Covid-19, despatches to customers in India and SE Asian countries were delayed for a period of time on account of complete or partial lockdowns in these regions.

All safety protocols related to Covid-19 as advised by the Government are being implemented and observed at the Plants. The Company adopted a work from home policy for non-site based employees.

The Company operates within the business to business (B2B) sector with no direct to consumer sales (B2C). Many of the Company's products are classified as essential serving the food, hygiene, pharma and container glass sectors where demand has not suffered significantly due to the pandemic.

The Company continues to closely monitor national and international sourcing and supply positions to identify any

potential material risks. The Company has so far not experienced any specific issue in its raw material sourcing.

The Company at present continues to fulfil its obligations with respect to all the existing contracts and agreements. The Company does not foresee any material impact on account of non-fulfilment of obligation by any party in existing contracts or agreements.

There has been no material change in the Company's liquidity position subsequent to the year ended March 31, 2020; with a very positive liquidity position in India with no borrowings and sufficient credit lines available. The Company has also instituted, across all its operations, aggressive and focussed cost control programmes and a deferment of all but completely necessary capital expenditure to build up and conserve its already healthy cash position. Further, there is no impact on internal financial controls due to Covid-19.

Business Units

Basic Chemistry Products

Industry Structure and Developments

TCL serves customers across four continents through its Basic Chemistry Products ('BCP') business (soda ash, salt, sodium bicarbonate, cement and marine chemicals). The Company's global supply chain gives it the unique advantage of maintaining assured supply and efficient service at competitive prices.

With an annual capacity of around 4.3 million tonnes, the Company is currently the world's 3rd largest soda ash producer. More than two-thirds of this capacity is natural soda ash based and located at the Green River Basin, Wyoming, US, where the world's largest deposits of Trona occur and at Lake Magadi in Kenya. In addition to having lower manufacturing costs, natural soda ash has a lower energy and environmental footprint. Synthetic soda ash and sodium bicarbonate are manufactured at Mithapur, India and Northwich, UK, primarily to cater to their respective domestic markets. This process uses raw salt/brine (saltwater) and limestone as key raw materials.

Soda Ash

The global Soda Ash demand is estimated to have grown by 4% in FY 2019-20 to reach approximately 62.5 million tonnes. With Turkish capacity getting fully operationalised and resurgence in domestic demand in China, approximately 2.5 million tonnes of additional volumes were consumed during the year. Turkey registered a 23% increase in exports compared to FY 2018-19, translating into 7 million tonnes additional material availability. Having overcome environmental inspections and hurdles, production in China started to normalise. Yearly domestic demand bounced by 8%, despite the early onslaught of Covid-19 and associated disruptions. China's exports at 14.4 lakh tonnes also returned to growth.

World soda ash markets were oversupplied despite no new significant capacity addition during the year. Higher operating rates of new capacity addition in India, Turkey and China created the surplus. Weaker economic sentiments and slowing demand led to higher stocks and softening of international soda ash prices. By the end of the year, price attrition was almost US$35-40/tonne as per internal tracking of price data from IHS Markit report. Natural soda ash supplies from Turkey with cost advantage increased penetration in Europe (EU), Indian Sub-Continent (ISC) and South-East Asia (SEA) replacing the US and Chinese dominance of past years. Ciech's plant in Romania with a capacity of 5.40 lakh tonnes was idled in September 2019 without any impact on supplies, even in EU.

In the US, domestic demand was lower by 2.4% but exports were higher by 0.8%. While exports to North-East Asia (NEA), Africa and the Middle East, South America and Western Europe were lower, this was offset by an increase in exports to SEA, North America and the ISC. Demand in Latin America, mainly driven by uses in lithium carbonate production, saw a drop, with prices of lithium reducing.

The Indian soda ash market remained largely oversupplied through the latter part of the year. Availability was higher due to the operationalisation of domestic capacity additions and an increase in imports. India experienced an extended monsoon, which affected the demand. GDP growth weakened in sequential quarters, leading to weaker market sentiment and muted demand growth. Oversupplies, with slowing consumption, led to inventory accumulation at supplier and consumer ends. The softening of international and domestic prices resulted in lower unit price realisation. Among the end segments, the float glass sector experienced problems due to cheaper imports and lower demand from both the realty and automotive sectors. The detergent segment was marginally impacted due to extended monsoons and lower consumer demand. Ceramic and Silicate clusters in Gujarat faced a downturn due to stringent environmental norms and lower exports on account of trade measures announced by the Kingdom of Saudi Arabia, one of the key export markets. Finally, in March 2020, the spread of Covid-19 and the consequent lockdown brought the market to almost a standstill. In FY 2019-20, soda ash volume was almost flat.

Sodium Bicarbonate

Sodium bicarbonate ('Bicarb') is a versatile product with a wide range of applications, including food additives, animal feed, pharmaceuticals, dyes, textiles and air pollution control. The Company believes that given its wide range of current and emerging new applications, Bicarb is expected to sustain volume growth rates above the GDP levels, along with offering significant value addition potential in the future. The Company is the

6th largest producer of Bicarb globally, with a total annual capacity of 2.3 lakh tonnes in India and the UK.

The Indian Bicarb market grew by approximately 7% in FY 2019-20. The demand for Bicarb was largely balanced throughout the year. Imports remained in line with previous year levels. An increase in supplies was met through higher throughput from capacity expansions of domestic producers. Adequate supplies and easing of international prices also led to price softening. Prices saw a decline of 8% during the year and the Company achieved sales of 1.09 lakh tonnes.

Key drivers of Bicarb growth continue to be food, feed and pharma segments. The emerging flue gas treatment segment appears to be another promising sector for Bicarb consumption. Mid-capacity power plants in India hold key to this demand. The Company won the first tender for this trial order from Government-owned power plants. However, lower plant load factors curtailed immediate continuity of this demand. The Company's Bicarb brands, 'Sodakarb', 'Alkakarb' and 'Medikarb', scaled higher volumes, registering double digit growth. Medikarb is now an established product for the haemodialysis segment and is increasing its reach and penetration. The Company has introduced 'Speckarb', a new brand with low chlorides to meet specific customer requirements of specialised Bicarb. The Company continues to explore new opportunities to retain its volume and value leadership in the Bicarb market. The various developments in Bicarb undertaken by the Company are an expansion of the Bicarb capacity at its UK plant, the Carbon Capture expansion project, etc.

Salt

Being a food ingredient, salt did not experience demand challenges, even when Covid-19 affected demand for most of the sectors. The demand continued to be strong and the increased salt production helped the Company to capitalise on the demand growth. The Company's Long-Term Supply Agreement ('LTSA') with Tata Consumer Products Limited (erstwhile Tata Global Beverages Limited) ['TCPL'], will support the Company's growth and investment plans for capacity-building. The LTSA provides for supply of vacuum-evaporated edible salt as a take or pay arrangement for an initial period of 25 years, with the option of extending this on mutual agreement. TCL recorded the highest production of salt at 10.78 lakh tonnes compared to the previous year high of 10.68 lakh tonnes. The Company plans to increase the Salt production capacity in order to meet growing demand of Indian market.

As part of its strategy of value addition and portfolio expansion, the Company is exploring various ideas for new value-added salt variants. The Company's Innovation Centre and the marketing teams are working on the development of new products in this category to offer new and value-added products that could address the needs of different segments, reaching them directly or through TCPL, depending on the nature of the consuming sector.

Cement

In addition to soda ash, salt and sodium bicarbonate, the Company also manufactures cement as part of its integrated operations at the Mithapur site. The operation of the cement plant demonstrates the Company's commitment to the environment; it utilises fly ash and other solid waste generated at the site. With a special focus on quality and key customer requirements, the Company's cement portfolio offers high-quality Cement with a strong customer service infrastructure in the targeted markets. In May 2019, the Company relaunched its Ordinary Portland Cement (OPC) with "Superior 1-day strength" to meet specific customer needs of early high strength cement. Also in sync with market demand, Portland Pozzolana Cement (PPC) was introduced to expand the product offerings.

The Company now offers three products, including Masonry cement. In FY 2019-20, the Gujarat Cement market experienced a demand contraction by 9% due to a combination of factors like weak economy and extended monsoons. However, better market prices supported profitability. Combined Cement and Clinker sales volumes at 3.95 lakh tonnes were lower by 2% compared to the previous year's performance.

Business Performance

TCL's Indian Basic Chemistry Products business unit maintained the performance of the past years, amidst sequential drops in quarterly GDP growth and slowing consumer demand. Profitability was supported by reduction in input costs on account of fuel and as a result of cost control programmes. During the year under review, the Company executed its operational excellence initiatives with rigour, leading to reasonable cost optimisation across all functions.

The Company targets a Zero Harm - Zero Harm to People, Asset and Environment. While the Company is continuously striving to improve its safety performance, the Mithapur site witnessed one unfortunate fatality in January 2020. All the incidents that take place are investigated and corrective measures are taken to prevent the recurrence of the incidents. It has led the Company to introspect and now the Company is working on evaluating innovative solutions to monitor the health and safety of its employees and contract employees working at critical areas or remote locations. During the year, the Company also increased its focus on process safety at the site.

When it comes to sustainability, the Company continues to aim beyond compliance requirements and sets the industry agenda with initiatives related to the environment and local

community engagement. Zero groundwater withdrawal for plant operations, 100% fly ash utilisation, solid waste filtration, usage of soda ash solids to minimise solid waste and focussed biodiversity preservation programmes indicate the Company's commitment to the environment. As part of its local community engagement, TCL continues to offer a multitude of skill development and self-employment generation programmes.

During the year, the Company continued to focus on throughput optimisation of all key products within the prevailing operational constraints and achieved strict cost control across all functions. Despite weak demand and pressure on realisation, financial performance improved due to the mix of volume increase in salt, value-added products in Bicarb, savings in raw materials and fuel costs and improved operational efficiencies. The Company delivered the highest production and sale of Salt and Bicarb. The Company's new offering in Specialty Pharma grade bicarbonate, 'Medikarb' has received encouraging market response. With consistency in sales and volume, the product has established its presence in its niche segment. Besides 'Detmate' coloured soda ash speckles for detergents is on stream with consistent volume delivery. The Company also initiated sales of 'Speckarb', the specialty grade Bicarb for customers with low chloride requirements, during the year. 'ChemConnect', the Company's online customer portal and app, has recorded above 98% customer engagement. The Company's channel partners have access to quick and easy online access of channel finance through designated banks. This arrangement has been facilitated by the Company between banks and our channel partners.

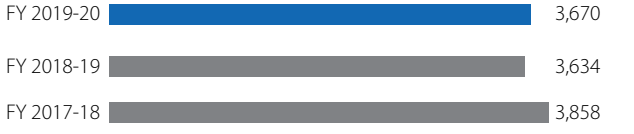
The production volumes at Tata Chemicals North America Inc. ('TCNA') were higher by 3.4% during the year, principally due to improved efficiency at the plant, resulting from significant investment in maintenance projects. Due to the pandemic, production in FY 2020-21 will likely be scaled back to match sales demand, expected to decline by 5-10% from the FY 2019-20 level, consistent with projected GDP regression in the Company's primary markets. During FY 2019-20, sales volumes were essentially flat as compared to the previous year (up by 0.6%). In spite of increased production levels, a temporary oversupply of soda ash worldwide, compounded by the pandemic, resulted in an unusual position of not being able to sell all of the products manufactured during this period. Due to the slightly higher sales volume, TCNA posted gross revenue of US$ 480.00 million for the year ended March 31, 2020, as against US$ 475.82 million in the previous year, in spite of slightly lower American Natural Soda Ash Corporation ('ANSAC') pricing and a market mix reflecting an increased supply to lower priced export markets relative to the US.

Tata Chemicals Europe Limited ('TCE') catered to 50% of the UK market demand of soda ash from its manufacturing operations at Lostock, with only very small amounts of imported material during the year. Energy prices and raw material costs generally softened as the year progressed. Plant operation was affected by major infrastructure work during the summer of 2019, as part of the Energy-from-Waste Plant investment on the site, but this was in line with expectations in the second half of the year. The associated energy business had a robust year, generating good income and contributing strongly to the soda ash/Energy business unit performance. The UK salt market volumes were largely flat in the year. Production was steady throughout, matching expectations.

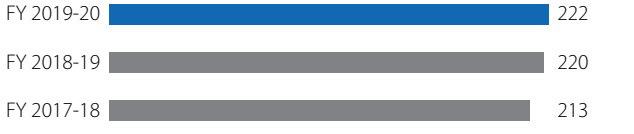
The sodium bicarbonate market continues to grow and while retaining the core UK market share, the major success in this product has been continued strong export growth across the globe, helping the business to grow strongly again through the year. During the year, the modified sodium bicarbonate at Winnington performed very well, yielding another record production level.

For Tata Chemicals Magadi Limited ('TCML'), soda ash is the most prominent product in the total portfolio, the main destination being the container glass and silicate sectors. The remainder of the portfolio includes Salt, Crushed Refined Soda ('CRS') and other by-products. The Magadi operation has stabilised the Standard Ash Magadi ('SAM') plant performance, which continues to be the lifeline for TCML turnaround. Going forward, TCML will focus on ensuring consistent quality and efficient operations of the SAM facility to deliver higher volumes at a lower cost.

BCP - Soda Ash Production Volumes ('000 tonnes)



BCP - Sodium Bicarbonate Production Volumes ('000 tonnes)



IVSD Salt-Production-India Chemical Operations ('000 tonnes)

Outlook for Business

Covid-19 has put the biggest question mark on the economic recovery of India and the world, even as nations began to phase out their lockdowns by the second half of May 2020. There were fears on several fronts viz. (i) of the infection rate soaring as people came out of self-isolation; (ii) of the virus mutating to a more virulent strain; and (iii) of a vaccine not being found soon enough. Despite the challenges of a global recession, currency risks and liquidity concerns, long-term prospects for the Company's business remain positive. It is committed to executing its growth strategy to further strengthen and leverage its leadership position.

The soda ash market is expected to experience degrowth of about 5-6% in FY 2020-21, with a demand loss of approximately 2.5 lakh tonnes. Imports are expected to come down by about 20% over FY 2019-20 due to current challenges related to global logistics, shutting down of Ciech's Romanian plant and the adverse exchange rate for imports. The soda ash and bicarb export that gained some momentum during the previous year is expected to continue. Soda ash availability is expected to be good despite lower imports due to increased domestic production. Prices are expected to be stable through the initial period and might improve in the later part of the year as demand starts to pick up.

The global soda ash market is expected to remain oversupplied, despite no significant announced capacity additions. Demand in Europe and Asia should be adequately supplied by Turkish volumes. International prices, in some markets, might witness a negative bias with slowing trade and excess supplies after Covid-19 impact. Lower production rates in some countries due to lockdown and global logistical challenges may bring the demand and supply to a more balanced level. With lower energy and raw material prices, manufacturers will gain from the cost compression factors. To stop dumping and protect markets, countries may seek trade remedies under the existing World Trade Organization (WTO) provisions.

In the medium term, the outlook for TCNA remains positive with soda ash being sold out in most years. The pandemic, combined with some oversupply in the worldwide market, is likely to have an impact on production and revenue in FY 2020-21. Beyond next year, strong growth in exports is expected to be a price-growth driver for US producers. TCNA will continue with efforts to stabilise its cost base and improve upon soda ash production to meet the market demand. These efforts will also look at the future raw material (Trona ore) requirements and process improvements at the plant.

TCE heads into FY 2020-21 with some momentum on the back of excellent Sodium Bicarbonate performance and increasing Soda Ash output. The focus is to drive sales even further from the sodium bicarbonate plants at Winnington, while Lostock will target stable soda ash performance, including a major investment in plant assets during the year.

The year will see the commissioning of the ground-breaking Carbon Capture and Usage (CCU) plant, as part of the TCL group's push to enhance its industry-leading low-carbon credentials and supporting growth in the Sodium Bicarbonate business. Salt is set for a decent year as increasing levels of investment over several years continue to bear fruits. This includes a major boiler replacement in the summer of 2020, which will significantly improve efficiency and carbon emissions and complement investments in packing/logistics and launching investment in significant growth of the value added salt portfolio.

For TCML, soda ash competitiveness will be defined by price and quality, which means that strategic market mixes will determine gains for TCML. Its focus will be on markets with best returns.

CRS growth shall be driven by animal feed, silicate and mining sectors. Product development continues since CRS has demonstrated potential for growth in diverse areas, such as lead processing, tobacco, silicate, disinfection, compost treatment, jigger treatment and flue gas treatment.

Risks and Opportunities

TCL's growth strategy encompasses addressing risks and capitalising on opportunities. With increasing demand, defending the Company's market leadership is a prime focus area. The Company will pursue the execution of its capacity addition plans at Mithapur for all product lines, especially, salt, soda ash and bicarb, under 'Project Pragati'. Additionally, it has planned to increase the production volumes of its subsidiaries for maintaining their market share.

The Company's value-driven growth opportunity in the Bicarb space with brands in food, feed, pharma and specialty segments will entail scale and consolidation. Customisation of new bicarb applications with a focus on flue gas treatment, aqua farms, etc. is a growth driver. Strategic partnerships around themes of innovation and sustainability will continue to offer better customer value.

In cement, the Company's rebranded high-strength OPC, addressing specific requirements of customers, is gaining acceptability with a pickup in volumes. PPC volumes are also expected to increase during the year.

Leveraging technology with increased focus on digitisation, automation, cloud solutions and data analytics to make processes smoother for customers and for internal efficiencies will be crucial. Multiple projects around plant and supply chain automation, customer engagement and digital imaging are being implemented.

The Indian Basic Chemistry Products business unit is taking measures to address key risks. The availability of increased volumes of soda ash will impact price realisations, especially with Covid-19 and the global slowdown. Apart from this, the higher energy costs and volatility in exchange rates are significant risks to the Company's business performance. The Company continues to remain focussed on keeping fixed costs low and controlling variable costs through securitisation of the key raw materials, including fuel and limestone along with continuous improvement programmes to help mitigate the adverse impact of these risks. Market mix change would be another lever to counter this risk. Adherence to more stringent environmental norms and improving the safety performance in a sustainable manner are other key issues for the India Basic Chemistry Products business.

At TCNA, beyond managing the short-term impacts of Covid-19, the focus will be on ensuring the continued safety of employees, while increasing reliability and stabilisation of production through debottlenecking. Improvement in maintenance programmes as well as capital spending will be other focus areas. Favourable global market demand for soda ash bodes well for increased prices when contracts are renewed.

As experienced in the previous years, there continues to be significant pressures on maintenance, material, labour and medical benefit costs, offset in part by programmes to eliminate costs. There is also an increased emphasis on environmental compliance dealing with regulations related to sulphur, carbon dioxide, dust and other emissions. TCNA will be investing a significant amount of capital expenditure as well as expense to address environmental compliance. It continues to investigate natural gas as an alternative energy source to coal to reduce emission and energy costs.

At TCE, there is a significant investment pipeline of projects across Salt, Sodium Bicarbonate, Soda Ash and Energy units. This is combined with a continued drive towards continuous improvement in cost competitiveness and product offering for our customers, both product-wise and service-wise. Developing sales opportunities overseas for Sodium Bicarbonate and Salt will continue to be a focus. Major threats are likely to be from any economic downturn or problems associated with Covid-19 or Brexit.

Two specific items related to the UK leaving the European Union are: a) A smooth transition in December 2020 to a new trading arrangement with the EU; b) Defined terms and rules relating to a replacement emissions trading scheme for the UK in CY 2021 and its alignment with the European Union Emissions Trading System ('EU-ETS') Phase IV proposals.

At TCML, the focus is largely on quality and capacity utilisation. In addition to SAM, opportunities exist in CRS. Utilisation of Lean Six Sigma and Lean manufacturing tools and techniques, continuous process improvement and enhanced global sourcing will help reduce costs and improve efficiency. Creating a talent pool is another focus area identified by TCML for the coming year. It is working on more engagement with local and national stakeholders and supports concerted efforts, including technical collaboration with third parties, to mitigate risks to its raw material (Trona) quality, affected by increased siltation in the northern part of Lake Magadi.

Specialty Products

Agri Sciences (Rallis India Limited)

Rallis India Limited ('Rallis'), a listed subsidiary of the Company, is one of India's leading crop care companies, serving Indian farmers since decades and is a pioneer in the agricultural inputs industry. The Company has created a distinct identity for itself with its extensive research & development ('R&D') capabilities, delivering innovative products, positively impacting the livelihood of millions of farmers in India.

India is a large market with high growth potential for the crop protection industry on the back of its diverse agro-climatic conditions and impetus to agricultural productivity. India's capability in low-cost manufacturing, availability of technically trained resources, seasonal domestic demand, overcapacity, better price realisation and a strong presence in generic pesticide manufacturing are the major factors boosting the crop care chemicals growth.

During FY 2019-20, Indian agriculture experienced erratic, delayed and extended monsoon, which resulted in modification of the crop calendar. Overall, purchasing power of farmers depicted an upward trend, buoyed by higher Minimum Support Price ('MSP') in rice, wheat, spices, pulses and sugarcane. The demand for agri-inputs is set to rise due to less penetration, rising labour cost, increased irrigation facility, credit availability and higher farmer income.

Rallis has cautiously expanded from being a pesticide manufacturing company to a more diversified player with presence across the agricultural value chain. It has widened its product portfolio and today, caters to all critical agricultural needs such as Soil Conditioners, Quality Hybrid Seeds, Plant Growth Nutrients, Specialty Nutrients and Plant Protection Chemicals. It has established four state-of-the-art manufacturing facilities in the states of Gujarat and Maharashtra.

The commodity prices of key crops such as rice, maize and soybean exhibited a rising trend in CY 2019, improving farmers' purchasing capacity. Farmers' higher purchasing power coupled with the Rallis' new product introductions, commercial excellence, trade

policy revision and enhanced channel reach led to superior growth in the segment during the year.

Crop Care

The Crop Protection business of Rallis registered a growth of 16% in FY 2019-20 with both domestic and international business delivering encouraging results. Under the Crop Protection business, Insecticides business performed well at 21% revenue growth during the year, primarily driven by the good performance of new products, Zygant and Cameo, along with the scale-up of existing products such as Rilon, Takumi and Summit. The Fungicides business revenue grew by 9% during the year owing to good traction in the new launches, Ayaan and Sarthak as well as the scale-up in existing products, Master, Taqat, Contaf Plus and Ergon. The Herbicides business registered a growth of 16%, exhibiting a mixed performance. There was lower offtake in sugarcane, soybean and wheat on account of the flood-like situation and untimely rainfall. The buoyant Rabi season boosted sales of paddy herbicides in South India.

The International business continued to perform positively amid certain headwinds and grew by 11% in FY 2019-20. It witnessed price erosion and margin pressure in key products such as Metribuzin and Pendimethalin on account of increased competition and higher input prices. For greater geographical diversification in South-East Asian countries and Africa, dossier submission efforts have been taken up.

Rallis' Crop Nutrition division delivered a satisfactory performance in FY 2019-20 with both GeoGreen and Plant Growth Nutrition (PGN) segments exhibiting strong revenue and profit growth during the year. The Company's Soil Conditioner business outperformed the industry growth in FY 2019-20 with revenue growth of 13%, which was primarily led by 10% volume growth. Rallis' PGN segment exhibited strong performance on the back of new product launches, good market presence and channel and sales-team incentivisation.

Rallis is also planning to launch Foliar Nutrition and Fertigation products in Kharif 2020. The Foliar Nutrition portfolio includes products catering to vegetables, onion, potato and apple, whereas the Fertigation portfolio consists of products primarily catering to grape production.

Seeds

During the year, Metahelix Life Sciences Limited (wholly-owned subsidiary of Rallis) merged with Rallis and was classified as Seeds division of Rallis. Inherent strengths of Metahelix, such as product portfolio breadth, emerging and popular Dhaanya seed brand, established supply chain and demand-generating abilities will enable Rallis to strengthen its Seeds business.

The Seeds division delivered a satisfactory growth of 8.3% in FY 2019-20, backed by strong volume growth witnessed in bajra (pearl millet) and superior price realisation for paddy and millets. During the year, Rallis witnessed a significant jump in its seed procurement prices due to increased MSP for rice and increased commodity prices of maize, millet and cotton. Despite the price increases, Rallis was able to maintain its gross margins. It continues to undertake product development initiatives to further diversify into Rabi season products such as fruits and vegetables. Besides, it is leveraging strong R&D capabilities to develop and launch innovative products.

Pandemic Impact on Agri Sciences Business

The Covid-19 outbreak had a disrupting impact on the supply chain, resulting in delays and cancellations in key raw material supply. The Indian agro-chemical production depends heavily on the import of key intermediates, particularly from China. The uncertain supply, expensive raw material prices, inventory overhang and extended lockdown impacted Rallis' manufacturing, production, processing and logistics operations and exerted pressures on the margins.

Nutritional Sciences

The Nutritional Sciences business of TCL, under the brand Tata NQ, offers solutions for human and animal health. The flagship products are FOSSENCE® and GOSSENCE®, prebiotic dietary fibres for better gut health, digestion and immunity.

The Company's partnership with Indian and global academic institutions and research bodies, in order to further understand the gut microbiota and their health effects, is helping TCL build a leadership position in this space. It is gathering deep insights by using bio-informatics in gut microbiota, with development of accurate Proprietary Predictive (Patent applied) models of microbiome response to interventions. The Company's expertise in fermentation technology, enabling production using whole cell route, is also opening up opportunities in other human nutrition segments, using the biosynthesis route. Strong application support, which enables close co-ordination with the customer on new product development projects, provides a deep understanding of a customer's requirements.

The Company commenced operations at its state-of-the-art greenfield facility in Nellore, marking an increase of 17 times in production capacity, significantly enhancing its ability to serve customers across the globe. There was wide acceptance of the product quality from the new plant and as a result, revenue grew by 59% to ₹ 65.15 crore over the past year, while the customer base grew to more than 250 customers.

The business had earlier established a global distribution network and initiated customer engagement in South-East Asia, China and the US. This engagement started to bear fruits,

with supplies across South-East Asia after product qualification from the new facility. There has also been considerable progress in the qualification process by major global consumers of FOS (fructo-oligosaccharide) and the feedback has been encouraging. The qualification is in progress and is expected to be favourably concluded soon.

Due to Covid-19, many TCL customers are likely to defer new product introduction, particularly the Food & Beverage customers, while additional sales opportunities are expected from Nutraceuticals companies, particularly in the area of immunity and gut health. The Company is re-calibrating its plans as the situation evolves.

Material Sciences

Silica & Highly Dispersible Silica ('HDS')

Precipitated silica is a highly versatile product that finds application in a wide range of industries, including tyres, non-tyre rubber goods for industrial (e.g. conveyor belts and hoses), consumer applications (e.g. footwear) and several non-rubber essential products like packaged food, feed, oral care, agro-chemicals, detergents, etc.

TCL's wide range of conventional silica and HDS products allows it to participate in this large domestic and global market poised for significant growth. While FY 2019-20 witnessed some short-term challenges in select application segments, the overall market demand growth remained healthy in line with GDP growth. The Company believes that long-term trends, like tightening automotive emission standards, would drive demand for high-performance and fuel-efficient green tyres, which need superior materials like HDS. The Company has seen a similar demand growth for high-performance silica products in other application segments, like non-tyre rubber goods and non-rubber segments, many of which are supported by a robust demand base of essential products.

In this business, FY 2019-20 marked the start of commercial production and subsequent ramp-up of sales volumes, driven by the launch of several new product grades and expansion of customer base and distribution network. TCL expects to accelerate this growth momentum in FY 2020-21 despite significant market headwinds related to Covid-19. It plans to do so by broadening and deepening its customer base and delivering on its unique value proposition: a cutting-edge portfolio leveraging its HDS platform technology; consistent product quality enabled by strict process and quality control; post-sales application support out of its R&D lab, with deep materials knowhow; and a quick and reliable order fulfilment, leveraging the larger SCM and customer service capabilities of TCL.

The Company is evaluating significant expansion of its existing silica capacity with a focus on next-gen HDS products and on exploring product and market growth adjacencies to build a larger Material Sciences portfolio.

Nano Zinc Oxide

Under the Specialty Products portfolio, the Company has entered into the production of Nano Zinc Oxide, which was developed at the Innovation Centre in Pune and has multiple applications for its anti-microbial, anti-fungus and UV-blocking properties. The Company collaborated with a customer to harness the anti-microbial and anti-viral properties of nZnO amidst the pandemic. Currently, it is finding use in face masks as an added layer of protection against Covid-19. The Company is at present working with Paints, Coatings & Adhesives, Plastics & Polymers and Personal Care & Cosmetics industries to build the portfolio. It would be focussing on nano-materials linked to nano-adhesives and nano-formulations aimed at anti-viral and antimicrobial application.

Energy Sciences

Lithium-ion cells are one of the most critical components in an Electric Vehicle, which is seen as the preferred mode of transport for a less polluted future. With its inherent strengths in chemistry, TCL is creating a platform to become a world-class provider of cutting-edge and disruptive electro-chemistry solutions for Energy Storage. It has a unique opportunity to build a truly circular economy around Lithium-ion technology, starting from active materials to cell and battery manufacturing and finally to recycling critical materials from used batteries.

The Company is partnering with leading battery makers around the world for contemporary commercial cells, global R&D labs for next-generation technologies and Indian R&D centres (like ISRO and Council of Scientific and Industrial Research - Central Electro Chemical Research Institute [CSIR-CECRI]) for indigenous development of actives, cells and recycling. TCL also has interests in some of the newer chemistries that are under development in the labs and it is working actively with some of the leading global players in the segment.

For manufacturing, it has invested in a plant site of over 127 acres of land in Dholera, Gujarat. This site can house the manufacturing of actives, cells and batteries up to 10 GWh per annum, as well as recycling operations. The lithium-ion cells and battery packs with Lithium Iron Phosphate (LFP) and Lithium Nickel Manganese Cobalt Oxide (NMC) chemistry in cylindrical and pouch forms will find application in the automotive sector, as well as stationary energy storage.

TCL has established a Battery Pack Engineering Centre in Pune, in collaboration with Tata Technologies. Its scientists at the Innovation Centre in Pune are working on the cell and active manufacturing technologies. Making use of its capabilities, TCL has also launched battery recycling operations.

Analysis of Financial Performance

Standalone performance for the year ended March 31, 2020

Statement of Profit and Loss – Continuing operations

1. Revenue from operations (net): ₹ in crore

Particulars	FY 2019-20	FY 2018-19	Change	% Change
Revenue from operations	2,920	3,121	(201)	(6)

Basic chemistry products:

Lower volumes of soda ash was compensated by higher realisation of soda ash and revenue from sale of new cement variant.

Specialty products:

Increase in revenue from operations is due to increase in volume related to Nutritional Science products.

2. Other Income: ₹ in crore

Particulars	FY 2019-20	FY 2018-19	Change	% Change
Other Income	309	400	(91)	(23)

Other income has decreased mainly on account of lower income towards (a) gain on redemption of current investments and (b) interest on fixed deposits.

3. Cost of materials consumed: ₹ in crore

Particulars	FY 2019-20	FY 2018-19	Change	% Change
Cost of materials consumed	542	567	(25)	(4)

Cost of materials is lower due to decreased input costs of raw materials comprising coke, limestone and anthracite.

4. Purchases of stock-in-trade: ₹ in crore

Particulars	FY 2019-20	FY 2018-19	Change	% Change
Purchases of stock-in-trade	94	102	(8)	(7)

Purchases of stock-in-trade decreased mainly on account of reduced supply of chemistry products business due to lower demand.

5. Power and fuel: ₹ in crore

Particulars	FY 2019-20	FY 2018-19	Change	% Change
Power and fuel	555	574	(19)	(3)

The decrease in power and fuel cost is mainly on account of decrease in mixed usage / consumption of pet coke and coal.

6. Freight and forwarding expenses: ₹ in crore

Particulars	FY 2019-20	FY 2018-19	Change	% Change
Freight and forwarding expenses	390	476	(86)	(18)

Freight and forwarding charges have decreased sharply due to lower sales volumes of soda ash and salt.

7. Finance costs: ₹ in crore

Particulars	FY 2019-20	FY 2018-19	Change	% Change
Finance costs	43	86	(43)	(50)

Finance costs decreased significantly on account of repayment of External Commercial Borrowings (ECB) and Non-Convertible Debentures (NCD).

Balance Sheet Analysis

Standalone Statement of Balance Sheet

1. Investments: ₹ in crore

Particulars	FY 2019-20	FY 2018-19	Change	% Change
Investments in equity instruments of subsidiaries	3,606	3,606	-	-
Investment in joint venture	336	336	-	-
Investment in preference shares of subsidiaries	815	815	-	-
Investment in other companies	1,904	2,462	(558)	(23)
Investment in mutual funds	1,301	2,146	(845)	(39)
Total Investment	**7,962**	**9,365**	**(1,403)**	**(15)**

Decrease in the value of investments in other companies is mainly due to changes in fair value of investments and lower investments in mutual funds as compared to the previous year.

2. Inventories: ₹ in crore

Particulars	FY 2019-20	FY 2018-19	Change	% Change
Continuing operations	701	474	227	48
Discontinued operations	-	154	(154)	(100)
Total Inventories	**701**	**628**	**73**	**12**

Inventories increased mainly due to timing and receipt of raw materials.

3. Trade receivables: ₹ in crore

Particulars	FY 2019-20	FY 2018-19	Change	% Change
Continuing operations	140	103	37	36
Discontinued operations	-	81	(81)	(100)
Total Trade receivables	**140**	**184**	**(44)**	**(24)**

Trade receivables increased mainly due to the lower collection from debtors in Basic Chemistry Products business.

4. Loans, other financial assets, advance tax assets (net) and other assets:

₹ in crore

Particulars	FY 2019-20	FY 2018-19	Change	% Change
Loans	1	2	(1)	(50)
Other financial assets	138	335	(197)	(59)
Advance tax assets (net)	589	521	68	13
Other assets	392	281	111	40
Discontinued operations	-	22	(22)	(100)
Total	**1,120**	**1,161**	**(41)**	**(4)**

Decrease in other financial assets is mainly due to realisation of subsidy receivable and lower exposure in derivatives. Increase in Other assets is mainly due to higher statutory receivables.

5. Cash flow:

Net cash flow from operating activities: The net cash from operating activities is ₹ 427 crore during FY 2019-20 as compared to ₹ 812 crore during FY 2018-19. The cash operating profit before working capital changes and direct taxes during FY 2019-20 is ₹ 763 crore as compared to ₹ 1,042 crore during FY 2018-19. The change in working capital, during the financial year, is mainly due to change in trade receivables and other assets.

Net cash flow from investing activities: The net cash outflow from investing activities amounted to ₹ 293 crore in FY 2019-20 as against an outflow of ₹ 1,504 crore in FY 2018-19. The outflow in FY 2019-20 is mainly on account of purchase of property, plant and equipment (including capital work-in-progress) and on account of purchase of current investments for FY 2018-19.

Net cash flow from financing activities: The net cash outflow from financing activities is ₹ 1,101 crore during FY 2019-20 compared to an outflow of ₹ 1,568 crore during FY 2018-19. The outflow is mainly due to repayment of current borrowings and payment of dividend.

6. Net borrowings: ₹ in crore

Particulars	FY 2019-20	FY 2018-19	Change	% Change
Non-current borrowings	10	13	(3)	(23)
Current borrowings	-	1	(1)	(100)
Current maturities of non-current borrowings and finance lease obligations	4	686	(682)	(99)
Discontinued operations	-	7	(7)	(100)
Total borrowings	**14**	**707**	**(693)**	**(98)**
Less: Cash and cash equivalent (including bank balances)	880	1,106	(226)	(20)
Net borrowings	**(866)**	**(399)**	**(467)**	**117**

The net borrowings decreased mainly due to repayment of borrowings (ECB & NCD).

Details of significant changes in key financial ratios:

1. **Debt equity ratio** of the Company has improved to 0.001 times (FY 2018-19: 0.06 times) due to repayment of borrowings (NCD / ECB).
2. **Interest coverage ratio** of the Company has improved to 20.24 times (FY 2018-19: 10.99 times) due to lower finance cost on account of repayment of borrowings during the year.

Consolidated performance for the year ended March 31, 2020

Statement of Profit and Loss – Continuing operations

1. Revenue from operations: ₹ in crore

Entity	FY 2019-20	FY 2018-19	Change	% Change
Tata Chemicals Limited - ('TCL')	2,920	3,121	(201)	(6)
Homefield Pvt. UK Limited - Group ('HFUK')	1,978	2,110	(132)	(6)
Tata Chemicals North America Inc. ('TCNA')	3,403	3,382	21	1
Rallis India Limited ('Rallis')	2,248	1,984	264	13
Others and Eliminations	(192)	(260)	68	(26)
Revenue from operations	**10,357**	**10,337**	**20**	**0**

a. In TCL, revenues were lower on account of lower volumes of soda ash.

b. In HFUK, the revenues were lower on account of decrease in sales volumes.

c. Rallis witnessed higher volumes during the year.

2. Cost of materials consumed: ₹ in crore

Entity	FY 2019-20	FY 2018-19	Change	% Change
TCL	542	567	(25)	(4)
HFUK	174	147	27	18
Rallis	1,217	1,121	96	9
Others and Eliminations	(89)	(61)	(28)	46
Total	**1,844**	**1,774**	**70**	**4**

Cost of materials consumed increased primarily at Rallis and HFUK due to higher volumes and price mix.

3. Purchases of stock-in-trade: ₹ in crore

Entity	FY 2019-20	FY 2018-19	Change	% Change
TCL	94	102	(8)	(8)
HFUK	144	221	(77)	(35)
TCNA	20	24	(4)	(17)
Rallis	141	116	25	22
Others and Eliminations	(147)	(219)	72	(33)
Total	**252**	**244**	**8**	**3**

Purchases of stock-in-trade decreased primarily in the UK due to lower PFR sales of soda ash.

4. Power and fuel: ₹ in crore

Entity	FY 2019-20	FY 2018-19	Change	% Change
TCL	555	574	(19)	(3)
HFUK	513	531	(18)	(3)
TCNA	325	314	11	4
Rallis	57	61	(4)	(7)
Total	**1,450**	**1,480**	**(30)**	**(2)**

Power and fuel increased primarily in India, HFUK and TCNA on account of higher input fuel cost and depreciating GBP exchange rates against INR.

5. Freight and forwarding charges: ₹ in crore

Entity	FY 2019-20	FY 2018-19	Change	% Change
TCL	390	476	(86)	(18)
HFUK	226	244	(18)	(7)
TCNA	855	817	38	5
Rallis	78	72	6	8
Others	2	1	1	100
Total	**1,551**	**1,610**	**(59)**	**(4)**

Freight and forwarding charges decreased primarily due to lower volume and price mix.

6. Finance costs: ₹ in crore

Entity	FY 2019-20	FY 2018-19	Change	% Change
TCL	43	86	(43)	(50)
HFUK	129	124	5	4
TCNA	131	110	21	19
Rallis	6	5	1	20
Others and Eliminations	33	29	4	14
Total	**342**	**354**	**(12)**	**(3)**

Lower interest cost in TCL is due to repayment of borrowing. Increase in interest cost in TCNA due to increase in borrowing during the year under review.

7. Other expenses: ₹ in crore

Entity	FY 2019-20	FY 2018-19	Change	% Change
TCL	447	414	33	8
HFUK	457	498	(41)	(8)
TCNA	809	890	(81)	(9)
Rallis	330	332	(2)	(1)
Others and Eliminations	20	12	8	67
Total	**2,063**	**2,146**	**(83)**	**(4)**

Other expenses represent the following: ₹ in crore

Entity	FY 2019-20	FY 2018-19	Change	% Change
Stores and spares consumed	258	266	(8)	(3)
Packing materials consumed	196	218	(22)	(10)
Repairs	445	401	44	11
Rent	59	150	(91)	(61)
Royalty, rates and taxes	340	340	-	-
Sales promotion expenses and Distributors service charges	91	93	(2)	(2)
Others(*)	674	678	(4)	(1)
Total	**2,063**	**2,146**	**(83)**	**(4)**

(*) – Others include insurance charges, distributors' service charges, professional fees, foreign exchange loss, travelling expense, provision for doubtful debts and advances, directors' fees/commission, subcontracting cost, outsourcing cost and other expenses.

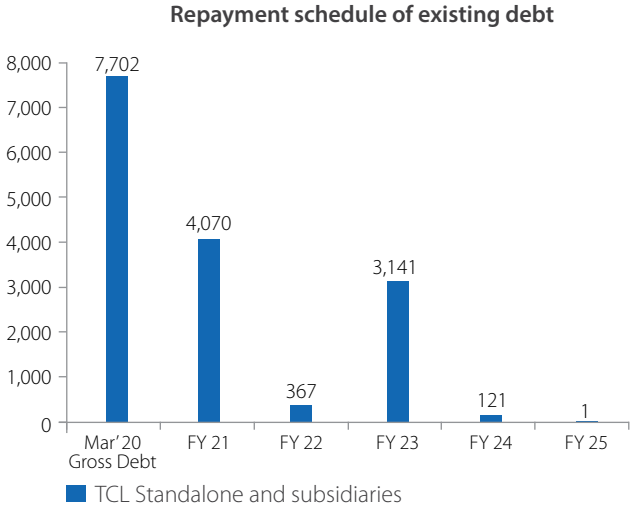
Changes in other expenses is primarily due to:

a. Packing materials consumed lower at TCL and Rallis.

b. Repair expenses higher at TCNA.

c. Rent is lower due to new lease accounting standard impact.

Total Debt and Amortisation Schedule ₹ in crores



Note:

1. *Gross debt of ₹ 7,702 crore includes ₹ 589 crore of working capital loans and ₹ 1,324 crore of bridge loan.*
2. *The repayment schedule for term loans has been prepared considering the existing repayment terms. Some of these loans/facilities may be refinanced, in full or in part, from time to time in future depending on the requirement and the business plans.*

Innovation and Technology

Innovation Centre

The Innovation Centre (IC) at Pune is the Company's science and technology hub for seeding new businesses and accelerating the Company's businesses. IC supports TCL's businesses by providing a customer-centric scientific problem-solving approach for sustainable differentiation. The Centre works with all the business units, including Material Sciences, Nutritional Solutions, Basic Chemistry and new businesses such as Energy. It uses a multi-disciplinary scientific approach to develop products and services.

At present, the Company has a total of 123 active patent families, out of which 35 have been granted. In FY 2019-20, IC filed 4 new patent applications in India and 2 applications in the US and published 4 research papers in international peer-reviewed journals.

Tech-talk and iNNCOTECH are the two key initiatives and platforms for knowledge-sharing and learning new technology trends and practices at IC. During the year under review, iNNCOTECH was conducted with the inclusion of all the R&D centres, including that of Rallis. The conference was inaugurated by Padma Shri Dr. Mashelkar and attended by global scientists including Padma Shri Dr. M. M. Sharma. During the year, IC also developed significant competencies in the area of Gut Microbiome, Energy Sciences, Data Analytics and Advanced Materials.

The Centre has explored the application of FOS (fructo-oligosaccharides) for skin microbiome and immunity application to develop next-generation applications in Nutraceuticals. It has developed customised vitamin and mineral solutions for the industry for fortification of staple foods. IC has built significant expertise in fermentation technology and has developed numerous Fossence-based product concepts and prototypes for NQ Innovation, aimed at serving society through science.

IC is currently building competency in lithium cell technology chemistry. It includes the synthesis of cathode active material and cell assembly to make lithium battery cells. IC has internalised lithium cell technology, transferred from ISRO and has built strategic relationships with Indian National Laboratories to leverage the science available in the country.

The IC materials division has continued its journey in building the HDS business for the Company. The team has recently developed a new functionalised silica grade for stretchable elastomer used in garment applications that significantly improves end-product performance. An abrasive grade silica was also developed for oral care (toothpaste application) for effective removal of pellicle film from the surface of teeth.

Digitalisation & Information Technology

TCL is in an exciting era of Industry 4.0 where businesses are increasingly adopting digital technologies. The Company has embarked on a journey to standardise and streamline processes and empower people with technologies. This will help it to make informed decisions and drive profitable growth. It has taken definitive steps towards this by implementing a common Enterprise Resource Planning (ERP) system across all group companies, including Customer Relationship Management (CRM) and Distributor Management System (DMS) modules in the Basic Chemistry Business.

During the year under review, the existing supplier collaboration and sourcing platform was extended to all across the subsidiary companies. TCL conducted an external study on Data Maturity Assessment, to provide an insight into the use of digitisation in the Company, unlocking the power of data. It also undertook a Digital Roadmapping exercise, aided by an external expert agency, to prioritise future steps in the strategic planning of digital programme. Work was initiated on a modern Laboratory Information Management system (for R&D labs), Transportation Management System, Dealer Connect System (at Rallis) and Human Resource Management System. TCL is strengthening its internal capability in digital and data analytics to make analytics

one of its strongest IT capabilities. The Company has begun to simplify and rationalise the various systems and processes across TCL entities, aiming to create synergistic platforms and services.

Industrial Internet of Things (IIoT) has been piloted for several discrete production processes at the Mithapur plant and it will be replicated across other equipment and processes. This is being developed under a lighthouse project initiative. The new Nutrition business at the Nellore plant was designed with state-of-the-art digital systems that meet global quality standards. The plant is now a digital factory.

Cyber-security is a critical function and TCL continually strengthens it through the implementation of relevant solutions, processes and by training employees. The Company is focussing on strengthening its core infotech for availability, reliability, security and optimising cost in the current macro-economic situation. It is enhancing analytics for plant automation, safety improvement and efficiencies. Smart Lab with automation and analytics for faster and cheaper R&D is an example of a priority project, along with developing an end-to-end workflow automation of business process.

The Company is driving transformational change with technology to have smarter factories, smarter labs, smarter offices, along with a KPI-driven digital and insight mindset. This will create a digital and analytics-led intelligent enterprise and help drive productivity.

Human Resources

FY 2019-20 saw a wide range of activities on multiple fronts as TCL went about its transformation journey. Some of the major events that had implications for employees and people-related processes were: the demerger of the Consumer Products Business; Mithapur expansion plans; stabilisation of the operations in the Nutrition business and Silica plants; putting the basic building blocks in new segments of Energy Storage and Lithium recycling; Aeroponics; and the merger of Metahelix with Rallis.

These internal changes were accompanied by fairly significant external changes that have far-reaching effects on business and people. Businesses are adopting new technologies in manufacturing processes, servicing customers, logistics and reducing turnaround times. TCL has a complete response plan for these challenges.

It believes that everything is made possible by its people – the Company's biggest strength. Its workforce and people processes give TCL the edge to manage complexities, embrace change proactively, stay contemporary and create the energy and passion to surge ahead.

The Company is committed to building a customer-focussed, agile and lean organisation. While the restructuring of the Basic Chemistry Products business is underway, synergies are being established in the common functions and practices across all TCL entities to leverage mutual strengths, diversity and better service to internal customers. To foster collaboration, speed and customer-centricity in the workforce, the Company has initiated a pilot of setting up self-managed teams at the Mambattu plant.

The IC, Pune, has also been restructured during the year and is now focussed on driving greater synergy with Rallis' R&D.

TCL has been recruiting fresh Graduate Engineer Trainees ('GET'), Diploma Engineer Trainees ('DET') and Technician Trainees and is also actively building an internal talent pipeline in its businesses. Diversity and Inclusion ('D&I') has been integrated into its people strategy through a formal policy that states the Company's intent and direction very clearly.

Steps are taken for reskilling and upskilling TCL's talent pool with future-ready and future-engaged competencies. This includes functional capability, behavioural or managerial capability and leadership capability.

The year saw TCL collaborating with premier research organisations like ISRO, CSIR-CECRI and other institutions that gave its scientists exposure to and knowledge about emerging technologies.

For the incoming 2019 batch of GETs, the Campus to Corporate induction programme, re-branded as 'Aarambh', was launched. The on-boarding process is enhanced through engaging with them before joining itself, using digital technology. Access to a mobile-based learning platform was enabled, giving the new joinees not only an overview of the organisation, its values and an insight into the training period, but also kickstarting the learning journey to build 10 foundational leadership competencies.

TCL partnered with Group HR to launch the first batch of 'Coachworks', which provides a platform for coaching-led intervention for personal growth and development by nominating four of its senior leaders. A two-day workshop on Felt Leadership was conducted for the senior leadership team for further improving the overall safety culture and awareness across the organisation. A workshop on D&I was also conducted for the senior leadership. edX, the digital platform, witnessed increased participation this year, empowering TCL people to attend any course, anytime, anywhere. Besides this, the Company mandated online courses on Ethics, Prevention, Prohibition and Redressal of Sexual Harassment (POSH) and Governance policies for specified role-holders in order to reinforce the importance of ethics and compliance at work.

Apart from classroom and digitised training programmes, employee capabilities were sharpened by on-the-job exposure through a combination of stretch, challenging assignments and doing a variety of roles. Towards this end, TCL provided a number of opportunities in new businesses to its existing employees and hired laterally only for new skill sets. This also provided career growth paths for many employees.

Besides career growth, the Company worked on other drivers of employee engagement. One of the key initiatives was to deploy a cross-functional team of employees under the 'Refresh 2020' programme to study each driver in detail and recommend action plans. This not only enhanced involvement and participation of employees but also incorporated their views and concerns. TCL helped line managers in interpreting their Xpress Score card (an employee engagement survey) with specific sessions.

The diverse workforce needs cohort-specific actions to address their needs and TCL's actions are designed for this. For instance, after inducting the first set of female trainees at Cuddalore, the Company organised a plant visit and interactive session with their parents to reassure them about the safety of their wards and share the pride of association with TCL.

A special session on 'Scripting Your Success' by the Chief Human Resources Officer with freshly hired GETs was greatly appreciated. Likewise, the Company organised 'Spandan', a workshop for DETs. A new platform for rewards and recognition, 'Kudos', was launched, letting both employees and managers to appreciate and recognise their peers and team members.

HR Helpdesk was launched as a one-stop solution to answer employee queries on HR policies, processes and system addressed. Work is in progress to launch the HR Chatbot that will enable quick response to employee queries. The Health Insurance Scheme has been renewed with enhanced employee-friendly features.

The senior leadership team has visited all major sites/offices multiple times over the past year and has engaged with employees across levels and cadres to share information and also to understand their views and concerns. There has been a whole series of formal and informal modes of communication with all relevant stakeholders.

TCL signed a Long-Term Settlement with unionised workers at Mithapur during the year, continuing to strengthen harmonious relationship.

The Leadership in Business Ethics (LBE) Assurance Survey score showed significant improvement for workmen and business partners segment, indicating that ethical behaviour has become a way of life for TCL. It has completed the groundwork for migrating to the new Human Resources Management System and will take it up next year. Apart from digitisation, developing a learning and development framework, launching a redesigned Management Development Programme, reviewing people policies, relooking at work processes are some of the other exciting projects that are underway at TCL and will be soon ready for rollout.

Employee Headcount as on March 31, 2020

Entities	No. of Employees
Tata Chemcials Limited, India	1,820
Rallis India Limited	1,610
Ncourage Social Enterprise Foundation	19
Tata Chemicals Europe	407
Tata Chemicals North America Inc.	573
Tata Chemicals Magadi Limited	221
Tata Chemicals International Pte. Ltd.	4
Tata Chemicals South Africa (Pty.) Limited	24
Total	**4,678**

Safety and Health

Driven by 'Target Zero Harm' – Zero Harm to People, Zero Harm to Asset and Zero Harm to Environment – health and safety form one of the core values at TCL. There is an unwavering commitment to the continuous improvement of the organisation's safety performance.

The Company is committed to continuously employing world-class Safety, Health and Environment ('SHE') practices through benchmarking with the companies that are best in the business. For an exclusive focus on safety and sustainability, the Company has a Board level Safety, Health, Environment and Sustainability ('SHES') Committee, chaired by an Independent Director. This Committee provides valuable direction and guidance to the Management to ensure that Safety and Sustainability implications are duly addressed in all new strategic initiatives, budgets, audit actions and improvement plans. The SHES Committee also monitors and reviews reports quarterly on SHE performance, including policy and legal compliances.

The Chief Safety & Engineering Officer has direct access to the Chairman of the SHES Committee. The Board-level Risk Management Committee also monitors the progress on mitigation plans associated with key safety risks. The senior leadership at the Company plays a definite and defining role in affirming positive attitudes towards safety and creating an enabling environment.

The Company's Corporate SHE policy is the overarching policy, with the subsidiaries fine-tuning it to align with the local regulatory and safety directorates, as per their location and legal jurisdiction. The health and safety of people is of utmost importance to the Company and it is keen to address any risk that could pose a threat to a safe and healthy work environment. To ensure steady improvement in the SHE performance, the Company is adopting

voluntary standards such as Process Safety and Risk Management, ISO 45001, Responsible Care and the British Safety Council guidelines. The Company's approach to safety is cohesive and integrates individual and group values, attitudes, competencies and patterns of behaviour.

As an organisation, the Company's commitment towards its safety management programmes follows a top-down approach, with the senior management persistently working towards establishing, demonstrating, sustaining and improving the safety culture and incorporating the Company's core value of safety in their daily responsibilities. The Company demands excellence and safety accountability from every individual. The workforce is actively involved in promoting safety and a conscious effort is made to keep them engaged. Cross-functional teams and joint management-workmen committees with active participation by senior management are formed at the site level. These teams work with a focussed agenda across occupational health and safety areas, best safety practices, risk control, etc. A stronger individual commitment to safety is also built by linking variable pay/incentive to the safety record of the business for the year.

All locations of the Company assess high hazard areas and activities with the intent to minimise risk to the lowest extent possible. The employees are specially trained to tackle any potential hazards that may arise in the course of their work. Additionally, tailored periodic medical check-ups are administered to the Company's employees, based on the risk profile of their work area, to identify risks to human health. Adequate medical facilities are present at all manufacturing sites and specialised medical facilities are provided through tie-ups with other hospitals, nursing homes, etc. Unfortunately, one fatal incident occurred at the Mithapur site in FY 2019-20. Detailed investigations were carried out and critical gaps were identified for the incidents. Necessary actions have been taken to prevent their recurrence. These incidents led the Company to introspect and now the Company is working on evaluating innovative solutions to monitor the health and safety of its employees and contract employees working at critical areas.

In order to ensure safety at sites, specific new programmes were initiated and many other programmes were continued e.g. Process Safety & Risk Management at Mithapur was declared operational and further improvisation is in progress under phase-2 and TCNA identified and introduced Safety One Plan to achieve injury-free workplace. The focus will be on (a) everyone is involved and engaged, (b) re-think risk in everything and increase training and development, (c) improvement in safety review mechanism at Magadi, (d) contract management through hazard awareness improvements initiatives based on risk perceptions, as part of updating Construction (Design & Management) procedures in the UK, (e) training on Golden Safety Rules at Mambattu, Cuddalore and Sriperumbudur, (f) re-launch of e-learning module related to defensive driving for the Company's Indian employees, (g) improvements in the training programme, including training programmes for the contract employees in India and introduction of certification programme at various locations of the Company as well as global operations.

In FY 2019-20, a global 'Safety Head' meeting was held in Mumbai. All Safety Heads from across the geographies came together to share their best practices. In addition, to assist individual units, the Company is working on digitisation and data analytics to forecast key vulnerable areas. Over the past 9 years, the Company has reduced its Recordable Injury Frequency rate by 51%. In supply chain safety, the Company's safety requirements are communicated to the third parties. Periodic audits are conducted and the Company is handholding the third parties to improve their safety practices and align their performance to the Company's Target Zero Harm.

Rallis is also a Responsible Care member company. The leadership team at Rallis is fully committed to building an organisation that creates new benchmarks in health and safety. Rallis is increasingly focussing on the production of environment-friendly formulations through safer chemistry and processes that ensure safety for all stakeholders handling these products. At Rallis, a culture of safety is encouraged across hierarchies by promoting behavioural safety, process safety and road safety as key focus areas among its workforce. To enhance process safety, gap assessment of existing PSRM is carried out with the help of external experts. Work Safe Online (WSO), the e-portal, has also been implemented to record safety performance and take action on deviations. Rallis is taking various measures to further strengthen its process safety. It has started a daily Behaviour Safety observation rounds with 100% coverage of the Company and associate employees. Rallis has regularly organised awareness workshops and campaigns to sensitise the farmer community. During FY 2019-20, under the 'You Are Safe' campaign, Rallis conducted safety awareness contact programmes in 293 villages across 7 districts, covering 19,530 farmers and 5,972 students.

Sustainability

At TCL, sustainability is aligned with the UN Sustainable Development Goals. The Company works towards 'inclusive growth' to achieve a robust triple bottom line encompassing economic, social and environmental aspects.

Aligned to the Tata Group's Sustainability Policy, the Company's sustainability policy encompasses actions towards responsible manufacturing, supporting climate change mitigation and adaptation, circular economy, biodiversity conservation and being

a neighbour of choice for its key communities. It has adopted an innovative business approach to balance social, environmental and economic gain by embedding sustainability in the respective businesses' strategy. Key sustainability indicators monitored by the Company on a regular basis include the internally developed tools Responsible Manufacturing Index ('RMI') and the Sustainability Assessment Framework ('SAF').

Efficient energy and waste management, emphasis on recycling of water, recyclable packaging, commitment towards EPR, reuse/recycling of solid waste, watershed, natural capital, waste composting, biodiversity conservation measures, drinking water for community, self-help groups, etc. are some of the continuous efforts that the Company undertakes for inclusive growth of all its stakeholders.

TCL uses frameworks such as ISO 14001, OHSAS 18001, Global Reporting Initiative ('GRI'), Carbon Disclosure, International Integrated Reporting Council ('IIRC'), United Nations Global Compact ('UNGC'), Science Based Targets Initiative ('SBTi') etc. to share its performance with stakeholders. This gives the Company an opportunity to get feedback from the stakeholders and engage with the key customers under supply chain programmes.

Integrated Report

The Company has adopted IIRC framework to establish integrated reporting within the mainstream business. In accordance with the IIRC Framework, the Company has included an Integrated Report <IR> as part of this Annual Report. The <IR> seeks to provide a concise and integrated account of how the Company's Strategy, Governance, Performance and Prospects are delivering on its core purpose – being a global company. The <IR> encompasses all key non-financial performance indicators which are material to the Company as per GRI, UNGC and Carbon Disclosure Project ('CDP'). It plays a crucial role in establishing the linkages between environmental and social sustainability as well as the financial growth of the organisation. The <IR> contains assured sustainability data for FY 2019-20 for entities across the enterprise. All additional information from all geographies, not covered under the <IR>, will also be available in the public domain shortly and can be viewed in the Sustainability section of the Company's website at www.tatachemicals.com.

Business Responsibility Report

In line with the Regulation 34 (2) (f) of the SEBI Listing Regulations, the Company reports on its business responsibility. The Business Responsibility Report is available as a separate section in the prescribed format. It details all actions taken by the Company on the 9 business responsibility principles i.e. Business Ethics, Product Responsibility, Wellbeing of Employees, Stakeholder Engagement, Human Rights, Environment, Public Policy, CSR and Customer Relations. It is also hosted on the Company's website at www.tatachemicals.com.

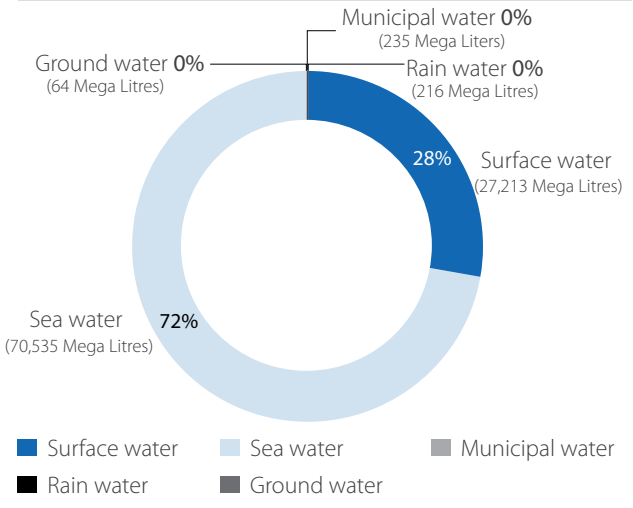
United Nations Global Compact

The UNGC is a non-binding United Nations pact to encourage businesses worldwide to adopt sustainable and socially responsible policies and to report on their implementation. The Company is a signatory to UNGC that promotes 10 principles in the areas of human rights, labour standards, environment and anti-bribery. The Company has been preparing and uploading the Communication on Progress ('COP') since 2005. The Company has uploaded a comprehensive communication on progress since last year and has included all the entities across the enterprise for the same. It will continue to do so going forward. The Company continues its commitment to UNGC and will submit its COP on the 10 UNGC principles for FY 2019-20. The details of UNGC can be viewed on www.unglobalcompact.org and on the Company's website www.tatachemicals.com.

Carbon Disclosure Project

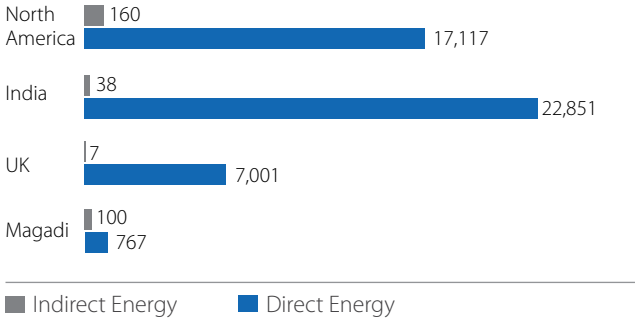
CDP is a not-for-profit organisation that facilitates the global disclosure system for investors, companies, cities, states and regions on taking urgent action to build a truly sustainable economy by measuring and understanding their environmental impact. It has developed a system that leads an engagement on environmental issues across the world. The Company has been reporting on CDP climate change, CDP water and CDP supply chain since 2007. They provide guidance for climate change reporting and help companies evaluate their sustainability performance. TCL aims to perform better on YoY scores to achieve the desired goal.

Water withdrawal pattern



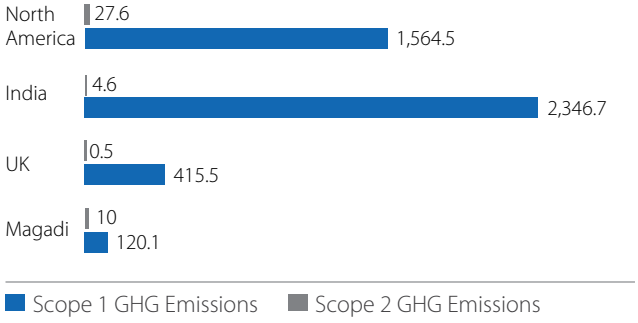
Energy consumption pattern

[Terajoule (TJ)]



Carbon footprint

(Metric KiloTon)



Science Based Targets Initiative

The SBTi is a partnership between CDP, UNGC, WRI and World Wide Fund ('WWF'), which helps companies determine how much and how quickly they need to reduce greenhouse gas (GHG) emissions in line with climate science to future-proof growth. TCL has signed up for SBTi and is working towards setting a target for itself and identifying levers for GHG emission reductions across the enterprise while still pursuing a growth strategy.

Business Excellence

The Company remains committed to continually raising the bar on performance in all aspects of its business. The Tata Business Excellence Model ('TBEM') serves as a pivotal framework that allows the Company to gain insights into its performance and establish continuous improvement initiatives for attaining superior business results and maximising satisfaction and value to the customers. The TBEM framework comprises six core areas of business excellence: Leadership, Strategic Planning, Customer Focus, Analysis & Knowledge Management, Workforce Focus and Process Management. For the Company, a global organisation that has its manufacturing operations spread across four continents, with diverse business segments and employees from different cultures, TBEM serves as a platform to establish a common standard of excellence. The Company participated in the Tata Group level TBEM assessments in 2019, which provided valuable inputs into the strengths and areas of focus for the Company. This helps TCL to strengthen the culture of excellence and progress towards becoming a world-class organisation.

Internal Controls

The Company has an independent Internal Audit function with well-established risk management processes both at the business and corporate levels. The scope and authority of the Internal Audit function is derived from the Internal Audit Charter approved by the Audit Committee. The Company has engaged a reputable external firm to support the Internal Auditor for carrying out the Internal Audit reviews.

Reviews are conducted on an on-going basis, based on a comprehensive risk based audit plan, which is approved by the Audit Committee at the beginning of each year.

The Audit Committee meets on a quarterly basis to review and discuss the various Internal Audit reports and follow up action plans of past significant audit issues and compliance to the audit plan.

The Chairperson of the Audit Committee has periodic one-on-one meetings with the Internal Auditor & Controller – Risk to discuss any key concerns.

Risk Management Framework

The following section discusses various dimensions of the Company's Enterprise Risk Management ('ERM') system. The risk-related information outlined in this section is not exhaustive and is for information purposes only. The discussion may contain statements which may be forward-looking in nature.

The Company's business model is subject to uncertainties that may cause actual results to differ materially from those reflected in any forward-looking statements.

Overview

Risk Management is an integral part of Company's strategy and planning process. Based on proactive identification of risks, action plans are devised to mitigate the risks that could materially impact the Company's long-term sustainability. Mitigation plans with identified owners are set against target dates and progress of mitigation actions are monitored and reviewed. ERM in the Company seeks to minimise adverse impact on business objectives and to enhance stakeholder value.

Over the years, the ERM process has evolved into a robust exercise entailing a balanced 'bottom-up' and 'top-down' approach covering all units, functions and departments of the Company and its subsidiaries.

As a process, the Company follows a well-defined 4-step ERM process to address the risks associated with its business. The ERM process framework has evolved and matured over the years and is based on international standards including ISO 31000 and the Committee of Sponsoring Organizations of the Treadway Commission, with inputs drawn from the best practices of leading companies across industries but tailored to suit TCL's business needs. Risk Management and Internal Audit functions complement each other at TCL.

Risk Management: Governance Structure

The Company has constituted a robust governance structure consisting of 5 levels thereby ensuring both bottom-up and top-down approach.

It constituted the Risk Management Committee ('RMC') to oversee the risk management efforts in the Company. The Committee currently consists of Mr. S. Padmanabhan, Ms. Padmini Khare Kaicker, Mr. R. Mukundan, Mr. Zarir Langrana and Mr. John Mulhall as Members. The RMC meets quarterly to review key risks and assess the status of mitigation measures. The TCL approach to risk management is designed to provide reasonable assurance that its assets are safeguarded; the risks facing the business are being assessed and mitigated.

The risk management framework is described below:

The key roles and responsibilities regarding risk management in the Company are summarised as follows:

1. Board of Directors
Reviewing and guiding risk policy of the Company
Ensuring the integrity of the systems for risk management

2. Risk Management Committee of Board
Overseeing the Company's risk management process and controls
Setting strategic plans and objectives for risk management, risk philosophy and risk minimisation
Reviewing compliance with policies implemented by the Company
Reviewing risk assessment of the Company annually and exercising oversight of various risks including Strategic Risk, Operational Risk, Market Risk, Cyber Security, etc.
Oversight of the Company's risk tolerance and risk appetite
Report and update to the Board periodically on various matters it has considered
Reviewing and analysing risk exposure related to specific issues, concentrations and limit excesses and provide oversight of risk across organisation.

3. Risk Management Group at Senior Leadership Level
Identification and review of enterprise risks from time to time, initiating mitigation actions, identifying owners and reviewing progress
Identification and review of risk appetite and risk trigger (at Enterprise Level)
Implementation of Risk reduction strategies
Formulating and deploying Risk Management Policy
Deploying practices for identification, assessment, monitoring, mitigation and reporting of risks
Providing updates to RMC from time to time on the enterprise risks and actions taken

4. RMG at Business Unit Level/Subsidiary Level
Reviewing respective BU/Subsidiary risks from time to time, initiating mitigation actions, identifying owners and reviewing progress
Identification and review of risk appetite and risk trigger (at BU/ Subsidiary Level)
Implementation of risk reduction strategies
Deploying Risk Management Policy
Deploying practices for identification, assessment, monitoring, mitigation and reporting of risks
Providing updates to RMG and RMC level from time to time on the respective SBU risks and actions taken

5. Risk Owners
Responsible for developing and acting on risk mitigation plan
Providing periodic updates to RMC on risks with mitigation plan

Risk Categories

The following broad categories of risks have been considered in the Risk Management Framework:

- **Strategic Risk** includes the range of external events and trends (like Government policy) that can adversely impact the Company's strategic growth trajectory and destroy stakeholder value. It also includes the risks arising out of the choices the Company has made in defining its strategy.
- **Reputational Risk** includes range of events that creates a mismatch between stakeholders' expectations and their perceptions of the Company's performance around those expectations.
- **Operational Risks** are those risks which are associated with operational uncertainties including failure in critical equipment, attrition, etc.
- **Regulatory and Compliance Risk** are risks on account of inadequate compliance of regulations, contractual obligations and intellectual property violations leading to litigation and loss of reputation.
- **Financial Risk** are risks faced by the organisation in terms of internal systems, planning and reporting.

Cautionary Statement

Statements in the Management Discussion and Analysis describing the objectives, projections, estimates and expectations of the Company, its direct and indirect subsidiaries and its associates, may be 'forward-looking statements' within the meaning of applicable laws and regulations. Actual results might differ substantially or materially from those expressed or implied. Important factors that could make a difference to the Company's operations include, among others, economic conditions affecting demand/supply, price conditions in the domestic and overseas markets in which the Company operates, changes in the Government regulations, tax laws and other statutes and incidental factors.