MANAGEMENT DISCUSSION AND ANALYSIS

INDUSTRY OVERVIEW

Economy

India is now the sixth largest manufacturing country in the world, rising up from the previous ninth position, and thus retaining its edge on the world economic landscape. Post the demonetisation announcement, the pace of remonetisation has picked up, and it is expected that the effects of demonetisation will not spill over into the next financial year. India's economic growth is estimated to slow to 7.1% in FY 17 compared to 7.6% last year.

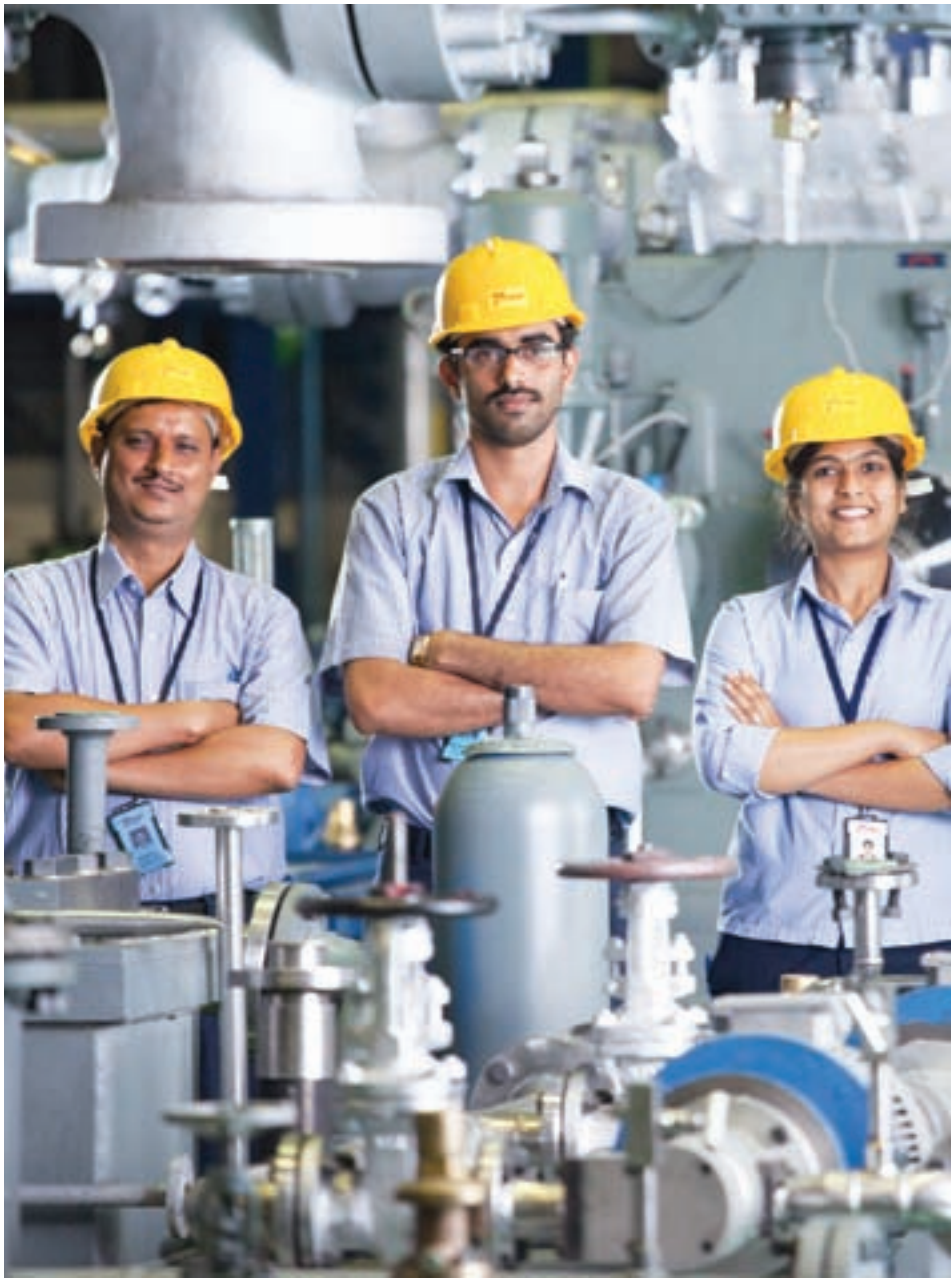
Year 2016 witnessed the slowest global economic growth since 2009 mainly due to weak international trade and investment. The world economic growth rate was 2.3% in 2016 with emerging and developing economies growing at 3.4%.

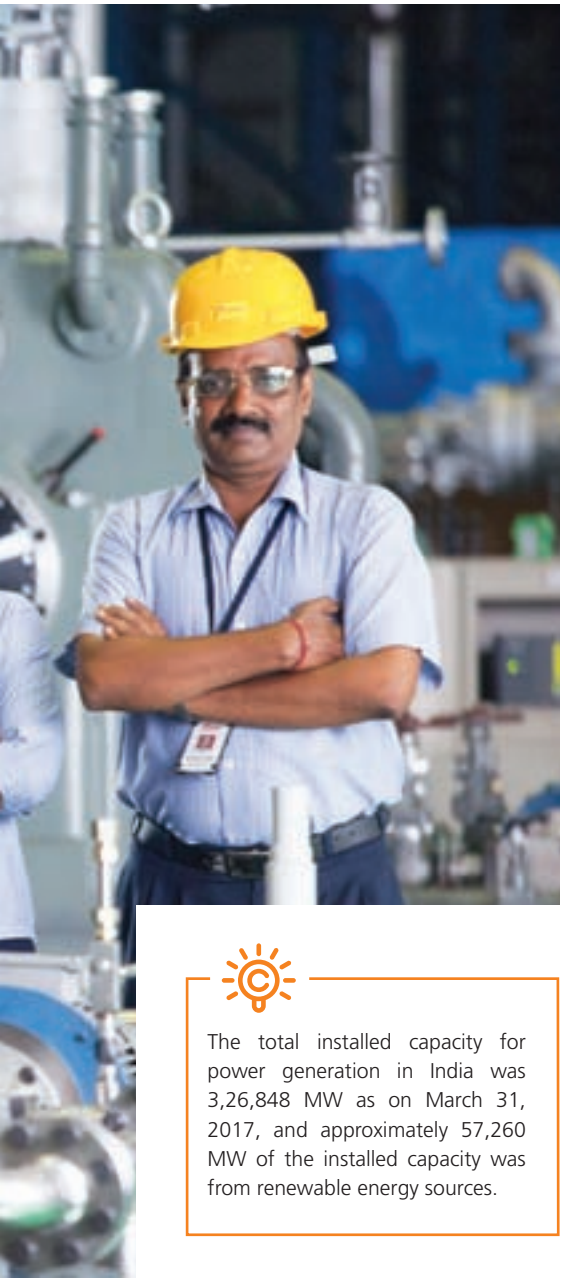
Industry trends

The global energy landscape is changing. Traditional centres of demand are being overtaken by fast growing emerging markets. The energy mix is shifting, driven by technological improvements and environmental concerns. More than ever, industries feel the need to adapt to changing energy requirements. Apart from focusing on increasing operational efficiencies and cost competitiveness, the power companies are finding ways to adhere to their commitment in addressing environmental concerns.

Indian Power Industry

India's power sector is one of the most diversified in the world. From conventional sources such as coal, lignite, natural gas, oil,





The total installed capacity for power generation in India was 3,26,848 MW as on March 31, 2017, and approximately 57,260 MW of the installed capacity was from renewable energy sources.

hydro and nuclear power to viable non-conventional sources such as wind, solar, agricultural and domestic waste, India is making significant investments in developing the complete gamut of the power sector. Electricity demand in the country has increased rapidly and is expected to rise further in the years to come. In order to meet the increasing demand for electricity in the country, massive addition to the installed generating capacity is planned. The total installed capacity for power generation in India was 3,26,848 MW as on March 31, 2017, and approximately 57,260 MW of the installed capacity was from renewable energy sources.

The Indian Government's focus on attaining 'Power for all' has accelerated capacity addition in the country. Indian power sector is undergoing significant changes that will redefine the industry outlook. Sustained economic growth continues to drive electricity demand in India.

The annual growth rate in renewable energy generation has been estimated to be 34%. The Government has added 8,500 MW of conventional generation capacity during April 2016 - January 2017 period. Under the 12th Five Year Plan, the Government has added 93,500 MW of conventional power generation capacity, thereby surpassing its target of 88,500 MW during the period.

Out of India's total installed capacity of 57,260 MW of grid-connected renewable power, a significant share of 56% comes from wind power, while 8% is contributed by small hydro power. The share of biomass and waste to energy segments contributes about 14%, with the balance 21% coming from solar. The Indian Government's efforts are centered on achieving the ambitious renewable energy targets in the coming years, mainly to accomplish the "Power for all" goal and to promote clean energy. The Ministry of New and Renewable Energy (MNRE) has been framing policies to attract private investment in renewable energy through financial incentives with the aim to make India an investment hub for manufacturing and installation.

Industry Analysis

The industrial power generation market represents the decentralised and captive power generating industry. The Company's business drivers in domestic as well as the export markets include Industrial Capital Expenditure, Renewable Energy and Opportunistic sale to grid by Captive Power Units.

Industrial Capital Expenditure

Most of the process industries that require both steam and power for their processes make dual use of their power plants. The steam required is produced in the boiler and is passed through the steam turbine at specific inlet pressure and temperature. This helps in generating power for the operation of the facility. The steam at a desired pressure can be extracted through use of extraction turbines. The steam thus extracted at a particular pressure and

temperature can be used for process requirements. The steam that is still inside the turbine further expands and is used for power production. Thus the requirement of both the steam and power is fulfilled through a single process. Process co-generation industries form a major component of the customer segment for the Company.

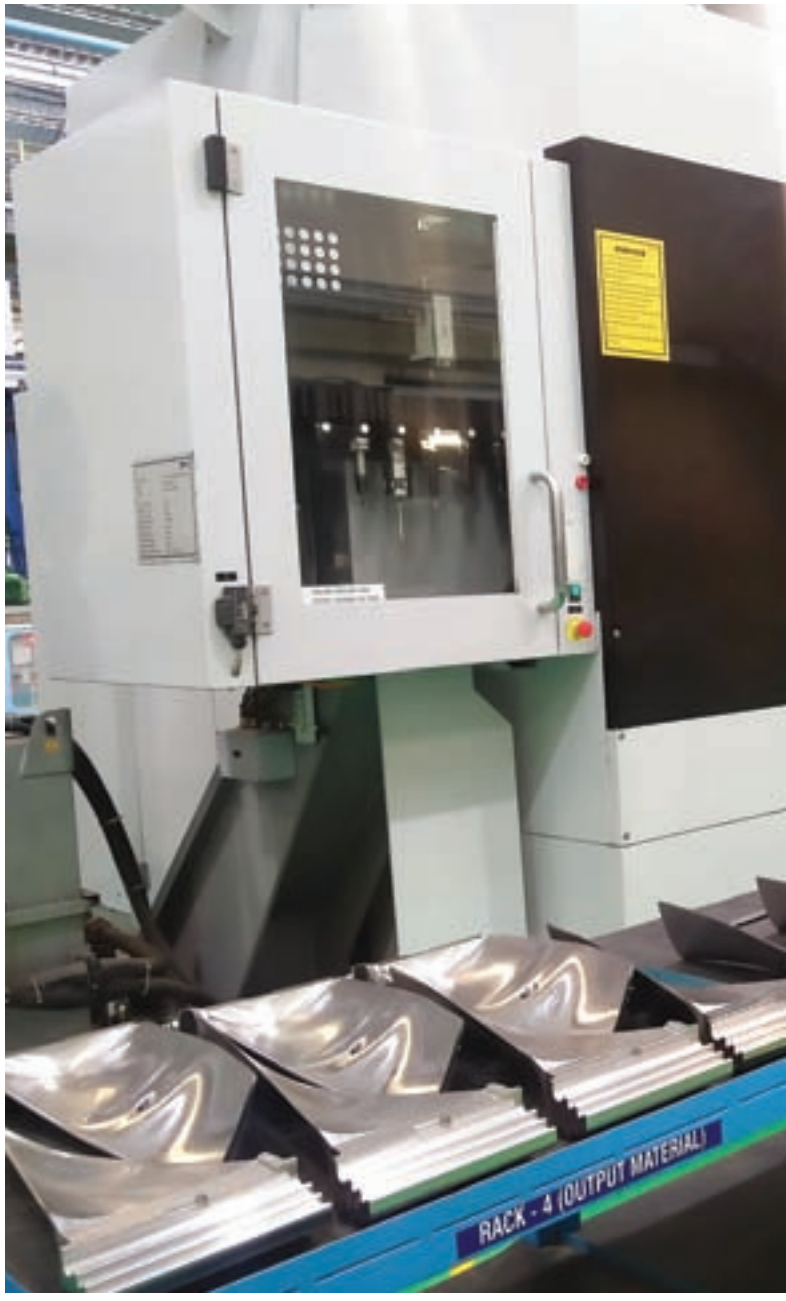
There is significant potential of process co-generation in various industries, such as breweries, caustic soda plants, textile mills, distilleries, fertiliser plants, paper and pulp industry, solvent extraction units, rice mills, petrochemical plants, etc. Furthermore, these co-generation projects also use conventional fuels, such as coal, oil, lignite, gas etc., for meeting their power and energy requirements.

Renewable Energy

Biomass-based power generation, waste to energy, waste heat recovery (excess heat converted to power) form a major part of TTL's customer base. The advantages of assured fuel supply, flexibility to switch fuel sources, and financial incentives make this segment a steady source for meeting the growing energy demand. However, this segment could suffer from supply constraints due to environmental factors such as drought or floods.

The current availability of biomass in India is estimated at about 500 million metric tonnes per year. Studies sponsored by the Government of India have estimated surplus biomass availability at about 120-150 million metric tonnes per annum including agricultural and forestry residues corresponding to a potential of about 18,000 MW. In addition, about 7,000 MW power can be generated through bagasse based co-generation in the country's 550+ Sugar mills, if these sugar mills were to extract power from the bagasse produced by them.

According to the estimates, the renewable power target to be achieved by India by the year 2022 is 1,75,000 MW, which includes 1,00,000 MW from solar (57%), 60,000 MW from wind (34%), 10,000 MW from biomass (6%) and 5,000 MW from small hydro power (3%).



According to the estimates, the potential of Biomass based power generation is ~ 25,000 MW in India including Bagasse based co-generation.

According to World Estimates, in 2016, the Global market for Renewable energy is roughly 2,100 GW of which Hydro Power is around 58%, Wind Power is 22%, Solar Power is 14%, Bioenergy is 5% and Geothermal less than 1%.

Captive Power Plants

Captive power is the power produced within the premises of an industry or establishment for self-consumption. It is the only economically feasible solution where reliable grid power