

ELECTRICAL & AUTOMATION BUSINESS



City Command & Control Centre, Vadodara Municipal Corporation

Overview:

L&T's Electrical & Automation (E&A) business, is a leading supplier of electrical equipment in India. It is engaged in manufacturing low and medium voltage electrical switchgear products (both standard & customized) and energy meters, and executes projects in the control & automation space.

In the low voltage (LV) segment, E&A has two categories of products – standard switchgear products and customised switchboards / electrical panels – and commands the highest market share in India. These products are widely accepted in international markets, particularly in South East Asia, the GCC and select African geographies. E&A's electrical Agri products have occupied the agricultural market for more than 40 years. Its innovative control-gear products as well as new generation solar energy-supported products give a technological push to the Indian agricultural ecosystem.

L&T's LV products are manufactured at three locations in India. Customised LV switchboards are manufactured at two locations in India and one location each in the Kingdom of Saudi Arabia (KSA) and Indonesia.

The medium voltage (MV) range of switchgear products is manufactured in India and Malaysia. E&A's group Company 'Tamco Switchgear' enjoys a

market-leading share in Malaysia and has a strong foothold in the MENA region, the SEA region, and select geographies in Europe and Australia.

E&A has the distinction of being the single largest manufacturer of single-phase energy meters with a leading market position in India. The business has significant capacity to manufacture three-phase / tri-vector meters, and is a pioneer in developing new products. It is one of the first to deploy smart prepaid meters in the country on a large scale.

E&A's System Integration business possesses project management experience of more than 25 years. The business is supported by an in-house manufacturing facility for control panels, combined with its own copyrighted software solution- i-Visionmax®. The business provides a one-stop engineered solution coupled with project management skills. The domestic business serves the Indian market and neighbouring countries like Bangladesh, Nepal and Indonesia, while its international arm addresses the GCC market.

Clients of the business span a wide range of sectors including Metro Rail, Airports, Renewable Energy/ Solar, Defence, Hospitals, Educational Institutions, Data Centres, Realty, Auto, Food & Beverages, Chemical, Pharma, Textile, Sugar, Automobile and Steel.



E&A's range of switchgear

The business' LV standard switchgear and agricultural products are marketed through a network of over 650 stockists. Automation products, such as drives and PLCs, are sold through around 75 Integrated solution providers. In addition, the retail market is serviced through a network of 165 Retail Distributors and around 350 Distribution Select Partners. Customers of E&A include both private and publicly-owned undertakings and select corporates.

E&A is a full-suite business with strong in-house design and development teams. It has five DSIR-approved R&D facilities and two NABL-accredited testing laboratories for testing products across diverse testing parameters. The 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 service the in-house business needs as well as external customers.

To promote good electrical practices in the industry, the business conducts a wide range of training programmes for technicians, customers, engineers, professionals and even students through its Switchgear Training Centres at Pune, Lucknow, Coonoor, Delhi, Kolkata and Vadodara.

The business has an international presence through the following entities within the group:

TAMCO Switchgear is an established manufacturer of low and medium voltage switchgear. Together with its direct subsidiary in Indonesia, Tamco's international market spans MENA regions, select geographies in Europe, ASEAN countries and Australia.

L&T Electrical & Automation FZE (LTEAFZE), located at Jebel Ali Free Zone (Dubai, UAE) provides turnkey engineering, assembly, integration of electrical, instrumentation and telecommunication solutions. It taps into a customer base in the Middle East and Africa. It has a state-of-the-art integration facility in Jebel Ali Free Zone.

L&T Electrical & Automation Saudi Arabia Company Limited, located at Dammam in the Kingdom of Saudi Arabia, offers the Gulf market a spectrum of products and services comprising Air Insulated Switchgear (AIS), Gas Insulated Switchgear (GIS), Ring Main Units, LV Switchgear, Motor Control Centre (MCC) - Fixed / Drawout, Pre-Fabricated / Packaged Sub-stations. Offerings include Variable Frequency Drive panels and automation systems, Security Systems and allied equipment such as Transformers, Busducts, DC/UPS, Power Quality Management Systems, as well as erection, testing, commissioning and retrofitting services and maintenance contracts.



Smart Meters

Henikwon Corporation is a leading Malaysia-based LV and MV busduct systems' manufacturer, with offerings for the building and infra segments.

The UK-based Servowatch Systems Limited, offers technology in the control & automation space for marine applications as well as other emerging segments. Servowatch is recognized as a world-leading system integrator for modern naval platforms, Super Yacht installations and commercial marine operators. The unique software design allows integration of third-party software into a common operator platform environment.

Kana Controls, Kuwait, is a local company that helps L&T penetrate the Kuwait market and enhance its domain expertise in design, engineering, supply and commissioning, as well as render after-sales support of Integrated Automation and Telecommunication Systems based on various global OEM products and technologies.

Business Environment

The various Government reforms initiated – such as focus on improving 41 different areas, primarily the Energy, Infrastructure and Irrigation sectors in India and making India a USD 5.0 trillion economy by 2024-25 – led the business to begin FY 2019-20 with a healthy order backlog.

As the General Elections in India were held at the beginning of the financial year, it was expected that

economic performance would remain benign in view of the model code of conduct and slowing down of the decision-making process by the Government in the first quarter of FY 2019-20. The pro-incumbency mandate received by the Government reassured the sustenance of the 'reform' agenda.

NITI Aayog's focus on the North Eastern region by proposing to set up industrial estates/parks in such areas set up a platform for growth for the standard product's division of the business during FY 2019-20. The Government's continued emphasis on improving rural infrastructure translated into opportunities for the business. Various announcements made in the Finance Budget by the Government of India paved the way for creating new infrastructure, public transport systems and airports. The support for renewable energy provided significant opportunities for E&A's standard switchgear products and switchboards divisions which are functional in the LV and MV space.

Other notable initiatives like UDAY, Smart Cities, Smart Grid, Pradhan Mantri Krishi Sinchayee Yojana, Pradhan Mantri Kisan Samman Nidhi Yojana and Digital Villages continued to remain highlights in FY 2019-20. The Metering division of the business found major opportunities owing to these initiatives and was able to successfully roll out one of the largest Smart Meter projects in India based on the linear polarisation resistance technology. Continued emphasis on smart cities has helped the



Control panels at MRPL

Control & Automation division of the business to provide technologically superior solutions to the domestic market.

The business also has a significant presence in Malaysia and South East Asian countries through TAMCO. With the drop in growth rates in Malaysia, business opportunities for TAMCO were scaled down.

Supported by market demand, enhancement in public-private partnership projects and Government reforms, the business performed on expected lines until January 2020 by achieving profitable growth. However the COVID-19 pandemic began to impact business from February 2020 onwards.

Awards

- The business's New Product Development function bagged the Deming Prize, the highest award in Quality. L&T is the first switchgear manufacturing company outside Japan to receive this prestigious award
- E&A's Metering & Protection Systems business unit won the coveted IMC Ramkrishna Bajaj National Quality Award (RBNQA) Performance Excellence Trophy 2019

Significant Initiatives

- The switchboard business initiated the manufacture of its 'Compact Substation' switchboard at Ahmednagar to enhance manufacturing excellence. A web-based portal

for asset management has been developed to monitor LV switchgear and other electrical system equipment

- The business received grants for as many as 81 patents, 9 trademarks and 9 design applications in India

Product Launches

- New MCCBs, new variants of ACBs, contactors, isolators and panel solutions for emerging market segments such as Solar and Railways, new state-of-the-art motor protection relays, controllers for Power Quality Solutions, intelligent products for the Agricultural segment, etc. were launched
- The Electrical Systems & Equipment business introduced feeder pillars, compact sub-stations and front RMU with FRTU for the Utilities segment. For the international market, sub-main distribution boards (SMDBs) and GIS for the wind segment were introduced to cater to the Infrastructure sector, including Metros, Airports, Smart Cities and high-end residential complexes. The business also introduced a pre-fabricated electrical substation building, known as 'E-House', customized to house all electrical equipment as per project requirements
- The MV portfolio was enhanced by an improved range of GIS for Wind Energy applications and Metro projects
- 'SMART' Ring Main Units were in high demand in Smart Cities. The domestic LV Switchboards with the



Air Insulated Switchgear

closed-door operation feature were offered to key customers in the refinery and power plant segments

- The Metering division worked on the integration of new communication technologies such as 4G, NBIoT and LoRa in the Smart Meter segment
- The business successfully rolled out one of India's largest Smart Meter projects based on the Linear Polarisation Resistance (LPR) technology

Digitalisation

Key digital initiatives which comprised both new as well as scope enhancement in projects under implementation included:

1. Asset Lifecycle Management, using Radio Frequency Identification (RFID)
2. Robotic Process Automation (RPA) & AI
3. Augmented reality (AR)
4. Virtual Reality (VR) - Virtual factory visit and Safety Training
5. Sales Force Dot Com (SFDC): The business recently implemented SFDC as a single platform for structured planning, database management and analytics to improve decision-making for its Electrical Standard Product (ESP) sales, business development, product management and service functions.

The business also developed a retail management system for the Retail and Agricultural business of its ESP division.

Environment, Health and Safety

Energy conservation remained a major focus area in FY20 across all manufacturing locations. Various initiatives undertaken have saved total energy of 962580 kWh. Notable initiatives include use of LED lights, optimum temperature setting for ACs, installation of solar panels to reduce conventional energy consumption and the use of the energy-saving option on CNC machines.

The Bureau Veritas Surveillance audit of the ISO50001 Energy Management. System of the ESP manufacturing campus at Ahmednagar was successfully completed.

There have been no accidents reported at the Mahape, Coimbatore and Mysore facilities in the last 2 years. The business conducted a Human Safety Audit at manufacturing locations through M/s TCE in August 2019. One of the outcomes of this audit was the conducting of Safety Leadership Training of line managers and supervisors who are directly responsible for safety at the workplace. This has resulted in safety awareness among employees, and manufacturing facilities have started reporting 'near miss' incidents.

Human Resources

The business has rolled out several digital initiatives to manage the indirect workforce, leading to enhanced productivity and process efficiency. There has been consistent encouragement to adopt on-line learning through Anytime Learning (ATL) and ATL Next across the organization. Various leadership development programmes linked to competency requirements at different career stages help build a robust internal pipeline of leadership to take charge of the current and future requirements of the organization. Despite the overhang of divestment, the business has been able to successfully recruit the right talent to meet its manpower requirements. Focus on employee health and wellness, succession and career planning and need-based developmental opportunities have helped retain top talent.

The HR practices of the business are well-aligned to the business strategy, and the outreach for development encompasses not just employees but also channel partners and customers, through a variety of training interventions.

Risks and Concerns

The key concern for the business is keeping pace with fast-evolving technologies to stay relevant to the market. For this, investments in Research and Development are essential.

By aligning its business strategy and product portfolio, the business strives to make a winning proposition amidst changing business environments and Government policies.

With the progress in the process of divesting the business to Schneider Electric, an impact was felt due to customers'

apprehensions about continuity of service quality. Also, with the pandemic, market sentiments have been affected overall, and the new norms mandated may impact operations.

Outlook

With the outbreak of the COVID-19 pandemic, economies are expected to contract in the near term, leading to reduced capex by the private sector. The Middle East economies continue to reel under the oil-price meltdown, impacting opportunities in that region. With limited opportunities, the competition is expected to intensify.

However, the Government's emphasis on 'Vocal for Local' and the push in the rural economy in view of the large migration of workforce from cities to rural areas may work in favour of the business. With the Government's focus on the large-scale roll-out of Smart Prepaid Meters in order to improve the fiscal health of the DISCOMs, the Metering division stands to gain majorly due to its in-house design and customization capabilities and its large manufacturing capacity. Better prospects are visible in Malaysia for large MV orders through TAMCO.

The growing trade-tensions between the US and China and the world's changing perception towards China may result in the shifting of manufacturing bases for some of industries to India, Indonesia, etc. The business is likely to benefit from this.

The divestment process of the business to Schneider Electric is on course. The approval of the Competition Commission of India, subject to fulfilment of certain conditions, has been received and the business has been classified as a discontinued operation from June 2019.