

# MANAGEMENT DISCUSSION & ANALYSIS



## Economy

Amid a positive outlook, led by revival in factory output and growth in the services sector, the Indian economy is estimated to grow at 7.6% in FY 16 as compared with 7.2% in FY 15. At real GDP growth of 7.6%, India would be growing faster than many economies in the world.

While the manufacturing sector is estimated to grow at 9.5% in FY 16, up from 5.5% a year ago, the services sector growth was catapulted by 10.1% in trade, hotels and communication, 9.9% in the financial sector and 7.5% in public administration. The revival of manufacturing can be attributed to a slew of reforms by the Government in the last one year or so, including 'Make in India'. The global economies, however, did not grow in the year 2015, and remained at the levels of 2014. One of the main contributors was the slowdown in China, which, at 6.9%, witnessed the least growth in the last 25 years, in 2015. Though the fall in oil prices helped some of the developing nations, the price drop was so steep that it even resulted in budget deficits in some oil producing countries, such as Saudi Arabia and Nigeria, etc. Strong dollar has placed many commodities-importing countries on the defensive, with already struggling nations such as Russia and Brazil also contributing to sluggish recovery on the global front.

## Indian Power Industry

Various initiatives have been taken by the Government of India in the areas of coal-mining, renewable-energy, power-generation and electricity-distribution sectors. After successfully completing the first phase of coal block auctions in FY 15, the Government further increased coal block auctions in FY 16.

In the mid and downstream power sector, the Government is strengthening the transmission and sub transmission grids, and also helping States to restructure the debts of the distribution companies. All these initiatives are expected to fuel further investment in the power generation sector. The total installed capacity for power generation in India was 301,965 MW as on 31<sup>st</sup> March, 2016, and approximately 42,727 MW of the installed capacity was from renewable energy sources.

## Industry Analysis

Out of India's total installed capacity of 42,727 MW of grid-connected renewable power, a significant share of 63% came from wind power, while 10% was contributed by small hydro power. The share of biomass and waste to energy segments contributed about 12%, with the balance 15% coming from solar.

The Indian Government has been supporting efforts to meet 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 to make India an investment hub for manufacturing and installations.

On a global scale, the share of renewable energy (excluding large hydro) in power generation was estimated at 10.3% in 2015, against 9.1% in 2014. It was estimated that renewable investments in 2015 in developing countries has surpassed the investments in developed countries. The main investors in developing nations include China, India, South Africa, Mexico and Chile. The power generation capacity added in

renewable power exceeded the power generation investments in conventional power in 2015. By 2020, it is expected that the amount of global electricity generation coming from renewable energy will be higher than today's combined electricity demand of China, India and Brazil.

### Co-generation

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 Triveni Turbine Ltd.

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

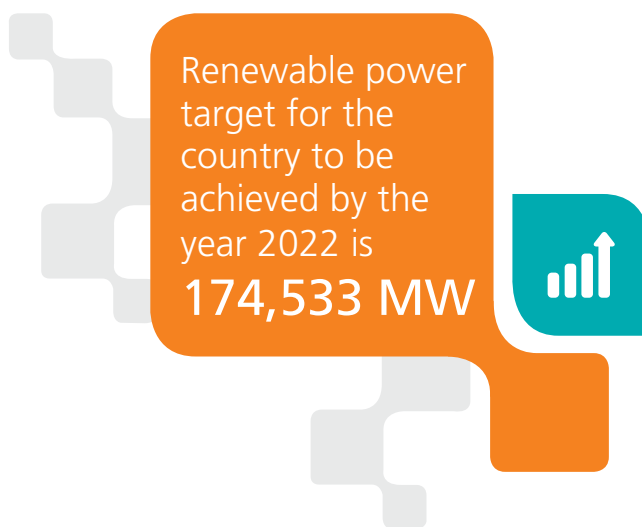
Biomass-based power generation, waste to energy, waste heat recovery (excess heat converted to power) form a major part of TTL's customer base. The advantages of assured fuel supply, flexibility to switch fuel sources, and financial incentives make this segment a steady contributor to meet the growing energy demand. However, this segment also suffers from supply constraints due to environmental factors such as drought or floods. Such was the case during FY 16 in Maharashtra, where many new biomass-based projects could not operate for desired periods due to extreme drought.

India's total estimated biomass power potential is about 25,000 MW. It is estimated that the potential for power generation from agricultural and agro-industrial residues is about 18,000 MW. With higher steam temperature and pressure, and efficient project configuration in new sugar mills coupled with modernisation of existing ones, the potential of surplus power generation through bagasse co-generation in sugar mills is estimated at 7,000 MW.

According to the estimates, the renewable power target to be achieved by India by the year 2022 is 174,533 MW, which includes 99,533 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%).

### Captive Power Plants

Captive power is the power produced inside the premises of an industry or establishment for self-consumption. Captive power plant is the only economically feasible solution where reliable grid power is not available. India has an installed captive power capacity of 40,726 MW as of September 2015. The Government of India allowed the captive power producers to participate in coal auctions last year to address the problem of coal shortages. Though limited fuel shortages still exist for the captive power sector, with expected long-term growth in the steel and cement industries, fuel production for the captive power plants is also expected to grow.



### Market Analysis

#### Domestic Market

Currently, the capital goods industry is rated as an underperformer due to overcapacity and market slowdown in user industries. The industry has been growing at 1% in the last 3 years. However, we expect this industry to grow at the back of strategic Government initiatives such as "Make in India", new "National Capital Goods Policy" etc. The new "National Capital Goods Policy" addresses major issues such as availability of finance, availability of raw material, innovation and technology, sharing of industry best practices, promoting domestic production from 12% to 20% of total manufacturing activity, and promoting exports. The Government is also supporting this sector by encouraging other allied industries.

#### Exports Market

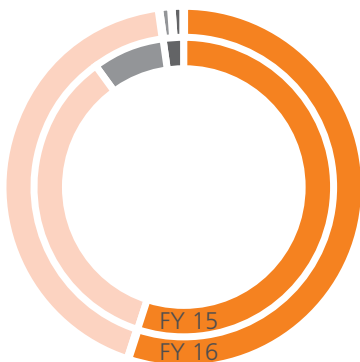
The global economy continues to be sluggish. However, on a global scale, there is a drive to increase renewable energy investment. Further, reduction of landfills is also boosting investment in sectors such as biomass and waste to energy. Countries such as the UK, Thailand and South Africa have shown good progress, while Kenya and Colombia are expected to pick up in new renewable energy investment. Global sugar production deficit, coupled with droughts in various regions due to El Niño, and market correction have helped the global sugar prices to increase, which is a positive sign for new investment in the sugar segment.



## Business Review

### Domestic Market

While the Indian Steam Turbine market for under 30 MW size has remained flat for the two consecutive years of FY 14 & FY 15, at around 700 MW of orders booking, the market for FY 16 has shown a decline by about 20%. The main contributor to this decline has been slow order booking in the sugar sector by around 36%, due to stress in the sector and drought in major sugar producing states like Maharashtra, Karnataka etc. However, the Company maintained its share of order booking during the year from sugar co-generation at the levels of the previous year, while the share of process co-generation went up from 35% in FY 15 to 43% in FY 16. Domestic order booking for the Company in terms of value stood at ₹ 2.1 billion in FY 16, which is a decline of 19% in comparison to the previous year. The segments from which the Company received orders during the current financial year are:



■ Sugar Co-generation ■ Process Co-generation ■ IPP ■ Metal

The Company has a good pipeline of enquiries, which are spread across process co-generation 43%; sugar co-generation 25%; IPPs 12% and metals 20%.

### Exports

The focus on exports has paid dividends and the Company has started gaining momentum in the export market over the past couple of years. FY 16 has been an excellent year for the international business, with product order booking of ₹ 4 billion - a strong growth of 61%. The broad share of export order booking on a regional basis is as under:



■ Europe (including Turkey) ■ Africa  
■ Central & South America ■ South East Asia ■ SAARC

The major segments of exports are from renewable, including waste to energy in Europe and for other markets it has been a mix of segments such as sugar, paper, apart from renewable etc.

The foray into new markets in Latin America, Africa and certain European markets, with potential to enter into CIS, North & West Africa etc., should support the Company's further growth in the export market. The Company's strategy to strengthen its presence in the existing markets of Philippines & Middle East regions, achieving higher penetration in Thailand and Korea, and enhancing market position in Europe, Southern Africa & South East Asia should also help propel continued growth in export business going forward. The Company has a strong enquiry pipeline from over 100 countries.

International enquiries received from over

# 100 countries

The Company has been continually focussing on its brand building in various geographies. A key initiative taken in this regard by the Company in FY 15 was to broad-base its international marketing presence by setting up subsidiary companies / offices in strategic locations. This initiative is gaining momentum, with the Company's presence established in four regions already and some more regions expected to get added in FY 17.

### Aftermarket Services

The Aftermarket Services team initiates a partnership with the customer from despatch of turbine and extending through the lifetime of the turbine. The nature of aftermarket business is ongoing and it lays the foundation for good references for future business.

The Company has a network of service centres strategically located within close proximity of customers, which ensures that TTL engineers reach customers' site faster, thus reducing downtime. This is being further strengthened with physical presence in London, Dubai, Indonesia and South Africa. This will give confidence to the customers, and this locational advantage can also be leveraged to secure product orders and long-term service arrangements.

The Company's foray into refurbishment of other makes of turbines in a focussed manner has started yielding results, particularly in international markets. There has been a significant growth in business from specific regions, and this momentum will be carried forward with substantial growth planned for the next few years.

During the year, the order-booking and revenue from this business segment showed good growth and helped the Company achieve higher levels of profitability. In FY 16, while the order booking grew by 14%, the sales increase was only 7%. However, the share of exports in aftermarket sales increased by 15%.

### Manufacturing Facility

The manufacturing facility of the Company is located on an 11-acre green campus in Peenya Industrial Area in Bengaluru. The facility is equipped with modern CNC machines and equipment dedicated to machining of high precision turbine components, adhering to international quality standards. The CNC machinery includes 4 and 5 axis vertical machining centres for blades, mill-turn centres for rotors, and CNC

gantry and CNC VTL for casing machining. There are specially designed test beds for in-site assembling and testing of turbines, equipped with remote controlled data acquisition system to automatically monitor the turbine performance while testing. The facility also boasts of high-speed vacuum balancing tunnel to carry out precision balancing of all types of rotors. The facility can produce around 150 turbines per year. It is certified with ISO 9001 QMS and ISO 14001 EMS standards, and has adopted excellence in operations through stringent practice of the principles of TQM, TPM, lean 5S, Kaizen, QCs, etc.

The Company has also embarked on an expansion plan to increase the manufacturing capacity of the turbines to 350 per year. It has acquired a 24-acre plot of land in Karnataka Industrial Areas Development Board (KIADB), Sompura, near Bengaluru, and has started construction activities at the new facility, set to be completed in a phased manner. The new facility has been designed to be a benchmark in turbine manufacturing, equipped with the most modern shop floor, R&D facility and a Learning Centre. The first phase of the new facility is expected to be ready for operations during FY 17.

### Technology and R&D

The Company has an advanced in-house R&D department, which is engaged continually in the development of robust, high-power dense, cost-effective and highly efficient turbines to fulfil the requirements of the changing global market. The department has a development roadmap to keep the Company aligned to high international standards with respect to products of global manufacturers in a competitive





environment. TTL is becoming a preferred industrial partner for Indian Government-funded programmes, and active proposals are being submitted to MNRE, TERI and Ministry of Power. The technology developed is extensively validated before commercial use, and the performance parameters in the field are closely monitored to make modifications, as may be considered necessary. Thus, the Company has well-defined processes for development, testing, field feedback and continuous advancement of technology through in-house processes and with global associates.

As in the previous year, the Company was able to develop cost competitive models, with much reduced carbon footprints so as to provide power solutions needed by its diverse international and domestic customers. In line with the industry trends, the Company has been diversifying into different types of steam turbines and other renewable energy products focussing on high efficiency cycles. Even as such products become a reality in the near future, the Company is constantly upgrading and improving its steam turbine designs for optimal performance to meet the increasing power solution requirements from international and domestic customers.

### Intellectual Property Rights

The Company's R&D programme is focussed on technological upgradations, necessitating safeguard of its Intellectual Property portfolio. A dedicated team of specialists gets involved from the planning and conceptualisation stage to the final product stage.

Over the years, the Company has developed a comprehensive IP strategy for creation and protection of long-term IP assets to secure its technological know-how. Reflecting its global focus, the Company constantly undertakes patent and industrial design filings in various international markets. The Company has, in recent times, filed patent applications and design registrations in India, Europe, South East Asia, and the U.S. In the future, the Company plans to file patent applications and design registrations in new international markets which are catered to by its products.

During the year, the Company made 28 IP filings, thereby increasing the IP filings in India to 141 and in other countries to 29 filings. A substantial number of Intellectual Property Rights have already been awarded to the Company in various jurisdictions. The Company was also adjudged the winner of the National IP Award 2016 in the category "Top Organisation for Designs" by the Ministry of Commerce & Industry, Government of India.

### Supply Chain

Efficient and robust supply chain is one of the critical success factors for the Company. A well-defined purchase policy provides guidelines for the Company's procurement function encompassing all its key aspects. The emphasis is on cost control, quality, timely delivery, working capital management, consistency and transparency. The Company provides an even playing field to the supply chain partners, sharing with them its



annual business plan, market dynamics, as well as new product developments and expectations. This helps the supply chain partners realign their businesses with the Company's vision and requirements. In the backdrop of an expanding export market, the supplier partners are encouraged to enhance their capacities so as to reduce the lead time and raise quality standards to meet the global benchmarks. In this process, the Company is working closely with the supplier partners, and provides training to improve their manufacturing process and reduce rejections.

There is a strong realisation and acceptance of 'Zero Defect' and 'Do it right the first time, every time' concepts by the supply chain partners and, to ensure the adherence to these concepts, supplier upgradation programmes are regularly conducted and suppliers are evaluated using structured parameters & tools.

Existing supplier partners are periodically re-assessed through a third party agency in order to ensure that the quality standards are maintained and technology is upgraded in line with the requirements. For new suppliers, a well-crafted qualification process is in place along with EHS requirements. All the supplier partners are governed by a strict code of conduct and non-disclosure agreements.

The Company has successfully managed its input costs by value engineering in the designs and materials, developing new cost-effective supplier partners and sourcing raw materials from some of the most cost-effective countries around the globe. The Company's supply chain always strives to be a value creator by way of implementing strategic initiatives every year.

### Quality Assurance

The Company has implemented a process-based management structure, where the processes are evolved and owned by process owners and focussed on customer and continuous

improvements. The Company is ISO 9001:2008 certified, with a sound quality management system integrated throughout the organisation.

TTL ensures that its network of suppliers and dedicated sub-contractors also comply with these standards through supplier qualification, QAPs and Standard Operating Procedures (SOPs) to maintain comprehensive quality control of turbine and its auxiliary systems.

Products are designed, manufactured and commissioned in accordance with the International quality norms, such as API, ASME, AGMA, NEMA and IEC, among others. Systems are developed to address country-specific product requirements. These systems have helped TTL to meet the stringent requirements of export customers, such as CE/PED and GOST certification.

TTL has adopted the 'Zero Defect' concept to quality, which is supported by tools and techniques like visual management system, root cause analysis, followed by CAPA, DWM, DMAIC, Kaizen, SQIP (Supplier Quality Improvement Programme), SQDCM, Quality Circles, and a rigorous automated Customer Complaint Resolution System.

"Kaizen" movement was started in the Company in 2010 to inculcate a culture of continuous innovation and improvements throughout the organisation, involving people at all levels. The movement continues to provide significant benefits in productivity, quality, cost and EHS. TTL regularly participates in All India Kaizen events organised by CII-TPM Club of India, and has bagged several awards.

### Human Resource

The Company has adopted diverse methods to build its organisational capability continuously, which will enable it to sustain competitiveness in the global market. It believes in building a robust talent pipeline by inducting fresh engineers through a structured selection and training programme. This initiative, which started a decade ago, has yielded good results in nurturing talent specific to the business. The young engineers so trained grow with the Company to occupy key roles.

The focus of the Company on development of human resources has contributed significantly in achieving the business goals, by building and enhancing technical capabilities amongst the people through innovative training and improvement programmes across the functions. This process of engagement and involvement through ongoing / special projects has created learning opportunities for the employees. Other initiatives to foster employee engagement like "Skill enhancement programme", "Capability building", and "Creating future leadership programme" are also being conducted.

The Learning Centre is the nodal point for both employees and customers, training them on a continuous basis with regards to Product and Operations & Maintenance of Steam Turbine Generator Islands.

TTL believes in providing theme-based annual training to employees. In FY 16, the theme was "Global Customer Satisfaction through Process Approach". Apart from the "Design, Review, Verification & Validation Training Programme", other programmes like "Site Operational & Diagnostic, supported/assisted by Remote Monitoring System (RMS)" was introduced for a detailed study of TG Island at the customer site. This was a significant step in behavioural assessment of the product. The officers in the Research & Development and Engineering departments were trained in this programme, and the RMS has been put to effective use for product development, including Transient Operational Regime.

The Company continued with the "Advance Product Knowledge Upgradation" programme for its Customer Care Engineers, improvising the behavioural aspects of the programme with outbound experiential learning. The "Supplier Quality Improvement Programme (SQIP)", as part of "Continuous Improvement" training programme for suppliers, also continued in FY 16.

Computer-Based Product Training (CBT), including display models, is an effective and comprehensive self-learning aide on turbine technology developed by the Learning Centre. CBT module is upgraded on a continuous basis in order to cover the latest technological changes and bring in innovative processes.

A total of 2,200 plus man days were dedicated to training of employees during the year, which was 15% higher in comparison to FY 15. Similarly, 12,000 plus man-days of training were provided to the Graduate Engineer Trainees before being inducted into their relevant departments. FY 16 also witnessed the induction of Diploma Engineers for assembling of higher range of turbines, trained at the Learning Centre.





## Environment, Health & Safety (EHS)

During the year, the Company launched an organisation-wide awareness programme that aimed to improve safety and security by changing “at-risk” behaviour to “safe” behaviour, and by fostering a more collaborative working environment. This included training, coaching and greater accountability for supervisors, along with broader employee engagement through peer-to-peer feedback.

The Company’s safety practices have contributed to zero reportable accidents during the last five years, through implementation of cross-functional teams that work to remove risks from the work process. Cross-functional teams comprised representatives of both labour and management, used structured protocols to identify methods to reduce or eliminate workplace hazards.

**Safety Culture Change:** An assessment was made on the current state of the organisational safety management system by an expert organisation working in this field. A review of all divisions was conducted and recommended for certification to the standards of OHSAS 18001:2007. The certification is expected to be completed by October 2016.

**Water Recycle Systems:** The existing waste-water treatment system in the plant was renovated for leak-proof water supplies to the largest zone of landscape irrigation by contributing to peak demand during summer months.

**Industrial Hygiene & Legal Compliance Audits:** Ambient air monitoring study for particulates and gases, ambient noise monitoring study, and drinking water analysis are being conducted on regular basis as per the norms specified by the Karnataka State Pollution Control Board. Results were below regulatory limits.

**Legal and Environmental Audits** are part of the Environmental Management System (EMS) that measures performance against regulatory and management standards. The Company’s Environmental Management System (EMS) is a comprehensive approach to environmental management and continual improvement, which is certified in line with ISO 14001:2004 standards. Audits are being conducted on half yearly basis by a reputed organisation, which is recognised by over 50 accreditation bodies. The Company is complying with all legal and environmental requirements.

## Outlook

Though the Government policies have started bringing positivity in the market sentiment, growth in industrial capex

8 MW  
turbine  
manufactured  
and despatched  
in 3.5 months



is yet to be seen in the Indian sub 30 MW steam turbine market. The impact of drought on the sugar and biomass industries may affect the order-booking. However, due to lower estimated sugar production for the sugar season 2016-17, the sugar companies are expected to be financially much better off, which in turn may result in capex for co-generation. The trend of projects going on hold is expected to continue for some more time. However, some respite for the market is possible due to increase in demand from process co-generation industries. It may result in renewal of industrial capex in many sectors, which may boost industrial investment and create favourable business conditions.

In the international market, the economic recovery is expected to take some more time. The sugar segment, globally, is expected to see new investment in capex in view of improved outlook and the reality of demand exceeding supply. The Company is expected to exploit the under-penetrated markets as well as new markets. Expansion through global subsidiaries and increased emphasis on service business (relating not only to Triveni make, but also other turbines makes) are expected to help the business growth in the international markets.

The growth potential for TTL in the international market is huge, as the Company is yet to tap many new geographies and new segments. With continuous focus, it is expected to keep the TTL order-booking on a growing trend, offsetting the drop in domestic market. Some of the segments of focus, going forward, will be biomass, waste to energy, paper, process co-generation, palm oil segment etc.

### GE Triveni Limited (GETL)

GE Triveni Limited, a joint venture with General Electric, is a subsidiary of the Company. GETL is engaged in the design, supply and service of advanced technology steam turbines with generating capacity in the range of above 30-100 MW.

GETL offers products, manufactured to international standards of quality and reliability, with best-in-class efficiencies. The flange to flange turbine is manufactured competitively at TTL's world-class facility located at Bengaluru, and the complete project is executed by GETL in accordance with GE's procedures and processes, which include certification of suppliers, adherence to environment and other standards.

GETL despatched its first large-sized international turbine order in FY 16, which helped in achieving growth and profits in FY 16 in comparison to FY 15. The despatches of other two turbines, which is the part of multiple turbines order, got shifted into the next financial year due to logistics constraints.

On the order-booking front, the JV got a breakthrough order in a new segment which, upon execution, will help market the same in other geographies in the future. Similarly, the commissioning of the large-sized turbines should also help in getting more orders in the future. The JV has currently a good pipeline of enquiries, which should facilitate in achieving a good order inflow in FY 17. The Indian market for the above 30-100 MW segment is yet to see any revival and the Company believes that there is still some time to revive the domestic segment of the JV product line.



Largest turbine of **55 MW** manufactured and despatched



## Corporate Social Responsibility (CSR)

At Triveni Turbines, we believe that the foundation of a robust business is the collective growth of its people and society. The Company is committed to create an environment that contributes to the well-being of communities and the conservation of nature.

### CSR Objectives

The Company wishes to be perceived as a 'Company with conscience', and to actively and continually contribute to the social and economic development of the communities for the benefit of the deprived, under-privileged and differently abled persons. Its approach will be based on merits only, without any regard to religion, caste or creed.

### CSR Focus Areas

Keeping the corporate philosophy in mind, the following focus areas have been identified by the CSR Committee to meet the Company's CSR objectives:

- Healthcare
- Education
- Technology & Innovation
- Environment
- Women Empowerment

## Highlights of the CSR Initiatives undertaken during FY 16

### 1) Healthcare

#### Triveni Turbines Preventive Health Programme (Triveni Turbines PHP) for Females

The Company participated in a project as part of its CSR plan which focussed on preventing diseases, such as osteoporosis, breast cancer, cancer of the cervix & ovary, anaemia of various types and promoting healthcare in women, especially of the lower socio-economic strata in North Delhi. Under this project, the Company provided free investigations and medical advice/consultation to about 2000 women. The programme increased the awareness level of women towards health issues and made them comprehend the need for timely prevention.

### 2) Education & Women Empowerment

#### Support to Nursing School

As part of CSR projects relating to the promotion of education and women empowerment, the Company provided financial support to the Nursing School of a hospital to improve teaching standards, provide scholarships to good performers and deserving students, and subsidise fees to students from the economically weaker section of the society.



2000  
females  
screened under  
preventive health  
programme



### Leadership Adoption Programme for Schools (LEAPS)

LEAPS is an innovative one year life skills programme developed by PeoplePro Trainers & Consultants for the benefit of under-privileged children studying in schools. The Company partnered in this unique programme at The Government Model Primary School, Peenya, Bengaluru.

### Other Educational Initiatives

The Company supported the Government Model Primary School, Peenya, Bengaluru, for running a pre-nursery school catering to under-privileged children of the area. Under the Swachh Bharat Abhiyan, the Company also constructed a toilet block at the school.

The Company is promoting special education among the differently abled children in Bengaluru.

The Company also participated in the Mid-Day meal programme run by Akshaya Patra Foundation by providing custom-built vehicle for distribution of the mid-day meals to Government and Corporation-run schools in Bengaluru.

## 3) Environment Sustainability

### Water Security for Community

Increasing water shortage and groundwater depletion have emerged as a key sustainability challenge for food and livelihood security in India. In order to ensure water security and thereby provide income and livelihood security, it remains important to understand the state of the available water resources.

The Company partnered with an implementation agency and undertook a detailed evaluation and assessment to

understand the key determinants resulting in a water stress situation in certain areas, with possible water resource management roadmap.

### India Water Tool

Water continues to rise as a priority for India and Indian business in a scenario where there is increased variability in water availability coupled with deterioration in resource quality.

Triveni Turbine Ltd supported an implementation agency to work on the development of India Water Tool Ver 2.1 (completed) and further refinement (Ver 2.2). The Water Tool is an easy-to-use country-specific online tool which can be used by diverse stakeholders, particularly Indian companies, to understand their water-related risks and prioritise actions toward sustainable water management.

### Skill Development Intervention for Industry towards Environmental Sustainability for Operating Renewable Energy Plants

The Company conducted skill development programmes focussing on environment sustainability for operating renewable energy / biomass / co-generation power plants as part of its CSR initiative under environment sustainability. The goal of the programme was to enable the industry to achieve operational excellence by reducing carbon footprint and create an eco-system of environmentally sustainable organisations that contribute as much to the environment as they do to the economic progress of the country.



## Financial Review

The financial results of the Company for the year FY 16, compared with the previous year are summarised hereunder:

Description	FY 16	FY 15	Change %
Income from operations	7081.4	6255.2	13.2
Other Income	138.7	276.5	-49.8
EBITDA	1693.9	1533.2	10.5
<b>EBITDA Margin</b>	<b>23.9%</b>	<b>24.5%</b>	
Depreciation & Amortisation	139.9	145.0	-3.5
PBIT	1554.0	1388.2	11.9
<b>PBIT Margin</b>	<b>21.9%</b>	<b>22.2%</b>	
Finance Cost	3.4	4.5	-24.4
PBT (Before exceptional item)	1550.6	1383.7	12.1
<b>PBT Margin</b>	<b>21.9%</b>	<b>22.1%</b>	
Exceptional Item	-	28.0	
PBT (After Exceptional Item)	1550.6	1355.7	14.4
PAT	1038.2	910.8	14.0
<b>PAT Margin</b>	<b>14.7%</b>	<b>14.6%</b>	

Despite challenging business conditions in the capital goods market, the financial performance of the Company has been

resilient and it achieved record turnover and profitability. While the domestic market continued to be subdued, the Company's relentless efforts in the international market paid dividends in terms of establishing market presence and penetration which resulted in increased export order booking – exports formed 58.6% of the total order booking during the year.

The highlights of the performance are:

- The total income from operations during the year under review was 13.2% higher at ₹ 7.08 billion. The export turnover during the year was at 35.8% of the total turnover as against 42.3% in the previous year. The export order booking during FY 16 is higher by 52.5% over the previous year, which will result in higher proportion of export turnover in the FY 17. All the sales made to domestic entities, including our subsidiary and JV Company, aggregating ₹ 886.7 million for onward exports have been considered as domestic sales.
- The aftermarket business grew by 6.5% over the previous year, mainly driven by higher export of services.
- PBT at ₹ 1550.6 million and PAT ₹ 1038.2 million increased by 14.4% and 14.0% respectively.

The Company's ambitious strategy to expand the geographical reach and broad-base the market for its products has yielded positive results. The Company believes that the export market offers enormous potential for the products of the Company, including for its specialised aftermarket services. It will be achieved through further penetration of the export markets and by being in the proximity to its customers by establishing overseas presence through its foreign subsidiaries / offices / establishing facilities to undertake aftermarket services.

The domestic market for steam turbines continued to remain flat for the fourth consecutive year. However, the margins and the market share could still be preserved through cost optimisation. With the various policy initiatives being taken by the Government, it is expected that the business sentiments will improve and the investment cycle will commence. The Company is well positioned to take advantage of higher demand through additional manufacturing facilities being set up in a phased manner.

As per the Consolidated Financial Statements for the year under review, the Turnover and Profit after tax increased by 22.4% and 18.9% respectively. The Subsidiary Company, GE Triveni Limited, also achieved record turnover and profitability and has fully wiped out all accumulated losses.

### Other Income

The Other Income of ₹ 138.70 million during the year includes ₹ 86.6 million towards net exchange gains. In view of significant exports, the export receivables are much higher than the import payables. It is the policy of the Company to substantially hedge its foreign exchange exposures. While the exchange gains have been classified under 'Other Income' as per the applicable accounting standards, for all internal assessments, the Company considers such gains as operating revenue and it is thus factored in the computation of EBITDA and other profitability ratios.

### Raw Material consumption & Increase/ Decrease in inventory

(₹ in Million)			
Description	FY 16	FY 15	Change %
Raw material consumption/Change in inventory	3994.3	3647.5	9.5
Percentage of sales	56.4%	58.3%	

The percentage increase in raw material cost was less than increase in turnover by 13.2% and consequently, the percentage material cost to sales is almost 200 basis points lower than the previous year. While the Company strives to continually rationalise material cost through value engineering and supply chain productivity, it also depends on the product-mix (extended scope of contract, extent of aftermarket services etc.) and extent of margins.

### Personnel Cost, Administration Expenses and Depreciation

(₹ in Million)			
Description	FY 16	FY 15	Change %
Personnel cost	632.0	600.9	5.2
Percentage of sales	8.9%	9.6%	
Other Expenses	904.4	748.3	20.9
<b>Percentage of sales</b>	<b>12.8%</b>	<b>12.0%</b>	
Depreciation & Amortisation	139.9	145.0	- 3.5
Percentage of sales	2.0%	2.3%	

#### Personnel Cost

The increase in personnel cost remained normal and was reflective of annual salary increase.

#### Other Expenses

Increase in Other Expenses were mainly due to following reasons:

- Increase in manufacturing costs by ₹ 41 million was mainly in respect of tooling and other indirect materials and consumables required in manufacturing higher range and specially designed turbines for catering to export market.
- Increase in marketing, packing and transport expenses aggregating ₹ 65.1 million relating to exports.
- CSR expenses of ₹ 26.4 million. As per the guidance available in the previous year, these were considered as appropriation of profits.

#### Depreciation and Amortisation

Since, there were no major additions to the Fixed Assets Block during the year, there was no significant change in depreciation & amortisation.

#### Balance Sheet

##### Share Capital

There was no change in equity share capital of the Company during the year.

##### Reserves and Surplus

The Reserves & Surplus increased by 29.7% to ₹ 2627.4 million as on 31.3.16 in view of plough-back of profits after payment of tax and dividend.

##### Loans

The Company virtually remained debt-free throughout the year, barring some vehicles procured on hire purchase terms.

##### Investments

The increase in long-term investments by ₹ 13.8 million represents contribution to the equity share capital in Triveni Turbines Europe Pvt Ltd, a wholly-owned subsidiary.



## Trade Receivables

The Trade Receivables stood at ₹ 1,142 million on 31.3.16 as compared to ₹ 1,534 million as on 31.3.15. The reduction in trade receivables was due to healthy collections at the year end, which also resulted in increased cash and cash equivalent.

## Cash and Cash Equivalent

Cash and cash equivalent represents current investment and cash and bank balance. It was considerably higher at ₹ 379.8 million as on 31.3.16 due to aggressive collection drive and substantial collections at the year end.

## Fixed Assets

There were no significant additions to fixed assets during the year. However, Capital Work-in-Progress increased from ₹ 61.0 million to ₹ 328.8 million as on 31.3.16 in view of amount spent on the civil and construction work of the upcoming new manufacturing plant near Bengaluru. The new plant is expected to be partly commissioned for production by middle of next financial year and further investments will be made in phases in line with the requirements.

## Risk Management & Mitigation

The Company follows a well laid out Enterprise Risk Management (ERM) policy which ensures: identification of all the risks being faced by the organisation; their categorisation based on their severity for regular monitoring and attention; formulation of effective mitigation plans and institution of internal and operating controls to minimise the impact of the risks and to improve the risk profile; to appoint risk owners for proper accountability; to have a dynamic system of receiving feedback on the effective working of ERM system, including identification of new risks and changes in the risk profile of the Company. The ERM policy helps the Company to meet its business objectives without getting over exposed to controllable risks and it endeavours to inculcate a culture within the organisation wherein all business decisions are only taken after evaluating the attendant risks and making robust plans to contain the impact of such risks.

In accordance with the Policy, the Company has developed a comprehensive Risk Management Framework based on the feedback and experiences of all the functional departments, using bottoms-up approach. The Company has a Risk Committee, having all functional heads as its members along with the Executive Director, which oversees the working of ERM system.

The Company's business relates to manufacture & sale of steam turbines which falls under capital goods industry. It is closely linked with the economic activities, domestically and internationally, and the growth of sectors/industries. Even though several external factors having an impact on the operation of the Company are uncontrollable, the Company strives to mitigate the externalities in the best possible manner by expanding its market and product range, ensuring diversified streams of revenues, avoiding over dependence on any sector/s or geographies and by focussing on value engineering to

remain cost effective and for margin protection.

Some of the major risks being faced by the Company are described below:

### 1) Slowdown in Economy & Overdependence on any market

A slowdown in economy directly impacts the demand of capital goods, including the products of the Company. Further, overdependence on any market/s may adversely affect the performance of the Company, if the concerned market gets sluggish due to internal factors.

The domestic market has declined/remained stagnant for several years limiting the demand of the Company's products. Although there is some recovery in sectors like sugar, certain process industries and IPP, core industries like cement and steel, are yet to recover. In order to reduce overdependence on the domestic market, the Company had started focussing on marketing its products in the global market a few years back and in the FY 16, the contribution of exports to the total turnover was 36%, whereas in respect of order booking during the year, export orders formed 59% of the total order booking. The Company is in the process of further extending its footprints in the global market to lessen the risk of overdependence on certain countries/regions. The Company is also leveraging on its international structures to be in the proximity of customers to get better and timely understanding of the addressable market, and its trends and potential, along with the requirements and preferences of customer.

### 2) Aftermarket Service

It is imperative to provide service support to the customers to keep the products trouble-free and to attend to breakdowns in the most efficient manner. Without such support, the Company may not be able to win the confidence and secure orders from customers.

Like in the domestic market, the Company is replicating its service model in the international market, offering its service for preventative maintenance of its products and strengthening its service capabilities to attend to urgent situations in a timely manner. The foreign subsidiaries recently set up by the Company will help in achieving such objectives apart from securing more aftermarket service orders. In due course, the Company may also own, directly or indirectly through joint ventures, service workshops in various geographies.

### 3) Technology

The Company operates in the engineered-to-order capital goods industry, where product efficiency, critical product features & overall life cycle costs play an important role. The Company vigilantly studies, analyses and forecasts market trends and customer preferences and accordingly develops its R&D programmes.

The Company has a vibrant R&D department which undertakes new product development and improvements within the shortest possible time and at optimal costs. The Company has also tied up with institutes of repute for development of technology & products. The Company has well-structured systems to validate its technology prior to commercial use. The Company imparts technical training at its in-house learning centre for all levels of engineers, to expose them to the latest technology and acquaint them on the Company's products.

#### 4) Competition

The Company faces competition from steam turbine manufacturers of international repute in the domestic and international markets. The Company may not be able to match the product offerings of the competitors and may compel the Company to quote aggressively and impact its margins.

The Company, as part of continual programme, aims to improve the product features and efficiencies and provide a value proposition to the customer with products which meet benchmark efficiencies at a competitive price and a shorter delivery without compromising on the margins. Further, the products are backed by a service organisation which is the best-in-class in India, and of a competitive standard with its competitors internationally.

#### 5) Internationalisation of Products

The Company is increasingly focussing on international markets for its products & services. There are risks of

claims from the customers if the contractual performance parameters are not met and there could be other implications in the event of non-compliance of laws of the concerned country.

The Company has been in steam turbine business for long and is aware of the technicalities involved. Proper due-diligence is made prior to accepting any order. Further, the Company has strict quality control procedures which ensure that all the products supplied to the customers meet the contractual specifications & parameters. It is also ensured that the contracts with customers clearly specify the obligations of the Company. The Company also takes appropriate insurance policies to cover all such risks. Further, a comprehensive list of all compliances is prepared for each concerned country/region to ensure full compliance.

#### 6) Increase in Manufacturing Capacity

The Company has embarked on an expansion plan to increase the manufacturing capacity of the turbines to 350 per year by building a new plant near Bengaluru. Any slowdown in the demand, domestic or international, for the products & services, may lead to underutilisation of the manufacturing capacity & impact the margins.

The Company plans to set up the facility in a phased manner so as to avoid idle overcapacity. The design & building of the new facilities will augment the production capabilities through better testing facilities and catering to larger range of turbines, thus offering large productivity gains to the Company.

# INFORMATION ON COMPANY'S BUSINESS LOCATIONS

## REGISTERED OFFICE

A-44, Hosiery Complex,  
Phase II Extension,  
Noida - 201 305, U.P.  
STD Code: 0120  
Phone: 4748000  
Fax: 4243049  
Website: [www.triveniturbines.com](http://www.triveniturbines.com)

## CORPORATE OFFICE

'Express Trade Towers', 8th Floor  
15-16, Sector-16A  
Noida - 201 301 (U.P.)  
STD Code: 0120  
Phone: 4308000  
Fax: 4311010-11

## SHARE DEPARTMENT/INVESTORS' GRIEVANCES

'Express Trade Towers', 8th Floor  
15-16, Sector-16A  
Noida - 201 301 (U.P.)  
STD Code: 0120  
Phone: 4308000  
Fax: 4311010-11  
Email: [shares.ttl@trivenigroup.com](mailto:shares.ttl@trivenigroup.com)

## REGISTRAR AND SHARE TRANSFER AGENTS

For Equity Shares held in physical and electronic mode  
(Correspondence Address)  
M/s Alankit Assignments Ltd.,  
Alankit Heights  
Unit: Triveni Turbine Limited  
IE/13, Jhandewalan Extension,  
New Delhi - 110 055.  
Phone: 011-42541234, 23451234  
Fax: 011-41543474  
Email: [rta@alankit.com](mailto:rta@alankit.com)

## MANUFACTURING FACILITY

12-A, Peenya Industrial Area,  
Peenya, Bengaluru - 560 058  
STD Code: 080  
Phone: 22164000  
Fax: 22164100

## SUBSIDIARY COMPANIES

GE Triveni Limited  
12-A, Peenya Industrial Area,  
Peenya, Bengaluru - 560 058  
STD Code: 080  
Phone: 22164000  
Fax: 22164100

Triveni Turbines Europe Private Limited  
Foreign Subsidiary  
UK

Triveni Turbines DMCC  
Foreign Subsidiary  
Dubai, UAE

## CORPORATE INFORMATION

### Chairman and Managing Director

Mr. Dhruv M. Sawhney (DIN-00102999)

### Vice Chairman and Managing Director

Mr. Nikhil Sawhney (DIN-00029028)

### Executive Director

Mr. Arun Prabhakar Mote (DIN-01961162)

### Directors

Mr. Tarun Sawhney (DIN-00382878)  
Lt. Gen. K.K. Hazari (Retd.) (DIN-00090909)  
Mr. Amal Ganguli (DIN-00013808)  
Mr. Shekhar Datta (DIN-00045591)  
Dr. Mrs. Vasantha S Bharucha (DIN-02163753)

## VICE PRESIDENT & CFO

Mr. Deepak K. Sen

## COMPANY SECRETARY

Mr. Rajiv Sawhney

## BANKERS

Axis Bank Ltd.  
IDBI Bank Ltd.  
Punjab National Bank  
Yes Bank Ltd.

## AUDITORS

M/s J.C. Bhalla & Co.

**Triveni Group website:** [www.trivenigroup.com](http://www.trivenigroup.com)