

ELECTRICAL & AUTOMATION BUSINESS



City Command & Control Centre, Vadodara Municipal Corporation.

Overview:

L&T's Electrical & Automation business is a leading provider of electrical equipment in India. It is structured into two Strategic Business Groups (SBGs) – Products SBG and Projects SBG.

The business is engaged in manufacturing low and medium voltage electrical switchgear products (both standard and customized), energy meters, apart from executing projects in the control & automation space. The products are widely accepted in both domestic and international markets, particularly in South East Asia, the GCC, select African geographies and the UK.

L&T's low voltage switchgear commands the highest market share in India. Its medium voltage switchgear products enjoy a market-leading share in Malaysia.

The Company's low voltage switchgear is manufactured at three locations in India - Vadodara, Mahape (Navi Mumbai) and Ahmednagar. The medium voltage product segment has two manufacturing units, one in India (Ahmednagar) and the other in Malaysia. The low voltage switchgear and agricultural products are marketed through a network of over 650 stockists.

L&T is one of the largest manufacturer of single-phase energy meters in Asia and enjoys a market-leading position.

The range of automation products, such as drives and PLCs, are sold through around 75 Integrated Solution Providers. In addition, it also serves the retail market through a network of 165 Retail Distributors (called Primary Trading Partners) and around 350 Distribution Select Partners (DSPs).

The business serves a wide range clients across sectors – metro rail, airports, renewable energy/solar, defence, hospitals, educational institutions, data centres, realty projects, auto, food & beverage, chemical, pharma, textile, sugar, automobile and steel. Additionally, the business supports the Indian agricultural ecosystem through innovative control-gear products as well as new-generation solar-energy supported products.

The industrial automation presence of the business is supported by an in-house manufacturing capability for control panels, strong in-house design and development teams and its own copyright software solution – i-Visionmax®. It also has tie-ups with global players in the automation industry.

The business has five DSIR-approved R&D facilities and two NABL-accredited testing laboratories to test products across diverse parameters. The



L&T offers India's widest range of switchgear to a variety of sectors

design and development team collaborates with international laboratories, testing centres and academic institutions. The business is supported by state-of-the-art tooling facilities which produce a range of high-precision tools to serve the needs of the business as well as those of external customers.

The business has an international presence through its subsidiary, the TAMCO group of companies, which manufactures low and medium voltage switchgear. It caters to international markets, i.e. the Middle East, Europe, Africa, North and South Asia, Australia and New Zealand.

L&T Electrical & Automation FZE (LTEAFZE) is a 100% subsidiary of L&T International FZE. It is located at Jebel Ali Free Zone in Dubai and caters to customers in the Middle East and Africa. It provides turnkey engineering, assembly, integration of electrical, instrumentation and telecommunication solutions. LTEAFZE currently is doing work for two major projects in GCC, notably the Doha and Riyadh metros.

L&T Electrical & Automation Saudi Arabia Company Limited (LTEASA), located at Dammam in Saudi Arabia, is a wholly owned subsidiary of L&T. It offers to the Gulf market a spectrum of products and services, such as Air Insulated Switchgear (AIS), Gas Insulated Switchgear (GIS), Ring Main

Units, LV Switchgear and Motor Control Centres (MCC) - fixed / draw out, pre-fabricated / packaged sub-stations.

Henikwon Corporation is a leading manufacturer of low voltage and medium voltage bus duct systems for the building and infrastructure segments. It caters to customers in South East Asia, India and the Middle East.

Servowatch Systems Limited, Bond Instrumentation & Process Control Limited and Servowatch Inc, (USA) offer technology in the control & automation space for marine applications as well as other emerging segments. It is recognised as a global leader in system integration for modern naval platforms, super yacht installations and commercial marine operators.

Business Environment

FY 2018-19 witnessed several technological shifts – from PLC (Programmable Logic Controllers) to PAC (Programmable Automation Controllers) in the equipment space, the emergence of IIoT analytics to facilitate monitoring and service management and the emergence of intelligent solutions. These are some of the key factors fuelling the market growth for the business. Additionally, the business is very sensitive to macro-economic situations and scenarios, including Government policies and macro-economic stability.



Air-insulated Switchgear

In order to reduce AT&C (Aggregate Technical & Commercial) losses, the Government has launched a scheme to convert all energy meters to smart prepaid meters. This bodes well for the metering business of the Company. Revision in agricultural MSP, targeted improvement of farmers income and other such initiatives have led to increased demand. The business has seen improved prospects from industries like textiles, Infrastructure and from Government-funded schemes like DDUJY and IPDS. Growth opportunities have arisen from segments such as affordable housing, airports, renewable energy, hospitals, educational institutions, data centres and telecom.

The trade war between the US and China and the Brexit chaos pose risks at the global level. However, the Indian economy continues to move from strength to strength and reap the benefits of the economic slowdown in China.

Cues of pick-up in Malaysia can be seen, while Gulf countries continue to be sluggish, with no sign of revival in sight. However, the swinging oil prices and plans for expansion in this space have led to increased capex outlay in GCC countries like the UAE, Kuwait and Iraq.

Major Achievements

- Grants for 34 patents, 33 trademarks and 26 design applications in India, as well as 3 foreign patent grants (one each in China, Malaysia and Europe).

- Electrical Standard Products business
 - 20% Healthy New Product Intensity (NPI) index powered by focused R&D activities
- Electrical Systems & Equipment business
 - Breakthrough in Africa for business with an order from the Dangote Group.
 - Attained success with wind players
 - Ahmednagar Switchgear Works factory has become the first Indian factory approved by global wind majors

Significant Initiatives

Multiple value engineering and procurement optimisation measures have helped generate operational cost-efficiencies and savings, across the business. A few, key vertical-specific initiatives include:

Electrical Standard Products

- Total Quality Management (TQM) remained a key focus area for business. It has applied for the coveted Deming Prize – the highest Quality award – which will help the business to garner further opportunities from international markets.
- New products introduced included MCCBs and variants of Omega ACBs for new emerging markets, contactors



Smart Meters

for power quality control, the ENGEM range of wiring accessories, products for the agriculture segments, etc.

Metering and Protection Systems

Ongoing implementation of operational excellence initiatives such as Value Engineering, Lean Manufacturing, 5S, etc. have helped it to achieve cost efficiencies and to remain competitive.

Switchboard Business

By shifting its low voltage switchboard manufacturing operations from Ahmednagar to Coimbatore the business has increased its manufacturing capacity for medium voltage products.

Electrical Systems and Equipment

- Introduced a range of new products for the utilities segment i.e. feeder pillars, CSS (Compact Sub Stations) and Front RMU (Ring Main Unit) with FRTU (Feeder Remote Terminal Unit)
- New products for infrastructure projects (metros, airports, smart cities and high-end residential complexes) in global markets: Sub-Main Distribution Board (SMDB) and GIS for the wind segment

Control and Automation

- Successfully developed its in-house AC drives of Series 690V and MV range, thereby reducing dependence on imports.
- Upgradation of the in-house developed SCADA i-Visionmax® which is gaining increased acceptance in the market.

Digitalisation

The business has embarked on number of enterprise-wide transformation initiatives towards digitalisation and data analytics in alignment with its business strategy. These include:

- Project Maitri – IoT-based Smart Asset Management Solution
- Asset Intelligence Management
- Collaboration, Document Management System, Workflow Management
- Digital Training & Education
- Augmented Reality
- Virtual Factory Visit (VR)
- Sales Force Automation solutions



Switchboard installation at a national infrastructure site



SCADA Systems

Environment, Health and Safety

Energy conservation remained a major focus area in FY 2018-19 across all manufacturing locations. Various initiatives undertaken have saved total energy of 2392491 kWh. Notable conservation initiatives across all manufacturing locations include the use of LED lights, optimum temperature setting for ACs, installation of solar panels to reduce conventional energy consumption and the implementation of energy-saving options on CNC machines.

Regarding safety, seven Lost Time Incidents were reported during the year from different project sites and factories of the business. There were no accidents reported at the Mahape, Ahmednagar, Coimbatore and Mysuru locations. The business has increased safety training man-hours. During the year, it spent 88% more man-hours in training in comparison with the last financial year. This has resulted in higher safety awareness among employees and consequently fewer Near-Miss Incidents in the year.

Human Resources

The sustained focus on employee development and engagement complements consistent business results. Enhanced workforce productivity is testament to innovative HR initiatives implemented year after year. The unique leadership development framework of STEP initiatives equip managers with the necessary leadership competencies

required at different managerial levels. The business's ability to scale-up operations through the right talent mix as well as to provide an eco-system conducive to high performance, reflects a robust engagement matrix.

Engagement frameworks on Rewards & Recognition (R&R) including Annual Awards and My-Day-My-Way stand out amongst the most popular and widely recognised initiatives across the business. Beyond engagement outcome and predictors, several human capital initiatives are designed to suit the business's strategy.

Risks and Concerns

Some parts of the businesses such as Meters, Control & Automation projects and supply of products to utilities are dependent on Government contracts and the stability of the Government's policies is essential to its growth. This risk is mitigated by an attempt to diversify the customer base.

Private sector investments are also a driver for the business's growth. Political and policy stability will, in turn, determine private sector growth. Any instability is a risk to the business and mitigation is again being attempted through a focus on products in emerging technologies, such as solar, in which projects are likely to be relatively Government and policy-agnostic.



Range of U Power Omega Air Circuit Breakers

The increasing barriers to imports in some of the GCC countries resulting from an emphasis on local content and presence poses a challenge. Country-specific business models to deal with local legislation in this regard are being mooted to mitigate this risk. The oil & gas industry is a major customer for the business across geographies. Investment in this space is directly related to the stability of oil prices. A more balanced customer base with increased focus on new technologies, i.e., renewables and infrastructure, are mitigation approaches.

Outlook

GDP growth in India is expected to be at around 7% and CPI & WPI Inflation remained subdued. To fuel industrial growth, RBI announced rate cuts with a focus on improving credit and liquidity.

Significant opportunities will be provided to the business by new infrastructure, public transport systems, airports and support to renewable energy. Government programmes

like UDAY, Smart Cities, Smart Grid, Pradhan Mantri Krishi Sinchayee Yojana, Pradhan Mantri Kisan Samman Nidhi Yojana, Digital Villages, India's Electric Vehicles mission and increased focus on renewable energy will provide new opportunities for the business.

Opportunities in the GCC region will emerge from the impetus to large renewable energy projects, the creation of new urban infrastructure and an increased focus on automation across sectors, notably in oil & gas. Growth in Africa is also expected to increase and the presence of the business in select geographies will be beneficial.

During the early part of FY19, L&T entered into a definitive agreement with M/s Schneider Electric, a French multinational company, to divest its Electrical & Automation business in line with the Company's policy to exit non-core businesses, subject to approvals from regulatory authorities. The Competition Commission of India in its letter dated April 18, 2019 has accorded approval, subject to certain amendments the details of which are awaited.