500kV Pulah Indah Olek Lempit Transmission Line, Malaysia

The *Transmission Line business unit* provides complete EPC solutions for overhead transmission lines. It is well integrated with the digitally driven, sustainability-focussed tower manufacturing units, which have a combined capacity to produce more than 1 lakh tonnes of tower components per annum. The Kancheepuram manufacturing facility also houses the world-renowned Tower Testing and Research Station, which provides its design and testing services to clientele from 33 countries.

The *Power Distribution business unit* has been at the forefront of distributing electricity in an efficient manner 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 **International T&D business units** provide the entire spectrum of power T&D-related services in the 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 a significant share of T&D projects awarded every year.

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

The *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 & Northern Africa with ongoing projects in Guinea, Cameroon, and Tunisia. With the regional offices strategically located in Nairobi and Casablanca 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, holding a portfolio of prestigious projects spread across Malaysia, Thailand, Myanmar, and the Philippines. The offices in Kuala Lumpur, Bangkok, and Jakarta serve as the touchpoints for the electricity companies in the region.

The **Digital Energy Solutions** arm of L&T's Power T&D business provides electricity-related consulting and digital solutions globally through its 'Spark' platform, and a multitude of software products and solutions. Its cutting-edge offerings include hybrid energy management systems, energy storage controllers, substation data platforms, power system cyber security needs, etc. Driven by powerful algorithms and simulations, the solutions offered by this unit enable customers across India, the Middle East, and the USA to build resilient future-ready systems.

The Power Transmission & Distribution business vertical aims to provide a green technology path to clean energy transition in India and abroad while providing customers and prosumers with the highest standards of reliability, availability, and efficiency of power transmission and distribution networks.

400kV Ottapidaram, Tamil Nadu

Business Environment

A vibrant renewable energy market in the Middle East provides ample opportunities coinciding with a plethora of Power Transmission & Distribution related projects. This makes up for the relatively subdued environment in India and Africa. Further, these opportunities come with significantly higher package sizes, thereby aiding effective resource utilisation and facilitating volume growth. Due to ongoing disturbances in the Red Sea, the supply chain was impacted to an extent. However, the execution of projects has largely continued unhindered.

The domestic Renewable Energy space is characterised by self-EPC execution by developers, land acquisition requirements, and e-reverse auctions. Selected opportunities were pursued with specific customers in niche areas, such as Floating Solar Plants.

As the domestic power distribution space was fraught with aggressive customer estimates and a fragmented contractor base, the addressable opportunities were relatively lesser, for which the business was very particular. The recent revival of the order finalisation of transmission line packages for renewable energy evacuation provided a welcome relief.

Major Achievements

Major Orders Won:

- 2.8GWp Solar PV Plant EPC orders in the Middle East
- An integrated order involving Renewable Generation, Power, and Water Utilities for an ultra-luxury tourism destination in Saudi Arabia
- 75MW Floating Solar order in India
- 765kV Transmission Lines related to the integration of Renewable Energy Zone in Karnataka
- 400kV Transmission Line orders in Jharkhand and Chhattisgarh
- Receiving and Auxiliary Substations with SCADA for Chennai Metro Corridors 3 & 5
- Distribution Infrastructure improvement projects in Rajasthan and Gujarat
- Upgradation of SCADA (Supervisory Control and Data Acquisition) at Transmission Asset Managing Centres for monitoring and control of 275 EHV Substations in India
- A 400kV Substation and 3 Nos. 132kV Substation packages in UAE
- 400kV Transmission Line packages in UAE and Kuwait
- 8 Nos. 132kV Substations in Kuwait
- Substation packages from the ongoing network expansion phase in Qatar
- 525kV HVDC Transmission Line package in Saudi Arabia
- 380kV Substations and Overhead Line packages in Saudi Arabia
- 275kV Substation and Underground Cable laying order in Malaysia
- Certain Advanced Grid Services and Energy Consulting Services in the USA for the Digital Energy Solutions business

400kV JNHPP Chalinze Transmission Line, Tanzania

Projects completed and commissioned:

- 1.8GWp Sudair Solar Plant in KSA
- 15 Substations and 1409 CKM of overhead transmission lines in the Middle East
- 5 Substations and 420 CKM of transmission lines in Africa
- 138 CKM of 500kV transmission lines in the ASEAN region, including the Tallest Transmission Tower in Malaysia that entered the 'Malaysia Book of Records'
- 50 GIS bays in Thailand
- 220kV Transmission Line and two Substations in Nepal at high altitudes
- 400kV Substations & Transmission Lines in Tamil Nadu and Uttar Pradesh
- 220kV Substation & Transmission Line in West Bengal
- Improved Distribution Infrastructure by adding 1531 Ring Main Units and 1450+KM of cable conversion in Uttar Pradesh, West Bengal, Haryana, and Jammu
- 35MW Solar Plant with 57MWh Battery Energy Storage System in Gujarat

Significant Initiatives

- Initiated a global strategic partnership with Dell Technologies for synergistic use of high-end computing power with software solutions for energy utilities
- Memorandum of Understanding (MOU) signed with IIT Indore for Advanced Research & Development in renewable energy integration and control technologies
- Innovation in anchoring & mooring methods for floating solar projects

Outlook

Renewable electricity has emerged as the preferred source of energy in varied applications and industries. Significant investments for enhancing renewable energy capacity are witnessed in both developed and emerging economies. Novel solutions involving a spectrum of renewable technologies, including wind and energy storage, are being integrated for solar generation. This proliferation of renewable energy goes hand in hand with the multi-fold expansion of transmission grid infrastructure.

The GCC countries have set ambitious renewable energy addition plans for 2030, which are backed by action on the ground. Besides diversification of fuel mix, renewable energy for Green Hydrogen is another major driver. Our reputation and relationships with the major developers in the region are expected to fuel the growth of the business in the adjacent regions as well.

In specific countries of Africa and ASEAN, the business will leverage its proven track record, established relationships with various stakeholders, and ability to access the project finance market in order to pursue select opportunities arising from Just Transition initiatives, grid interconnection requirements, and renewable proliferation.

In India, a significant increase in the capacity of solar module manufacturing in the past year will improve input costs and delivery timelines, given the compulsory requirement to meet Approved List of Models and Manufacturers (ALMM) stipulations. Further, the tendering of the on-the-ground and floating solar plants by the Central and State Public Sector Enterprises will be the mainstay in the coming years.

Water Treatment Plant at Nashik, Maharashtra

765kV Transmission Line and Substation opportunities, mainly for the purpose of renewable energy evacuation, will continue to provide stable order inflow in the medium-term, besides HVDC corridors and Metro Rail projects. From select DISCOMs, distribution modernisation opportunities such as Loss Reduction Works and Supervisory Control and Data Acquisition (SCADA)/Advanced Distribution Management System (ADMS) packages are expected to gain momentum.

The ability to provide a range of advanced physical and digital solutions, including Dynamic Reactive Power Compensation, Hybrid Energy Management Systems, and EV Charging Infrastructure at scale, gives the business an edge over competitors.

The influx of orders coupled with ramped-up execution and efficient working capital cycle provide a strong ground for improved return ratios in the business.

Water & Effluent Treatment

Overview

L&T's Water & Effluent Treatment (WET) business is a technology-driven EPC business dedicated to delivering comprehensive solutions in the water space, through best-in-class project management, technological capabilities, and treatment process know-how. The business caters to varied customer segments for municipal water (potable & waste), irrigation, industrial water, desalination, and smart water infrastructure by implementing treatment plants, storage & pipeline networks for water supply & wastewater, irrigation, and industrial applications across India and at various international geographies. The business is recognised for its successful implementation of large-scale projects nationally and globally, delivering clean water, sanitation facilities, and efficient treatment processes for the community. These efforts not only enhance public health and quality of life but also promote economic growth and sustainable development.

The business has a unique Water Technology Centre (WTC) in Kancheepuram, near Chennai, which has state-of-the-art laboratories to develop solutions for the ongoing/emerging challenges in the Water sector.

L&T's Water & Effluent Treatment business is structured into three verticals:

(i) Water & Wastewater

(ii) Irrigation, Industrial, and Infrastructure

(iii) Water International

The **Water & Wastewater** business vertical provides water solutions to the municipal water sector. In the potable water arena, it undertakes projects that encompass sourcing, treatment, transmission, storage, and distribution for the entire value chain, from intake to households. In the municipal wastewater segment, projects involve the collection and conveyance of sewage, pumping stations, and wastewater treatment, including the treatment of sludge to the highest standards and generation of power.

The **Irrigation, Industrial, and Infrastructure** business vertical caters to the needs of the irrigation and industrial sector by providing a wide variety of water solutions, including mega & micro irrigation, treatment of industrial effluent, plant water systems, and water infrastructure

Varanasi Sewage Treatment Plant, Uttar Pradesh

for smart cities. Desalination projects are also undertaken by this vertical.

The **Water International** business vertical focusses on providing complete water solutions in the markets of the Middle East, East Africa, and SAARC (South Asian Association for Regional Cooperation) countries.

Business Environment

With the Government's focus on water infrastructure development, the business foresees significant market opportunities in the Urban Water & Water Management, Wastewater, Industrial & Desalination, and Irrigation sectors.

The business faces industry-specific challenges, including intense competition from established players and new entrants, workforce shortages, commodity price fluctuation, and cost escalations. Despite these challenges, the business remains resilient and actively addresses these headwinds through improved productivity and timely project implementation with exceptional quality and safety standards, thereby meeting stakeholder expectations.

In the Middle East region, the water demand is expected to grow significantly as huge spending is envisaged in the areas of desalination and treatment of wastewater & industrial effluents. The conscious pursuit of value-accretive opportunities in the Middle East is a risk mitigation to a high-growth but commoditised domestic market.

Major Achievements

Major Orders Won:

- Ballia Water Supply Project, Uttar Pradesh
- Firozabad Water Supply Project, Uttar Pradesh
- AMAALA Utilities Water Package, KSA
- Chittorgarh Package I Water Supply Project, Rajasthan
- Mega Lift Irrigation Project Cluster XXII & XXV in various Districts, Odisha
- Southwest Guwahati Water Supply Project, Assam
- Effluent Treatment Plant for Talcher TPP Stage III, NTPC, Odisha

Major Projects Commissioned:

More than 10 million people benefitted from the commissioning of 32 projects during FY 2023-24. Some of the major projects commissioned during the year are:

- Ranchi Smart City, Jharkhand
- Gangadhar Meher Lift Irrigation Project, Odisha
- Shivhar Water Supply Scheme, Uttar Pradesh
- Diggian Sewage Treatment Plant, Chandigarh
- Coimbatore Sewage Treatment Plant, Tamil Nadu
- Chhatarpur Water Supply Scheme, Madhya Pradesh
- Jawai Water Supply Project, Rajasthan
- Sauni L3P8, Gujarat
- 30 MLD Common Effluent Treatment Plant, Gujarat
- Zanzibar Water Supply Project, Tanzania

Gangadhar Meher Lift Irrigation Scheme, Bargarh, Odisha

Significant Initiatives

Multiple strategic initiatives were implemented during the financial year with an enhanced focus on digitalisation, mechanisation, and technology to make the business more future-ready in its quest to stay ahead in the competitive market.

- With a focus on operational excellence, the business implemented precast/hybrid construction methods (Intake, Pumphouses, Elevated Storage Reservoirs, and House Service Connections) across various projects to address the shortages in skilled manpower
- Predictive analytics incorporated in tendering based on historical data to estimate optimised tender Bills of Quantity (BOQ) with accuracy & speed, which has substantially reduced manual efforts and improved tendering efficiency
- Aerial survey using drones, extensive usage of ArcGIS software for auto-zoning of villages & volumetric calculations for large areas, Gap Information Monitoring App (GIMS), and House Service Connection app are some other key initiatives undertaken on the engineering & execution front
- The Incident Potential Rate (IPR) dashboard helps monitor project execution and facilitates risk evaluation in real-time. This AI/NLP-enabled platform has fast-tracked management intervention that facilitated quick decision-making, resource planning, and mobilisation, culminating in a better EHS environment at the projects
- The business has piloted the 'Integrated Project Management System (IPMS)' in a few projects to foster seamless collaboration across departments, enhance visibility into all aspects of project management, and mitigate risks proactively

Outlook

The business is predominantly a B2G company with many state government departments as its clientele. The growth of the business is highly dependent on the policies of the central and state governments. In the Interim Government Budget for FY 2024-25, the Central Government has once again emphasised its vision of making India 'Viksit Bharat' by 2047, thereby underscoring the importance of the various welfare schemes for its citizens, which, in turn, is expected to further drive opportunities in the Water, Wastewater, and Irrigation sectors. Additionally, the Jal Jeevan mission (Har Ghar Jal) that aims to provide piped water to every rural household will continue to provide opportunities in the arena of potable water infrastructure and ancillary services.

On the International Business front, the Middle East (especially the Kingdom of Saudi Arabia) presents new business horizons with ongoing mega-development projects. The business will collaborate with strategic partners to leverage opportunities that are aligned with regional priorities and economic growth initiatives.

Domestic competition remains fierce with a low entry barrier and emergence of new entrants, due to which innovation and technological advancements become critical for sustained business growth.

Amidst these opportunities, challenges like commodity price volatility and increased cost pressures persist

Alumina Refinery Expansion Project at Vedanta Lanjigarh, Odisha

across the industry. The business will focus on strategic planning and improved risk management practices to counter these challenges.

Minerals and Metals

Overview

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

The business also offers comprehensive product solutions with an array of customised Mineral Crushing Equipment and Plants for varied applications, surface miners, material handling, high-speed railway construction equipment, steel plant machinery, and other custom-made critical equipment & complex assemblies catering to core industrial sectors including mining, steel, ports, fertilisers, cement, chemical plants, etc.

The complete range of product solutions is backed by five decades of knowledge & experience, in-house design capabilities, and state-of-the-art manufacturing facilities, providing after-sales product support and value-added & cost-effective services to ensure higher uptime. The manufacturing centres are in Kansbahal, Odisha and Kancheepuram, Tamil Nadu.

Business Environment

Domestic Business

Currently, India is the second-largest crude steel producer in the world. Domestic steel consumption has witnessed consistent robust growth, driven by sectors like infrastructure, automotive, construction, and consumer goods. In FY 2023-24, the cumulative production of crude steel was above 140 MT, registering a growth of 11% on y-o-y basis.

Similarly, India's annual steel consumption was ~130 MT for FY 2023-24, recording a growth of 8% over the previous year. The Government's impetus on infrastructure development and the 'Make in India' initiative have played a significant role in boosting metal consumption. Improved volumes coupled with better realisations have helped the metal industry to substantially de-leverage its balance sheets and have paved the way for a fresh CapEx investment cycle.

The discovery of lithium deposits for the first time in the country is likely to fuel industry growth. Further, with the Central Government approving the lithium mining auction proposal, private companies will be able to participate in such tenders. The same is expected to enhance business prospects in the non-ferrous segment as well.

With all these positives, major metal manufacturers are in the process of CapEx expansion, which should augur well for the business.

Bucket Wheel Stacker reclaimer for JSW Dolvi, Maharashtra

International Business

Minerals & Metals has found renewed focus in the Middle East as countries keep funnelling investments to new mineral exploration & conversion to metal as part of their long-term strategy. Driven by the need to diversify beyond oil, investments in mega-to-giga infrastructure projects/ factories are on the anvil as the GCC region is embarking on an actionable road map to exploit its other mineral resources, led by the Kingdom of Saudi Arabia.

The Middle East is emerging as a major transit centre for setting up low-carbon emission Iron & Steel hubs and is attracting investments by offering low gas prices, lower power tariffs, and flexible policies.

New opportunities are expected in aluminium, gold, phosphate, copper, and new-age minerals as sponsors evaluate the likely approach to embark on setting up new plants, as well as expanding existing facilities to cater to increasing demand.

In Africa, investments in Minerals & Metals continue to be a mainstay, since many of the countries are rich in a wide variety of valuable minerals/resources. However, challenges around the speed and scale of implementation limit the entry of the business to offer complete services.

Product Business

The outlook for the Product business is positive, with the user industry poised for growth, driven by the Government's focus on the development of infrastructure and housing construction activities. The business has been actively pursuing prospects in select international markets and has successfully secured repeat orders for Surface Miners from African markets, and expects the momentum to continue in the medium-term.

The business has some unique solutions in mining and stockyard equipment, which will be pursued across the African continent and other international markets as well.

The demand for core products (like Crushing Systems, Surface Miners, Material Handling Equipment, High-Speed Rail Equipment, and Port Cranes) is primarily driven by movement in the following industrial sectors:

Cement Sector: The cement segment in India is expected to grow at a CAGR of 5%-6% over the medium-term, with large investments in greenfield and brownfield projects. Major cement players in the country are undertaking ambitious expansion plans to capitalise on this growth potential.

It is estimated that the Indian cement industry is likely to add ~30 MT capacity in FY 2024-25, majorly due to the growth in housing, industrial, commercial and infrastructure projects.

Mining & Steel Sector: The spurt in capacity augmentation of steel plants and continued augmentation of capacities in coal and iron ore to cater to the growing steel and power demand have increased the business potential for Surface Miners and Skid Mounted Coal Crushers. New investments in coal-based thermal power plants have also led to an increase in the business potential for equipment ranges covering crushers, stacker reclaimers, plough feeders, etc.

Freight Handling Facilities for Etihad Rail, UAE

The current year also witnessed increased order inflow for Surface Miners, Apron Feeders, Stacker Reclaimers, Wagon Tipplers, Paddle Feeders, and Coal-Crushing Equipment from the above sectors. The momentum is expected to continue in the coming years, with promising growth plans for the mining and steel players.

Construction Sector: Growth in infrastructure projects drives growth in Aggregate Crushing solutions. Enhanced budget allocation for roads and highway projects in FY 2024-25 will further ensure tremendous growth opportunities for Aggregate Crushing solutions.

Port Sector: The port segment in India is expected to experience significant growth due to various Government initiatives aimed at promoting port-led development, like the SagarMala initiative and Maritime India Vision 2030. Steady growth of 7% y-o-y basis is evaluated in container traffic expected till 2030, with Government and private players investing in the expansion of container terminals.

The business has signed a license agreement with Konecranes, Finland, to manufacture and supply technologically advanced cranes for Indian ports and shipyards. The business has started the supplies of the first order of ELLs (Electric Level Luffing Cranes) for Cochin Shipyard Limited in the current year. With good prospects in the pipeline from all major players in Ports and Shipyards, FY 2024-25 holds good potential for locally manufactured equipment.

Major Achievements

Major Orders Won:

With increased demand and growth in industrial sectors domestically, the following are a few highlights & prestigious orders received:

- New 5 MTPA Blast Furnace at Dolvi, Maharashtra, for JSW Steel
- 5 MTPA Steel Melt Shop augmentation at Dolvi, Maharashtra, for JSW Steel
- Upgradation of Blast Furnace 'G' at Tata Steel, Jamshedpur
- 160 KTPA Zinc Roaster 6 Package at HZL Debari, Rajasthan
- A large order from ArcelorMittal Nippon Steel India (AM/NS) for ten Stacker cum Reclaimers
- Order from Mahanadi Coalfields Limited (MCL) for six Surface Miners
- Highest-ever orders for twenty Stacker Reclaimers in a year
- Limestone crushing plant orders from Adani Cement
- An order for a Crushing Plant from Dalmia Cement
- First 300T Goliath Gantry Crane from Hindustan Shipyard Limited

Key Projects Commissioned:

- Inaugurated CHP Dudhichua Phase-III in Madhya Pradesh, 10 MTPA CHP for Bhubaneswari Coal Mining Limited in Odisha, 7.5 MTPA CHP for North Urimari Birsa Coal Mine in Jharkhand, and 15 MTPA Lajkura Projects in Odisha
- Alumina Refinery Expansion Project at Lanjigarh, Odisha, has been commissioned
- 1st Slab Caster for Tata Steel at Kalinganagar, Odisha

General Cargo Berth II for Kamarajar Port, Chennai, Tamil Nadu

- Aluminium refinery expansion for Hindalco at Tikri, Odisha
- Achieved a historic milestone of the 1000th Apron Feeder supplied to Shree Cement
- Largest capacity 1100TPH Aggregate Crushing export order supplied to JSW-Fujairah in UAE
- Three Sets of High-Speed Rail equipment supplied in a record time of 9 months
- Three Drum Coolers supplied to Hindustan Zinc Limited as a successful import substitute on a repeat basis
- Mansourah-Massarah Gold Project in the Kingdom of Saudi Arabia
- Freight Handling Package for Etihad Rail in UAE

Significant Initiatives:

- Implemented Wrench Software, a central system which enables live project management
- Developed in-house Steel Structural Software System for managing 2 lakh metric tonnes of Structural Fabrication & Erection per annum
- Smart Health Station [An IOMT (Internet of Medical Things)-based Health Station] to enhance health monitoring of employees, including workmen
- Steel frame Plastic Shutter panels to replace plywood & hardwood to improve productivity and quality besides being environmentally friendly

Outlook

The developed countries in Europe, the USA, and Japan are relocating their steel production capacity to Asian countries due to economic and environmental concerns. India, with huge iron ore reserves, will be the major beneficiary of this diversification strategy, coupled with increased domestic production and consumption needs due to its rapid economic expansion.

Auctioning and privatisation of mines drive more investments in mineral beneficiation & pelletisation of iron ore, which provides value-added and environment-friendly products to Iron & Steel plants both in India and facilitates exports. Iron & Steel capacity expansions by all major Indian companies are on track, buoyed by domestic consumption demand and elevated margins.

Aluminium and Zinc in the non-ferrous sector are witnessing capacity expansions in all the existing plans by the major players like Hindalco, Vedanta, and HZL.

The Minerals and Metals sector in the Middle East is emerging as a major investment destination due to low energy costs and investment-friendly policies and financing options, which coincides with their vision of expansion to non-oil areas. Expansion in freight handling and related infrastructure across the countries in the Middle East is also witnessing increased investments, mainly in the UAE and Oman.

ENERGY PROJECTS SEGMENT

Modularised Reformer for a Blue Hydrogen project in Rotterdam, Netherlands

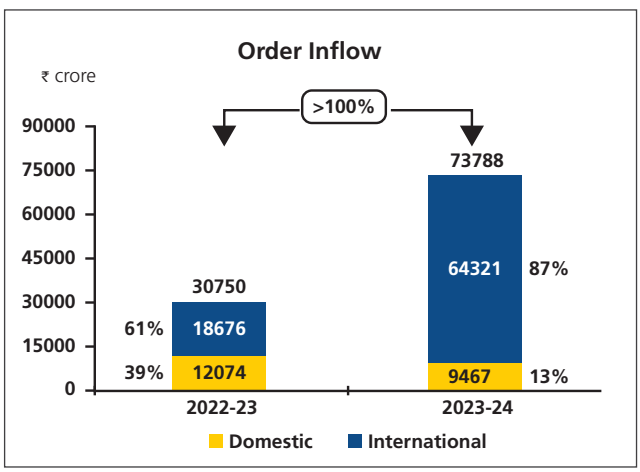
The Energy Projects Segment comprises:

a) Hydrocarbon Business

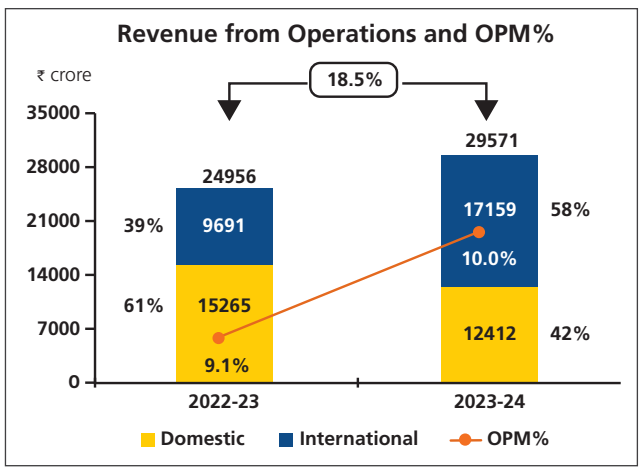
b) Power Business

c) Green Energy Business

Financial performance of the segment



The Energy segment achieved order inflows of ₹ 73,788 crore in FY 2023-24, registering a substantial growth of more than 100% over the previous year on robust ordering momentum from the Middle East region, leading to an increase in the share of international orders from 61% in the previous year to 87% in FY 2023-24. The receipt of multiple ultra-mega international orders in the Hydrocarbon business aided the order inflow.



The Energy segment's revenue at ₹ 29,571 crore for the year grew by 18.5% y-o-y due to a pick-up in the execution momentum, mainly in the Hydrocarbon business. The Power business registered a decline due to a tapering order book. The share of international revenue in FY 2023-24 at the segment level was higher at 58% compared to 39% in the previous year on the execution of large international projects in the Hydrocarbon business.

The segment's operating margin increased to 10.0% from 9.1%, mainly due to cost savings and favourable award of claims.

Funds employed by the segment as on March 31, 2024, at ₹ 5,792 crore, increased by 34.7% over the corresponding number as on March 31, 2023, mainly due to an increase in contract assets in some large value projects.

Oil Production Deck Module for Saudi waters

Hydrocarbon Business

Overview

The Company's Hydrocarbon business provides integrated 'design and build' turnkey solutions for the hydrocarbon industry across multiple geographies. The business executes projects encompassing all functions, such as engineering, procurement, fabrication, construction, installation, project management, and asset life management services.

Backed by cutting-edge innovation, the business has integrated capabilities across the value chain, supported by in-house Front-End Engineering Design (FEED), project management, procurement, modular fabrication facilities, Onshore and Offshore construction, installation, and commissioning.

Modular fabrication facilities of the business are located primarily in India and the Middle East; at Hazira (near Surat), Kattupalli (near Chennai), and Sohar in Oman to serve the respective adjacent markets.

In India, the Engineering, Procurement, and Project Management centres are located in Mumbai and Vadodara. Overseas, the business presence is predominantly in the Middle East—spanning Kuwait, Algeria, Qatar, and the UAE—with a regional centre of excellence for Engineering and Project Management situated in the Kingdom of Saudi Arabia. The business has set up a Piping shop and a Heavy Wall Pressure Vessel Manufacturing shop at Jubail Industrial Zone to support the KSA In-Kingdom Total Value Add (IKTVA) services.

The business caters to clients across the hydrocarbon value chain through the following business verticals and units:

Offshore

The Offshore business offers lump sum turnkey EPCIC (Engineering, Procurement, Construction, Installation, and Commissioning) solutions for wellhead platforms, riser platforms, process platforms, accommodation platforms, subsea pipelines, brownfield developments, decommissioning projects, deepwater structures, manifolds, as well as transportation and installation services to the global offshore oil & gas industry.

The Offshore business has its dedicated comprehensive in-house engineering capabilities offering 'Fit for Purpose' engineering solutions, which cover the complete project life cycle, from concept to commissioning. As a one-stop solution EPCIC player, it also has in-house fabrication facilities which focus on quality and timely dispatches. Own marine assets comprise a self-propelled heavy-lift-cum-pipe-lay vessel – LTS 3000 – held through a joint venture and a wholly-owned pipe-lay barge – LTB 300 – that helps expedite offshore installations, besides ensuring on-time completion of projects.

As a contractor of choice for both domestic & international markets, the Offshore project management team delivers complex offshore projects in a time-bound manner with the utmost quality standards in a safe and incident-free environment.

Dual Feed Cracker Block Unit (DFCU) for HRRL, Barmer, Rajasthan

Onshore EPC

This business provides end-to-end EPCC (Engineering, Procurement, Construction, and Commissioning) solutions for the oil & gas industry, offering turnkey solutions across the hydrocarbon value chain covering refining, oil & gas processing, petrochemicals, fertilisers, cryogenic storage, LNG, pipelines, and terminals, including storage tanks and underground cavern storage systems for LPG.

It also offers innovative construction solutions, such as automated welding (double-sided tandem SAW for horizontal joints and Semi-Auto FCAW for vertical joints), NDT (Non-Destructive Testing), and Automated UT (Ultrasonic Testing) for LNG Tank construction yielding high quality and productivity, enhancement of high deposition submerged arc welding process for duplex stainless-steel material in pipelines, new line of gas regulators for reduced gas wastage, and automatic pipe fabrication shop with cutting edge technologies.

The business has a track record of concurrent execution of multiple ultra-mega & mega projects successfully, both in domestic and international markets, with different technology process licensors. The world-class in-house Engineering Centres offer design and engineering services for onshore hydrocarbon plants, pipeline projects, and onshore oil & gas field development projects with a complete spectrum of FEED, process, detailed engineering, project management services, procurement assistance, and related services.

The business will continue to provide engineering and related services to the hydrocarbon industry in the domestic and international markets.

Onshore Petrochemicals and Fertilisers

Recently, a separate SBU has been carved out from the Onshore vertical to significantly focus on emerging opportunities due to significant developments in the downstream petrochemical and fertiliser sectors, such as Liquid to Chemicals, Blue Ammonia, and Urea projects.

Modular Fabrication

The Modular Fabrication business specialises in supplying plants & modular systems built as solutions for the Offshore, Onshore Oil & Gas, and Offshore Wind Farm industries, with the capability to deliver modules up to 6,600 MT.

Its dedicated engineering & project management expertise is extensive and draws strength from the EPC businesses for both Offshore and Onshore projects. Offshore solutions encompass structures and modules for Oil & Gas and Wind Farm projects, including Deepwater Subsea structures, Oil & Gas manifolds, Jack-up rigs, and Mobile Offshore Production Units (MOPU). Onshore offerings cover Process & Piperack modules, skids, structures, Static Equipment/ Pressure Vessels and Columns, Modular Specialty Furnaces, and Prefabricated Control Rooms/Substation Buildings (E-houses).

World-class modular fabrication facilities are strategically located at Hazira (India's West coast), Kattupalli (India's East coast), Sohar (Oman), and Jubail (KSA). The combined annual capacity for fabrication is estimated at about 60 million manhours or 2,00,000 MT (depending on the product mix). The Heavy Wall Pressure Vessel manufacturing facility, along with an operational pipe fabrication shop in KSA, primarily caters to the local requirement of

Residue Upgradation Facility (RUF) for HPCL, Vizag, Andhra Pradesh

offshore and onshore projects while developing skills in the Kingdom of Saudi Arabia to support the country's localisation programme.

Modular Engineering capability also includes tailored 'Print to Build' solutions for technology companies, particularly in renewables and decarbonisation. The business is delivering modules globally, covering significant regions such as North America, Europe, Africa, the Middle East, Asia, and Australia.

Advanced Value Engineering & Technology Services (AdVENT)

Leveraging expertise in high-end engineering and execution of large-scale, technologically complex EPC projects over several decades, and collaborating with well-organised R&D centres and renowned institutions, the AdVENT business unit delivers customer-centric solutions for various elements of the value chain of the hydrocarbon industry.

AdVENT's technical capabilities and agility enable it to offer associated tailored value engineering solutions. Its offerings to clients encompass full-spectrum engineering–from concept to commissioning. It also provides EPC Project Solutions, Integrated Modular Solutions, Refinery Technology Solutions, and Sustainable Waste-to-Energy Solutions.

AdVENT also focusses on technology-backed chemical industries, which are now ramping up investments in the chemical sector and reducing dependence on imports. These chemicals are the building blocks of high-value industrial end products.

Asset Management

The Asset Management business delivers differentiated and value-added services across a wide spectrum of solutions to Hydrocarbon and allied Process Industries.

These comprehensive Asset Management Solutions cover operation, maintenance, performance enhancement, and health assessment of critical assets. This business complements the organisation's EPC Project offerings for mutually beneficial engagement with clients over the entire lifecycle of assets.

The comprehensive Operations & Maintenance Outsourcing model covers Consulting and Asset Integrity. It can also include Asset Performance Improvement & specialised services based on the needs of customers.

Offshore Wind

The vision of accelerating sustainable energy solutions is the driving force behind the Offshore Wind Business, which offers one-stop EPCI (Engineering, Procurement, Construction, and Installation) solutions for HVAC/HVDC substations, and Wind Turbine foundations in both fixed and floating structures across the globe—from Far East, to Europe, and the USA. The business has strong multidisciplinary teams, partnerships with key industry stakeholders, and a robust network of suppliers backed by state-of-the-art fabrication facilities in Oman and India operating on the principle of 'Think Global Act Local'. The business is also partnering with electrical technology companies and collaborating with floating foundation technology providers and other key stakeholders to offer a comprehensive solution.

Jubail Industrial Gas Network, KSA

Business Environment

India's energy demand is poised to increase significantly, fuelled by strategic investments and initiatives such as the USD 67 billion plan in the next 5-6 years to bolster the domestic gas sector. Furthermore, the impending transition towards green energy is evident through initiatives like the Green Hydrogen Standard, backed by substantial incentives and agreements for green hydrogen production in states like Maharashtra, Rajasthan, and Odisha.

Integrated outsourcing of Operations & Maintenance gains momentum, with Vedanta Limited-Cairn and ONGC leading the change.

GCC-based oil companies are investing heavily in gas compared to oil. Geopolitical events have affected businesses both positively and negatively. Oil & Gas prices have remained significantly buoyant, enabling the oil companies in the Middle East to maintain their investment appetites. However, challenges continue to persist with regard to supply chain disruptions resulting from the ongoing conflicts in the Red Sea and Russia/Ukraine.

India's expertise in speciality chemicals and the potential extension of PLI schemes to the chemical and petrochemical sectors indicate promising growth prospects. Additionally, investments in coal gasification projects, viability gap funding for such projects, and the tripling of the Ammonia market by 2050 underscore significant opportunities in the sector.

Globally, the Offshore Wind market is poised to play a pivotal role in helping nations transition to Net Zero and decarbonise life. This sector is witnessing exponential growth, propelled by a confluence of factors viz. escalating demand for clean energy, supportive governmental policies, technological breakthroughs, and an expanding global market. The growth is being fuelled by advancements in technology, improvement in infrastructure, and viability of projects.

International competition for EPC primarily emanates from Korean and European EPC companies. The business has diversified its exposure to more regions like Australia and Europe, leveraging technological solutions, and enhancing productivity to mitigate risks while maintaining competitiveness as it takes on new competitors. The business remains proactive in deploying measures to ensure cost leadership and focus on improved productivity.

Digital transformation in optimising operations, enhancing efficiency, improving safety, and increasing innovation is an ongoing effort with the adoption of Artificial intelligence (AI) and Machine Learning (ML).

Major Achievements

Major Orders Won:

- EPCI order for new offshore structures, secured from a prestigious client in the Middle East
- Contract from a prestigious client in the Middle East for engineering, procurement, and construction of large Gas Compression Plants consisting of Gas Inlet Facilities, Gas Compression Systems, Produced Water Handling, Propane Refrigeration Systems, Condensate Transfer, and Utilities for Gas Compression Facilities in new onshore facilities and its integration with existing Gas Compression Plants
- Saipem & Clough JV (SCJV), Australia, has awarded a contract for the fabrication and supply of process

Central Processing Facilities for Sonatrach project, Algeria

and piperack modules for a 2.3 MMTPA urea plant for Perdaman Chemicals and Fertilisers Pty Ltd

- Order from a prestigious client in the Middle East for EPC for an ultra-mega Gas Processing Plant consisting of Inlet Separation Facilities, Booster Compression System, Amine Gas Recovery Unit, Dehydration Unit, Mercury Removal Unit, NGL Recovery Unit, and Sales Gas Compression System in new onshore facilities and its integration with existing Gas Processing Plants
- EPCI contract for a new large offshore platform and brownfield integration work with existing facilities from a prestigious client in the Middle East
- Contract from Indian Oil Adani Ventures Limited, including engineering, procurement, construction, and commissioning of offsite tankages, bullets, and other associated facilities on a lumpsum Turnkey basis
- Order from Oil & Natural Gas Corporation (ONGC) for the MHN TCPP PGC BGC Project (MTPBP) off India's West Coast for engineering, procurement, construction, installation, and commissioning of new Process Gas Compressor (PGC) modules at ONGC's Mumbai High & Tapti offshore locations, along with the upgrade of existing facilities to enhance production
- EPC contract for an Enclosed Ground-Flare System and demolition of existing facilities, reducing flame and smoke visibility to the nearby ongoing large-scale residential developments from prestigious clients in the Middle East
- Gas Pipeline project from a prestigious client in the Middle East comprising engineering, procurement, and construction of two new 56" Pipelines along with associated scraper receivers and launchers and main line isolation valve (MLIV) stations running parallel to the existing pipeline corridor

Projects completed

- Mechanical completion and gas-in achieved for Re-route Gas and Condensate Pipeline Midyan Duba Project
- Successful completion of Performance Guarantee Test Run (PGTR) for all three sites of the South-West Gas Fields Development (SWGFD) Project, Algeria
- Commissioning of New Strategic Gas Export Pipeline (NSGEP) for KOC, Kuwait
- Commissioning of Replacement of Hydraulic ESD Systems project for a client in the Middle East
- Mechanical completion of Replacement of 11 BERRI Pipelines project for a client in the Middle East
- Delivery of Linde Rotterdam HMU (Hydrogen Manufacturing Unit) Project
- Construction of Fuel (Hydrogen) and Utility facilities (Nitrogen/Oxygen) completed at Jubail, KSA for Air Products

Significant Initiatives

Productivity Enhancement

The business is implementing strategies geared towards streamlining processes, eliminating redundancies, and empowering its workforce to maximise productivity.

Value Engineering

Embracing value engineering practices is paramount to reducing quantities, leading to a competitive

LNG Storage Tanks for Adani Dhamra LNG Terminal, Odisha

business strategy. Good value engineering entails standardisation, templatisation, rework avoidance, surplus management, and resource optimisation to drive efficiency and minimise costs.

Digitalisation and Automation

Recognising the pivotal role of technology, the business is making substantial investments in digitalisation and automation initiatives. These encompass 4D visualisation, critical path integration, construction ability simulation, material handling studies, interactive VR simulations, AI/ML-based video analytics, predictive analytics, and increased yard automation to enhance operational efficiency and accuracy. Generative AI will be used over time to enhance productivity.

Smart Procurement

The business is adopting smarter procurement practices to optimise resource utilisation and enhance cost-effectiveness. This involves the implementation of e-procurement platforms, data-driven decision-making processes, vendor consolidation, spend analysis, and fostering strategic supplier partnerships to drive value and efficiency across the procurement chain.

Outlook

The opportunity landscape of India's refining capacity currently stands at approximately 250 MMTPA, with ongoing additions of 40 MMTPA capacity, coupled with value-added petrochemical units. Anticipated investments in Refinery-Petrochemical integration and the pursuit of achieving targeted Net Zero emissions in India and the Middle East underscore a promising market trajectory for the business in the medium-term.

The Indian government's focus on the 'National Coal Gasification Mission' aims to curtail dependence on imports by utilising coal to create value-added products, further supported by an incentive allocation of ₹ 8,500 crore. Additionally, initiatives aimed at increasing the share of Gas in India's energy mix to 15% by 2030, coupled with the development of a robust National Gas Grid, present avenues for growth and diversification.

For the Offshore industry, the Indian government's recent focus on enhancing energy security has unlocked 99% of previously restricted areas within India's Exclusive Economic Zone (EEZ) for oil exploration and production (E&P). Previously, 42% of the EEZ was off-limits, but now only 1% remains restricted, presenting significant opportunities.

ONGC continues to press ahead with its deepwater exploration and production plans, buoyed by sustained high oil prices. It intends to develop more than 25 offshore facilities and lay more than 1000 Km of subsea pipelines in the next three years with investments of USD 7.3 billion spread across both the West and East coasts.

There is a considerable demand for Value-Added Services like Consulting, Shutdown and Turn-around Management, Performance Improvement, Asset Integrity Services, etc.

With a strategic focus on asset monetisation and value maximisation, coupled with increased capital expenditure in upstream projects, the Middle East region is poised for growth, especially in the downstream processing of crude to chemicals.

New Strategic Gas Export Pipeline for Kuwait Oil Company, Kuwait

The business expects Saudi Aramco to continue its investment spending in the medium-term. Due to supply-side capacity constraints, which were affecting the completion schedule of various projects, Saudi Aramco has temporarily paused investment in the increment programme. Once a few of the ongoing programmes achieve significant progress, the increment CapEx programme should be revived. Overall, as per the guidance released by Aramco, even in this revised scenario, there is an increase of up to 20% CapEx growth to USD 58 billion expected for 2024, with 60% of this investment in the Upstream sector.

Qatar Energy intends to boost its LNG production capacity from the current 77 MTPA to 126 MTPA by 2026 and plans to contribute 40% of global LNG demand by 2029. It is continuing with expansion under its USD 12 billion North Field Production Sustainability programme.

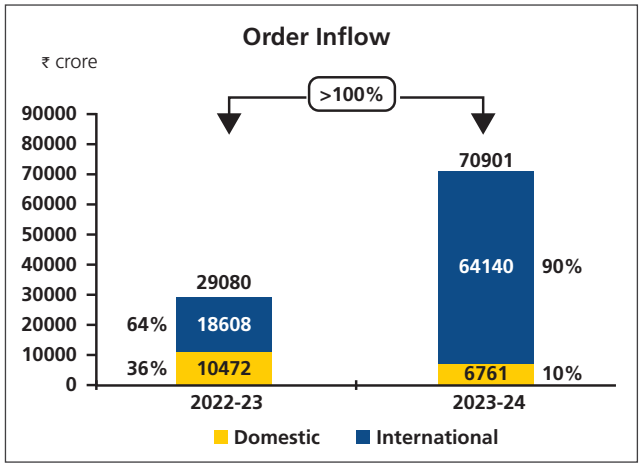
OPEC expects an increase in oil demand over the next two years, which will be met by crude supply from non-OPEC+ producers.

Commitment to offshore wind energy with the formation of Offshore Wind Business, the business is participating in global tenders for key developers. In Global Offshore Wind Capacity, the European market has renewed urgency to replace fossil fuels with renewables. There is a strong demand for renewable energy in the US as well (Inflation Reduction Act).

Globally, new wind power installations are projected to exceed 100 GW in 2026, with an additional 680 GW of new capacity expected to be added in the next five years. Additionally, there are business opportunities in Far East countries like Korea and Taiwan. Offshore Wind is also gaining momentum in India with the announcement of 30 GW capacity by 2030. Government initiatives for the allocation of offshore wind blocks are setting the ecosystem in motion.

With dynamic market conditions, the business remains steadfast in its commitment to a customer-centric approach, prioritising innovation, driving sustainable growth, and fostering competitiveness to achieve the mission of 'Execution Par Excellence.'

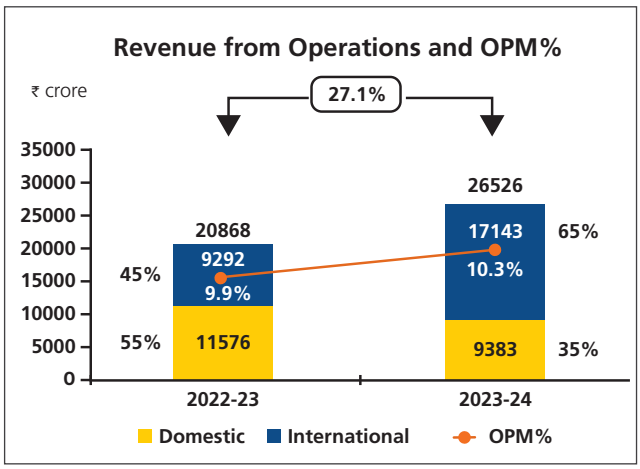
Financial performance of the business



The Hydrocarbon business achieved order inflows of ₹ 70,901 crore in FY 2023-24, registering a growth of more than 100% over the previous year with the receipt of two ultra-mega orders from Saudi Arabia and a mega

Flue Gas Desulphurisation (FGD) system at India's first ultra-supercritical thermal power plant, Khargone, Madhya Pradesh

order from the domestic client. The share of international orders also improved from 64% in the previous year to 90% in March 2024 with the receipt of ultra-mega orders in Saudi Arabia.



The Hydrocarbon business recorded revenue of ₹ 26,526 crore for the year, registering a growth of 27.1% y-o-y, due to a pick-up in execution momentum, mainly in the Offshore vertical of the business. The share of international revenue in FY 2023-24 was higher at 65% of the total revenue as compared to 45% in the previous year, with a higher opening international order book.

The operating margin of the business increased to 10.3% from 9.9%, mainly due to cost savings arising out of improved execution in a few international and domestic jobs, further aided by the reversal of provisions on the receipt of a favourable arbitration award in a legacy project.

Power Business

Overview

L&T is one of the leading EPC players offering turnkey solutions for both Coal and Gas-based power plants. These solutions encompass every aspect of design, engineering, manufacturing, construction, and project management. In addition to undertaking turnkey projects, it also offers equipment and other services for power plants.

The business has developed its own capabilities in executing large and complex power projects. These include engineering, state-of-the-art manufacturing facilities, a competent manpower pool, and decades of experience earned in executing large & complex projects within and outside India. The business has a proven track record of delivering complete power plant solutions with scale and sophistication to meet India's growing energy needs.

The business also executes combined cycle and cogeneration power projects based on LNG, Natural Gas and/or liquid fuel on a turnkey basis. It has an excellent track record in implementing projects for utilities, refineries, and Independent Power Producers (IPPs) in India and overseas. With extensive experience of over three decades in executing EPC contracts for Combined Cycle Power Plants (CCPP) and Cogen plants, the business has numerous references, deploying gas turbines sourced from major leading Original Equipment Manufacturers with Gas Turbine (GT) sizes ranging from 30 MW up to the most advanced GTs to date.

The business has built on its core competencies and capabilities and has emerged as a major player in emission

2x660 MW Shree Singaji Thermal Power Plant (Stage-II), Madhya Pradesh

control technologies such as Flue-gas Desulphurisation (FGD) in the Indian thermal power plant industry. It now has a sizeable presence in the FGD business.

The business has an integrated manufacturing facility at Hazira, Gujarat. It is one of the world's most advanced facilities, having a manufacturing capacity of 5,000 MW per annum.

The facility manufactures ultra-supercritical/supercritical boilers, turbines & generators, pulverisers, axial fans and air preheaters, components of FGD, and electrostatic precipitators. The business has project management offices in Vadodara and various other locations.

The business has the following Joint Venture (JV) companies within its fold:

L&T-MHI Power Boilers Private Limited, a joint venture with Mitsubishi Heavy Industries (MHI), Japan, the world's leading power equipment maker, for the engineering, designing, manufacturing, erection, and commissioning of ultra-supercritical/supercritical boilers up to a single unit of 1,000 MW.

L&T-MHI Power Turbine Generators Private Limited, a joint venture with Mitsubishi Heavy Industries (MHI), Japan and Mitsubishi Electric Corp. (MELCO), for the manufacture of Steam Turbine Generator (STG) equipment of capacity ranging from 660 MW to 1,000 MW. The Company is engaged in the engineering, design, manufacture, erection, and commissioning of ultra-supercritical/supercritical turbines and generators.

L&T Howden Private Limited, a joint venture with Howden Holdings B.V, is in the business of regenerative air preheaters and variable pitch axial fans (equipment, after-market spares and services) for power plants.

L&T-Sargent & Lundy Limited, a joint venture with Sargent & Lundy LLC, USA, is engaged in the business of providing design, engineering, and project management services for power projects.

Business Environment

The thermal power sector is witnessing a revival after around three years amidst the continuing transition of India's power generation mix. With increasing economic activity, high GDP growth, industrial expansion, and power demand growing to record levels, many utilities are feeling the need to fast-track the brownfield expansion of their existing coal-based thermal power projects.

In FY 2023-24, EPC coal-based power projects with a cumulative capacity of around 7 GW were awarded. Currently, around 10 GW of projects are in various phases of tendering. This establishes that for sustained energy security, thermal power generation is going to co-exist with renewable energy for a longer period than envisaged – till India achieves its Net Zero Target by 2070.

The gas-based power generation sector in India remains muted due to high fuel costs despite an improvement in the supply and distribution network for natural gas. Approximately 24 GW of installed/commissioned gas-based power plants in India are idling due to high costs

Boiler manufacturing facility at Hazira, Gujarat

of generation. The Government of India has no plans to increase gas-based power generation.

However, to meet the anticipated surge in power demand during the upcoming summers, the government has mandated the activation of the existing gas-based power plants across the country and has issued directives to make these plants fully operational to meet the surge in power demand.

Major Achievements

Some of the major achievements by the business during the year include:

- Flue Gas Desulphurisation System for a 2 x 500 MW Central Utility Project inaugurated in West Bengal
- FGD orders received from State Utilities for a 2 x 300 MW + 2 x 500 MW Power project in West Bengal and a 1 x 800 MW Power project in Gujarat
- Completion of facilities for three FGD units of Central Utility Projects in Chhattisgarh, Madhya Pradesh, and Odisha
- Reliability Test Run completed for three FGD units of Central Utility Projects in Chhattisgarh, Madhya Pradesh, and Uttar Pradesh
- Final Acceptance Certificate received for an International Combined Cycle Project in Bangladesh
- Auxiliary Boiler Light Up achieved for a 2 x 660 MW Power Project in Uttar Pradesh

Significant Initiatives

In line with the energy transition and sustainability requirements, the business formed a Technology Task Force (TTF) to identify, incubate, and implement new technology opportunities to make the organisation resilient. TTF has finalised a few focus areas like Carbon Capture Technology, Small Modular Reactors, Flexibilisation in Coal based power plants, Coal Gasification, Integrated Gasification Combine Cycle (IGCC), and Biofuel/Ammonia/Methanol firing in Supercritical Power Boilers, etc. The business is also expanding into adjacencies like providing Life Cycle Solutions (Spares and Services) to customers, which will cater to other OEM machines as well.

To improve profitability and on-time execution of projects, the business introduced various Operational Excellence initiatives. To improve productivity and reduce profit leakages, various digital and analytical levers such as Artificial Intelligence (including Machine Learning), IoT-isation, Immersive Technologies like Virtual Reality, BIM, Drones, Process Automation, and Business Intelligence & Analytics have been imbibed into the day-to-day operations. The focus on achieving QEHS (Quality, Environment, Health & Safety) excellence remains of prime importance. It has also accelerated the usage of digital levers to increase the efficiency and productivity of operations.

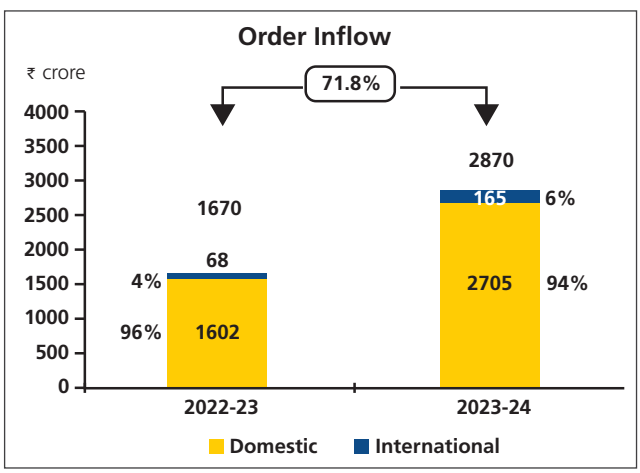
Turbine manufacturing facility at Hazira, Gujarat

Outlook

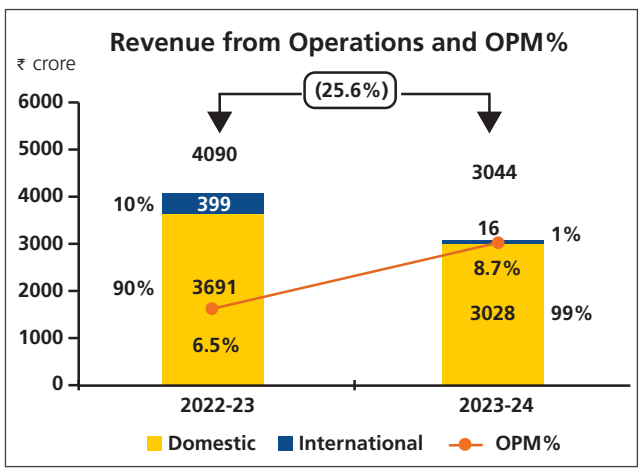
India is continuing to see a surge in energy demand and an increase in the Plant Load Factor (PLF) of thermal power plants to maintain the country's energy security amid rising demand. As per estimates from the Ministry of Power, the capacity additions in thermal power will continue up to 2032. More than 49 GW of coal-based power projects are expected to be awarded in the next 3-4 years.

Focus on execution and improvement in profitability of operations continue to remain critical for the continuity of the business.

Financial performance of the business



The Power business recorded an order inflow of ₹ 2,870 crore for the year ending March 31, 2024, registering a growth of 71.8% as compared to the previous year, largely aided by the receipt of a few FGD orders.



The Power business revenue at ₹ 3,044 crore declined 25.6% on a y-o-y basis, with tapering of execution of jobs in the portfolio and a declining order book.

The operating margin improved to 8.7% from 6.5%, mainly due to the cost savings in certain international gas-based projects.

Green Hydrogen Plant at L&T's A. M. Naik Heavy Engineering Complex in Hazira, Gujarat

Green Manufacturing & Development

Overview

L&T's Green Energy business affirms the Greener Planet vision by aligning with the initiatives of global decarbonisation and the National Green Hydrogen Mission (NGHM). It focusses on a green energy portfolio to meet the domestic and global future energy needs while achieving the global climate goals.

To achieve this vision, L&T Energy Green Tech Limited (LTEGL), a wholly-owned subsidiary of Larsen & Toubro Limited, focussing on Green and New Energy transition business segments, has been created. The Green Energy business shall focus on the entire Green Energy value stream, including Green Molecules and their derivatives (Hydrogen, Ammonia, Methanol, etc.).

The business is centred on three principal business segments, viz. Manufacturing, EPC, & Development. The Green Manufacturing unit at Hazira (Gujarat) would focus on end-to-end manufacturing of electrolysers as an OEM supplier, with value stacking and advanced technologies. The EPC arm would cater to domestic and global projects in the Green H2, Derivatives, and Carbon Capture Solutions. The Development division would focus on Integrated Development of Green H2 & Derivatives projects. The business has incorporated three companies that cater to these three lines of business.

L&T Energy Green Tech Limited (LTEGL) will provide single-point integrated solutions in the hydrogen economy. LTEGL aims to undertake complex and mega projects in the hydrogen value stream of renewable power, hydrogen, and derivatives (Ammonia, Methanol, DME, etc.) generation, storage, and transportation infrastructure. LTEGL would undertake extensive research and development (R&D) activities through its Technology & Innovation centres and assess the best global technologies, acquire strategic interests, licensing in technologies aligned with green and new energy opportunities.

L&T Electrolysers Limited (LTEL), a subsidiary of LTEGL, is the manufacturing arm for modular & mass manufacturing of smart, efficient, and reliable electrolysers. Electrolysers are hi-tech equipment that use electricity, water, and electrolytes to produce green hydrogen. The units consist of transformers, rectifiers, electrolyser stacks, electrolyser processing units (EPUs) for gas separation, and purification & distillation units (PDUs) for making fuel cell grade hydrogen with 99.999% purity.

The company will use pressurised, alkaline technology under licensing arrangements with its European partner, M/s McPhy. The technology does not use noble materials and is competitive with a compact modular footprint. These devices have a fast start-up from hot standby to full load and demonstrate a quick response to intermittent renewable energy supply.

GH4India Pvt Ltd, a JV between L&T, ReNew Power, and IOCL, is formed to develop the nascent green hydrogen sector in India. GH4India will focus on developing Green Hydrogen & derivatives projects to supply Green Hydrogen at an industrial scale in a time-bound manner under various ownership and operatorship models.

Electrolyser manufacturing plant at L&T's A. M. Naik Heavy Engineering Complex in Hazira, Gujarat

Business Environment

The Green Hydrogen and New Energy sectors are experiencing a remarkable surge globally, driven by the urgent need to combat climate change and transition towards a low-carbon economy. Governments worldwide are recognising the importance of investing in renewable energy technologies, including Green Hydrogen, to achieve their climate targets outlined in the Paris Agreement.

Competitive renewable energy sources, aided by advancements in electrolysis technology, low-cost financing, and government incentives, are accelerating the pace of achieving parity between green energy and conventional alternatives. This has led to a proliferation of projects and investments across various regions, ranging from Europe and the USA to Asia-Pacific and beyond.

Over forty nations have hydrogen strategies, with early adopters revising their plans for higher ambitions. Low-emission hydrogen is seen as vital for decarbonising hard-to-abate sectors, highlighted by the energy crisis sparked by the global geopolitical situation. Additionally, major economies are integrating hydrogen technologies into their new industrial strategies.

Countries such as India with abundant renewable energy resources, have a competitive advantage in green hydrogen production, potentially reshaping global energy trade dynamics.

In the global electrolyser market, China, after a slow beginning till 2022, added 30% to the global electrolyser capacity addition in 2023. North America and Europe lead in promoting low-emission hydrogen production, backed by significant government funding initiatives like the US Inflation Reduction Act (IRA), Hydrogen Production Tax Credit, the EU Important Projects of Common European Interest, and the UK Low Carbon Hydrogen Business Model. The European Union Emissions Trading System – EU ETS is a cornerstone of the EU's policy to combat climate change and its key tool for reducing greenhouse gas emissions cost-effectively.

The National Green Hydrogen Mission (NGHM) of India has come up with incentives to accelerate Green Hydrogen adoption in India through the Strategic Initiative for Green Hydrogen Transition (SIGHT). Over ₹ 19,500 crore is earmarked towards the adoption of Green Hydrogen. These incentives are mainly directed towards Electrolyser Manufacturers and Green Hydrogen Producers.

Major Achievements

- LTEL engineered, developed, and commissioned the first Indigenous Electrolyser in its newly set up factory at A. M. Naik Heavy Engineering Complex at Hazira, Gujarat
- LTEL is awarded a PLI benefit of ₹ 444 crore for manufacturing electrolysers with an allotted capacity of 300 MW and also a grant of ₹ 120 crore as a fiscal incentive under the Gujarat Electronics' Policy
- LTEGL has bagged its first Front End Engineering & Design orders from global players making a foray into the Green EPC space

- LTEGL and GH4India have received pre-qualifications for developing Green Hydrogen & Derivative assets from domestic and overseas off-takers
- LTEL has established an Electrochemical Testing Facility at A. M. Naik Heavy Engineering Complex at Hazira, Gujarat

Significant Initiatives

- The R&D Lab is being enhanced, and the New Energy Technology Lab is being set up to develop various green & sustainable technologies
- LTEL has taken definitive steps towards indigenisation by developing a local supplier ecosystem for electrolysers
- LTEL is establishing a Giga factory with manufacturing automation and Industry 4.0 solutions ensuring productivity, safety, efficiency, and traceability
- The Green Energy business is initiating world-class quality systems per ISO and implementing L&T's Business Excellence Models at its manufacturing facility
- Set up an advisory 'L&T Green Energy Council' (GEC), a global think-tank comprising eminent thought leaders and experts from various facets of Green Energy, towards identification of technology trends, analyse global policy developments, evaluate emerging business models, and explore collaborations

Outlook

The global outlook on green hydrogen and its derivatives business seems encouraging and reflects a growing recognition of its potential to decarbonise industries and power systems. Most countries that have set ambitious targets towards carbon neutrality are exploiting the production of Green Hydrogen from renewable energy sources. Therefore, Green Hydrogen emerges as a key solution to reduce carbon emissions across various sectors, including transportation, manufacturing, and energy generation. Investments in Green Hydrogen infrastructure and technology are increasing, mainly driven by Government incentives, private sector initiatives, and international collaborations. Moreover, the development of hydrogen derivatives such as ammonia, methanol, and synthetic fuels further expands the potential applications of Green Hydrogen, offering scalable solutions for energy storage, transportation, and industrial processes.

Despite challenges such as cost competitiveness and scaling up production, the global momentum towards a hydrogen economy is palpable, signalling a transformative shift towards sustainable energy systems amidst the pursuit of economic growth.

In India, the Green Hydrogen and New Energy Sectors are poised for significant growth and innovation. As the country aggressively pursues its renewable energy targets, the demand for clean and sustainable energy solutions is escalating rapidly. Besides, the Government's commitment to reducing carbon emissions is evident from various announcements around favourable policies and incentives. NGHM creates a conducive environment for the expansion of green hydrogen and new energy businesses.

In addition, India's vast renewable energy potential, particularly in solar and wind power, presents abundant opportunities for Green Hydrogen production through electrolysis. The integration of Green Hydrogen into various sectors such as industry (especially cement, steel, refineries, fertilisers, etc.), transportation, and power generation offers promising prospects for market penetration and revenue generation. Additionally, collaborations with government agencies, private enterprises, and research institutions will play a crucial role in driving innovation and scaling up production capacities.

However, challenges around financing and regulatory complexities need to be addressed to unlock the full potential of the Green Hydrogen and New Energy markets in India.

Overall, with the right strategies and investments, the outlook for this sector is highly optimistic, promising a substantial contribution to India's energy transition and sustainable development goals.

HI-TECH MANUFACTURING SEGMENT

TA Crystallizer and PTA Crystallizer for Mega PX-PTA project at IOCL Paradip Refinery, Odisha

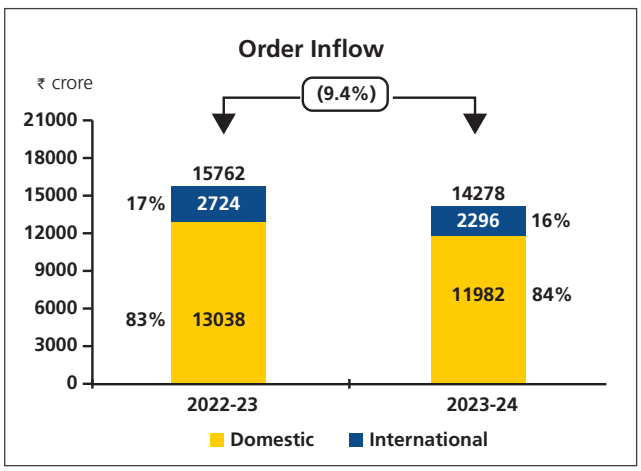
The Hi-Tech Manufacturing Segment comprises:

a) Heavy Engineering Business

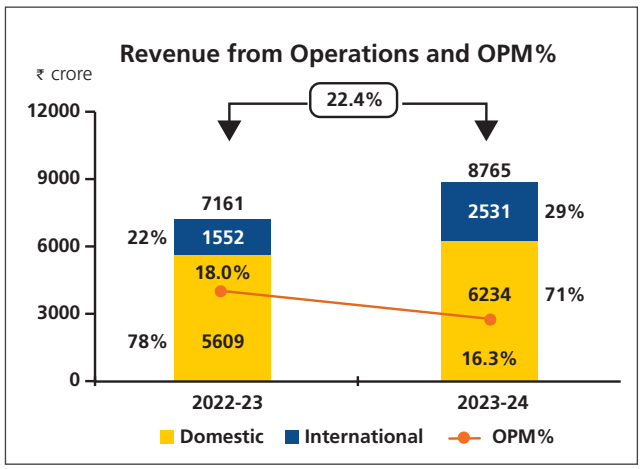
b) Precision Engineering & Systems Business

The Defence Engineering business has been renamed as L&T Precision Engineering & Systems business with effect from April 01, 2024. This is in line with the vision to pursue opportunities in emerging deep-tech sectors like Precision Manufacturing and Electronic systems in Defence, Aerospace, and other industries.

Financial performance of the segment



The Hi-Tech Manufacturing segment achieved order inflows of ₹ 14,278 crore during FY 2023-24, registering a decline of 9.4% over the previous year, mainly on account of deferment of orders in Precision Engineering & Systems business. The share of international orders decreased to 16% in the current year from 17% in FY 2022-23.



The Hi-Tech Manufacturing segment achieved revenue of ₹ 8,765 crore for the year, registering a growth of 22.4% y-o-y due to a pick-up in execution momentum. The share of international revenue in FY 2023-24 was at 29% of the total revenue of the segment as compared to 22% in the previous year, on account of higher opening international order book.

The segment's operating margin declined to 16.3% from 18.0%, mainly due to cost overruns in a few jobs and the change in job mix.

Funds employed by the segment as on March 31, 2024, at ₹ 1,353 crore declined over the corresponding figure on March 31, 2023, by 49.0%, mainly due to higher

OxO Reactor for BASF Guandong Integrated Project, China

customer advances on receipt of large orders in the Precision Engineering & Systems business. The Heavy Engineering business also contributed through improved customer collections.

Heavy Engineering Business

Overview

L&T Heavy Engineering business is a global leader in the manufacturing of Engineered-to-Order Hi-Tech Reactors and high-pressure & temperature Heat Exchangers for Refinery, Petrochemicals, Fertiliser, Oil & Gas, and Nuclear Power plants.

The A. M. Naik Heavy Engineering complex at Hazira is a globally benchmarked state-of-the-art, fully integrated, and digitally-enabled manufacturing complex. Its capability spectrum spans across in-house Engineering & Technology centres, besides having a highly talented team committed to a safe and sustainable work culture. The business is globally recognised for its impeccable track record of timely and quality deliveries while creating new international benchmarks. The business has implemented extensive digital Industry 4.0 technology in its manufacturing & operations.

The business is organised into the following Product Business Units (PBUs):

- The **Reactor & Pressure Vessels (RPV)** PBU specialises in the fabrication of Hydro-Processing Reactors, Tubular Reactors, Gasifiers, Ammonia Converters, Urea Reactors, Coke Drums, Fluid Catalytic Cracking (FCC) Reactor – Regenerator system, Oxidation Reactor, Titanium Cladded Equipment, LNG/Gas Processing Pressure Vessels and Heavy Columns
- The **Heat Transfer Equipment (HTE)** PBU specialises in Molten Salt Reactor System, Ammonia & Urea Exchangers, High-Pressure Screw Plug Heat Exchangers, Methanol Converters, Propylene (PO) Reactors, Vinyl Acetate Monomer (VAM) Reactors and Fired-Tube Waste Heat Boiler packages
- The **Process Plant Internals (PPI)** PBU specialises in proprietary internals for Reactors and Ammonia Converter Baskets, Chemical Vapor Deposition (CVD) reactors for polysilicon plants, which are manufactured using materials like Stainless Steel, Duplex/Super Duplex Stainless Steel, Inconel, Monel, Hastelloy, Titanium, Zirconium, etc.
- The **Modification, Revamp & Upgrade (MRU)** PBU offers value-added end-to-end solutions for FCC (Fluid Catalytic Cracking) revamps, Crude Distillation Unit/ Vacuum Distillation Unit revamps, Multi-Shutdown Facility revamps, Urea Reactor Life extension, Coke Drum repairs, Heat Exchanger revamp, Urea energy-saving projects, debottlenecking/capacity enhancement of Oil & Gas units, and emergency repairs for the process plant industry
- The **Nuclear** PBU specialises in key equipment for steam supply systems in nuclear power plants. It manufactures key components of the nuclear island like Steam Generators, End Shields, Pressurisers, Safety Heat Exchangers, Reactor Header Assemblies, Calandria, End Fittings, etc.
- The **Special Fabrication Unit (SFU)** fabricates critical Titanium Piping Spools, complex internals for Gasification Plants, Loop Reactors, Primary Quench Exchangers (PQE), and filter vessels for the petrochemicals sector

Ammonia Converter and Basket for OCI Beaumont, USA

- The business also has one of the world's largest Forge Shops. **L&T Special Steels and Heavy Forgings Private Limited (LTSSHF)** is a joint venture with the Nuclear Power Corporation of India Limited (NPCIL). It is one of a kind in Southeast Asia with all the operations for making heavy forgings under one roof

Business Environment

The current FY 2023-24 has continued to witness the fallout of the prolonged Russia-Ukraine war, the Israel-Hamas conflict, and the persistent U.S.-China tensions. These geopolitical events have led to overall economic uncertainty and higher operational risks, like rising freight costs and delayed deliveries. Despite these headwinds, the business has continued its progress across most of the segments.

On the domestic front, the business has seen traction in large-scale private projects like solar photovoltaic GIGA factories & refinery revamps.

The Modification, Revamp and Upgrade (MRU) business, identified as a Lakshya 2026 growth initiative, has taken off well both in India and GCC countries. Clients are increasingly opting for revamps and deferring greenfield investment projects. Euro-5 compliance norms in GCC, fertiliser energy-saving projects in India and revamping of ageing plants are key drivers for the MRU business.

In the nuclear power sector, fleet procurement for the Indian Pressurised Heavy Water Reactor (IPHWR) is in progress, albeit at a slower pace.

Volatility in the cost of input materials and high energy prices are having an impact on the margins of the Forging business, which are being neutralised partly by stepping up energy conservation. Global forging companies are able to compete better in prices due to relatively lower energy costs.

Major Achievements

On the International front, Business has won major orders like:

- IEFCL (Indorama Eleme & Fertiliser Chemicals Ltd.) Train-3 Ammonia Plant, Nigeria – A first-ever complete package of PEQs (Proprietary Equipment), CEQs (Critical Equipment), and Steam Drum
- Fertiglobe - Harvest Ammonia Plant, UAE – Order for Ammonia Converter & Basket
- Perdaman Australia – Complete package of Urea Equipment
- PTT Glycol Company, Thailand – 1st direct order for 2 nos. Scientific Design Ethylene Oxide Rx
- PDH-PP (Propane Hydrogeneration - Polypropylene) Plant, Turkey – 1st order Ceyhan Polypropylene, Uretim A.S, Turkey

In the domestic sector, the business continues to dominate by winning a total of 10 Urea PEQs in a row in the current financial year. CVD (Chemical Vapor Deposition) Reactor and Offgas Coolers are breakthrough orders with large business potential for the Polysilicon Project of RIL Giga factories.

HDS Reactor for IOCL Panipat DHDT project, Haryana

The MRU business secured the largest order from Petro Rabigh, KSA, for Ethane Cracker revamp and HOFCC (High Olefin Fluidised Catalytic Cracking Unit) debottlenecking. This will unlock new opportunities with Aramco JV companies in KSA. The MRU business has also secured a number of orders on a nomination basis in the domestic market, including the largest domestic order from Nayara Energy for Coke Drum replacement.

The business has also successfully and timely delivered the World's Heaviest Ammonia Converter for OCI Beaumont, USA; the World's Heaviest Coke Drums for Pemex's Salina Cruz Refinery, Mexico; and SS Heaviest Removal Column for Pluto Train 2 Project, Australia. Further, the business also delivered Loop Rx of the IOCL P-25 project for the first time & Titanium spools for Assam Bio-Refinery.

The business was granted four patents for its innovative designs and processes.

The Nuclear business has surpassed its earlier benchmark of 36 months to manufacture Steam Generators in 33 months. The business has also qualified to manufacture the forgings for Framatome's Pressuriser Design for the first time.

LTSSHF team has completed 16 out of the 24 sets of forgings for Nuclear Steam Generators; 70% delivery of the critical forgings for a prestigious strategic programme; India's biggest Pelton Runner Forging (~49 MT) for Idukki Hydro project in Kerala, and 1st set of Titanium Forgings for the country's strategic programme named 'Samudrayaan – India's Deep Ocean Mission'.

Significant Initiatives

iRUDRA is an end-to-end digital transformation programme focussed on enhancing product reliability, cost competitiveness, and customer & employee experience. Foundational solutions like plant connectivity, cybersecurity, and middleware, are its strong backbone.

Leveraging LTIMindtree's iNXT platform for IIoT, 112 critical machines have been connected, enhancing quality, productivity, and support for the 'Express Delivery Programme'.

The acceleration of automation initiatives, as mentioned below, continued during the year, contributing to significant improvement in productivity:

- Automated Circumferential Seam Setup Station
- Robotic External Welding Station
- Overlay UT Automation
- AI-Based UT & Visual Inspection

Outlook

In the domestic market, the Union Cabinet approved a viability gap funding scheme for Coal Gasification projects in January 2024 and multiple mega projects in the refinery and petrochemicals sector. The business expects a continuation of large-scale private projects in solar photovoltaic Giga Factories and petrochemical segments.

Climate change is expected to provide sustainable growth in view of the demand for renewable diesel and biodiesel plants (which are more eco-friendly) and enforcement of clean fuel standards – Renewable Energy Directive (RED) II, Renewable Fuel Standard (RFS), and Low Carbon Fuel

Coke drums each weighing 450 MT for Numaligarh Refinery Limited, Assam

Standard (LCFS) in developed countries. Oil-to-Chemicals projects drive growth in the petrochemicals sector (especially in Asia) and LNG sector (especially in the USA and the Middle East).

The MRU business expects sustainable increased demand and a stronger foothold in GCC for energy efficiency, emission reduction, and crude-to-chemical projects.

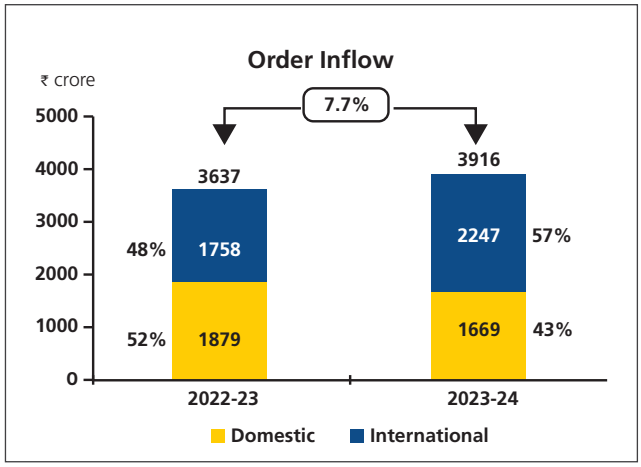
COP28 has been a historic event for the nuclear energy sector. India plans to triple its nuclear power generation capacity to 22.5 GWe by 2031. NITI Aayog and the Department of Atomic Energy (DAE) are exploring the possibility of repurposing retiring thermal power plants with small modular nuclear reactors. Anushakti Vidhyut Nigam Limited (ASHVINI), a JV between NTPC and NPCIL, will focus on fast-track construction of 6 X 700 MWe Pressurised Heavy Water Reactor (PHWRs) as a part of the Fleet Programme in support of climate change and towards achieving Net Zero emissions target.

The business is targeting special projects like Laser Interferometer Gravitational-Wave Observatory (LIGO) and Medical Isotope Reactors. A successful historical track record in the Fusion Reactor project (ITER) has opened new business opportunities for the ITER organisation. The business is well poised to benefit from the momentum in the nuclear sector.

The business remains positive in its outlook for order prospects despite as many as 60+ countries, including many in India and the European Union, going into elections, which may lead to a lot of uncertainties in decision-making on upcoming prospects.

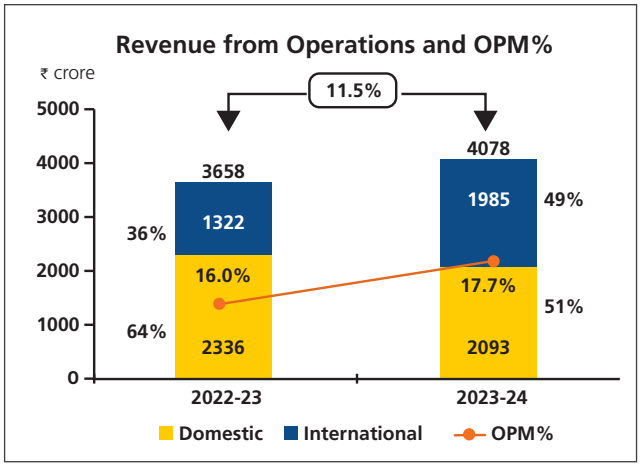
The digital as well as the various organisational excellence initiatives of the business are expected to result in improved productivity and higher value creation on a medium to long-term basis.

Financial performance of the business



The Heavy Engineering business recorded an order inflow of ₹ 3,916 crore for the year ending March 31, 2024, higher by 7.7% as compared to the previous year, mainly due to the receipt of a high-value international order in the Modification, Revamp & Upgradation (MRU) business. The share of international orders increased to 57% in the current year from 48% in the previous year.

Naval vessel RFA Argus from Royal Fleet Auxiliary (RFA) UK, for repairs at L&T Shipbuilding's Kattupalli Shipyard, Tamil Nadu



The Heavy Engineering business's revenue of ₹ 4,078 crore grew by 11.5% on a y-o-y basis, with higher execution of orders in the MRU business. The share of revenue from international operations has increased to 49% compared to 36% in FY 2022-23.

The operating margin of the business improved from 16.0% to 17.7% due to execution cost savings and a better job mix.

Precision Engineering and Systems Business

Overview

L&T entered the various strategic sectors, such as nuclear power, aerospace, and defence, in the sixties, early seventies, and mid-eighties, respectively, as a part of the Company's focus on building a strong and self-reliant India by leveraging its precision and systems engineering capabilities. This was well ahead of the opening up of these sectors for private industry participation, beginning with Defence in 2001 and Space in 2020.

During the preceding one and a half decades, L&T was associated with the Defence Research & Development Organisation (DRDO) while concurrently contributing towards the Indian Navy's 'A Builders Navy' aspiration by developing platform-specific equipment and systems across classes of Naval platforms with in-country value addition. As for the Space sector, the business continued to be a trusted partner to ISRO across every segment of Space activities across Boosters and wide-ranging hardware for Space Launch Vehicles and Satellites, test facilities, material independence, Satcom infrastructure, and Deep Space Communication Network.

Since the constitution of a separate business vertical in 2017, the business has grown from strength to strength and earned recognition in the aerospace and defence segments, as L&T Defence. Reflecting the Company's vision to pursue opportunities in emerging deep tech sectors like precision manufacturing, advanced electronics systems, AI, additive manufacturing, autonomous platforms, and digital technologies, including Industry 4.0 in Defence & other industries, the business has been renamed as L&T Precision Engineering & Systems with effect from April 01, 2024.

Having built a portfolio of products, systems, platforms, and solutions, and correspondingly a basket of technologies, the business provides concept-to-design-to-delivery customised solutions across chosen strategic

Close-In Weapon System (CIWS)

segments with a focus on indigenous design and emphasis on creating Indian Intellectual Property (IP).

The business is structured to provide direction to various segments of operations, as under:

- Marine Platforms, Equipment, and Systems
- Land Platforms, Equipment, and Systems
- Aerospace Systems

The business is headquartered in Powai, Mumbai and its operations extend across India. It also includes R&D centres, Product Design & Engineering Centres, and the following dedicated production centres:

- A. M. Naik Heavy Engineering Complex at Hazira (near Surat) for manufacturing, integration, and testing of armoured & allied land platforms and hulls, as well as pressure-proof structures for underwater platforms
- The shipyard at Kattupalli (near Chennai) caters to new builds and repair of marine platforms
- Strategic Systems Complex for weapon launch systems, sensors, engineering equipment and control systems at Talegaon (near Pune)
- Precision Manufacturing & Systems Complex (PMSC) for aerospace systems manufacturing, equipped with Centres of Excellence for Advanced Composites and Additive Manufacturing at Coimbatore
- Strategic Electronics Centre at Bengaluru

These work centres are complemented by R&D Centres at Powai and Bengaluru, and Product Design, Development & Engineering Centres for Armoured Platforms & Weapon Systems, Sensors, Engineering Equipment and Aerospace Systems at Powai, Talegaon, Hazira, and Coimbatore, as well as Design & Engineering Centres for Underwater Platforms and Warships at Powai and Chennai.

Since its inception, the business has built a portfolio of wide-ranging, indigenously designed and developed products, systems, solutions, platforms, and technologies. The business has indigenously conceptualised, engineered, built, and supplied over 250 systems and products, with more than 50 of them having been delivered in serial production mode. The business model is uniquely differentiated through its focus on in-house technology and product development, innovation for serial production, and mature and equated partnerships with domestic as well as global majors, both in the government and private sectors. Besides the supplies, the business offerings also include providing support during installation, commissioning, field evaluation trials, through-life support, and obsolescence management. These capabilities enable the business to maintain its market leadership position amongst the private sector defence industry and be future-ready, given the Government's push for higher indigenisation and autonomy through the 'Aatmanirbhar Bharat Abhiyan'.

L&T's participation in the defence sector stems from its ethos of being a builder of the Indian nation. Various sustainability and risk assessors of defence-related businesses do recognise the right of countries to defend themselves and the need to develop & produce defence-related products to fulfil security, peacekeeping, and humanitarian needs. This is well-acknowledged in the current era of multiple regional conflicts where nations have increased their spending on defence to be able to be equipped for self-defence and ensure national security.

Offshore Patrol Vessel

It is noteworthy that the business' sole customer & regulator, the Indian Government, is committed to non-proliferation under the 'Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act, 2005'. India is also a signatory to the Missile Technology Control Regime (MTCR), a multilateral export control regime, and a party to the Wassenaar Arrangement – a voluntary export control regime that limits the destabilising proliferation of sensitive technologies. Further, India has voluntarily adopted a 'No First Use' (NFU) Policy (PIB notification dated January 4, 2003) that is enshrined in the commitments of the Cabinet Committee on Security (CCS). India's application to join the Nuclear Suppliers Group (NSG) in 2016 is also under discussion. The Company recognises the need to act responsibly in carrying out its business related to the defence sector, implement internal controls and stay committed to respecting human rights.

While maintaining its position as a leading player in the Indian Defence Sector, ***the business does not manufacture any explosives or ammunition of any kind, including cluster munitions or antipersonnel landmines or nuclear weapons or components for such munitions. The business also does not customise any delivery systems for such munitions.***

Leveraging its prowess in technology development for about four decades, the business is incubating the following new business segments in FY 2024-25:

- Precision Products: This segment will manufacture precision products that are characterised by their adherence to high reliability and critical specifications
- Electronics Products and Systems: This segment will design, develop, and realise critical hardware and application software that would have wide applications across industries

Business Environment

With the Government of India initiating substantive policy reforms in the past years and allocating higher budgets for indigenous defence acquisition, the macro picture has improved for this sector. In FY 2023-24, Acceptance of Necessity (AoNs), which would trigger capital acquisition worth ~ ₹ 3.6 trillion, has been accorded, of which greater than 80% of this acquisition will be from Indian industries.

The defence supply chain ecosystem continues to witness challenges on account of geopolitical dynamics. The prevailing wars and increased NATO spending have caused the overloading of global OEM capacities, mainly in the European region. The volatile geopolitical situation has also provided a new perspective on the impact of emerging and disruptive technologies and their deployment in combat. However, in this segment, the company has developed a robust and resilient supply chain over the years, with self-reliance as the primary focus and in-house design capabilities. The business is also constantly developing and diversifying its supply chain with an emphasis on indigenisation to assure autonomy to the Indian Armed Forces.

On the Aerospace front, the opening of the sector in 2020 and the Indian Space Policy 2023 provide opportunities to the private sector for participation in end-to-end space

L&T's AMOGH - Autonomous Underwater Vehicle for surveillance

activities, from building launch vehicles and satellites to downstream space data collection and dissemination. The launch services segment is also emerging as a business opportunity for the Indian Industry with the potential transfer of technology of ISRO's Small Satellite Launch Vehicle, which the company targets to operationalise on the back of industrialising the production of Polar Satellite Launch Vehicle (PSLV) for which the Company has teamed-up with Hindustan Aeronautics through a consortium. The launch of the first industry-built PSLV is expected in calendar year 2024. Today, the business is involved in the assembly and integration of launch vehicles for ISRO to build in-house capability to position and eventually begin to offer 'Launch on Demand' services as a business model.

Major Achievements

During the year, the business has achieved multiple successes, uniquely reaffirming L&T's positioning as a 'nation-builder' through a series of Make-in-India programmes. These include:

- A breakthrough in securing a contract from MoD - IAF for High Power Radars (HPR) that would provide long-range threat detection capabilities for the Air Force
- The signing of a previously negotiated contract for the supply of indigenously developed Close-in Weapon Systems (CIWS) to the Indian Air Force, which provides the last layer of air defence to vital assets and vital points across the country
- Unveiling India's first light tank developed indigenously with DRDO at its Armoured System Complex in an unprecedented time frame of 18 months
- Award of a supply order to develop and trial evaluate Tactical Communication System to serve as a mobile communication backbone for the Indian Army under a 70% Government Funded Make-I scheme
- Develop and realise Air Independent Propulsion (AIP) energy modules for retro-fitment in the Indian Navy's Project P75 Kalvari class diesel-electric submarines
- Accord of Technical Evaluation Clearance for the bid for Indian Navy's Project P75-I for the acquisition of 6 diesel-electric submarines with AIP under the strategic partnership model, in association with Navantia of Spain
- Delivering mission-critical flight hardware for ISRO's Chandrayaan-3, Aditya-L1 Mission, and Human Spaceflight Gaganyaan Programme
- New benchmarks were established by all work centres in terms of accelerated realisation of systems and equipment (serial production category) by deploying Industry 4.0 techniques. Noteworthy ones include the supply of the first lot of Modular Bridging Systems in record time from bulk production clearance and the supply of Large Survey Vessels to Garden Research Shipbuilders & Engineers Ltd. (GRSE) from Kattuppalli Shipyard
- The Kattupalli Shipyard created history by signing a Master Ship Repair Agreement with the US Navy and undertaking repairs of two US Military Sealift Command. It also enhanced the longstanding collaboration between the UK and India in the maritime domain by undertaking and supporting the maintenance of two Royal Fleet Auxiliary ships
- Conduct extensive development and validation trials of Autonomous Underwater Systems

L&T has provided critical subsystems for most of India's space missions

- Successful development and validation trials of medium- and high-speed unmanned aerial targets. This effort was also awarded the Society of Indian Defence Manufacturers (SIDM) Championship Award 2023 for import substitution
- Award of Green Channel Certificates for multiple land and marine systems and platforms by Quality Assurance agencies of the Indian MoD, based on the demonstrated levels of quality along with mature processes of quality assurance during the execution of major orders

Significant Initiatives

R&D and innovation have been the backbone of the Precision Engineering and Systems business since its inception, and the business continues to invest in R&D to develop technologies and products. Various R&D initiatives in the development of high-precision sensors, directed energy beam combiners, unmanned and autonomous system technologies, and the deployment of AI-based solutions have been undertaken during the year.

The business has established its proficiency by leveraging Industry 4.0 practices across its operations. Focussed digital initiatives have accelerated productivity and business excellence.

While providing a safe working environment for men and materials, the business continues to focus on the triple bottom line, viz. Social, Environmental and Financial, as well as green initiatives. It has achieved a significant y-o-y reduction in water and energy consumption at its campuses, in line with L&T's sustainability focus and carbon & water neutrality targets.

Outlook

The capital acquisition budget for Defence witnessed a moderate increase of ~5% y-o-y in the interim budget for FY 2024-25, resulting in an overall budget of ₹ 1.72 trillion, mainly for aircraft & aero engines, army vehicles, and naval fleet. The same is expected to be reset with the historical long-term average growth of 11-12% in the regular budget expected in July 2024. The budget for the FY 2024-25 has also proposed setting up a ₹ 1 trillion corpus fund in line with the country's aspiration to develop capabilities in the deep tech sector.

The indigenous defence production crossed ₹ 1 trillion in FY 2022-23. Additionally, the Government has set an ambitious target of ₹ 3 trillion of domestic production with ₹ 50,000 crore defence exports by FY 2028-29, coupled with over 150 programmes having been identified for acquisition under the 'Make' route of DAP 2020, which focusses on indigenous design, development and manufacturing, is all expected to gather steam over the next five years for the procurement of systems/platforms for domestic use with the government also facilitating exports of these products.

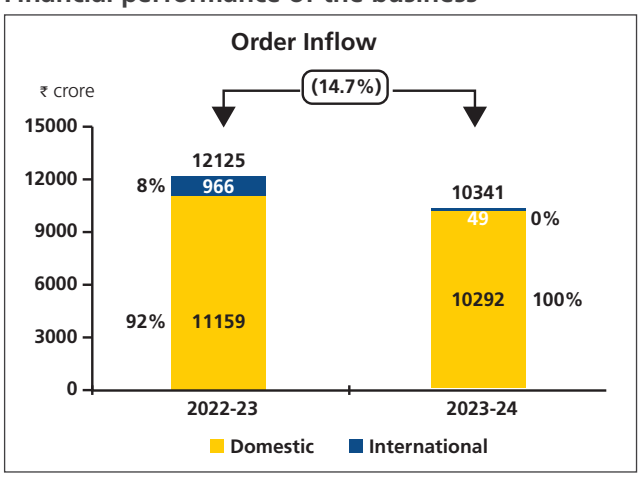
The business is well poised to leverage the Government's thrust on 'Aatmanirbharta' to gain strategic autonomy through domestic production and win new opportunities in shipbuilding, artillery equipment, combat engineering equipment, and long-range communication equipment in India as well as select regional markets.

The Indian space sector is fast emerging as a sunshine sector and promises to see tremendous growth in the coming times. The business has been a trusted industry

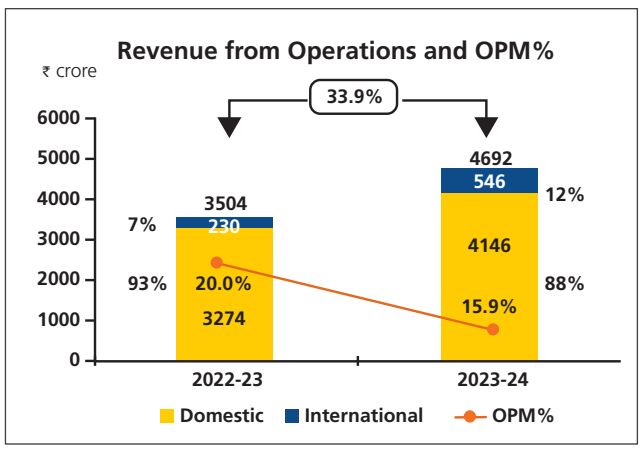
Launch Tracking C&S Band Radar

partner to ISRO and has contributed to the indigenous capability of the Indian space sector for over five decades. The reforms announced in the space sector will enable private sector companies – like L&T, to take on the complete manufacture and integration of launch vehicles as well as satellite bus manufacturing and provide associated services.

Financial performance of the business



The Precision Engineering & Systems business recorded an order inflow of ₹ 10,341 crore, registering a decline of 14.7% y-o-y, mainly due to the deferment of a few orders and due to a higher base. During the year, the business secured a large value order from the Ministry of Defence. No major international orders were received during the year.



Benefitting from a higher opening order book, the Precision Engineering & Systems business earned revenue of ₹ 4,692 crore during FY 2023-24, higher by 33.9% compared to the previous year. The share of international revenues increased to 12% from 7% in the previous year with the ramp-up in the execution of export orders.

The operating margin declined to 15.9% from 20.0% in the previous year, largely reflecting the stage of execution and job mix.

IT & TECHNOLOGY SERVICES SEGMENT

LTIMindtree campus, Bengaluru, Karnataka

The IT & Technology Services Segment comprises:

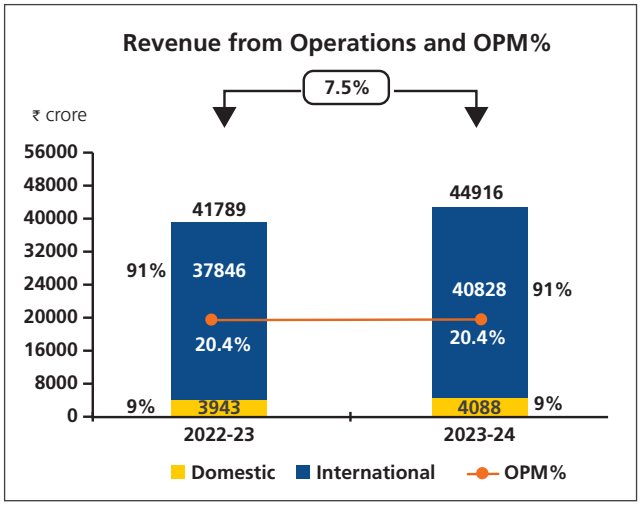
a) LTIMindtree Limited and its Subsidiaries

b) L&T Technology Services Limited and its Subsidiaries

c) E-commerce/Digital Platforms and Data Centers

The Group has forayed into fabless semiconductor chip design during FY 2023-24 by incorporating L&T Semiconductor Technologies Limited (LTST), a wholly-owned subsidiary. A fabless semiconductor company specialises in the design and creation of semiconductor chips without owning or operating semiconductor manufacturing facilities.

Financial performance of the segment



The segment recorded revenue of ₹ 44,916 crore for the year ended March 31, 2024, registering a growth of 7.5% over the previous year, largely reflecting the overall challenging macro environment in the sector. International revenue continues to be at 91% of the total revenue of the segment.

The segment's operating margin, at 20.4%, is in line with the previous year.

The funds employed by the segment as on March 31, 2024, at ₹ 33,034 crore, increased by 12.4% compared to March 31, 2023, largely due to higher Cash & Cash equivalents on the Balance Sheet.

LTIMindtree

Overview

LTIMindtree (LTIM) is a global technology consulting and digital solutions company that enables enterprises across industries to reimagine business models, accelerate innovation, and maximise growth by harnessing digital technologies. As a digital transformation partner to more than 700 clients, LTIMindtree brings extensive domain and technology expertise to help drive superior competitive differentiation, customer experiences, and business outcomes in a converging world. Powered by nearly 81,000 talented professionals across more than 30 countries, the Company helps in solving the most complex business challenges and delivering transformation at scale.

LTIMindtree's state-of-the-art campus at Mahape, Navi Mumbai, Maharashtra

The business has a strong presence in each of the following business verticals:

Banking and Financial Services (BFS)

LTIM's strong domain and technology capabilities, focussed sub-industry offerings, and a strong partner ecosystem across banking, financial services as well as enterprise partners enable true end-to-end transformation, helping BFS clients modernise their core, reimagine their go-to-market models, achieve their sustainability goals, enable cyber-resilience, transform using AI, data and insights, and better engage with their end consumers.

Insurance

LTIM has been at the forefront of transforming leading Property & Casualty (P&C) insurers, life and annuity insurers, insurance brokers, employee benefits, and reinsurers, helping them lower costs, scale operations, personalise products, and thereby shape the future of insurance, faster. Using deep expertise with leading-edge technologies, including gen AI, ML, drones, digital twins, IoT, cloud, and advanced data analytics, LTIM has partnered with customers to develop unique solutions to some of the most complex industry issues, such as claim/fraud management, digital transformation, underwriting profitability, and distribution effectiveness.

Hi-Tech & Services

LTIM powers innovation to leading Hi-Tech and Services enterprises across various sub-segments: semiconductors, software and platforms, hardware and OEMs, and professional services. LTIM combines domain, customer experience, and digital engineering prowess to deliver next-generation technology solutions and products catering to the industry's needs.

Communications, Media, and Entertainment

LTIM works with the world's leading broadcasters, studios, OTT/streaming, publishers, information services, education, music, gaming, AdTech, telcos, and multiple-system operators. LTIM is enabling them with product innovation to drive new revenue streams, modernise content supply chains, and personalise viewer/audience experiences.

Manufacturing and Resources

LTIM is geared to address customers' priorities across the manufacturing value chain – across the front office (sales, marketing, commerce, commercial) & back office (procurement, manufacturing & supply chain). The Resources sub-vertical enables the domain-led digital transformation of manufacturing, mining, metals, building materials, utilities, oil & gas, oilfield, and renewable energy giants with technology solutions and services that help them achieve their goals of safety, reliability, efficiency, profitability, sustainability, and value chain transformation.

Energy

LTIM delivers a comprehensive set of next-generation solutions that are designed for the complete energy value chain across upstream, midstream, and downstream oilfield services, as well as renewables segments. LTIM also helps monitor, track, account for, and report carbon footprint and assists in trading carbon credits through holistic emissions management, decarbonisation of operations, and expansion into renewables.

LTIMindtree Headquarters, Powai, Mumbai, Maharashtra

Utilities

LTIM has experience in helping electric, gas and water utility firms reinvent themselves by delivering solutions and methodologies required to connect the physical and digital worlds through end-to-end IT/OT capabilities. LTIM's vision is aimed at addressing transformational challenges such as Distributed Energy Resources, Grid Modernisation, Production Asset Management, Transmission & Distribution Network Ops., expansion of EV Infrastructure, Customer Experience, and last but not least, Decarbonisation.

Retail and Consumer Packaged Goods (CPG)

LTIM delivers hyper-personalised experiences at scale to the world's largest CPG and brands. The Company also helps CPG and retail clients to navigate increased competition and margin pressures from online retailers, ever-changing consumer behaviour, rising costs, supply chain disruptions, and ESG issues. With deep industry expertise, the Company's 6,500+ global associates lead by designing new 'Phygital' experiences, modernising legacy applications and infrastructure leveraging the cloud, helping automate, and reducing the time from data to decision.

Travel, Transport, and Hospitality

LTIM is propelling its clients from 'post-pandemic recovery' to 'fast-track growth' with innovative technology solutions, which have been successfully implemented by some of the world's largest and fastest-growing airline, hotel, car rental, travel technology, travel management, logistics and real estate companies, to accelerate revenue growth and optimise costs. The Company develops modern mobile and web applications, enables digital marketing and sales, provides actionable insights to enhance customer experience and loyalty as well as to improve employee productivity, modernises legacy infrastructure and applications by leveraging Hyperscale Clouds, and helps accelerate Sustainability initiatives.

Healthcare

LTIM has delivered transformative consulting services and technology solutions to global healthcare giants across the payer, provider, healthcare product manufacturer, pharmacy, health insurance, and benefits manager landscape. The Company brings a unique healthcare platform operation approach to help clients adopt new processes and technologies quickly and easily.

Life Sciences

LTIM is driving collaboration in the life sciences industry, making healthcare more affordable and accessible while accelerating personalised medicine and patient-centric treatment journeys. The Company's digital and technology-enabled solutions focus on faster drug discovery, lower R&D costs, diverse & comprehensive trials, adaptive manufacturing, a transparent supply chain, and meeting regulatory stipulations.

Public Services

LTIM's Public Services sub-vertical enables federal, state, local, provincial, municipal, defence, and government healthcare organisations to unlock the true potential of technology and digital, helping them to transform their service delivery to meet citizens' evolving needs.

LTIMindtree's state-of-the-art Delivery Center in Johannesburg, South Africa

LTIM has offerings across the following service lines:

- Interactive
- Data and Analytics
- Enterprise AI
- Cloud and Digital Infrastructure
- Cybersecurity
- Digital Engineering
- iNXT
- Platform Operations
- iNXT Geospatial Engineering
- Enterprise Cloud Applications
- Salesforce
- SAP
- Oracle
- Consulting Services
- Hyper Automation
- Quality Engineering Services – Testing

Alliances & Partnerships

The Business has built a strong ecosystem of partners that enables it to drive significant value for its clients in an ever-changing technology landscape. The Company's partner ecosystem comprises global tech majors in Cloud, Data & AI, Interactive, Digital Engineering, Low code and Integration, Enterprise Applications, Quality Engineering, Automation, Infrastructure and Security domains serving across multiple industry groups.

In the current year, LTIM has been able to deepen relationships with its partners and create combined value through the execution of joint Go-to-Market (GTM) strategies, co-innovation, co-selling and global demand generation activities. It implemented multiple co-branding and co-marketing initiatives and signed up exclusive partner programmes with its key strategic partners. This helped the Company to augment its GTM strategy and co-investments across key priority areas.

Business Environment

Despite the macroeconomic challenges throughout the year, the technology/IT Services industry demonstrated resilience as large-scale cost optimisation and automation deals helped maintain demand for enterprise software and IT services.

In the midst of significant business caution towards investments and delayed decision-making, India's technology industry revenue (including hardware) is still expected to hit USD 254 billion.

The Nasscom Annual Enterprise & Tech Services CXO Survey 2024 indicated an expectation of stronger growth momentum for the calendar year 2024, with the under-stressed sectors of BFSI, Telecom, Media & Entertainment and Hi-tech leading the digital spending. Generative AI remains a key priority for over 95% of the surveyed organisations over the next 6-12 months. Technology providers are also optimistic about growth expectations for FY 2024-25, with 79% expecting higher growth compared to last year. Hiring growth is also expected to improve, with 80% of the providers planning a higher level of hiring compared to FY 2023-24.

LTIMindtree, Kalinga Campus, Bhubaneswar, Odisha

Key Deal Wins

- A global leader in the design, engineering, and delivery of customised facilities for high-tech industries has selected LTIM as their preferred strategic partner for their Digital Transformation journey over the next five years
- A US-based premier oil and gas producer selected LTIM as their strategic partner for end-to-end technology services
- A diversified multinational mass media corporation has chosen LTIM as its preferred ServiceNow transformation partner
- A global financial services technology company has chosen LTIM for its Product Development initiatives
- A utility company in the Middle East continues to strengthen its relationship with LTIM by signing another 3-year agreement where the Company will support their transformation journey by identifying areas of expansion and optimising the technology landscape
- One of the largest semiconductor manufacturers in the world has chosen LTIM as their key digital transformation partner to modernise its SAP application landscape, enrich user experience, streamline business processes, and deliver contemporary digital operations across both SAP S/4HANA and SAP Cloud Solutions
- One of the largest property & casualty insurance companies in the United States has chosen LTIM as a strategic partner for a multi-year application development and maintenance deal
- A prestigious regulatory body has chosen LTIM for its Next-Generation Data Warehouse implementation

Significant Initiatives

At the forefront of Research & Development (R&D) efforts, the Company has curated a platform called LTIM Crystal that scouts 'Beyond-the-Horizon' technologies and empowers us with future-driven growth strategies and opportunities for research and incubation consideration.

Using the above approach, LTIM has evangelised emerging technologies like Generative AI, Explainable AI, Zero Trust Architecture, Platforms at Scale, and Quantum technologies to establish capabilities and their offerings.

As a part of incubating new technologies and demonstrating delivery success, LTIM is doing first-of-a-kind (FOAK) engagements that set up the capability for industrialisation. Additionally, the Company has a Technology Architecture Office with Unit Chief Technology Officers (CTOs) and Cluster CTOs, driven by the Global Technology Office (GTO), leading to forward-looking innovation and solution excellence in delivery with industries.

Outlook

In this environment of restrained client spending, the Company continues to expand its value proposition to become a partner of choice for the clients. By focussing on cross-selling to existing accounts and prioritising Focus 100 clients, the Company is observing multiple deal conversations and wins.

With the completion of the merger integration, the Company is strategically placed to take advantage of the market recovery and further improve its position in the industry leaders' quadrant. A strong order

L&T Technology Services - Module X Design Centre, Mysuru, Karnataka

inflow and healthy deal pipeline have set the stage for medium-term growth.

As the Company continues to negotiate the dynamic terrain of shifting market priorities, rapid technological advancements, and evolving customer expectations, it remains confident of its ability to align clients' operational strategies with their technological ambitions and help them reach a future without limit.

The positive outcomes of LTIM's positioning as an organisation with scale-expanded capabilities and stronger partnerships continue to reflect in the order inflow and pipeline. Through the year, the Company has pivoted its portfolio to align with the current spending areas and is positioned well to capture the discretionary spend wave when it returns.

LTIM is stepping into the new financial year with renewed vigour and a stronger foundation to drive revenue synergies. As it reflects on its achievements and looks toward the future, the Company is confident that the insights gained and strategies implemented will enable it to execute better going forward. Finally, the Company is excited to see what the future holds and is committed to making the most of every opportunity that comes its way.

L&T TECHNOLOGY SERVICES

Overview

L&T Technology Services Limited (LTTS) is a leading global Engineering Research and Development (ER&D) services provider. LTTS specialises in delivering a comprehensive range of consultancy, design, development, and testing services throughout the product and process development lifecycle. LTTS leverages its deep multi-domain expertise across software and digital engineering, embedded systems, engineering analytics, and plant engineering to create transformative value propositions for clients globally.

Headquartered in India, LTTS has over 23,800 employees spread across 22 global design centres, 28 global sales offices, and 104 innovation labs as of March 31, 2024. The Company's global footprint covers 20+ countries across all key geographies, catering to a global clientele of 69 Fortune 500 companies and 57 of the top ER&D firms.

LTTS offers its services to customers across five key segments. The Company delivers specialised **Transportation Engineering** services to global OEMs and Tier 1s, helping accelerate market entry, foster cutting-edge innovation, and drive sustained business excellence. For **Industrial Products**, LTTS capitalises on its extensive multi-domain expertise across software, hardware, and mechanical engineering to cater to an expanding global customer base. The Company's **Telecom & Hi-Tech** offerings include services across Telecom, Consumer Electronics, Semiconductors, Independent Software Vendors (ISVs), and Media & Entertainment (M&E). Leveraging its comprehensive chip-to-cloud capabilities – from design and engineering to project management – LTTS helps drive delivery, maintenance, and sustenance of bespoke solutions for a global **Plant Engineering** clientele. Leveraging over three decades of **Medical Device** industry presence in combination with cross-vertical engineering expertise, LTTS also works closely with the Top 10 global healthcare providers and device manufacturers.

Wire Harness Center – Peoria, USA

LTTS continues to be at the forefront of cutting-edge innovation, partnering with leading technology majors and hyperscalers to enable next-gen solutions and offerings across emerging domains, including AI, Software Defined Everything (SDx), and Cyber Security. These collaborations focus on streamlining new product development, enhancing remote asset management, enabling robust sustenance paradigms, and advancing virtual product design as well as prototyping.

With its cutting-edge technology capabilities, multi-geography presence, and customer-first approach, LTTS continues to reaffirm its leadership of the growing ER&D services segment.

At the start of the fiscal year, LTTS successfully closed the acquisition of the Smart World and Communication Business Unit from its parent L&T. The new capabilities unlocked from the merger, including industry-leading expertise in Sustainable Smart Spaces, NexGen Comms, and Cyber Security, have already registered considerable traction amongst LTTS' global customer base. The success was evident in the recent marquee USD 100 million deal win for the delivery of cutting-edge cyber security services.

Business Environment

The rise in the intensity of Engineering Research and Development (ER&D) across sectors is driving new growth opportunities. Nasscom estimates that total global ER&D spending could well exceed USD 3 trillion by 2030. With the Automotive, Software, and Healthcare & Medical Devices sectors set to account for about half of this spending, high growth areas like Telecom, Semiconductors, and Software will continue to register double-digit CAGR from 2023 to 2030 and drive the next frontiers of growth.

Stickier ER&D spending, led by continued investments in future products and a sustained rise in demand for digital engineering and offshoring services, is expected to drive the growth of the Indian ER&D sector as well. While current Nasscom estimates indicate the US to be the largest ER&D spender at about USD 550 billion, trends suggest a sustained rise of markets across the EU and Asia-Pacific regions.

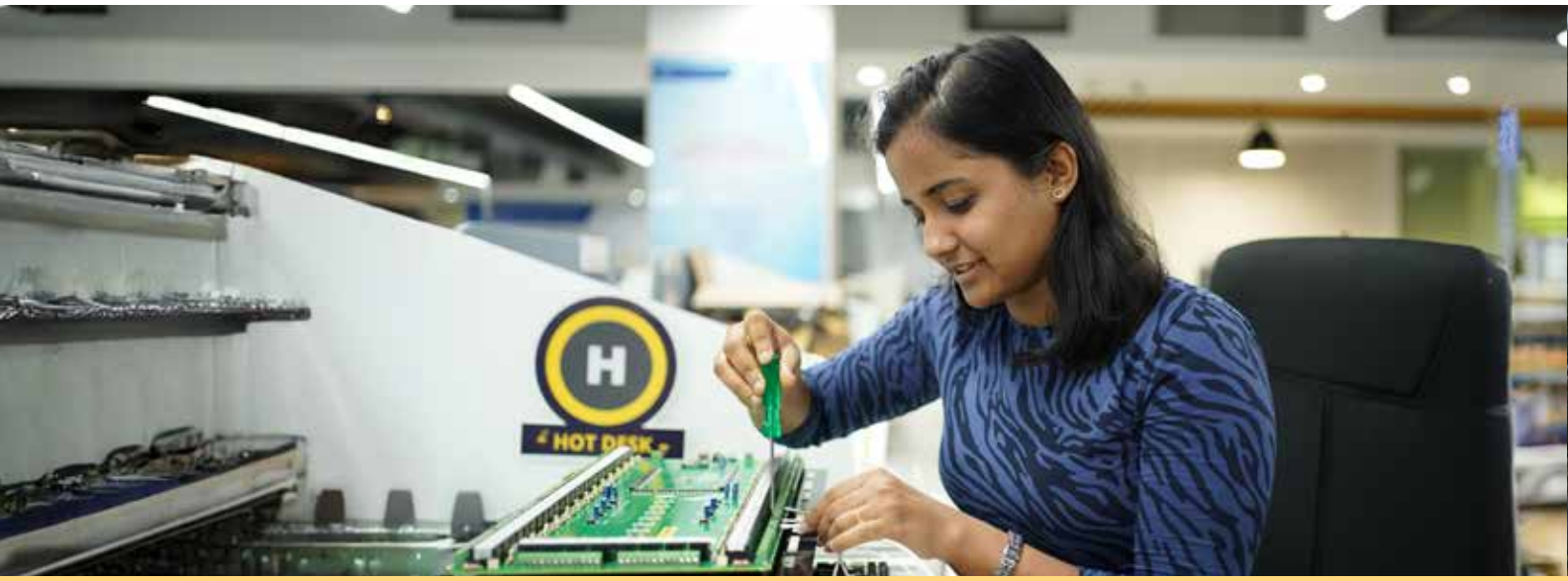
Further, estimates from Zinnov corroborate this trend and predict a 2X rise in Digital Engineering spending by 2026, at over USD 1.6 trillion.

As the dynamics of the global ER&D landscape evolve, LTTS will continue to reassess its key drivers, including the availability of talent, new partnerships and alliances, and revitalised compliance with laws and regulations. This would help ensure continued business success in a dynamic ecosystem.

Driven by its key differentiators around multi-vertical domain expertise, value-maximising customer-centric innovations across major industry segments, and a robust network of alliances across emerging technologies, including AI and SDx, LTTS continues to be well-poised to navigate the evolving landscape.

Major Achievements

During the year, LTTS had multiple major deal wins across all its verticals. Large deal bookings were led by a marquee USD 100 million win, a USD 50 million, and USD 40 million engagement, and more than twenty USD 10 million projects (including several in the range of over USD 15



Engineering in action at LTTS, Mysuru, Karnataka

million and USD 20 million).

Competitive Positioning

During the fiscal year, LTTS demonstrated a robust competitive positioning within the global dynamics of the engineering and technology services sector. The Company's financial performance and strategic initiatives underscored its resilience, a scenario that was further reflected across the ratings by leading analysts and industry bodies and a growing patents portfolio.

- LTTS was rated as a Leader in Manufacturing Smart Industry Services 2023 RadarView by Avasant and was positioned as Leaders in Everest Group's ACES Automotive Engineering Services PEAK Matrix® Assessment 2023 – Electric
- ISG rated LTTS as Leaders in Manufacturing Industry Services and Solutions 2023 - Digital Factory/ Manufacturing Solutions, North America and Agile Product Development and Design Services
- Zinnov rated LTTS in the leadership zone across 14 Engineering domains as leaders in Overall 2023 ER&D Services and in the leadership zone across Automotive, Aerospace, Electrification, Industrial, Telecom, Semiconductors, and Telehealth

As of March 31, 2024, LTTS boasted an impressive patent portfolio comprising 1,296 patents, reflecting the Company's focus and commitment towards innovation and collaborative development. The scenario was complemented by a growing alliance ecosystem with leading technology majors and hyperscalers, especially in emerging areas like AI and Gen AI.

By continuing to cater to diverse industries and maintaining a steady growth trajectory, LTTS solidified its competitive edge in FY 2023-24, showcasing resilience, innovation, and a customer-at-the-core mindset in navigating the challenges and opportunities of the evolving market landscape.

Significant Initiatives

LTTS has continued to invest considerable time and effort in strategic initiatives that will propel its technology footprint, engineering infrastructure, and human resources, with the objective of providing a differentiated experience to its customers. These include:

- Expanding presence with delivery centres across India, including Vadodara, Chennai, and Bengaluru (new campus inaugurated with a capacity to host 4,000 engineers)
- Becoming a Palo Alto Networks Managed Security Services Partner (MSSP) for delivering a suite of security services to end customers across industrial verticals
- Strategic partnership with Bharat Sanchar Nigam Limited (BSNL) to drive and enable global enterprises in their private 5G network deployments
- Collaboration with NVIDIA to unveil Gen AI and advanced Software-Defined Architecture for Medical Devices
- Partnership with Google Cloud to harness the power of its Gen AI technologies and tools for the development of DevX, LTTS' Developer Experience Platform
- Alliance with Amazon Web Services (AWS) to help global automotive manufacturers accelerate the transition towards SDV, leveraging Gen AI

LTTS office, Airoli, Navi Mumbai, Maharashtra

- Collaboration with the Nasscom Gen AI Foundry to stimulate the growth of Gen AI startups

Outlook

During the year, LTTS has continued to strengthen its position as the nation's largest pure-play ER&D services provider. Having crossed the USD 1 billion mark annual run rate in the previous year, the Company has now set its sights on the next milestone of USD 1.5 billion.

The Company's journey ahead is being enabled by a focussed realignment with new opportunities around AI, SDx, and Cyber Security. The emerging paradigm is supported by subsuming new capabilities from the Smart World and Communication acquisition, which closed successfully at the start of the fiscal year. By leveraging the new synergies, LTTS has registered several multi-million deal wins across segments, with a marquee USD 100 million engagement reaffirming the positive impact of the decision on the Company's digital-focussed growth trajectory. The Company expects that this trend of scaling new capabilities across markets will continue to strengthen over the coming years.

As emerging technologies reshape the world, LTTS believes that the future will be defined by a twin-track approach to growth. This involves leveraging new partnerships and alliances while focussing on up-skilling and cross-skilling our talent pool to unlock new growth avenues. The Company is also working closely with leading global hyper scalers, including AWS, Google Cloud, Intel, Microsoft Azure, and NVIDIA, to develop new-age and future-proof technology solutions and offerings.

The forward momentum is further strengthened by the growing collaboration of the LTTS Global Engineering Academy (GEA) with leading centres of Learning and R&D, thereby driving depth and sustainability in its approach towards enabling a deep, reliable, and resilient talent paradigm. Its commitment to growth is further illustrated by an industry-leading portfolio of over 1300 patents across sectors and the focussed reskilling and upskilling of over 3000 engineers in AI and allied technologies during the year.

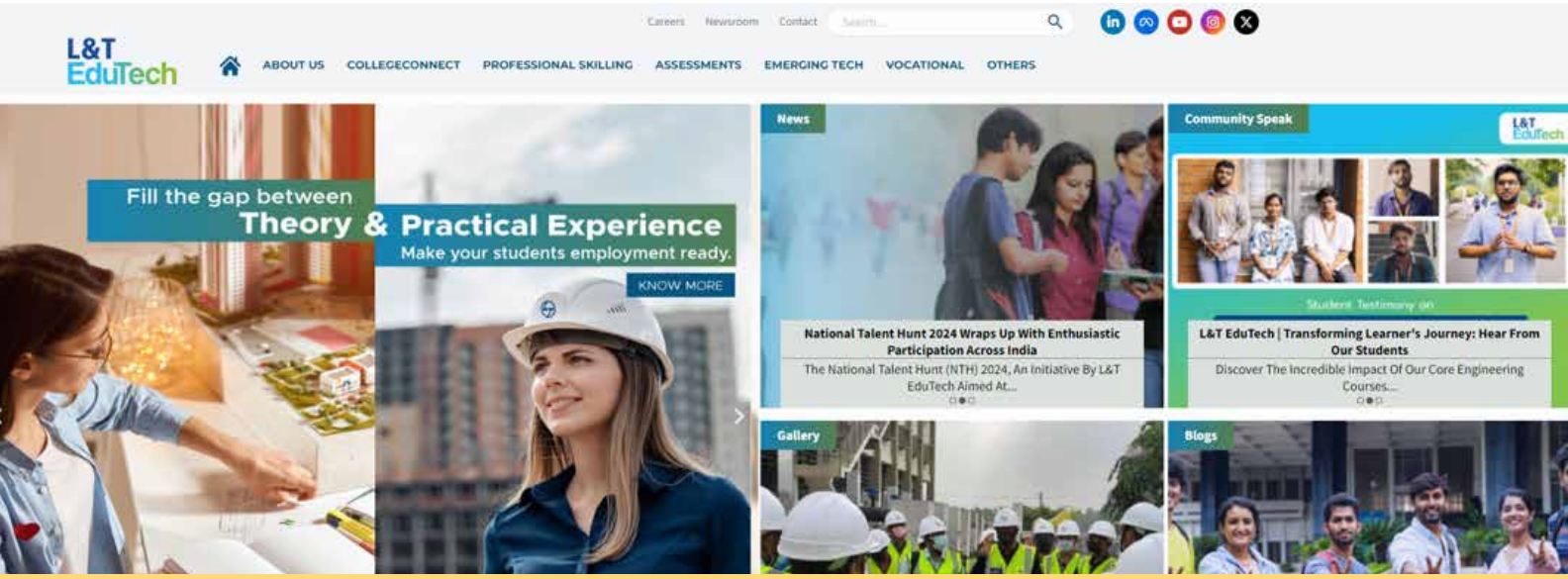
LTTS remains a committed enabler of deep transformative journeys for our global customer base through engineering new frontiers of business success and sustainable excellence across domains.

Digital Platforms and Data Centers

This business mainly includes new-age businesses incubated by the Company namely L&T EduTech, L&T-SuFin and Data Centers. These ventures are a part of L&T's plan to leverage digital technologies in some of its core domains in order to future-proof them and tap future growth opportunities.

L&T EduTech

L&T EduTech is an EdTech initiative of the Company, providing high-quality hybrid education for higher education students and working professionals. The Company partners with colleges, universities, corporations, channel partners, and government agencies to facilitate skills in niche core engineering and IT domains.



L&T Edutech, building value for learners, academia and industry

L&T EduTech has developed a robust Learning Management System, Assessment Engine, Recruitment Automation, and Skill Exchange platform with a wide bouquet of learning & assessment solutions with its learning programmes, assessments & certifications, virtual & hands-on labs, industry capstone projects, instructor-led training, and industry immersion.

L&T EduTech also provides a discussion forum, the National Engineers Ensemble Forum for Knowledge Sharing, and the Microlearning Platform (supported by the All India Council for Technical Education [AICTE]), with free courses for its learners. The forum optimises students' educational efforts and further enhances their continuous learning journey.

The two major verticals of L&T EduTech are as follows:

College Connect: This vertical aims to narrow the gap between academic learning and practical industrial experience. It offers courses in core engineering, information technology, arts, and science with industry-specific application-oriented knowledge. Aligning to the National Education Policy (NEP) 2020, College Connect offers multidisciplinary programmes which can be integrated into the college curriculum to replace/add on to the credits required for degree programmes. Further, this business vertical organises career guidance sessions, conducts regular faculty development programmes, and offers industry immersion programmes to deliver superior learning experiences to both teachers and students.

Enterprise: This vertical offers upskilling and reskilling opportunities for corporate employees with several product packages, including .Net, Java, Data Analytics, Cybersecurity, and more. Along with industry-relevant courses, this vertical also focusses on assessments. Further, the robust auto-proctored assessment platform helps organisations in their recruitment process for fresh talent and workforce development. It measures workplace competency in multiple stages of a learner's life.

Major Achievements

- Successfully onboarded over 40,000 students and faculty members in FY 2023-24, along with 9,600 working professionals, onto our platforms
- Conducted over 5,90,000 assessments, reflecting the efficacy and scalability of our educational offerings
- Secured major accounts, both domestically and internationally, including prominent institutions such as Manipal Group, University of Petroleum and Engineering Studies, Oman Education and Training Investments, Wolters Kluwer and work scope enhancements from Chitkara University
- Formed strategic partnerships with 17 institutions for integrated programmes, with over 20 more in the pipeline
- Witnessed rapid traction in enrollments in our Employability Skilling Programme
- Secured significant orders through government channels, with Naan Mudhalvan (Tamil Nadu Skill Development Corporation) and Additional Skills Acquisition Programme (Kerala), with further prospects being created in UP and Gujarat as well

L&T-SuFin, India's first online business platform for industrial and construction products, integrated with finance and logistics options

- Successfully facilitated the physical delivery of education to 15K+ students through the Naan Mudhalvan initiative
- Launched channel business initiatives with CADD Center (Chennai) and IITM Pravartak Technologies Foundation (Chennai). Similarly, the pilot course launched in Coursera has yielded positive feedback from global learners
- Initiated export order business for Enterprise business, with the first signup achieved with Vulcan Green Steel in Oman
- Integrated Gen AI into our assessment engine, enhancing the effectiveness and efficiency of our educational assessments

Over the past few years, India has emerged as the world's second-largest EdTech market. The dearth of industry-based education and the acute need for a skill upgrade among students and professionals in India will result in more industry-led curricula and cross-functional credits. Additionally, digitalisation has made it easier for people to learn at their own pace, anytime and anywhere. Such factors provide a positive outlook for the scalability of L&T EduTech in the medium-term.

L&T-SuFin

L&T-SuFin is a B2B digital marketplace platform which was launched in March 2022 for buyers and sellers dealing in industrial and construction goods to connect in an efficient & transparent manner. The platform enables sellers to expand their sales reach and buyers to find the right products at an optimal cost and quality. The platform offers a wide product range in industrial supplies & consumables, building & construction materials, electrical & electronics equipment, machinery tools & mechanical equipment, packaging, printing & office supplies, etc.

In 2023, B2B e-commerce GMV (Gross Merchandise Value) was USD 15 billion in India and is expected to reach USD 55 billion by 2027. Similarly, the total transaction value in the Digital Payments segment in India is projected to reach USD 150-200 billion in the next 3-4 years from the current USD 65 billion. L&T is playing a pioneering role by foraying into digital B2B e-commerce through this platform with the objective of bringing about scale and speed in supply chains, procurement processes, trade financing, and logistics, thereby helping the Indian MSME sector, which is expected to benefit through this transformation.

Major features offered by L&T-SuFin include:

- Discovery of Industrial Products and Sellers through an efficient digital process
- Getting competitive prices through the Request for Quotation (RFQ) mechanism and online transaction fulfilment
- Financing support from partner banks and NBFCs
- Logistical support, including free transit insurance

The business has catalogued 5 lakh+ Stock Keeping Units (SKUs) in 49 categories. Further, the business has onboarded 42,000+ sellers on the platform and has crossed a Gross Merchandise Value (GMV) of ₹ 2,700 crore since inception.

Hyperscale Data Center, Kancheepuram, Tamil Nadu

The business has taken several new initiatives to catalyse growth and scale up further, such as:

- Launched the SuFin App for buyers, leading to greater ease of usage & convenience
- Original Equipment Manufacturers (OEMs)-led supply chain strategy for inducting reliable sellers with a good track record in business and ensuring the quality of goods
- Formulated a central RFQ team to aid the buyers
- Enabled WhatsApp-based RFQs to improve the response rate by Sellers
- Providing finance to the Buyer and/or Seller for doing transactions on the platform through Partner Banks or NBFCs. This has helped the MSMEs on the platform in getting liquidity to overcome the working capital gap and has increased their loyalty to the platform for repeat transactions
- Initiated steps to achieve ISO 27001 Compliance

In FY 2024-25, the business plans to scale up its GMV and revenue with a focus on subscription, market partnership, higher margin product offerings, and expanding financing solutions.

Data Center & Cloud Services Business

Overview

L&T's Data Center is a new business unit of L&T that will offer Colocation Services (space, power, CCTV monitoring, etc.), to MSME and other enterprises. In addition, it shall also offer Cloud Services in Infrastructure as a Service - IaaS (viz. application integration services) and Platform as a Service - PaaS (viz. operating systems and database management) models. The necessary ecosystems are in place to offer an integrated offering to customers, including Network and Monitoring services through the NOC. Specialised Colocation for AI/ML/GPU-based workloads for enterprises based on diverse cooling technologies will also be offered. The business, branded L&T-Cloudfiniti, has been launched to provide these services. The Company has committed investments to set up modern state-of-the-art Data Centers at multiple locations in India, starting with Mumbai and Chennai regions.

Business Environment

India is witnessing a rapid adoption of digital technologies in the overall Governance and Business environment, thereby necessitating the need for a larger number of data centers. The country is experiencing exponential growth in Internet traffic fuelled by 5G, digital commerce, digital entertainment, and the use of social media. India

has over a billion mobile phones and more than 800 million internet subscribers. This is further fuelled by the demand for AI/ML, which requires high computational capability, such as GPUs.

Today, India is one of the fastest-growing data center markets globally, with about 130+ data centers and capacity of ~1000 MW by the end of FY 2023-24. Further, new data centers with 1200+ MW capacity are expected to come up by the end of 2026.

With the aim to achieve USD 1 trillion Digital Economy by 2025-26, the Government of India and the various state governments have come out with many schemes to support the ecosystem of the Telecommunication and Information Technology industries, thereby creating a conducive environment for data center business growth in India.

There are a few concerns, like the lack of a unified single window clearance across the country, rising input costs, unavailability of redundant infra such as network and power connectivity from utility providers, and scarcity of skilled manpower resources. Challenges also exist across states for sourcing renewables through Third-Party Open Access (TPOA) as, besides inadequate surplus capacity, it also comes with certain added charges from the States, while third-party group captives (TPGC) require substantial investments in SPV format with developers.

Competitive Positioning

The Company is in a position to offer a complete range of IT, ITES, and Managed Services to its customers, including the hosting environment/colocation services.

Further, L&T will leverage the expertise of its group companies, such as LTTS and LTIM, in providing value-added services. The Company has the capability to create the complete value chain of Build, Operate, and Manage Data Centers with initial offerings in the form of providing Colocation and Managed services to customers.

Strategic Business Plan

The Panvel Data Center of 2 MW is currently operational. The first Hyperscale Data Center at Sriperumbudur, Chennai, will be built in stages with a total capacity of 30 MW. Further investments in new Data Centers at Mahape, Navi Mumbai and Bengaluru, Karnataka, of 20 MW each, will be made over time. With these, a total of 72 MW of DC capacity is being built. Various specialised Colocation services for enterprises are also being explored as an offering through these Data Centers by adopting resilient hybrid Data Center designs catering to medium to high-density compute workloads.

Outlook

The data center industry continues to grow at a fast pace due to technological advancements and market trends. Growing demand for computing and storage from enterprise customers, enhanced cloud adoption, rising rack densities (power consumption in KW), and competitive pricing dynamics present several challenges and opportunities as well. The emergence of use cases based on Generative AI and its applications across various business processes requires the setting up of next-gen Data Centers with resilient high compute workloads, enhanced power usage effectiveness, and blending renewable power in consumption. Such factors augur well for L&T to position itself as a reliable Data Center Service Provider with sustainable practices embedded across the entire life cycle of Data Centers from build to steady-state operations.

FINANCIAL SERVICES SEGMENT

Rural business finance

Overview

L&T Finance Limited ('LTF') (earlier known as L&T Finance Holdings Ltd (LTFH)) is a leading diversified Retail NBFC headquartered in Mumbai. A ₹ 80,000 crore+ strong pan-India Retail franchise built over the past 15 years, the Company is amongst a select cohort of NBFCs classified as Upper Layer (NBFC-UL) under the scale-based regulations of RBI. The business offers financing across the rural and urban ecosystem through Rural Business Finance, Farmer Finance, Urban Finance (which includes Two-Wheeler Finance, Personal Loans, Home Loans and Loan Against Property), and SME Finance. Over the years, LTF has created a 'Right to Win' and emerged as a leading player in Rural Group Loans and Micro Finance, Farm Equipment Finance, and Two-Wheeler Finance.

LTF is accorded the highest rating of 'AAA' by four credit rating agencies, viz. CRISIL, ICRA, CARE, and India Ratings and has also received leadership scores and ratings from global and national Environmental, Social, and Governance (ESG) agencies.

LTF's Retail franchise and reach:

Retail Book	₹ 80,037 crore
Geo Footprint	Rural: 1,800+ branches servicing ~2,00,000 villages | Urban: ~150 branches servicing 100+ Cities/Towns
Customer Database	2.3 crore+

RETAIL FINANCE

- **Rural Business Finance**

  Rural Group Loans & Micro Finance (part of the product profile of Rural Business Finance) offers sustainable financing to women in rural India through the Joint Liability Group mechanism. The Rural Group Loans & Micro Finance business delivered a healthy growth of 32% y-o-y, achieving a book size of ₹ 24,716 crore while disbursing ₹ 21,495 crore during the year, reinforcing our position as a leading financier in this segment. Through this business, LTF added 15.4 lakh new customers during the year, empowering them to build sustainable livelihoods. LTF's 14K+ strong feet on the street through a wide network of 1,700+ meeting centres (branches) across 14 states help deliver doorstep banking services to these women entrepreneurs, thus fostering the formalisation of credit and financial inclusion in rural India. Over the past 15 years, the business has financed over 1.4 crore women.

  Business momentum in the industry was also positive, with the industry size crossing ₹ 4 lakh crore, supported by tailwinds from a favourable macro environment and stable rural demand.

  Going forward, the business will continue to leverage its deep rural network, digital customer value proposition and strong data-driven analytics to grow this business vertical further while maintaining superior asset quality vis-à-vis the industry.