







Triveni Turbine Ltd.
Corporate Presentation
Q3/9M FY13

Triveni Turbine Ltd. (TTL)

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GE Triveni Ltd. (JV with GE)

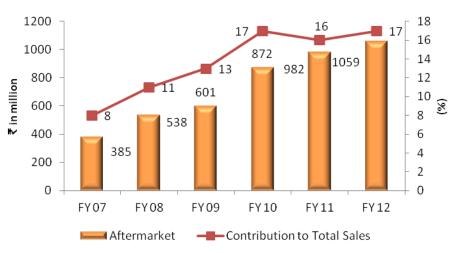


A 50,000 sq.mt factory area in beautiful city of Bengaluru

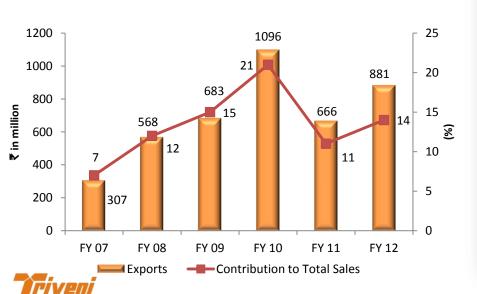


Staying Focused

Staying focused on aftermarket sales



Staying focused on expanding globally



Staying focused on research & development

- Multiple new basic models.
- 12 new product variants in FY 12 & 11 new models/variants in FY 13.
- New Blade Designs for high volumetric flow, high efficiency. blade path and high back pressure designs.
- Over 75 distinct IPR, design and copyright applications filed globally to date.



Fact Sheet

₹6319

Annual Revenues for FY 12 at ₹ 6319 million

Upto 30

Delivering STG packages up to 30 MW

30 Countries Significant presence in S.E Asia, Europe & Africa, with installations in more 30 countries.



Installations base of over 2500 turbines globally.

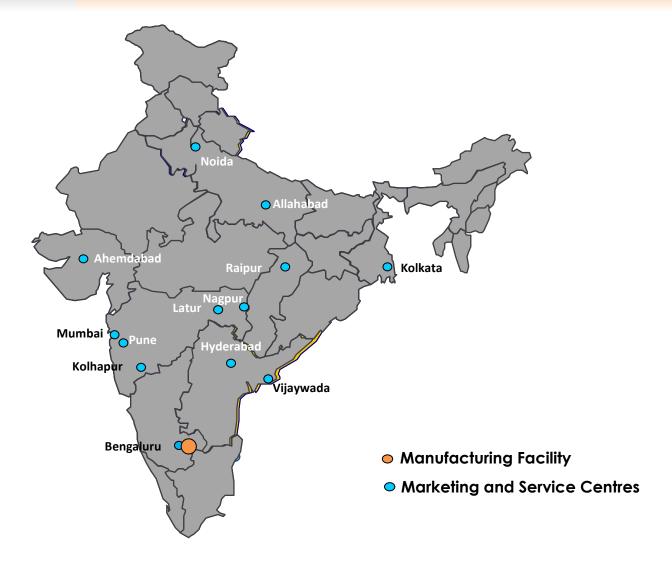


Key global player in steam turbine market with market leadership position in India, having approx. 54% market share.





Pan India Presence





Power Generation Market

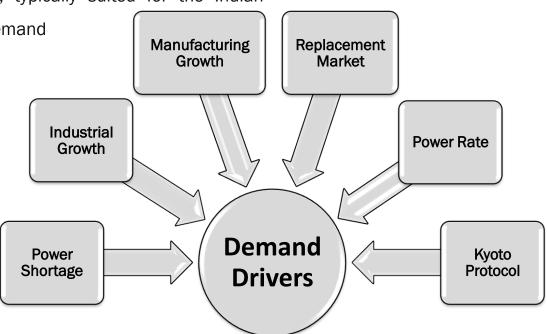
Market Characteristics -

- Purchase decision based on high level of technology, efficiency & low life cycle cost
- Price sensitive market
- Premium on shorter deliveries
- Strong servicing capabilities and lifetime relationship with the customer is expected

Robust designs, typically suited for the Indian market are in demand

Annual Market for Turbines -

The five year average annual domestic demand for steam turbines upto 30 MW is about 1700 MW including additions on account of growth, fulfilment of gap and replacement. On account of economic uncertainty and delay in order finalisation, the demand currently for FY 13 is estimated at 800-900 MW





Power Generation – Potential To Grow

- Gap between requirement power generation getting wide
 - Growing renewable energy market
 - Huge potential for Biomass based power generation.
- Costly fuel source to influence replacement of DG to TG sets; thrust on co-generation.
- Focus on waste heat to energy and nonconventional energy sources like solar etc.
- Current industrial power consumption generation gap to be bridged – focus on captive power generation.

and (6) Additional power requirement in the country incentive for surplus generation and allowing open access sale of power at remunerative prices.





Applications

Co-generation

Captive Power Plant

Combined Heat & Power

CCP / Waste Heat Recovery

Incineration

Biomass

Solar Thermal

Geothermal

Industrial Drives / API turbines

Ships / Off shore







Industry Segments

Food Processing

Sugar

Palm Oil

Distillery

Pulp & Paper

Textiles





Steel & Metal

Carbon Black

Cement

Chemicals & Fertilisers

Oil & Gas & Petrochemical

District Heating & Cooling

Municipal Solid waste



Manufacturing Excellence

- Plant capacity of over 150 turbines per annum.
- Facility has 5 bays & 19 test beds with a world class machining facility performing Rotor & Casing and complete blades machining.
- Entire "Critical to Quality" Machining operations performed In-house.
- High precision 5-Axis CNC Mill Turn Center for machining of rotor shaft.
- 5-Axis CNC Machining Center for blade machining
- A fleet of 4-Axis CNC machines for blade machining, casing etc.
- Latest software such as Integrated CAD/CAM for seamless manufacturing of turbine parts, Zeiss Coordinate Measuring Machines (CMM) for precision measurements of critical components.
- Vacuum tunnel for high speed balancing of rotors with capabilities of over-speed testing.
- Facility to perform MRT for each turbine before dispatches.

- Computerised wireless Advanced Data Acquisition System (ADAS) for capturing mechanical run test data and automatic generation of test reports etc.
- Fastest delivery a benchmark in the industry.

Manufacturing Philosophy -Technology, Precision, Quality





Manufacturing Excellence





















Research & Development

- A decade old focused R&D programme.
- In-house design and development, ably supported by consultants and domain experts.
- Association with leading academic institutions of such as IIT Chennal and IISc Bengaluru.
- Association with globally acclaimed turbomachinery design houses based in the USA.
- Innovative product development concepts such as Design to cost, QFD, FMEA techniques, DOE techniques for robustness, cost / performance optimization are employed.
- Latest computer aided design and engineering software for Finite Element Analysis (FEA), Computational Fluid Dynamics (CFD), deployed for Aerodynamic and Thermal Design, Modeling, Rotor Dynamics and Ageing analysis of turbo- machinery components.

- Continuous product improvement program which focuses on higher power density and reduction in the size of turbines.
- Introduced many new variants of high pressure and temperature applications, cost effective and highly efficient steam turbines.
- Developed and commercialized 22 basic new models over the past 10 years and 12 new product variants in FY 12. 11 new models / variants developed in FY 13.
- 11 design registrations in India and 7 European community designs have been granted during FY12. 7 more new design registrations have been granted upto Dec 2012.
- Over 75 distinct IPR, design and copyright applications filed globally to date.



Quality & Supply Chain

- An ISO 9001 14001 company.
- Quality Checks performed before dispatch
 - □ Ultrasonic Test
 - Radiography
 - □ Hydro Test
 - □ Profile Measurement
 - ZygloTest
 - Dynamic Balancing
 - □ Alignment Check
 - ☐ Full speed factory test
 - □ Sound Level Measurement
 - □ Vibration Measurement
 - □ Governor Response

- Products meet International standards such as API, ASME, AGMA, IEC, NEMA etc.
- Tools and techniques such as Six-Sigma methodology, Kaizen, Small Group Activities, Daily Work.
- Management and Root Cause Analysis, etc. are employed.
- A network of approved suppliers and dedicated subcontractors complying with stringent quality norms.





Product Range

Condensing Turbines

Types -

Uncontrolled Extraction

Controlled Extraction

Parameter Range -

Power Generation : Upto 30MW

Steam Inlet Pressure : Upto 105 Bar (a)

Steam Inlet Temperature: Upto 535 deg. C

Our standard scope includes

Steam turbine and its control system

Control oil system

Lubricating oil system

Condensing system (as applicable)

Back Pressure Turbines

Types -

Uncontrolled Extraction

Controlled Extraction

Parameter Range -

Power Generation : Upto 30MW

Steam Inlet Pressure : Upto 105 Bar (a)

Steam Inlet Temperature: Upto 535 deg.C

- Gear box
- Alternator
- © Electrical metering/control/protection system
- Instrument control system



Aftermarket Services

Aftermarket Services are integrated under Customer Care Cell (CCC) which provides solutions for all after-sales requirements from erection and commissioning (E&C) to maintenance and spare parts to efficiency improvement.

Customer Care

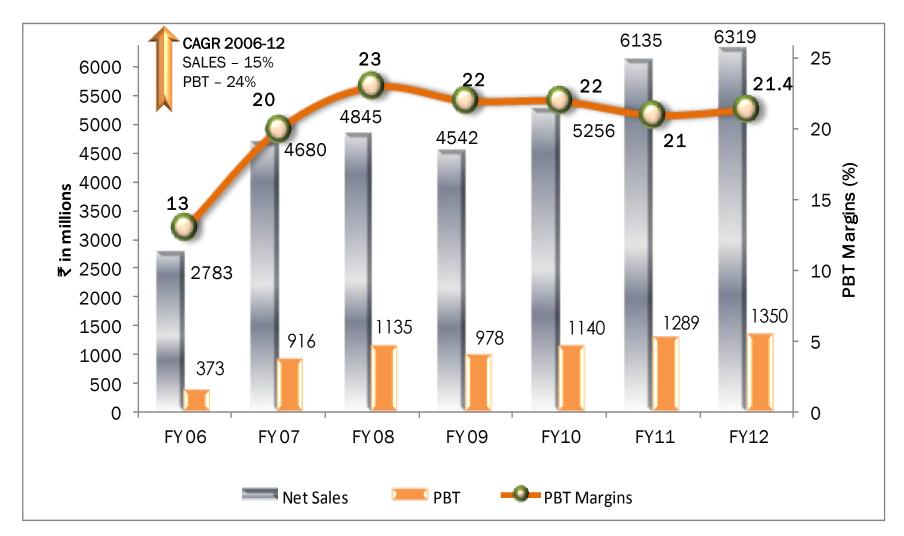
- An extensive network of 13 Service centres.
- A strong team of 185 service professionals.
- Currently over 900 turbines serviced annually.
- Reaching the customer site within 24 hours of service call.



Refurbishing

- Full speed vacuum balancing tunnel for balancing turbines, compressors/alternators - can undertake balancing for turbo machines up to 200 MW depending on specifications.
- Overhauling & troubleshooting.
- Refurbishment & Residual Life Assessment of all makes of turbines, compressors etc.;
- Customization & upgradation of old turbines for both industrial and utility segments in India and Asia Pacific market.
- Currently offering refurbishment solutions for higher MW turbines for all makes.

Historical Financial Performance





All financials are for April-March period for respective financial year

Financial Performance – Q3/9M FY13

- With the increase in turnover in Q3 by over 20%, the 9 month year-on-year gap has been bridged significantly to 5% from 15% as at the end of H1 FY 13.
- Focus on exports led to 158% year-on-year increase in turnover for the 9 month period.
- The aftermarket business also shown growth of 10% during the 9 month period, which included aftermarket segments from Export market as well.
- The mix of product and after-market has improved significantly in 9M FY 13 at 82:18 from 84:16 during 9M FY 12.
- The margins at all levels have shown significant improvement with PBT margins improved by over 4%. This is primarily on account of higher share of exports, favourable exchange rates and higher aftermarket mix in the total sales.
- The outstanding order book as on 31st December 2012 has been ₹ 5.16 billion including refurbishing orders (without considering slow moving orders).
- TTL has become debt free after having repaid / prepaid all its long term debt as at the end of the quarter.



Financial Performance - Q3/9M FY13

(Figures in ₹ million)

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	Q3 FY 13 Oct - Dec 2012	Q3 FY 12 Oct - Dec 2011	Variation Q3 FY 13 over Q3 FY 12	9M FY 13 Apr - Dec 2012	9M FY 12 Apr - Dec 2011	Variation 9M FY 13 over 9M FY 12	
Net sales	1751	1460	20%	4663	4891	(5%)	
EBITDA	490	355	38%	1245	1132	10%	
EBITDA Margin	28.0%	24.3%	3.7%	26.7%	23.1%	3.6%	
Depreciation &	31	30	3%	92	86	7%	
Amortisation							
PBIT	459	325	41%	1153	1046	10%	
PBIT Margin	26.2%	22.3%	3.9%	24.7%	21.4%	3.3%	
Interest	5	20	(75%)	26	68	(62%)	
РВТ	454	305	49%	1127	978	15%	
PBT Margin	25.9%	20.9%	5.0%	24.2%	20.0%	4.2%	
PAT	305	206	48%	760	662	15%	
PAT Margin	17.4%	14.1%	3.3%	16.3%	13.5%	2.8%	



Joint Venture with General Electric (GE)

- Triveni Turbine Ltd. formed a 50:50 Joint Venture with GE on 15th April 2010. GE Triveni Ltd. (GETL) headquartered in Bengaluru, a subsidiary of TTL, will design, manufacture, supply, sell and service advanced technology steam turbines in India in the range above 30-100MW for power generation applications in India and globally.
- GETL to get technology and on-going R&D support from GE and TTL and will use TTL's Bengaluru facility for turbine manufacturing.
- The operations of the joint venture with GE are in line with our expectation. All key managerial personnel are on board and the technology transfer is progressing as per schedule.
- The marketing teams of both GE and Triveni are working closely on the opportunities in their respective markets. The JV is currently responding to the enquiries both in the domestic market and to a diverse international market ranging from Canada to Indonesia.
- GETL dispatched its first turbine of 35 MW which is under commissioning.
- GETL received another breakthrough order for two turbines of 40 MW each through one of the largest power sector Engineering, Procurement and Construction (EPC) Company, for a new 80MW distributed power plant that will generate power for a leading GoI Enterprise engaged in mining & metal industry at its new 3 million tonne per annum integrated steel plant in Central India.



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