



Challenging  
the Now.  
**Building  
the Next.**



2018-19  
ANNUAL  
REPORT



## Inside Stories

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View or download the report at  
[www.triveniturbines.com](http://www.triveniturbines.com)

#### Forward-looking statement

This report contains forward-looking statements, which may be identified by their use of words like 'plans', 'expects', 'will', 'anticipates', 'believes', 'intends', 'projects', 'estimates' or other words of similar meaning. All statements that address expectations or projections about the future, including but not limited to statements about the Company's strategy for growth, product development, market position, expenditures and financial results, are forward-looking statements. Forward-looking statements are based on certain assumptions and expectations of future events. The Company cannot guarantee that these assumptions and expectations are accurate or will be realised. The Company's actual results, performance or achievements could thus differ materially from those projected in any such forward-looking statements. The Company assumes no responsibility to publicly amend, modify or revise any forward-looking statements, on the basis of any subsequent developments, information or events. The Company has sourced the industry information from the publicly available resources and has not verified those information independently.

Challenging the NOW.  
**Building the NEXT.**

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Every  
day is an  
opportunity  
to build a  
**new  
tomorrow.**

At Triveni Turbines, we believe that the contours of tomorrow are shaped by our ability to overcome the challenges of today.

Continuously sharpening our innovation edge, persistently scaling the quality of our products, unwaveringly focussing on harnessing future opportunities, we remain committed to building the next level of the enterprise. An enterprise that can envision solutions that are aligned to the evolving needs of customers, not just for today but for the future as well.

Because we believe that the journey from NOW to NEXT is powered by our unique ability to challenge the present. And by the strong capabilities that we are constantly enhancing to create new products and solutions we can address the needs of tomorrow, across an expanding customer and sectoral presence.

# A Future-looking Organisation

Focused on driving the next level of growth by delivering robust, reliable and efficient end-to-end solutions, Triveni Turbines is the largest manufacturer of industrial steam turbines in >5 to 30 MW range globally.

The Company's product proposition is delivered by its two state-of-the-art manufacturing facilities in Bengaluru, India, while its global network help to serve the requirements of customers worldwide.

**>4,000**

steam turbines installed

**>20**

industries serviced

**70**

countries of presence

**>13GW**

power generation capacity

Triveni Turbines is the world's largest manufacturer of steam turbines (>5 MW to 30 MW range) for providing industrial & renewable power solutions to a growing global base of customers, making it a next-level enterprise that is bringing the future forward with its futuristic vision and strengths.



### What drives Triveni Turbines...

The Company's continuous focus on technological advancement and capturing new markets is driving the business forward. We remain focussed on strengthening our product and solutions pipeline into a formidable array of offerings crafted to fulfil the unique needs of customers, across sectors and geographies.



## Robust portfolio of solutions

We offer robust back pressure and condensing steam turbines up to 30 MW that work across a wide range of pressure and flow applications, with choice of Impulse and Reaction technologies.



### Products

#### Up to 30 MW

- Condensing Steam Turbines
  - Straight Condensing Type
  - Extraction Condensing Type
  - Bleed Condensing Type
  - Injection Condensing Type
  - Reheat Turbines
  - Double Extraction Condensing
- Back Pressure Steam Turbines
  - Straight Back Pressure Type
  - Extraction Back Pressure Type
  - Bleed Back Pressure Type



### Spares & Services

#### 360° Customised Service Portfolio for every turbine served throughout its lifecycle

- AMCs & overhauling for Steam Turbines
- Spare Parts Inventory Management
- Reliable Operations Package
- Highly Skilled Engineers



### Refurbishment

#### Any make, any age turbine

- Efficiency Restoration
- Re-engineering
- Reverse Engineering
- OEM Expertise
- Health Survey & Condition Assessment
- Renovation & Modernisation
- Catering to Process & Sugar Co-generation, Captive Power Generation & Utility

## Wide sectoral presence

Our strong R&D thrust and technological prowess enables us to create products and solutions designed to the specialised needs of diverse industries and applications, globally. The sectoral diversity insulates us from industry-specific risks, with the geographical diversification of the various sectors further minimising the regional risks to our business.



## Global footprint

Led by a strong customer-centric approach, with keen focus on innovative products and aftermarket solutions, Triveni Turbines continues to expand its global footprint for its products as well as aftermarket services, both for its make as well as other makes of turbines.



# Challenging the NOW

Rooted in innovation, our products and solutions are designed to challenge the present-day complexities of businesses across various industries, with the objective of helping them build on their foundations for future growth.

## High on innovation

Our strength in innovation, which has emerged as a powerful growth driver for our business, is manifest in our regular product developments and technological interventions in the market. Our strategy is centred on introducing 5-7 new variants into the market every year, building more efficiencies and customised features into each of them. With exclusive designs developed in association with our partners, which include world-renowned design houses and academia, we remain ahead of the competitive curve. Our agile organisational structure, coupled with our deep understanding of the latest market trends and customer needs, has facilitated the formulation of a shorter development cycle – a key differentiator from the competition and key value proposition for our customers.

Our R&D function is crafted to drive innovation across our business segments, encompassing the full range of our solutions.

## R&D prowess

Manned by domain experts from steam turbine technology, fluid dynamics, metallurgy and structural designs, besides other related fields, our state-of-the-art Research and Development (R&D) Centre has emerged as a powerful hub for our growing portfolio of innovative products, technology and solutions.

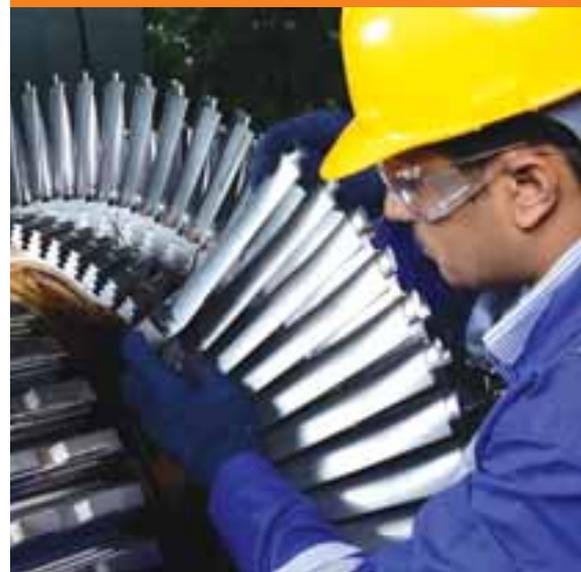
Our R&D teams are closely aligned with our production, marketing and service teams, who provide essential inputs and feedback to the department on a regular basis.

We remain focussed on maximising product output and performance, while lowering life cycle costs, to deliver total customer satisfaction.

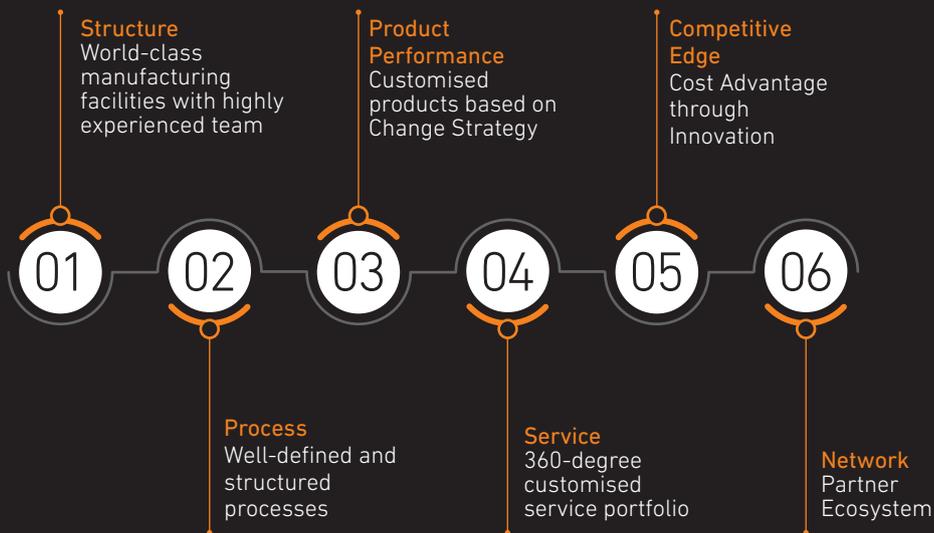
We have in place a cohesive innovation framework that seeks to deliver best-in-class products and services to our customers globally, thereby helping boost their ROI.

## Embracing next-level technology

Our aggressive onward march in the areas of design and self-validation has enabled us to make substantial gains in the technical and technology fields in recent period. A series of new models and blades designed by our teams have found validation from the best organisations globally. These validations are propelling our growth in terms of order bookings, in the existing and new sectors, while helping further scale our research programme. It has given us a strong technological edge, backed by a growing marketing reach, to support our pursuit of product sales and aftermarket sales globally.



## Our innovation framework



The power of our 'Challenging the Now' proposition is translating into increased market share of Triveni Turbines. As per an International Power sector report for Small Units (5-30 MWe), most of which are in the Thermal Renewables category, in terms of units sold, Triveni Turbines was at the top in 2018, with 26% global market share. Similarly, in terms of Units sold in the Thermal Renewables Segment also, Triveni ranked second globally with a market share of 21%.

# 249

Intellectual Property filings globally

(as on March 31, 2019)

## And there's more...

At Triveni, such high level of customisation and expertise extends across all industries of our presence. We have built turbines for variable speed applications, double casing designs for high pressure applications, and robust control systems with quick response characteristics. Our multilevel balance piston helps in thrust load reduction, while our remote monitoring and diagnostics facilitate health monitoring and predictive maintenance. We also have customised turbines for Marine & Defence.

# Building the NEXT

The journey from innovation to delivering the final product or solution to the customer spans many facets of operational and quality excellence at Triveni Turbines. Continuous enhancement of our core capabilities leads our efforts to build the next-generation turbines, as we strive to strengthen our customers in the segments of their presence.

At the same time, our design & development edge, extensive in-house testing and field validation programmes, high-end manufacturing processes and strong quality credentials help us in our goal to build the Next, not just for ourselves but also for each of our customers.

## Partnering next-level growth

We have in place a robust value chain, with extensive partnerships from the procurement to the delivery, to power next-level growth for Triveni and its customers. Proven modular building blocks are extensively tested for product life cycle performance, while customer Capex and Opex optimisation enables extensive operability benefits, making Triveni a leading partner for companies worldwide. Our Innovation & Learning Centre provides the best of training to our employees and customers using the latest equipment and technological know-how to ensure they remain ahead of competition.

## Leveraging infrastructure to scale customer interface

Our plants are equipped with state-of-the-art equipment for the manufacture of robust and reliable steam turbines, including critical components, assembly, testing and refurbishing services. Our innovation-led strategic agenda is driven by our manufacturing facilities, which have the latest design tools and software.

We have a highly qualified and experienced workforce that works closely with customers to gauge their specific requirements and realise the full potential of our manufacturing prowess. All our products are benchmarked to global standards of quality, backed by streamlined processes and systems to ensure zero defects, so that customers get the maximum uptime for their plant operations.

- 
- 01 Five-axis CNC Machining Centres
  - 02 Five-axis CNC Mill Turn Centre machine
  - 03 Large fleet of Four-axis CNC machines
  - 04 Zeiss co-ordinate measuring machines
  - 05 2 Vacuum tunnels catering up to 150 MW rotors
  - 06 Computerised test facility
  - 07 Full-speed Mechanical Steam Run Test
  - 08 Integrated CAD/CAM
  - 09 5-face CNC Gantry machine