



Mauritius LRT Phase 1

## INFRASTRUCTURE BUSINESS

### Sector Performance in FY 2021-22

India continues to invest heavily in infrastructure development as the primary driver of growth. This is not only in terms of adopting a long-term integrated focus on large infrastructure projects but also facilitates quick implementation by providing the necessary regulatory and timely financial support. This has augured well for the country and as a multiplier effect, evidenced positive sentiment on private capex as well.

Over the years, the Union Government continues to provide policy support for Infrastructure development in India. In the Union Budget 2021, to support initiatives such as 'Housing for All' and 'Smart Cities Mission', the Government allocated ₹ 13,750 crore to AMRUT and Smart Cities Mission. In March 2021, the Parliament passed a bill to set up the National Bank for Financing Infrastructure and Development (NaBFID) to fund infrastructure projects in India.

Additionally, in the Union Budget 2021, the Government announced the Pradhan Mantri Atmanirbhar Swasth Bharat Yojana (PMANSY), which will entail an outlay of ₹ 64,180 crore over six years to strengthen the existing 'National Health Mission'. The Government also announced ₹ 18,998 crore for metro projects. The Government announced ₹ 305,984 crore over the next five years for a revamped, reforms-based and result-linked new power distribution sector scheme.

As a follow up, the Union Budget 2022 has focused on high impact areas and accelerating the capital expenditure cycle by providing for a sharp increase in capex outlay by 35.4% (from ₹ 5.54 lakh crore in FY 2021-22 to ₹ 7.50 lakh crore in FY 2022-23), to propel economic growth.

The Prime Minister announced a national master plan for multi-modal connectivity in October 2021, with the goal of developing infrastructure, to lower logistic costs and improve efficiency. The Government's PM Gati Shakti initiative is expected to bring together 16 Ministries and is expected to help in taking care of long-standing issues, such as disjointed planning, lack of standardisation, problems with clearances, and timely creation and utilisation of infrastructure capacities. This announcement follows two major steps taken by the Government towards advancing Indian infrastructure, namely, the National Infrastructure Pipeline and National Monetisation Pipeline, helping generate funds to support the capex.

The Government's thrust for bi-lateral co-operation bodes well for the construction industry. In November 2021, India, US, Israel and the UAE established a new quadrilateral economic forum to focus on infrastructure development projects in the region. To meet the objective of a USD 5 Trillion Economy by 2025, Infrastructure spend will be the key driver.

Post a six-year slowdown triggered by the crash in oil prices in 2014 and deepened by the impact of COVID-19, the Gulf Cooperation Council (GCC) construction industry is finally set for a strong recovery, as oil production and prices have risen and much of the non-oil sector rebounded from the impact of the pandemic. The Middle East is continuing to diversify into non-oil sectors and take advantage of its natural solar resources. The region also has robust plans around healthcare, transport, water and sewage, offering some prime opportunities to EPC players.

Saudi Arabia, the GCC region's largest economy in 2021, has begun to ramp up tendering on its Public Investment Fund (PIF)



Mumbai Trans Harbour Link Project

'giga projects' program, particularly on the Neom, Red Sea, Diriyah Gate and Qiddiya developments, as it seeks to turn its ambitious tourism and real estate plans into action on the ground.

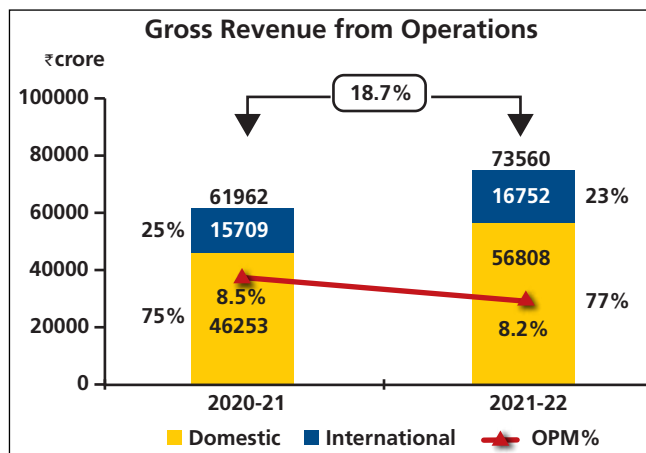
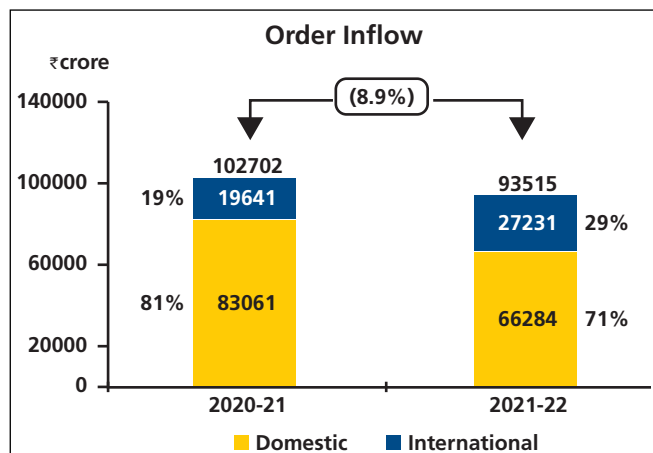
While the pandemic affected the African economies, the IMF is predicting a strong recovery that will catalyse an increase in project investment. However, Africa's project plans are engulfed with challenges from political instability to poor infrastructure and lack of finance.

Increasing construction activity around the globe is expected with global growth gaining momentum. The sharp rise in crude prices will remain a double-edged sword, raising expectations for the oil and gas sector and infrastructure development in the Middle East, which would augur well for the construction sector but simultaneously create inflationary pressures.

The Infrastructure segment won orders worth ₹ 93,515 crore, lower by 8.9% over the previous year that had receipt of large-value, high-speed rail orders. During the current year, the Power Transmission & Distribution business registered significant growth with receipt of a mega order in the Middle East. The Buildings & Factories business registered growth with receipt of some prestigious orders in the Health and Public Space businesses. The Water & Effluent Treatment business also received numerous orders in the Rural Water Supply segment, majorly in Uttar Pradesh. De-growth was seen in the Heavy Civil Infrastructure, Transportation Infrastructure and Minerals & Metals businesses mainly due to deferral of targeted prospects.

The share of international Order Inflow for the Infrastructure segment increased to 29%, from 19% in the previous year.

## Financial Performance of the Segment





Hyderabad International Airport

The Infrastructure segment clocked a gross revenue of ₹ 73,560 crore for FY 2021-22, registering growth of 18.7% over the previous year. Growth was mainly on account of pick up in execution momentum of a strong opening Order Book. Revenue from international operations constituted 23% of the total revenues, compared to 25% in the previous year, with some large value orders getting substantially completed.

The segment's operating margin reduced from 8.5% to 8.2% mainly due to the impact of high commodity prices and increased provisions on contract assets and customer receivables.

The funds employed by the segment at ₹ 24,234 crore as at March 31, 2022 registered a decline of 3.7% vis-à-vis March 31, 2021, with receipt of advances in large value projects and better vendor credit management. The increase in inventory levels to sustain the operations from headwinds in supply chain also impacted the funds employed to an extent.

## BUILDINGS & FACTORIES

### Overview

The Buildings & Factories (B&F) business is an industry leader in Design & Engineering, Procurement and Construction (EPC) of projects ranging from airports, hospitals, stadiums, retail spaces, educational institutions, IT parks, office buildings, data centers, high-rise structures to mass housing complexes, cement plants, industrial warehouses, test tracks and other light factory structures. The business has a track record of building the tallest, largest, and most complex structures across India and overseas.

The business is organised into following business units (BUs):

**Public Spaces:** Provides design and execution of special structures like tall statues, metro stations, convention centres, marquee buildings, hotels, malls, integrated development and educational institutions.

**Airports:** Offers design-and-build solutions for passenger & cargo buildings and allied service buildings, with integrated airport system solutions like baggage-handling systems, passenger-flow monitoring system, passenger boarding bridges, visual docking guidance systems and other facilities.

**Factories:** This business unit is a one-stop solution for the EPC requirements for cement plants, automobile plants, EV manufacturing, glass & paint manufacturing, warehouses, automobile test tracks and food processing plants.

**Health:** This BU handles the turnkey Design & Build solutions of hospitals, medical and nursing colleges. Healthcare infrastructure is delivered with end-to-end healthcare facilities, including medical equipment, right from concept to commissioning.

**Residential Buildings:** This unit is a prime EPC solutions provider of elite, affordable and mass housing projects.

**ITOS & Datacentres:** Focuses on providing concept-to-commissioning services for setting up Data Centers, leveraging its strong mechanical, electrical and plumbing (MEP) competencies. It also offers turnkey office space solutions for Information Technology and Office spaces.

**B&F Fast:** Responsible for exploring and creating value from advanced construction technologies such as prefabricated prefinished volumetric construction, modular construction, structural steel construction, and 3D printing that will fast track project delivery.





*Patna Medical College and Hospital*

The Buildings & Factories business offers total turnkey solutions with in-house structural & architectural design using advanced systems like BIM 4D, 5D and BIM 360 field. The Engineering Design and Research Centre (EDRC), supports various business units with efficient engineering solutions and has proven capabilities in the Data Centre segment as well.

Dedicated competency cells, advanced formwork systems, mechanised project execution, a wide network of consultants and vendors, digitised project control and a talented pool of employees help the business in sustaining its leadership position over the years.

## Business Environment

India has emerged as the fastest-growing major economy in the world and is expected to be one of the top three economic powers in the world over the next 10-15 years, which augurs well for the B&F business vertical that is dependent equally on the public and the private sector investments.

As COVID-19 restrictions were gradually lifted, many parts of the economy witnessed robust activity and private sector capex also showed signs of revival.

While the country requires enormous investments in the expansion and building of new airports to handle expanding traffic and boost regional connectivity, with the onset of the pandemic, the investment decisions got delayed.

A growing population and rising burden of new diseases boosts the demand for health care systems in the country. The Health BU saw prospects materializing for construction of hospitals.

The Central Vista Redevelopment Infrastructure Plan involving multiple projects added prospects for the Public Spaces BU.

The ITOS segment looked subdued in the initial quarters with very few large prospects and most of the large ITOS majors deferring new investments. The year ended with the receipt of an international order by the BU.

Indian real estate ended the fiscal on a very strong footing, registering one of the highest growth in recent times, positively impacting the business. However, Central & State Government prospects under 'Housing for All scheme' did not pick up as anticipated during the period.

The Factories BU saw traction with improved private capex in the green energy and related segments like electric scooter factory. Cement manufacturing and industrial chemicals like paints are also gaining traction.

The B&F Fast division has started expanding into the market with jobs from Central Government agencies and other structural steel buildings with some private players. The business is now exploring to exploit its expertise in technologies like 3D printing, PPVC, etc.

Investments in the GCC region remained muted during the financial year.

## Major Achievements

### Orders won:

- Common Central Secretariat project at New Delhi
- SCB Medical College and Hospital, Cuttack
- IT/Hi-Tech Park at Bangladesh
- Prestige City Project, Bengaluru
- Super Specialty Hospital at Warangal



*L&T Innovation Campus - Chennai*

### Projects commissioned:

- AllMS Hospital at Gorakhpur
- Indira Gandhi Hospital at Dwarka
- AllMS Guntur, Mangalagiri
- NXTRA data center at Chennai
- Prestige Song of the South project in Bengaluru

### Other key achievements:

The business also achieved important milestones in the execution of major landmark projects:

- Delhi International Airport – Ph 3A – T1, Arrival Part A opened for passenger movement in February 2022
- Chennai Airport- Commissioned the Arrival Lounge for public use
- 1,30,000 Cum Engineered Fill completed in record time of 5 months at Shri Ram Temple Project, Ayodhya
- Completion & handing over of FCS ADE Facility to DRDO in a record time of 45 days

To provide impetus for India's ambitious 'Housing for All' initiative, the business has been extensively exploring 3D Concrete printing, which is significantly new and radically different from conventional construction methodology. With extensive research and after obtaining design validation and structural stability certification from Indian Institute of Technology, Madras (IIT-M), the business printed a G+1 reinforced concrete building in the previous year. It has received Performance Appraisal Certification from Buildings Materials & Technology Promotion Council (BMTPC), Ministry

of Housing & Urban Affairs, Government of India towards Volumetric (3D) Concrete Printing Technology (VCPT). With the technology certification from the Government of India's Apex Body, L&T is planning to offer this innovative technology to all its prestigious customers and implement in its ongoing projects.

A structured Lean Practices Implementation drive is carried out across major projects in the business. Some of the Lean Initiatives being implemented are Planned Percentage Complete (PPC), Last Planner System (LPS®), Constraint Identification, Weekly Progress Tracking, Variance & Root Cause Analysis, Workmen Performance Measurement & Reward System, Work Sampling Technique and 5S system implementation to remove root cause of poor housekeeping. Extensive training programs are conducted for staff and workmen to adopt these practices.

In addition to the existing set of digital tools to monitor project progress, quality, safety and workmen mobilisation, some more applications like Procurement Tracker, Material Wastage Control Solution, Integrated Gate Entry System, and Workforce Management Solutions were developed and implemented to improve procurement turn-around time, reduce wastage, track material movement, and enhance workmen productivity. The business has inhouse developed and introduced 'Safety Screen System' in all new high-rise residential structures to significantly enhance the safety of workers while working at high altitude.

Various training programs, for staff and workmen, have been conducted throughout the year to inculcate a pro-safety culture in the organisation.





Dhaka Metro

## Outlook

With 100% FDI allowance for green field airports, it is anticipated that India is set to become the 3<sup>rd</sup> largest aviation market by 2025. India's aviation industry is expected to witness ₹35,000 crore (USD 4.99 Bn) investment in the next four years. The Indian Government is planning to invest USD 1.83 bn for development of airport infrastructure along with aviation navigation services by 2026.

The health sector has garnered significant attention from the Government after the pandemic. The Government has allocated about ₹64,000 crore for healthcare infrastructure over the next 6 years. Government spending is the biggest growth driver for this segment and the business is expected to focus on major healthcare prospects coming up from the Central Government and the State Governments. The total Health Sector allocation for FY 2021-22 stood at ₹223,846 crore.

The State and the Central Governments and a few public sector units are coming up with buildings like the Central Vista, Museums, Statues and Educational Institutions. The awards under National High Speed Rail Corporation Ltd. (NHSRCL) projects are picking up pace and are likely to witness further tendering. The business is also expecting some traction in the development / redevelopment of railway stations across the country.

The Indian Data Centre Industry is witnessing meteoric growth. A large and growing internet user base coupled with the explosion of data and creation of a conducive atmosphere via the Government's Digital India Mission has transformed India into a fast-growing data centre hub.

FY 2022-23 is poised to be a very promising year for the Indian housing market, supported by investments either from Government or private players in the Affordable Housing Segment.

With manufacturing leaders trying to set their hubs in India, it is expected that the factories sector will get a significant boost. The Solar PV industry which is now under PLI is also expected to generate significant prospects in the future. Warehousing and Logistics are picking up pace. Industrial Chemicals like Paints are gaining significant investments. The Automobile and the Cement industries are also on an uptrend and will lead an increase in the setting up of new manufacturing facilities across the country.

With the economy poised to grow in the coming year the business is well placed to benefit from the expected large investments across many sectors.

## TRANSPORTATION INFRASTRUCTURE

### Overview

L&T's Transportation Infrastructure business is one of the leading contractors in India offering turnkey Design & Build / EPC solutions with single point responsibility for all kinds of transportation infrastructure such as Roads, Bridges, Railways, City Infra, Urban Transit and Airports. The business is broadly divided into two Strategic Business Groups (SBGs), namely, Railways Business Group (RBG) and Roads Runways & Elevated Corridors (RREC).



Dhaka Metro MRT Line 6

The Railways Business Group is recognised as a full range rail system integrator. The SBG has built capabilities in all 3 railway domains including track construction, overhead electrification and signalling & telecommunication. The SBG is further subdivided into Mainline Business Unit (MLBU) and Metro Business Unit (MTBU). MLBU addresses EPC construction works in the domains of civil and trackwork, electrification, system integration for all Mainline Railway Projects, Dedicated Freight Corridors, and Rail Links for Port, Mining & Power Plant facilities etc. MTBU addresses EPC construction works involving ballastless trackwork, electrification and system integration for all Mass Rapid Transit System Projects and Regional Rapid Transit System in India and abroad.

The Road, Runways & Elevated Corridor Business Group is divided into Roads & Bridges (R&B) Business Unit and Formations & Structure (Railways) Segment (F&S). R&B provides EPC design and build construction services for all types of roads, bridges and elevated corridors including all associated structures, cross-drainage, toll booths, wayside amenities, etc. In the airport sector, the R&B BU is involved in the construction of complete airside infrastructure viz. runways, taxiways, aprons, airfield ground lighting, fuel hydrant systems, etc. The F&S Segment provides design and build construction services of civil works (Earthwork, Earth-retaining structures, Cross drainage, etc.) for all types of Railway projects including Dedicated Freight Corridors, High Speed Rail and Urban Railway Network.

The business has Engineering Design Centres located at Mumbai, Faridabad, and Chennai. It also has a Competency Development Centre at Kancheepuram and a Workmen Training Centre at Ahmedabad.

## Business Environment

### Railway Business Group

Increasing urbanisation, growing industrialisation, and the need to connect metros with growth centres has been driving the growth in the Railway sector in the past few years. The pace of infrastructure creation has been at an all-time high with new and innovative means of construction. Most of the projects during the year were awarded on a fragmented basis. As a part of Atmanirbhar Bharat, 2,000 km of network will be brought under Kavach, the indigenous technology for safety and capacity augmentation in FY 2022-23. A new Project Development Cell (PDC) has been created in the Railway Board to increase investments and encourage foreign direct investment.

### Roads, Runways & Elevated Corridor SBG

The budgetary support for the Road and Bridges sector has seen a steady increase of more than 58% over the last 4 years. 18% of the National Infrastructure Pipeline announced by the Government is earmarked for roads & bridges.

Over the last 7 years, the length of National Highways has gone up by 50% - from 91,287 km (as of April 2014) to 1,46,440 km (as of March 2022). Construction of highways has increased to 39 km / day in 2021-22 from 27 km / day in 2019-20, with an increased focus on the timely delivery of projects.

Also, in view of the exponential increase in traffic over the years in urban areas, the Government has shifted its focus on developing many new Elevated Corridor / Flyover projects across major cities, with the primary aim of decongesting urban roads and highways.



*Ghoshpukur Salsalabari Road Project*

However, over the last couple of years, the number of projects awarded under the Hybrid Annuity Method is seeing an increase impacting the prospects for pure play EPC players.

The Airport sector did not see any major traction in the recent year.

## Major Achievements

### Orders won:

Major projects received during the year:

- Slab Track Package T3 Package (258 TKM) from National High Speed Rail Corporation Ltd.
- EPC Overhead Electrification Projects from IRCON
- Third Rail Traction Project: Agra Metro (64 TKM) from Uttar Pradesh Metro Rail Corporation Limited
- Ganga Expressway Group 1, Package A from IRB Infrastructure Developers Ltd.
- Chennai Peripheral Ring Road Project EPC 02 of section II from Tamil Nadu Road Infrastructure Development Corporation
- 4 Lane to 6 Lane Ghaziabad to Aligarh Road Project from CUBE Highways
- Bangalore Suburban Rail Project – Corridor 02 from Rail Infrastructure Development Company, Karnataka

### Projects completed:

The business has completed the following projects:

- Electrical and Mechanical Works at Western Dedicated Freight Corridor involving 2x25 kV, high rise over head

equipment, the section corresponding to CTP 1 & 2 has been commissioned

- Odisha Power Generation Corporation - Fully commissioned 68 km rail connectivity and commercial operations started from Manoharpur Coal Mines to Thermal Power Plant for the OPGC project
- Phase 2A of Mauritius Metro Express has been commissioned (Rose Hill to Quatre Bornes) and is in commercial operation since June 2021
- 18 TKM of Kanpur Metro priority section commissioned in Dec 2021 from IIT to Motijheel
- Loco Trial for 133 TKM priority section of EDFC CP-204 Mughalsarai to New Bhaupur commenced in Feb 2022 from Kanpur to Sujatpur
- Loco Trial for 118 TKM priority section of EDFC MGS-SEBN commenced in Nov 2021 from New Ganjkhwaja to Chiralapathu Station
- 4 Lane 11 km Chandigarh-Khadar Elevated Corridor commissioned in June 2021
- 4 Lane 84 km Ghoshpukur-Salsalabari Road Project commissioned in Jul 2021
- 4 Lane 34 km Helwak-Patan-Karad Road Project commissioned in Jul 2021
- 4 Lane 111 km Baharagora-Singhara Road Project commissioned in Aug 2021
- 4 Lane 30 km Karodi-Aurangabad Road Project commissioned in Feb 2022
- Bidkin Industrial Area Development Project commissioned in Apr 2021





Mumbai-Nagpur Expressway

## Outlook

### Railway Business

As per the National Infrastructure Pipeline, investments worth ₹ 13.67 trillion are to be made in the railways sector during the period from 2019-20 to 2024-25 to enhance track capacity, improve freight efficiency, augment the speed of trains, enhancing safety and ensuring better connectivity. In FY 2022-23, the national transporter has received the highest ever total plan capex of ₹ 2.45 trillion vis-à-vis ₹ 2.15 trillion in FY 2021-22.

The Indian Railways (IR) has announced multiple projects aimed at capacity augmentation and traffic decongestion in its network. The prospects in next 3 years include New Line 6,000 km (₹ 60,000 crore), Doubling / 3<sup>rd</sup> Line 4,000 km (₹ 40,000 crore).

Also, through Mission Electrification, IR has completed the highest-ever Railway Electrification of 6,366 km in its history and further IR has commenced upgradation of the existing electrification system to 2x25 kV electrification to facilitate higher speeds (upto 160 km / h), haulage and improved system efficiency for High Density Network (HDN) and Highly Utilised Network (HUN) through Zonal Railways.

Civil Packages and System Tenders expected under the four RRTS corridors being implemented by the National Capital Region Transport Corporation (NCRTC).

Further Track and Systems packages are expected to be awarded for the Mumbai – Ahmedabad High Speed Corridor during FY 2022-23.

Rapid commissioning of Western & Eastern Freight Corridors will catalyse development of new freight corridors i.e., East Coast, North-South and East-West Corridors. Detailed project reports have been initiated for East Coast (1,114 km) and the East-West (2,328 km) Corridors. In total, Projects worth ₹ 58,500 crore are expected to be finalised in the next 5 years.

Systems orders are expected to be finalised across six Metros in FY 2022-23 viz. Chennai Metro Phase 2, Ahmedabad Metro Phase 2, Surat Metro, Indore and Bhopal Metro and Delhi Metro Phase 4. New Metros have been announced in several Tier 2 cities like Gorakhpur, Varanasi, Meerut, Vijayawada, Vizag, Dehradun, Bhubaneswar etc. Expansion of existing Metro Systems in major cities such as Mumbai, Delhi, Bangalore, Chennai, Kolkata is underway. The business outlook for the next 5 years includes 18 new projects (700 km) in the Track and Systems domain.

### Road & Bridges

The Government has planned to expand the National Highway network by ~ 60,000 km by 2025 in major economic corridors, strategic areas, and Elevated Corridor & Flyovers network in major cities such as Delhi, Chennai, Kolkata, Mumbai and Bengaluru, with an investment outlay of ₹ 20.33 lakh crore under the National Infrastructure Plan (NIP). While a daily average of constructing 39 km of road per day has been achieved in March 2022, the Government has set up an ambitious target of construction of 25,000 km of national highways in the next fiscal year under the PM Gati Shakti National Master Plan.



*The Mumbai Coastal Road Project. L&T is executing Packages 1 and 4.*

### International Front

On the international front, while the business continues to focus on neighbouring countries like Bangladesh, it is also strongly looking at entering ASEAN, North and East Africa – regions where the Company already has a presence in the other businesses.

## HEAVY CIVIL INFRASTRUCTURE

### Overview

The Heavy Civil Infrastructure business is a market leader in EPC projects in core civil infrastructure segments that are crucial to the Indian economy viz. Metro Rail System, High Speed Rail, Nuclear, Hydel & Tunnels, Marine Structures and Defence Infrastructure Facilities.

The business has a strong presence in India, Middle East, and Bhutan. With dedicated design and technical centres, competency cells, specialised training centres, digital project management, and a talented pool of employees, the business sustains its leading position.

The business is currently involved in the construction of the country's first High Speed Rail corridor connecting Mumbai to Ahmedabad. The latest construction technologies including in-house fabricated Full Span Launching Equipment, Straddle Carrier and Girder Transporter are being used in the marquee project as a part of the Make in India initiative.

With an industry leading position in enhancing urban mass rail transit capabilities, the Company is involved in building metro rail systems in nearly all major Indian cities.

The nuclear business segment offers turnkey services including seismic qualification, civil, mechanical, electrical, instrumentation and modular construction technology. Its expertise extends to both Pressurised Heavy Water Reactor (PHWR) and Light Water Reactor (LWR) technologies.

The Company's Hydel & Tunnels segment is involved in road and railway tunnelling projects, which enhances nation building and offers EPC solutions for complete hydroelectric power projects, large-diameter transport / water tunnels and complex irrigation projects.

The Marine Structures Vertical has extensive experience in greenfield ports, shipyard structures and seawater intake systems along the coastlines of India. It specialises in providing state-of-the-art ship lift structures and turnkey EPC solutions.

L&T Geostructure, a wholly-owned subsidiary engages in foundation and ground improvement projects. With its expertise in building deep piling and diaphragm walls, multicellular intake wells for river-linking, and marinas with berths and jetties. It has a strong and professional foundation specialised team with knowledge of design, equipment, and methods to execute and supervise sophisticated foundation works.

### Business Environment

The Government is keen to expand metro services to 50 Indian cities to accommodate the growing commuting requirements and for better mobility.

With hydel power evolving as an alternate source for grid stability, the Government has taken various steps for the development of hydropower projects in J&K and the North-Eastern states. 21 Hydropower projects with an aggregate



Bangalore Metro – an underground section

Rishikesh-Karnaprayag Rail Link Package 2

capacity of 5,186 MW are under discussion at various levels for development in the next five years in Jammu & Kashmir.

India's installed nuclear capacity is 6,780 MW which is expected to reach to 22,480 MW by 2031 on completion of projects under construction. At present there are 11 reactors at various stages of construction totaling to 8,700 MW.

In the Maritime India Summit – 2021, the Government came up with the Maritime Vision 2030, which envisages the development of three mega ports of greater than 300 MTPA cargo handling capacity. Debottlenecking of existing port facilities is required to accommodate the increased cargo handling and trading sector. Also, the Government is keen on strengthening and modernising naval bases across the country.

The Government is focusing on building new capacities and upgrading existing defence infrastructure. This will lead to creation of opportunities in various defence infrastructure projects including naval infrastructure facilities.

## Major Achievements

### Orders won:

- Chennai Metro Rail Ltd. Phase 2 Packages –
  - » UG TU – 02 for construction of approx. 12 km underground twin tunnel between Kellys and Taramani Road
  - » C5 ECV – 02 for construction of approx. 12.4 km of elevated viaduct and 12 elevated stations between CMBT metro station and Puzhuthivakkam metro station
  - » CP10 ECV – 03 for construction of approx. 10.2 km of elevated viaduct and 11 elevated stations from Assissi Nagar to CMBT Metro station

- Patna Metro PC03 for construction of underground twin tunnel of 6.3 km length each and 6 stations between Rajendranagar and Akashvani
- Delhi Metro Rail Corporation Package DC 09 for construction of twin TBM tunnel of 5 km length each and 4 underground stations between Chattarpur and Neb Sarai
- High Speed Rail Package C5 for construction of civil and building works for double line high speed rail involving Vadodara station between MAHSR 393.7 km and MAHSR 401.9 km in the state of Gujarat

### Key achievements:

- Bangalore Metro RT-03 package achieved its second TBM breakthrough on 13<sup>th</sup> October 2021 after covering 866 m
- High Speed Rail Package 4 connecting Zaroli village – Maharashtra – Gujarat border to Vadodara erected the first 40 m full span box girder (weighing 970 MT) on 25<sup>th</sup> November 2021 at the Navsari casting yard
- RVNL Package 2 connecting Shivpuri to Byasi in Uttarakhand completed 10 km of tunnelling using the new Austrian tunnelling method (NATM) technology in about twenty months (out of total 26.6 km)
- India's largest TBM (MAVALA having 12.19 m dia.) at Mumbai Coastal Road Project, Package-4 achieved its first breakthrough on 10<sup>th</sup> January 2022, covering a total distance of 2.1 km
- Bangalore Metro Rail Project, RT-02 package has achieved its First Tunnel Boring Machine (TBM) Breakthrough on 6<sup>th</sup> January 2022 at MG Road Station





500kV Bang Saphan 2 to Surat Thani 2 Transmission Line

- Medigadda Barrage project in Telangana bagged Formwork Award 2020 for best use of formwork in civil engineering from the Association of Consulting Civil Engineers, India

## Outlook

Considering Mission 2070 Net Zero India, the country is to focus on green construction technologies in future infrastructure projects. Carbon-efficient design (modular design), adoption of low-carbon construction processes (low emission materials such as fly ash), enforcement of building energy codes are few initiatives suggested by World Economic Forum in the Mission 2070: A Green New Deal for a Net Zero India white paper. The thrust on renewable energy is expected to increase in the coming years, providing the necessary boost for sustainable infrastructure such as Metros, Hydel & Nuclear businesses.

In India, metro networks operate only in 13 cities and to increase better urban mobility and metro being one of the low carbon emission transport systems, the Government is keen to expand metro services. It is also considering the implementation of Mass Transit Systems such as Metro / Metro Lite / Metro Neo / Personal Rapid Transit System in Tier 1 and Tier 2 cities keeping in view the growing importance of the transport sector in the city's overall development.

The Nuclear business is expected to continue its growth along with continued focus on 10 Pressurised Heavy Water Reactor (PHWR) projects. The growing energy demand in India will make nuclear power a major source of renewable power, as fossil fuels are scarce in the country.

In terms of infrastructure investments, the Budget has factored in a significant increase in capital expenditure in

FY 2022-23 to ₹ 7.5 trillion, which is 24.4% higher than ₹ 6.0 trillion in FY 2021-22 revised estimate. The above initiatives by Govt will benefit the business in the upcoming years.

## POWER TRANSMISSION & DISTRIBUTION

### Overview

L&T's Power Transmission & Distribution business vertical is a leading EPC player, providing end-to-end solutions for transmission / distribution infrastructure, clean electricity starting from Solar PV plant EPC to last mile electrification. It offers integrated EPC offerings including Ground Mounted / Floating Solar Photovoltaic Plants, Battery Energy Storage Systems (BESS), Substations and Transmission Lines up to 1200 kV, Underground Cable Systems, Distribution Infrastructure both at Medium & Low Voltage levels, and related Digital Solutions. With 15 regional offices spread across the SAARC, Middle East, Africa, ASEAN and CIS regions, the Power T&D business has projects being executed in 30 countries.

The domestic business is organised based on offerings and caters to various T&D utilities, developers and infrastructure customers such as metros, airports etc.

**The Substation** Business Unit provides turnkey solutions for Extra High Voltage (EHV) air insulated / gas insulated substations, Flexible AC Transmission Systems (FACTS), Digital Substation related solutions and EHV cable systems.



400 kV GIS Substation, Chennai, Tamil Nadu



132-11 kV Umm Beshar and 132-11 kV Wakrah-4 Substation

**The Transmission Line** Business Unit provides complete EPC solutions for overhead transmission lines. It is well integrated with the digitally-driven, green tower manufacturing units at Puducherry, Pithampur and Kancheepuram, which have a combined capacity to produce more than 1.5 lakh tonnes of tower components per annum. The Kancheepuram facility also houses the world-renowned Tower Testing and Research Station.

**The Power Distribution** Business Unit has been at the forefront of taking electricity to all by providing a range of EPC services related to urban / rural electrification, augmenting, reforming, and strengthening of high voltage and low voltage distribution networks, power quality improvement works and advanced distribution management solutions.

**The Renewables** arm of Power T&D business is a single-stop EPC service provider globally for GW-scale Solar PV, Energy Storage, Microgrid and Hybrid renewable projects. There are very few players with such strong experience and expertise in different module technologies, module mounting structures and storage types. The business unit has accumulated in-depth engineering and construction know-how to execute a vast range of renewable projects, be it hybrid, floating or linear, with the best suited technologies for terrain type and tracking. The container integration facility at Kancheepuram augments the capabilities of the business with an annual capacity to integrate ~ 400 MWh of battery energy storage system with associated intelligent management and control systems.

The initiatives in emerging areas such as Digital Solutions and Electric Vehicle Charging Infrastructure have made initial wins and are on track to ensure that the business is future ready.

**The international units** of the business provide the entire spectrum of Power T&D related services in Middle East, Africa and ASEAN regions.

Over the past three decades, the Middle East business unit has earned a strong reputation among the utilities and oil companies in Saudi Arabia, UAE, Oman, Qatar, Kuwait, and Bahrain, having executed several marquee projects. It enjoys an enviable track record and garners significant share of T&D projects awarded every year.

The fast – expanding Africa business unit has executed several landmark projects in Algeria, Egypt, Morocco, Kenya, Ethiopia, Tanzania, Uganda, Botswana, Mozambique, and Malawi. It has made further inroads into Western & Central Africa with breakthrough projects in Ghana and Cameroon. With the regional offices strategically located in Nairobi, Cairo, Johannesburg & Accra to serve the vast continent, the business has earned a coveted position with a sizeable market share in the addressable segment.

In the ASEAN region, L&T is an established international T&D player to reckon with, holding a portfolio of prestigious projects spread across Thailand, Malaysia, and Philippines.

Larsen & Toubro Saudi Arabia LLC (LTSA), a wholly-owned subsidiary, provides engineering, construction, and contracting services in the sphere of transmission & distribution in the Kingdom of Saudi Arabia.

## Business Environment

With the consolidation of ongoing distribution schemes under a new, yet to be operationalised Revamped Distribution Sector Scheme, the distribution jobs were limited to few packages. However, the business emerged successful



500 kV HVDC Transmission Line, Kenya

in packages where the scope included advanced SCADA systems and Digital Solutions.

The Substation and Transmission Line orders from state utilities were limited to few states like Karnataka and Rajasthan. The delays in Tariff Based Competitive Bidding for interstate T&D networks led to shrinking of orders from Power Grid Corporation and other developers.

On the back of ongoing transmission line projects in Bangladesh, the business has made further inroads with Substation and EHV cabling orders. With the successful execution of Koshi corridor associated substations and transmission lines, Nepal also offers good T&D prospects.

The customer-end delays in finalisation of funding arrangements and fulfilling bidding / contractual arrangements for Optical Fibre Cabling (OFC) projects in southern parts of the country led to lacklustre performance on the OFC front. The next phase of Bharat Net projects is yet to take off with PPP mode tenders receiving muted response.

The Renewables arm of the business has emerged successful in more than 1 GWp projects in the western region of the country, from Central and State Public Sector Enterprises. This is in line with rising potential for hybrid plants with wind and BESS components. Current supply constraints of solar modules and batteries are envisaged to ease out in the medium to long term with the push given by the Government through the Production Linked Incentive Scheme.

The opportunities for providing Reactive Power Compensation devices like STATCOMs, Static Var Compensators (SVCs), and Reactors have previously been limited only to India. However, such opportunities are on the rise in other operating geographies such as KSA, UAE and Qatar recently.

The expansion of the 380 kV network in Saudi Arabia presented sizeable opportunities for Substations and Overhead Lines. A major Oil & Gas project win for the Group provided power system opportunities in the Kingdom. The GW scale renewable energy projects being built in the region gained significant momentum.

In Africa, the lower vaccination rates, travel restrictions, internal conflict, etc. etc. has caused a lull in the momentum, with borrowing capacities of countries reduced drastically as per the Debt Service Suspension Initiative. However, the business gained successful entry into West Africa with breakthrough projects in Guinea and Cameroon. Addition of South Africa into the fold is another key milestone. Sustained lockdowns and severe restrictions impacted the order finalisations in the ASEAN region.

The FY 2021-22 witnessed several headwinds viz. successive waves of COVID-19, supply chain disruptions worldwide causing unusual increase in commodity / solar module prices besides freight costs. These led not only to delayed order finalisations from the customer's end but also the measured pacing of progress in ongoing projects.

## Major Achievements

### Orders won:

- 400 kV & 220 kV Substations & Transmission Line in Karnataka
- 400 kV Substations & Transmission Line in Rajasthan
- Switchyard package in Gorakhpur
- Power Supply System for Agra Metro
- EHV Cable System package in Bangladesh





*Large scale solar cum storage project in Andaman*

- 230 kV GIS in Nepal
- A large Solar-cum-Energy Storage Project with 57 MWhr storage capacity, in Gujarat
- STATCOM / Shunt Reactor / Dynamic Reactive Power Compensation orders in Saudi Arabia and UAE
- 400 kV TLs in Cameroon, Tanzania, and the Mozambique – Malawi 400 kV Interconnector
- 225 kV TL in Guinea
- 500 kV Castillejos TL – a major transmission line project in Philippines

#### **Projects completed and commissioned:**

- Two 230 kV Gas Insulated Substations in Bengaluru
- Power Supply Systems for Mumbai Metro Line 3 & Line 7
- 1250+ km of Transmission Lines completed in Madhya Pradesh, Kerala, etc.
- Distribution Infrastructure improved by adding 2400+ RMUs and 1450 km of cable conversion in Northern part of India
- 26 substations and 790 km of overhead / underground transmission corridors in the Middle East, including a 400 kV Substation in UAE and one of the longest 380 kV Overhead lines in GCC region
- 275 kV Matang Substation in Sarawak, Malaysia

#### **Significant Initiatives**

- Advanced resource management, BIM integration and forecasting abilities were added to the mature project management digital ecosystem PRAPTI / BODHI.

- Seamless integration of customer relationship and enterprise risk management modules, the migration to an advanced version of enterprise portal with added capabilities and fortified cybersecurity were some other milestones.

#### **Outlook**

Various measures proposed in the General Instructions on Procurement and Project Management guidelines by Ministry of Finance, Government of India may prove to be gamechangers if these get implemented by Central Public Sector Enterprises.

The Revamped Distribution Sector scheme gaining traction with budget allocation and ministerial push, several packages are expected to get finalized in next year, especially the infrastructure works meant for Aggregate Technical & Commercial (AT&C) loss reduction.

The Himalayan terrain being quite familiar for the business, the upcoming Leh Solar evacuation related prospects may offer substantial prospects, in addition to Green Energy Corridor II and intrastate strengthening packages. The evacuation arrangements and electrics for nuclear power plants being developed in fleet mode is another good opportunity. Also, the power system packages of metro rail projects in major cities provide good substation and cabling opportunities.

With oil prices remaining high due to geo-political tensions, the Middle East region now provides stable opportunities, though the individual countries are likely to witness cyclical variations due to various factors including demand growth.

Challenges faced by the EPC players due to slow ramp-up of domestic module manufacturing capacity, price uncertainty coupled with aggressive tariffs is further aggravated by



Haliba, Containerised Substation

Chattarpur Water Supply Project

additional customs duty coming into effect from April 2022 on import of solar cells and modules. With India's ambitious target of generating 500 GW of renewable energy by 2030, prospects in renewable evacuation corridors look better. In KSA and Oman, GW scale plants characterised by substantial BESS and Grid components continue to provide huge opportunities, given the Net Zero commitments and Green Hydrogen prospects.

As the multilateral funding from institutions like JICA, Millennium Challenge Corporation are now gathering momentum and as the renewable energy projects are given a thrust, several opportunities including interconnector projects are now on the anvil in Africa. Countries such as Algeria, Mozambique, Tanzania, and Uganda also offer substantial potential.

The establishment of an Indonesian subsidiary of the business is expected to open up sizeable opportunities locally. The T&D network expansion plans of Thailand, Malaysia, and Philippines in addition to Floating Solar, BESS and SVC related opportunities have resulted in several prospects which are under various stages of bidding. The entry into Georgia with a 500 kV Transmission Line order should help build credentials and experience for further opportunities in the Transcaucasia region.

The scaling up of the Digital Solutions business, given its early successes proving its potential and prowess, provides another avenue for growth and profitability. The business is well poised to garner opportunities arising out of the Net Zero renewables race and provide a green technology path to clean energy transition in India and abroad, all this while enabling the customers and prosumers with the highest standards of reliability, availability and efficiency of power transmission and distribution networks.

## WATER & EFFLUENT TREATMENT

### Overview

L&T's Water & Effluent Treatment business develops water infrastructure offerings which serve to store, move, and treat water, thus delivering substantial social and economic benefits. The business has established itself as an industry leader by executing, commissioning, and operating mega water projects in the areas of drinking water supply, wastewater treatment, industrial water treatment, irrigation and development of smart water infrastructure across the length and breadth of the country. The business has successfully forayed into Middle East, East Africa and SAARC region countries.

L&T's Water & Effluent Treatment business is organised into 3 verticals – (i) Water & Wastewater; (ii) Irrigation, Industrial & Infrastructure; (iii) Water International.

The Water & Wastewater business vertical comprises of Rural Water Supply, Urban Water Supply, Water Management and Wastewater Treatment encompassing the entire spectrum of water and wastewater solutions.

The Irrigation, Industrial & Infrastructure business vertical constitutes Mega & Micro Irrigation, Industrial Water Systems & Effluent Treatment, Desalination and Smart Water Infrastructure, catering to the needs of agriculture and industries.

The Water International business vertical lays its focus on the international markets and continues to tap business opportunities in the regions of Middle East, East Africa, and SAARC region countries.



Industrial Area Sewage Treatment Works, Doha, Qatar

## Business Environment

The Financial year 2021-22 was the second consecutive year that the nation had to bear the brunt of the COVID-19 pandemic, with Governments being forced to divert funds towards mitigating the healthcare emergency and consequently leading to deferment of prospects in irrigation and wastewater sectors. However, rural drinking water continued to receive support under the 'Har Ghar Nal Se Jal' Yojana in certain states.

The global spotlight on ESG led to an upsurge in technology intensive process-oriented orders with some of the established PSUs leading the way by transforming their process toward water neutrality.

The water infrastructure market in the Middle East is on an upward trajectory, aided by a rebound in the prices of crude oil. The water sector in the African subcontinent is seeing increasing thrust from multilateral agencies focused on social sector lending in areas of drinking water supply and wastewater treatment. Consequently, both these regions witnessed a surge in prospects during the last quarter of FY 2021-22.

The increase in prospects across the value chain of the business has transformed the industry from a niche segment to a highly commoditised market leading to entry of several competitors. Further, to aid participation of local agencies in Government contracts, a sharp dilution in prequalification criteria has been carried out for all new tenders, leading to increased competition. The business has been able to thrive and grow amidst stiff competition by leveraging advanced technologies, digitalisation and is on course to transform itself into a technology-led EPC player.

## Major Achievements

### Orders won:

- Piped water supply schemes to various districts in Uttar Pradesh
- Rengali Right Bank underground pipeline project Odisha
- Sewerage works in K&C Valley, Karnataka
- Zero Liquid Discharge and Demineralization works for IOCL Refineries at Baroda and Barauni
- Integrated Infrastructure Development Works for Silvassa Smart City
- Dubai Water Transmission Project
- Water Supply Schemes in various towns of Tanzania

### Major projects commissioned:

6+ million people benefitted with the commissioning of 20 projects during FY 2021-22.

- Industrial Area Sewage Treatment Works, Qatar
- 318 MLD Sewage Treatment Plant at Coronation Pillar, Delhi
- CDS Drinking Water Supply Schemes, Rajasthan
- Bansujara Micro Irrigation Scheme, Madhya Pradesh
- Kanpur Water Carriage System, Uttar Pradesh

The business celebrated the UN Designated 'World Water Day' on March 22, 2022 for the 13<sup>th</sup> consecutive year with numerous events designed to inculcate the need for water conservation among employees and other stakeholders. The mega awareness campaign conducted by the employees covering 20,000+ students was declared a record by the India Book of Records for being the 'Largest Water Conservation Campaign for students across the nation on a single day'.





*Moga Water Supply Scheme Project, Punjab*

## Significant Initiatives

As part of the business strategy to become future-proof and build on the foundation of an agile culture, the following initiatives were undertaken during the financial year:

- In order to track the movement of workforce engaged in remote working areas, a mobile application LMNOP Raksha has been developed. The application sends timely alerts to the related supervisor pertaining to work happening in risk prone areas leading to better EHS performance
- Material Schedule Tracker (MST) is a predictive analytics tool that provides information on cycle time associated with the procurement of a wide variety of materials. MST, adopted across projects, aims to influence procurement decisions and minimise delays associated with procurement of major supplies
- In order to mitigate the impact of steep volatility in prices of commodities due to pent up demand and geopolitical tension, the business is entering into pre-tender pricing agreements with reputed vendors and increasingly focusing on the Just In Time Model for material procurement based on the availability of work fronts
- With the focus on accelerating innovation and maintaining technology leadership, the business has embarked upon the construction of a Water Technology Centre (WTC) at Kancheepuram. The WTC is committed to continuous R&D to innovate scalable solutions enabling the business to meet present and future water needs, to build safe, resilient and sustainable eco-systems globally
- The business is also working with several renowned start-ups in the area of efficient and remote operation of plants with a potential to provide a significant cost advantage. These initiatives will go a long way in the transformation of the business into a technology driven EPC player

## Outlook

The prospects for development of water infrastructure continue to remain bright. As per NITI Aayog Report 2019, India is in the midst of a water crisis with 600 million people facing extreme water stress. The Government is doing its bit to tackle water scarcity through a variety of schemes.

The Jal Jeevan Mission with its ambitious target of providing tapped drinking water to 193 million households by 2024 is expected to provide opportunities for mega prospects in the arena of drinking water supply. With general elections scheduled for 2024 and several state elections around the corner, the Government is working on mission mode to monitor the progress and hence prospects in this sector look very encouraging.

Urbanisation, population growth, and climate related water inequity will ensure good opportunities in the water and wastewater infrastructure area in the foreseeable future. Implementation of river interlinking projects announced in the Union Budget 2022 will add another dimension to the business prospects.

Investment into irrigation infrastructure is expected to revive soon. With 51% of agricultural area being rain fed and with an overall irrigation efficiency of only 38%, a wide array of prospects are visible in macro and micro irrigation with the Government being focused on 'More Crop per Drop' through its 'Pradhan Mantri Krishi Sinchayee Yojana'.

The emergence of ESG investing has enhanced the focus on sustainable corporate actions. As a result, the visibility of prospects has increased in the areas of specialised and process oriented industrial effluent solutions.

On the international front, the rise in crude prices is driving more investments in the Middle East and enough prospects



Stacker-Reclaimer

are available in water and wastewater businesses. Priority funding from multilateral agencies for social infrastructure projects are opening new markets for the business in East Africa. The business is carefully reviewing each of the prospects in the international space and perusing projects in countries with a stable Government and sound economic linkages to mitigate any associated risks.

## **MINERALS & METALS**

### **Overview**

L&T's Minerals & Metals (M&M) business offers complete EPC solutions for the Mining, Minerals & Metals sectors across the globe. The business undertakes end-to-end engineering, procurement, manufacturing, supply, construction, erection, and commissioning of the projects, covering the complete spectrum from mineral processing to finished metals.

The business also offers comprehensive product solutions like an array of customised Mineral Crushing Equipment and Plants for varied applications such as surface miners, sand manufacturing plants, material handling and high-speed railway equipment, other custom-made critical equipment and complex assemblies catering to core industrial sectors including Mining, Steel, Ports, Fertilisers, Cement and Chemical Plants, etc.

The complete range of our product solutions are backed by 5 decades of experience & knowledge, in-house design resources, state-of-the-art manufacturing capabilities and providing after sales product support, value-added and cost-effective services to ensure higher uptime. The

manufacturing centres are in Kansbahal, Odisha and Kancheepuram, Tamil Nadu.

## **Business Environment**

### **Domestic Business**

With the revival of economic activity post the disruption caused by COVID-19, the demand for steel has increased and a strong recovery in steel production was evident during FY 2021-22. During the latter half of the year, all non-ferrous metal prices have steadied near their peaks, while steel prices continue to rise unabated. Consequently, metal industry cash flow has been robust, resulting in a substantial reduction in their debt levels.

All the major steel and non-ferrous metal producers are augmenting their current capacity by way of expansion and acquisitions, including setting up greenfield projects.

### **International Business**

The Mineral and Metals sector is one of the thrust areas identified by most of the Middle East countries, as a strategic diversification beyond oil. GCC countries continue to invest in their mineral sectors with strategic long-term initiatives to exploit the untapped mineral deposits.

The Kingdom of Saudi Arabia has been a frontrunner in developing a non-oil economy – led by the mineral sector. Incidentally, the mineral sector has been earmarked to become the third pillar of the industrial thrust area with the establishment of a Mining Fund to provide sustainable finance for the sector.





*Kakrapar Atomic Power Plant 3*

Steel, Aluminium, Copper, Gold, Phosphate and their allied industries are likely to present new EPC opportunities, especially in the KSA, UAE and West Africa. The downstream metal industry is becoming an attractive investment destination in UAE and KSA due to low power tariffs and flexible policies which is included in their Vision 2030 to be net exporter of value-added products.

The first E&P Project of the business in Egypt is expected to help set a foothold in Africa.

## Product Business

The Product Business is the domestic leader for many of its products and is actively pursuing international markets currently, more particularly in Indonesia, Australia and select countries in Africa for their product range. The core products (such as crushers, surface miners, sand plants, material handling equipment) growth is primarily driven by movement in following industrial sectors:

**Cement Sector:** Major cement producers continued to embark on their expansion plans during FY 2021-22 showing strong revival in the sector. L&T's Crushing Systems & Material Handling Equipment continued to be the preferred choice for Indian cement players. Riding on the current momentum in the economy, business witnessed large order inflows from the Cement Sector in the current year and continues to see a strong order pipeline in the next year. It is estimated that the Indian cement industry is likely to add ~80 million tonnes (MT) capacity by FY 2023-24, riding on the growth in housing and infrastructure projects.

**Mining & Steel Sector:** Continued augmentation of capacities in coal and iron ore to cater to the growing

demand for steel has increased the business potential for its equipment range covering Surface Miners and Skid-mounted Coal Crushers, Stacker Reclaimers, Plough Feeders, etc. The thrust on increasing domestic coal production is expected to continue and reach 1000+ million tonnes by FY 2025-26.

The current year also witnessed an increased Order Inflow for apron feeders, stacker reclaimers, coal crushing equipment from the above sectors and the momentum is expected to continue in the coming years with promising growth plans of the mining and steel players.

**Construction Sector:** Growth in infrastructure projects, backed by a revival in economic activities, drives demand for sand plants as well as newly launched, new generation, high-capacity aggregate crushing solutions (jaw crushers, cone crushers and vertical shaft impactors).

## Major Achievements

### Orders won:

With increased demand and growth in domestic industrial sectors, the business has received the following prestigious orders:

- Steel Melt Shop at Tata Steel Kalinganagar
- Coke Oven Battery at Tata Steel Kalinganagar
- Dry Circuit System at NMDC Ltd. Kirandul
- 2 MTPA Pellet Plant at NMDC Ltd. Nagarnar
- Maintained 100% market share in Cement sector and securing a total of 17 order wins in limestone crushing plants





KSM-304C Surface Miner

- Booked orders for 19 Sand Plants from various quarry owners and construction companies across the country

#### Major projects commissioned:

- Coke Oven Battery, JSW Steel Dolvi
- Blast Furnace, JSW Steel Dolvi
- Coke Dry Quenching Project, JSW Steel Dolvi
- First stream Commissioned for Steel Melt Shop, JSW Steel Dolvi
- New Hot Strip Mill, SAIL, Rourkela
- 1.5 MTPA to 2 MTPA Expansion of Alumina refinery at UAIL Rayagada
- Stacker Reclaimer at JSW Paradip

#### Other key achievements:

With its superior manufacturing capabilities and prowess in design to deliver equipment, the Product BU had the following major commissioning highlights this year:

- Successfully designed, manufactured, commissioned and load tested the 1100 MT Straddle Carrier & Transporter Girder and three of the Straddle Carrier Machines, which are in successful operation at High-Speed Rail Project Sites at Gujarat
- A total of 8 Surface Miners (including 2 in international geographies), 11 Sand Plants, 3 Largest Capacity Skid-mounted Coal crushing plants, apart from multiple limestone crushing plants commissioned this year

#### Significant Initiatives

- Implemented Design Automation, AI enabled engineering, and Data Analytics Solution for continuous improvement on various processes in its domain area
- Implemented the specialised software under iMPACT initiative to monitor progress from BOM to Erection in Piping & Structural with QR code-based progress monitoring and materials tracing and tracking

#### Outlook

Market sentiments continue to remain positive with strong demand, bullish commodity price forecasts in near terms and metal producers recording unprecedented margins which will provide solid impetus towards new capex cycle. This has strengthened the sentiments of investors and, will lead to a robust investment environment in the industry.

Similarly, the economic scenario in Gulf countries is following a fresh capex cycle to industrialization, facilitating their strategic shift away from oil & gas.