





Fact sheet

We are one of the world's largest manufacturers of steam turbines ranging up to 30 MW for providing renewable power solutions specifically for Biomass, Sugar & Process Co-generation, Waste-to-energy and District Heating





Fact sheet

Triveni Turbine Ltd.
(TTL)

50% + One share

GE Triveni Ltd.
(JV with GE)

Key global player in steam turbines industry with market leadership position in India, having over 60% market share in the range upto 30 MW

Annual Consolidated Revenues for FY 15 at ₹ 6.51 billion

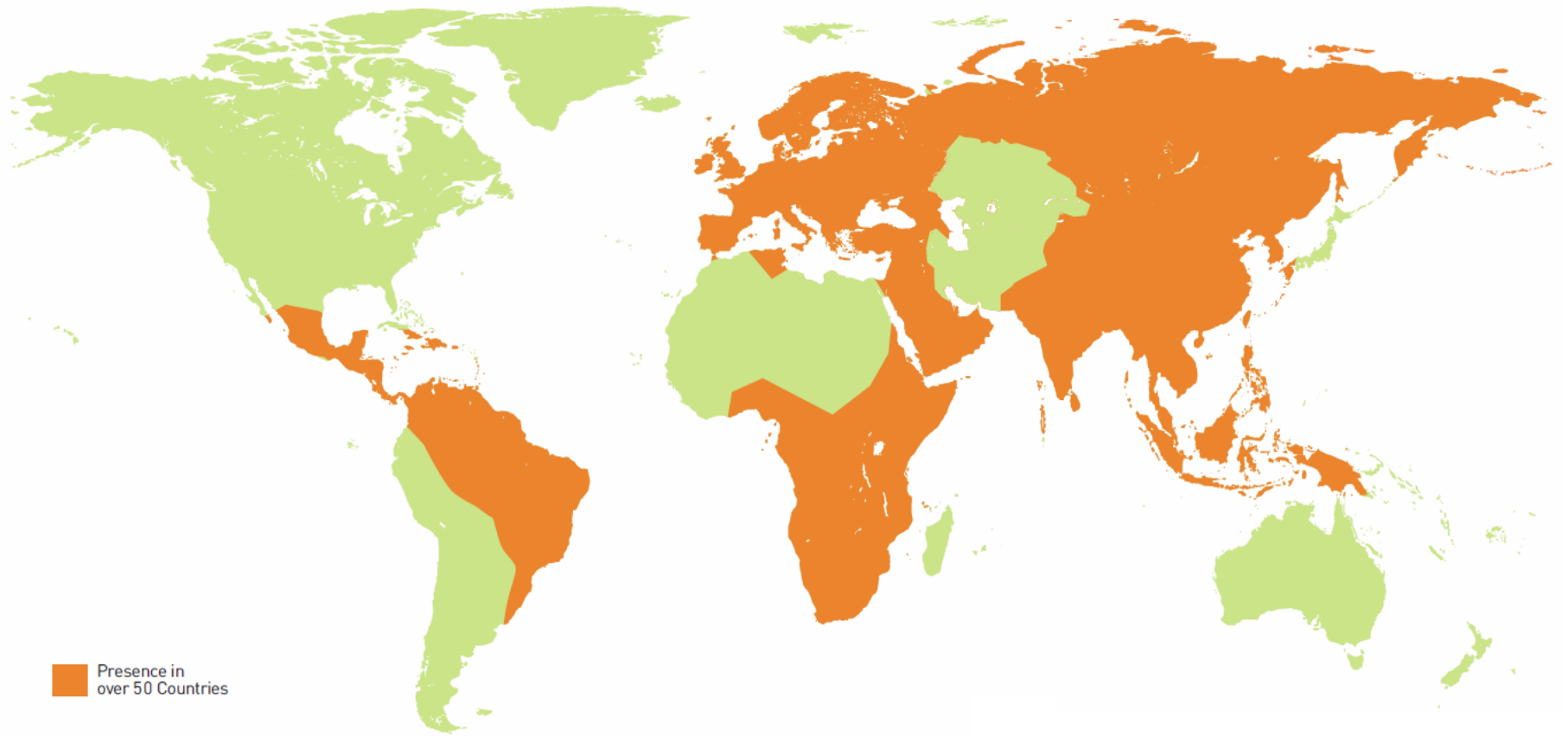
Significant presence in South East Asia, Europe, South America, Middle East & Africa, with installations in over 50 countries

Location: A 50,000 sq.mt factory area in the beautiful city of Bengaluru. 13 service centres across India

TTL is listed in NSE & BSE, two major stock exchanges in India with a market capitalization of ₹ 33 billion (as on Jan 27, 2016)



Global Presence





Efficient Products

Engineered-to-order

Cost Efficient

Best-in-class Technology

Robust & Reliable

Back Pressure Steam Turbines

- Straight Back Pressure Type
- Extraction Back Pressure Type
- Bleed Back Pressure Type

Condensing Steam Turbines

- Straight Condensing Type
- Extraction Condensing Type
- Bleed Condensing Type
- Injection Condensing Type

Power Generation Capacity	Up to 30 MW
Steam Inlet Temperature	Up to 545°C
Steam Inlet Pressure	Up to 120 Bar (a)
For GETL range	Above 30 MW to 100 MW



Efficient Products

Standard scope includes

- Steam turbine and its control system
- Control oil system
- Lubricating oil system
- Condensing system (as applicable)
- Gear box
- Alternator
- Electrical metering/control/protection system
- Instrument control system





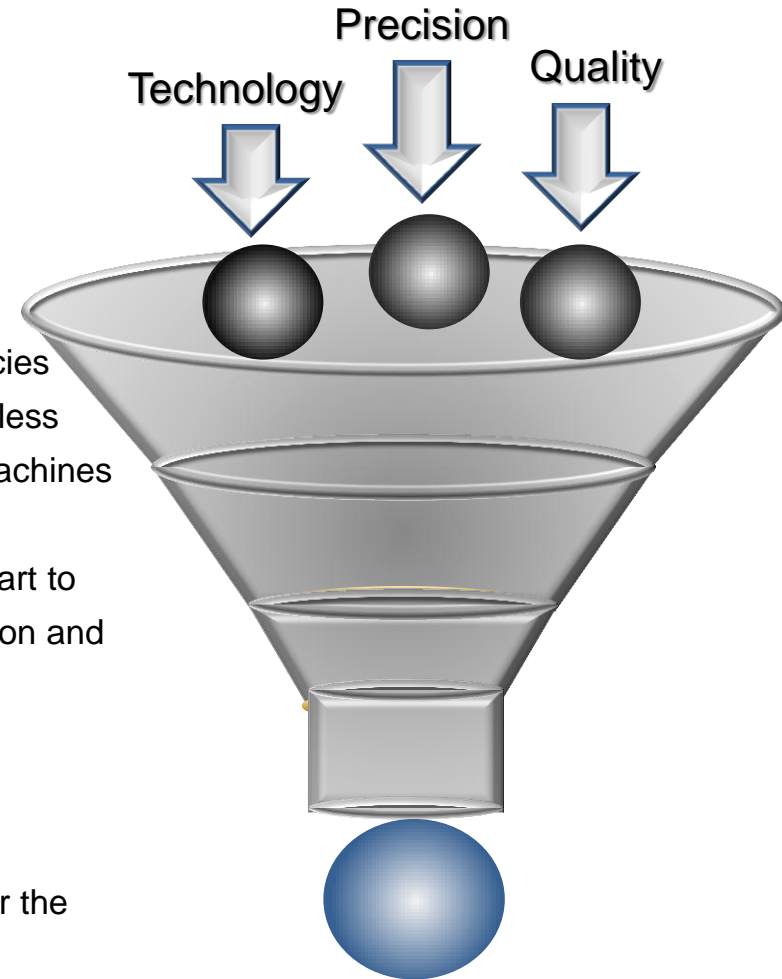
Manufacturing Excellence

State-of-the-art manufacturing facility

ISO 9001 QMS ISO 14001 EMS certified

Manufacturing facility is equipped with:

- An array of 4 axis and 5 axis Vertical Machining Centres and Horizontal Machining Centres for machining of blades
- Mill-turn centre for machining of rotors
- CNC gantry and CNC VTL for casing machining to high accuracies
- Latest software applications like Integrated CAD/CAM for seamless manufacturing of turbine parts, Zeiss Co-ordinate Measuring Machines (CMM) for precision measurements of critical components
- Assembly-cum-test beds for assembling steam turbines from start to finish and recording the test results on a wireless Data Acquisition and Display System
- High Speed Vacuum Balancing Machine for balancing rotors
- CNC Coordinate Measurement Machine
- Turbine no load steam test facility
- GHTM Goratu Turn Milling Machine for Rotors above 30 MW for the GETL range of products.



**Manufacturing
Excellence**



Quality First

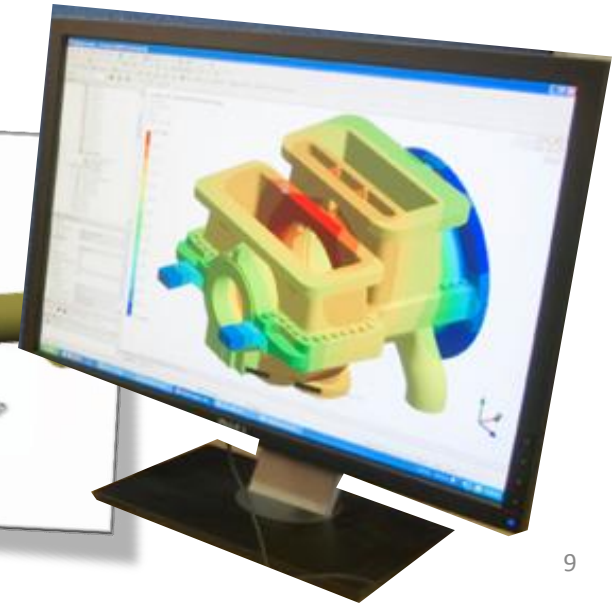
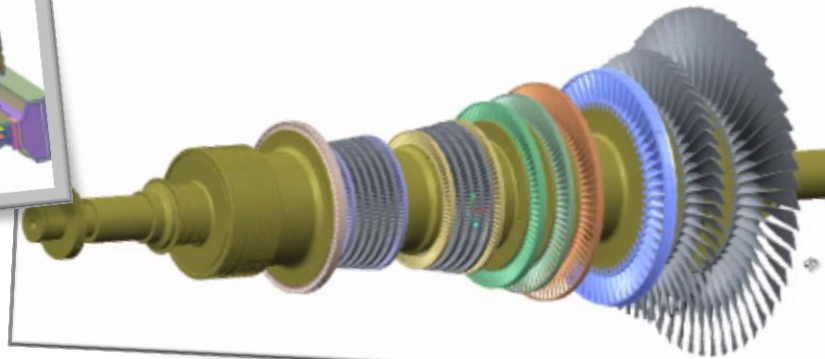
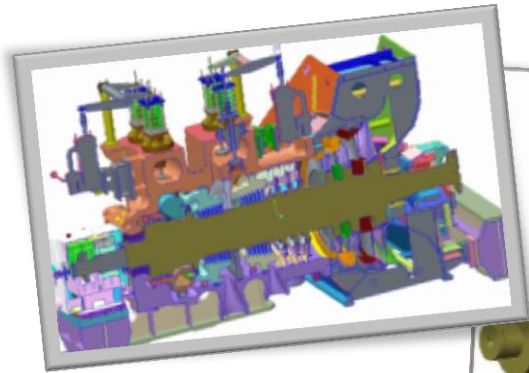
- An ISO 9001 14001 company
- Products meet International standards such as API, ASME, AGMA, IEC, NEMA etc.
- A network of approved suppliers and dedicated sub-contractors complying with stringent quality norms.
- Quality Checks performed before dispatch
 - ✓ Ultrasonic Test
 - ✓ Radiography
 - ✓ Hydro Test
 - ✓ Profile Measurement
 - ✓ Zyglotest
 - ✓ Dynamic Balancing
 - ✓ Alignment Check
 - ✓ Full Speed Mechanical Steam Run Test
 - ✓ Sound Level Measurement
 - ✓ Vibration Measurement
 - ✓ Governor Response





Research & Development

- Strong design team supported by consultants and domain experts
- Association with globally acclaimed turbo-machinery design houses
- The R & D advanced product program has commercialized over 50 models thus achieving a robust fleet experience base.
- Innovative designs delivering maximum performance and higher efficiency
- Innovative product development concepts such as design to cost, QFD, FMEA techniques, DOE
- Deploy Latest computer aided design and engineering software for continuous product development





Intellectual Property Rights

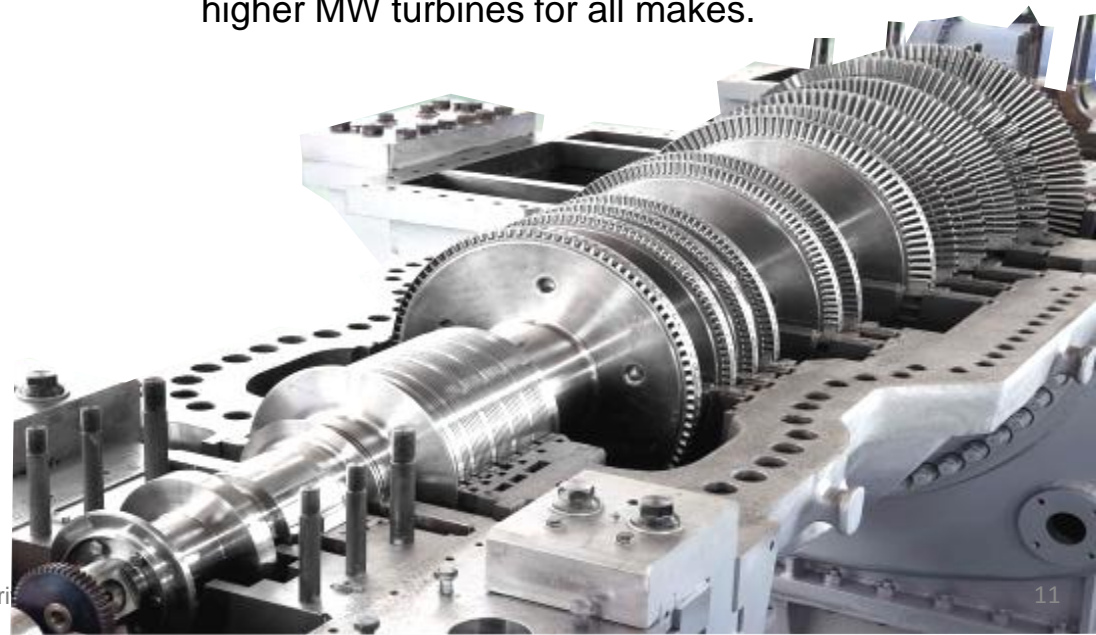
- TTL has filed 165 unique IP filings till Dec 2015.
- As on Dec 2015, 44 designs and 21 copyrights have been granted in India while 20 European community designs and 3 US design patents have also been granted.
- Involvement of IP team is right from product conceptualisation stage to the final design stage thus establishing a comprehensive security system to safeguard the valuable IPRs.
- The Company won the prestigious National Intellectual Property Award 2013 in the category of "Top Organisation in Design" for its outstanding contribution to intellectual property in the country.
- TTL has been awarded certificate of "Commendation for Significant Achievement" in the CII-EXIM Bank Award for Business Excellence - 2014. This recognition has been achieved by TTL for the four time in the consecutive years.



Unparallel Service

Aftermarket Services are integrated under Customer Care Cell (CCC) which provides a comprehensive range of customized service solutions and complete life cycle support for industrial steam turbines

- Full speed vacuum balancing tunnel for balancing turbines, compressors/alternators – can undertake balancing for turbo machines up to 300 MW depending on specifications.
- Offers all after-sales requirements from erection and commissioning (E&C) to maintenance and spare parts to efficiency improvement.
- 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 global markets.
- Currently offering refurbishment solutions for higher MW turbines for all makes.





Diverse Applications & Industry Segments

Industry Segments

- Sugar
- Palm Oil
- Distillery
- Pulp & Paper
- Food Processing
- Textiles
- Steel & Metal
- Carbon Black
- Cement
- Chemicals & Fertilisers
- Oil & Gas and Petrochemical
- District Heating & Cooling
- Municipal Solid waste

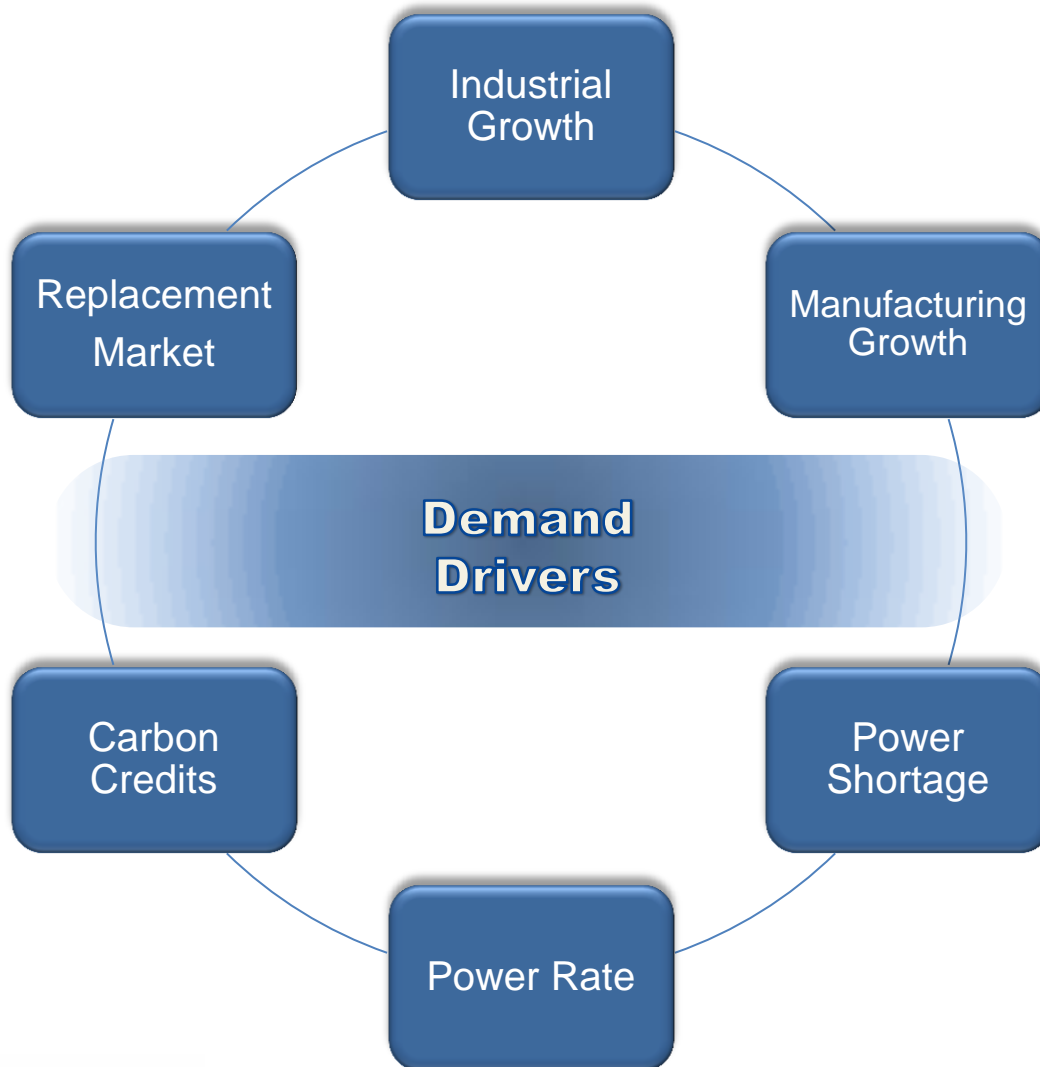
Applications

- Co-generation
- Captive Power Plant
- Combined Heat & Power
- CCP / Waste Heat Recovery
- Incineration
- Biomass





Power Generation Market Segments



Market Characteristics

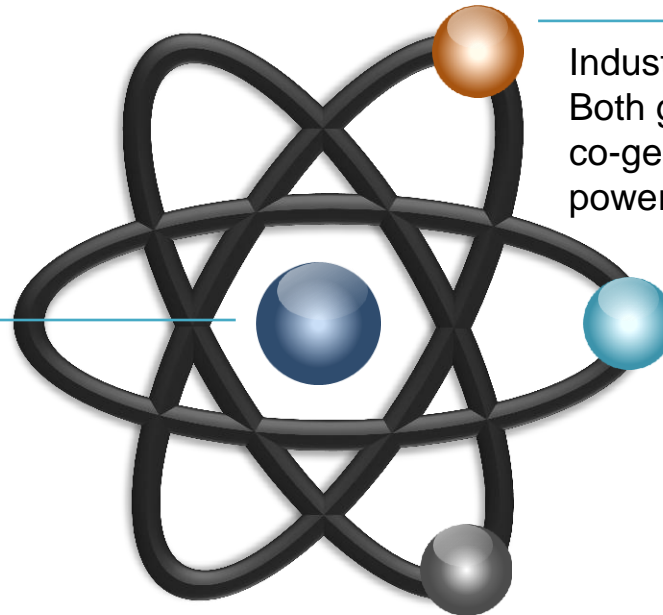
- Purchase decision based on robust designs, high level of technology, efficiency & low life cycle cost
- Price sensitive market
- Premium on shorter deliveries
- Strong servicing capabilities and lifetime relationship with the customer is expected.



Power Generation Market Potential

The industrial power generation market represents the decentralised and captive power generating industry.

Three principal segments that generate demand in both domestic as well as the export market



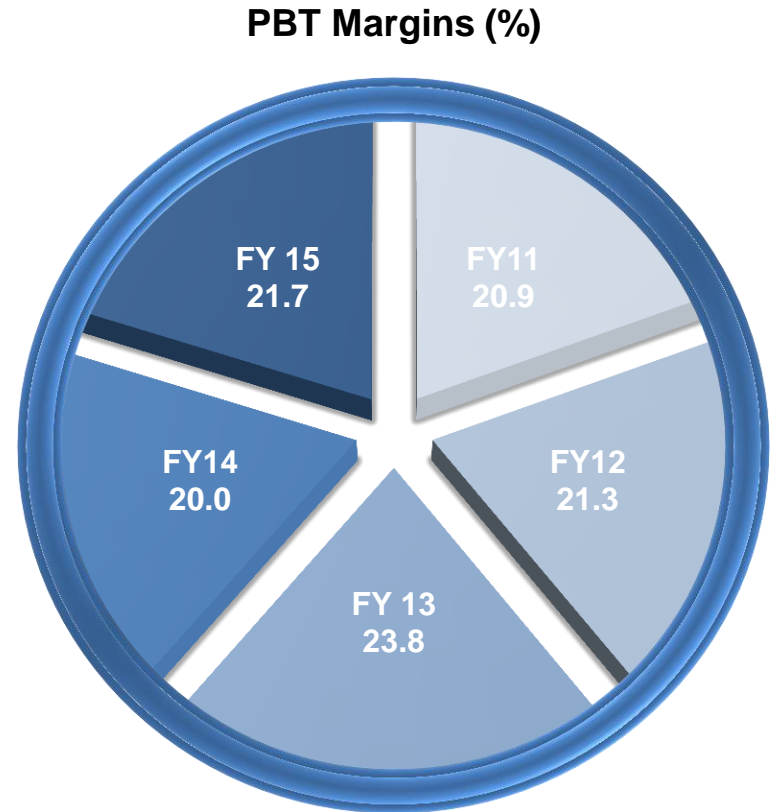
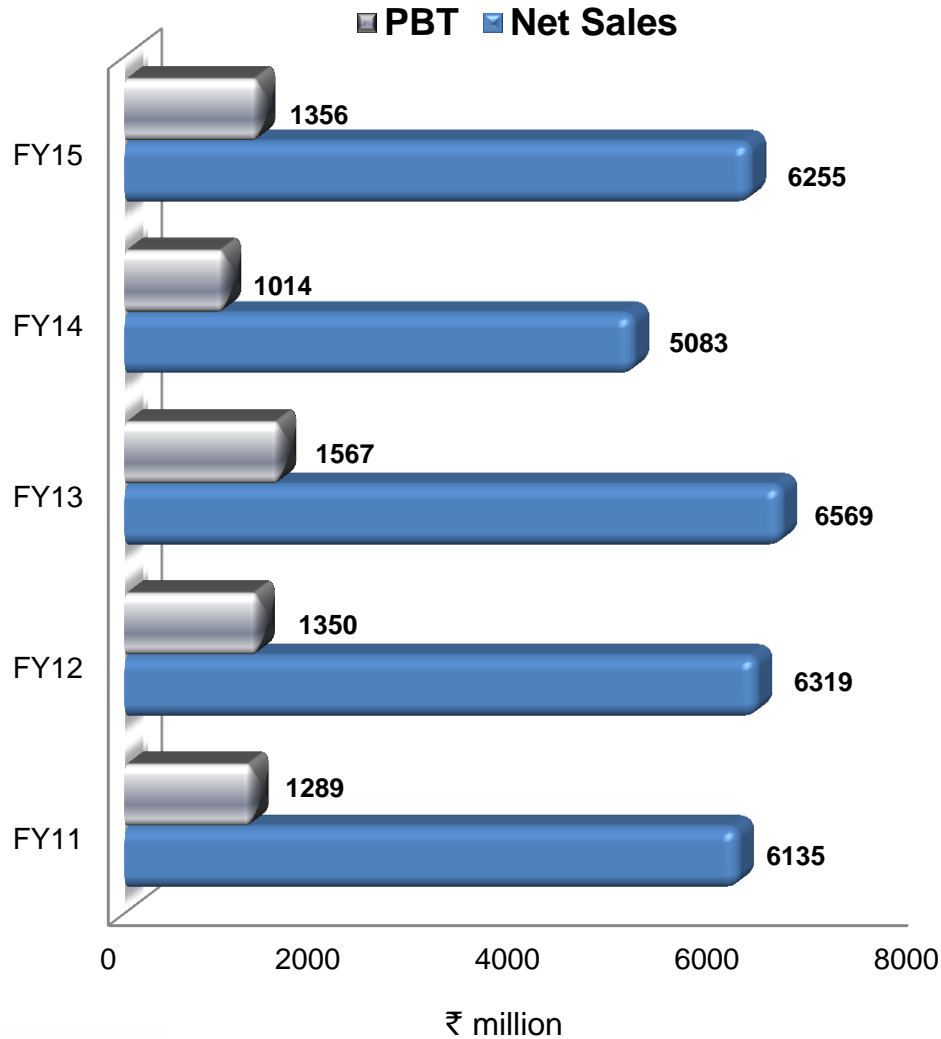
Industrial capital expenditure – Both greenfield and brownfield co-generation based captive power plants

Renewable Energy – Small-scale renewable-based Independent Power Producers, agro-based co-generation and renewable waste-heat

Opportunity based sale of power to the grid by captive units



Financial Performance





Financial Performance

(Figures in ₹ million)

	Q3 FY 16	Q3 FY 15	% change	9M FY 16	9M FY 15	% change
Income from Operations (Net)	1977	1511	31	4987	4297	16
EBITDA	446	385	16	1145	1032	11
EBITDA Margin (%)	22.6	25.5		23.0	24.0	
Depreciation & Amortisation	34	39	(13)	105	120	(13)
PBIT	412	346	19	1040	912	14
PBIT Margin (%)	20.8	22.9		20.9	21.2	
Finance cost	1	1		3	2	
PBT	411	345	19	1037	910	14
PBT Margin (%)	20.8	22.8		20.8	21.2	
PAT	275	236	17	695	617	13
PAT Margin (%)	13.9	15.6		13.9	14.4	



Financial Performance

- The total income for the nine months under review has been higher by 16% with product segment showing a growth of 21% y-o-y while the aftermarket revenue shown a marginal growth of 1%.
- The lower than expected growth in aftermarket revenue is due to deferment of dispatch of some significant orders from the international market to Q4 FY 16.
- The increase in turnover has been on account of increased domestic despatches – both in product and aftermarket.
- The lower export turnover both for the product and after market was due to uneven order inflow in the past and also on account of deferment of despatches towards the end of the quarter.
- During 9M FY 16, the total product order intake has been ₹ 4.6 billion, which is a growth of 31% in comparison to the corresponding period of last year while the aftermarket order-intake has been higher by 9% at ₹ 1.25 billion. Some aftermarket orders have been deferred to Q4 which will raise the growth rate versus last year
- The overall order booking at ₹ 5.8 billion during 9M FY 16 has grown by 26% in comparison to the corresponding period of last year.
- The outstanding order book on a standalone basis, as on 31st Dec 2015 has been ₹ 6.8 billion, while on a consolidated basis, the outstanding order book is ₹ 7.8 billion.



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, supply, sell and service advanced technology steam turbines in India in the range above 30-100 MW 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.
- After achieving profitability in the last quarter of FY 15, GETL is expected to have higher turnover and profits in FY 16 with the scheduled despatches of international orders during the current financial year.
- Large sized turbines are scheduled for despatches in Q4, which will help in achieving a significant year on year growth in turnover and also a much improved positive bottom line.
- On the order booking front, the JV is well positioned in many orders which are under finalisation, Lols for some of those have been received and advances are expected in Q4.
- Overall the order inflow in Q4 is expected to be good and will help the JV to have a good pipeline for execution in the coming year.
- The commissioning of JV's domestic and overseas orders will help the JV to establish the necessary references and to achieve enhanced orders inflow in the future.



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