

POWER BUSINESS



225 MW Sikalbaha Combined Cycle Power Plant, Bangladesh

Overview:

L&T's Power business is one of the leading EPC players in India that is known to deliver 'design to commission' business solutions for the thermal power Industry.

Building on its core competencies, the business has swiftly built the necessary capabilities and undertaken projects in newly-emerging technologies in the thermal power plant industry, like Flue Gas Desulphurization (FGD) for example.

The business has a track record of providing end-to-end solutions for executing large and complex projects. It has comprehensive in-house capabilities including engineering, state-of-the-art manufacturing facilities, project management expertise and erection-to-commissioning, which is unparalleled in India and provides complete satisfaction of quality of delivery to the customer.

L&T's integrated power equipment manufacturing facility in Hazira, Gujarat is one of the most advanced in the world where it manufactures ultra-supercritical/ supercritical boilers, turbines, generators, pulverisers, axial fans, air-preheaters and electrostatic precipitators, which has added more than 8 GW of supercritical power generation capacity to grid since its inception.

The business is now gearing up to make its footprints in Nuclear power plants. It has taken necessary steps to undertake STG island contracts in upcoming PHWR nuclear based power plants.

Following are the JVs within its fold:

L&T-MHPS Boilers Pvt. Ltd., a joint venture with Mitsubishi Hitachi Power Systems Limited (MHPS) Japan, for the engineering, design, manufacture, erection and commissioning of ultra-supercritical/ supercritical boilers in India up to a single unit of 1000 MW.

L&T-MHPS Turbine Generators Pvt Ltd., a joint venture with Mitsubishi Hitachi Power Systems Limited (MHPS), Japan and Mitsubishi Electric Corp. (MELCO), for manufacture of STG equipment of capacity ranging from 500 MW to 1,000 MW. The company is engaged in the engineering, design, manufacture, erection and commissioning of ultra-supercritical/supercritical turbines and generators in India.

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



2x660 MW Jaypee Nigrie Thermal Power Plant, Madhya Pradesh

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

Business Environment

In the current year, the power industry witnessed a spurt in ordering for FGDs. Installation of FGD systems in existing and upcoming thermal power plants has been made mandatory by the Ministry of Environment, Forest and climate Change, (MOEFCC), Government of India to curtail SO₂ emissions. The Central Government has taken the lead in ordering of FGD systems while power plants in the state and private sector have started floating tenders, which would ensure ordering in the upcoming financial year.

It is estimated that the total installed capacity where FGD is to be installed stands at around 156 GW involving 430 FGD units. The business sees enormous potential in this area and is geared to undertake more such jobs on an EPC basis. The business also has the right combination of technology capabilities namely CT-121 from the world-renowned Chiyoda Corporation, Japan and its own in-house capability in engineering and project management, giving it a competitive edge.

In the mainstream of EPC jobs in coal based projects, India saw very low ordering this financial year. The tender pipeline had practically dried up and most of the tenders

have been deferred to next year. The power sector continues to face challenges like availability of funds, low plant load factor, financial stress, load balancing, coal and water availability issues, payment assurances, etc. Further, muted demand from the private sector and excess manufacturing capacity of suppliers continues to put pressure on EPC prices.

Major Achievements

Following are some of the major achievements by the business during the year:

- Achieved Commercial Operations Date for the 1st unit in a project in Madhya Pradesh
- Achieved completion of Performance Guarantee test in a project in Rajasthan.
- Gas Turbine Generator synchronization for a Bangladesh Gas based power plant project within the contractual period.
- First 1,000 MW Turbines to be manufactured in the country by L&T-MHPS Turbine Generator (2 x 1,000 MW Turbines)
- Award for Significant Improvement in Productivity at the IMTMA Ace Microsmatic Productivity Championship.

The business bagged 4 contracts from NTPC for FGD and export orders in L&T-MHPS Boilers. A strong Order Book



2x800 MW Sri Damodaram Sanjeevaiah Thermal Power Plant, Andhra Pradesh



Boiler internals being manufactured at Hazira, Gujarat

ensured that the factory at Hazira operated at almost full utilization.

Significant Initiatives

During the year, the business has taken a few initiatives like implementation of business excellence model, cost optimization and vendor profiling among others.

With the help of leading consultants, the business has focused on reducing its direct and indirect cost to strive for cost leadership.

Digitalisation

In the area of digitisation, the business has implemented various IT driven processes like IOT technology deployment on various plants and machineries at site to improve its machine utilization, work density in different zones, health of machines and their duty cycles,

Other initiatives like GPS tracking of moving vehicles like pick and carry cranes, trucks, tipper and trailers to improve efficiency and Virtual Reality to improve safety conditions at sites, Hawk-Eye (cloud based solution) for project monitoring and use of drones for site survey are at various stages of implementation.

Environment, Health and Safety

The business considers safety as an integral part of its operations, on par with time and cost factors. The

business believes that 'safety' is the differentiator between L&T and other organisations. It has now moved to next level of safety implementation by embracing the digital environment for a safer workplace. Embracing initiatives like Virtual Reality to improve the safety conditions at sites is one such example. The various other initiatives like safety campaigns, observing 'safety month' and varied programmes at sites reaffirm the business commitment towards a robust safety management system.

Human Resources

Emphasis on training and development of the workforce has been the focus area. The business realizes the importance of talent preservation and has implemented various initiatives like Promoting Perpetual Leadership (PROPEL) for grooming of its talent. This includes competency building programs for leadership development to make them ready for next level, and various other engagement programs like Instant Motivation for Praiseworthy Actions (IMPACT) awards to motivate and sustain employees who showcased above average commitment.

Risks and Concerns

Despite an increasing focus on renewable energy, the business is confident that coal will continue to be the mainstay of the domestic power sector for providing stable, reliable and robust base load power supply and will continue to offer sustained market opportunities.



Supercritical turbine being manufactured at Hazira, Gujarat



3x660 MW Koradi Thermal Power Plant, Maharashtra

Excess manufacturing capacity, however will continue to drive the prices aggressively and would reflect in the financials of EPC players.

Outlook

Looking ahead, the business is confident of a revival of capacity addition in the thermal power sector to match projected rise in demand for power, in line with projected economic growth in the country.

Coal fired stations will continue to be in demand as it would ensure stable power and provide peaking power requirements and ensure a balanced grid.

The business anticipates growth in power demand, which would require capacity addition and enhancement in the areas of generation, transmission and distribution. Due to anticipated demand, the business sees a market opportunity of around 7GW in next year for coal based thermal power plant business.

The business sees around 40 GW of ordering in FGD systems in the next year, and opportunities in the replacement market.

The Government has an ambitious plan to increase the nuclear power production to 23 GW by 2031 from the

current level of 7GW. The business sees large value opportunities in this segment. It is gearing up in terms of manufacturing capability and procuring the requisite technology to produce turbines of 700 MW capacity relating to PHWR nuclear power plants.

The Business is also taking the necessary steps to make itself a serious player to undertake STG island contracts in PHWR nuclear based Power Plants.

Gas based plants are not expected to revive in India soon. The business continues to focus in markets outside India for gas based power plants. The target countries are Bangladesh, Sri Lanka, Myanmar, GCC countries. The business has taken steps to strengthen its presence in the Middle East to encash available opportunities in this sector.

The L&T-MHPS Boiler JV is looking forward to encashing upcoming opportunities in the domestic market and will continue to explore business opportunities in the international market for direct export orders. In addition, the Company is looking forward to gaining a foothold in the Selective Catalytic Reduction system market in India which is likely to open up in the second half of FY 2019-20.