



MULTIBRAND

REFURBISHMENT SERVICES

Any age
make
turbine
Trust us to
bring it to life
UP TO 1000 MW



A JOURNEY DRIVEN BY PURPOSE AND POWERED BY PRECISION

Established in 1968, Triveni Turbine Limited (TTL) has evolved into a globally recognized leader in industrial heat and power solutions and decentralized, sustainable energy systems. With more than five decades of engineering excellence, TTL delivers high-efficiency, reliable, and customized steam turbine solutions that help industries optimize energy use, enhance operational performance, and advance sustainability goals.

Today, the company has installed over 6,000 steam turbines globally across 80+ countries, serving 22+ industries including industrial heat and power applications. Backed by an annual manufacturing capacity of 350+ turbines, Triveni Turbines continues to strengthen its global footprint while supporting customers with innovative and efficient energy solutions.

The company is also playing a pivotal role in the transition to cleaner energy, with nearly 80-85% of its business coming from thermal renewable fuel applications, reflecting its strong commitment to greener and more sustainable growth. With a more than 30% global market share in the sub-30 MW steam turbine segment, as reported by McCoy Report, Triveni Turbines remains committed to delivering precision-driven solutions that power industries worldwide while contributing to a more sustainable energy future.

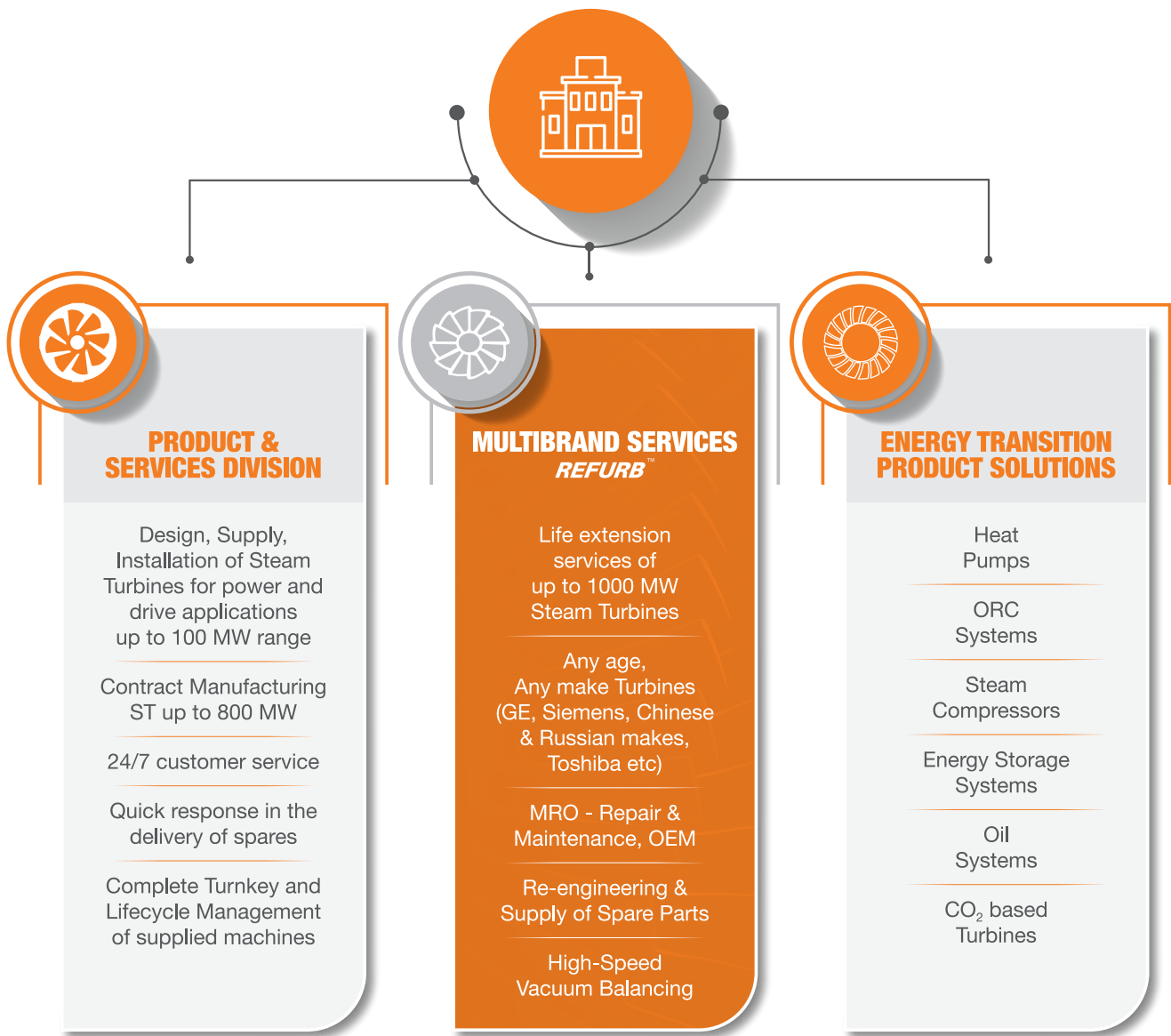
— CERTIFIED FOR GLOBAL EXCELLENCE —





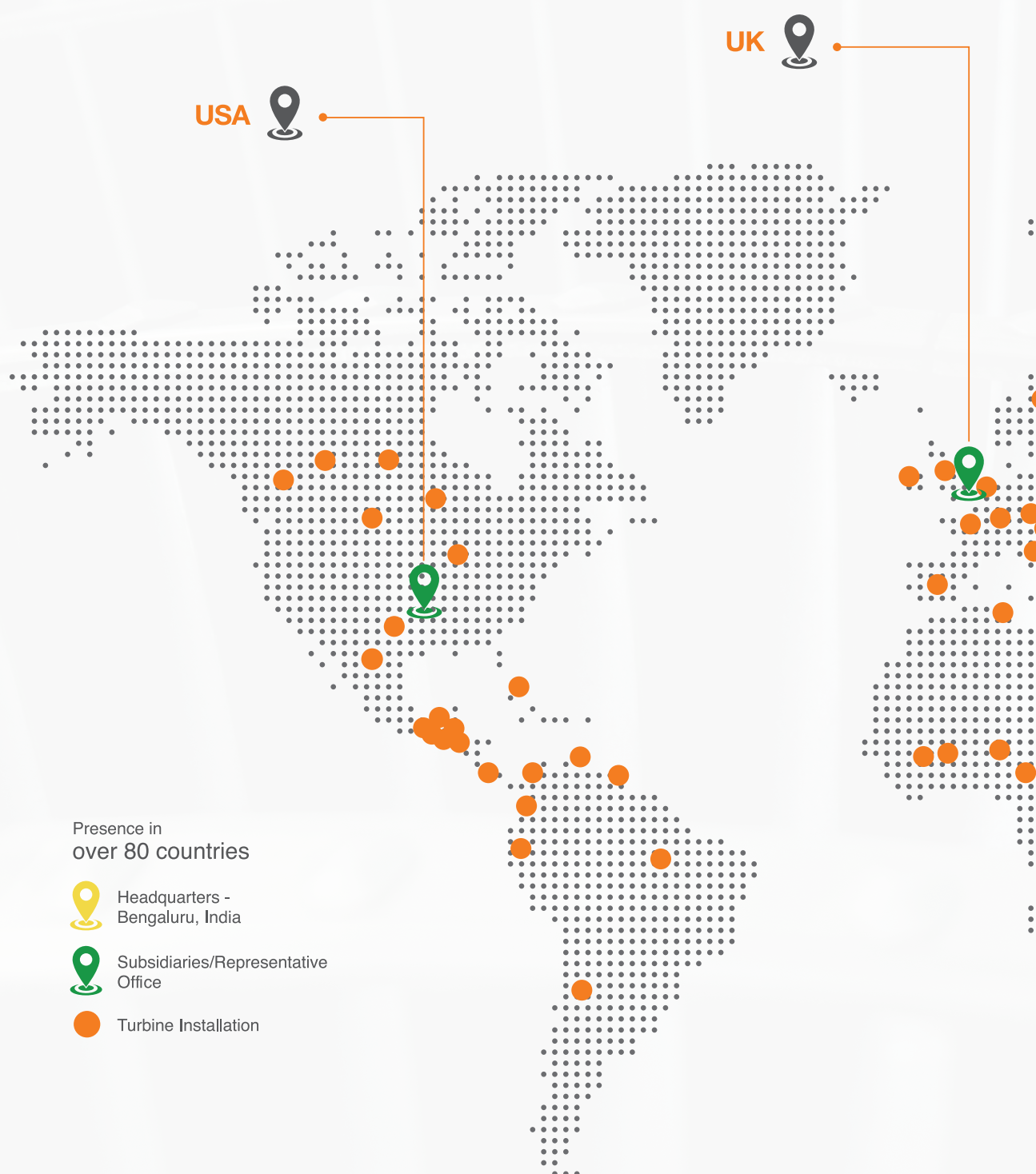
BUSINESS SEGMENTS AT A GLANCE

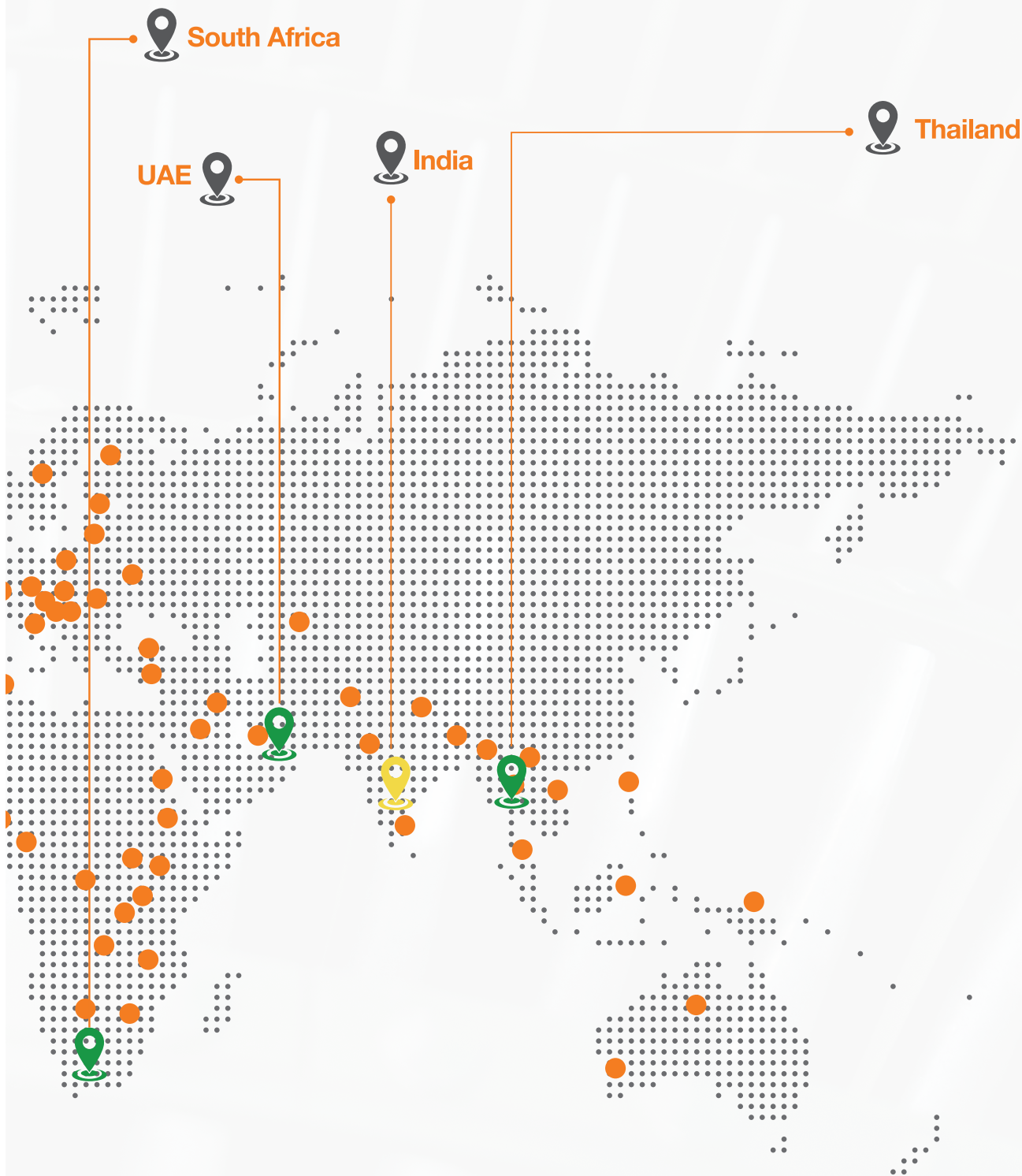
TRIVENI TURBINE LTD. (TTL)



GLOBAL PRESENCE. LOCAL COMMITMENT.

With a footprint across more than 80 countries, Triveni Turbines delivers worldwide service backed by global scale. Supported by our state-of-the-art facilities in Peenya and Sompura, Bengaluru along with our global centres in the USA and South Africa, we offer customer-specific solutions strengthened by strategically placed offices and strong on-ground teams that ensure continuous engagement and lasting partnerships.





REVERSE THE CLOCK ON AGEING TURBINES

As one of the leading names as an OEM in the energy sector, Triveni Turbines supports the global power generation industry through its niche multibrand refurbishment business specializing in the re-engineering and repair of rotating equipment of '**Any age, Any make**' across the world. Our extensive refurbishment services include efficiency enhancements, advanced 3D scanning and proactive turbine overhauls, health checks, condition assessments and spare parts supply.



YOUR OLD TURBINE ACROSS ALL BRANDS DESERVES A SECOND CHANCE

Choosing the right turbine for your plant is a complex task requiring extensive time, efforts and resources, and when after years of prolonged service, the efficiency declines due to wear and tear. It instantly hampers the overall productivity and ROI of the plant. Now, replacement is often considered the obvious solution for renewed and better functioning, ***but is it the only one?***

Our six decades of expertise as OEM in the power generation sector has led us to firmly believe that why replace when you can **REFURB™**. In fact, sometimes the issue is just in one part or equipment of the turbine, not the whole turbine, and refurbishment can not only put back new life into your old turbine but also increase its efficiency as per updated requirement. Thus, making refurbishment the better alternative over replacement.



REVIVE YOUR PLANT'S EFFICIENCY WITH RIGHT REFURBISHMENT SERVICES

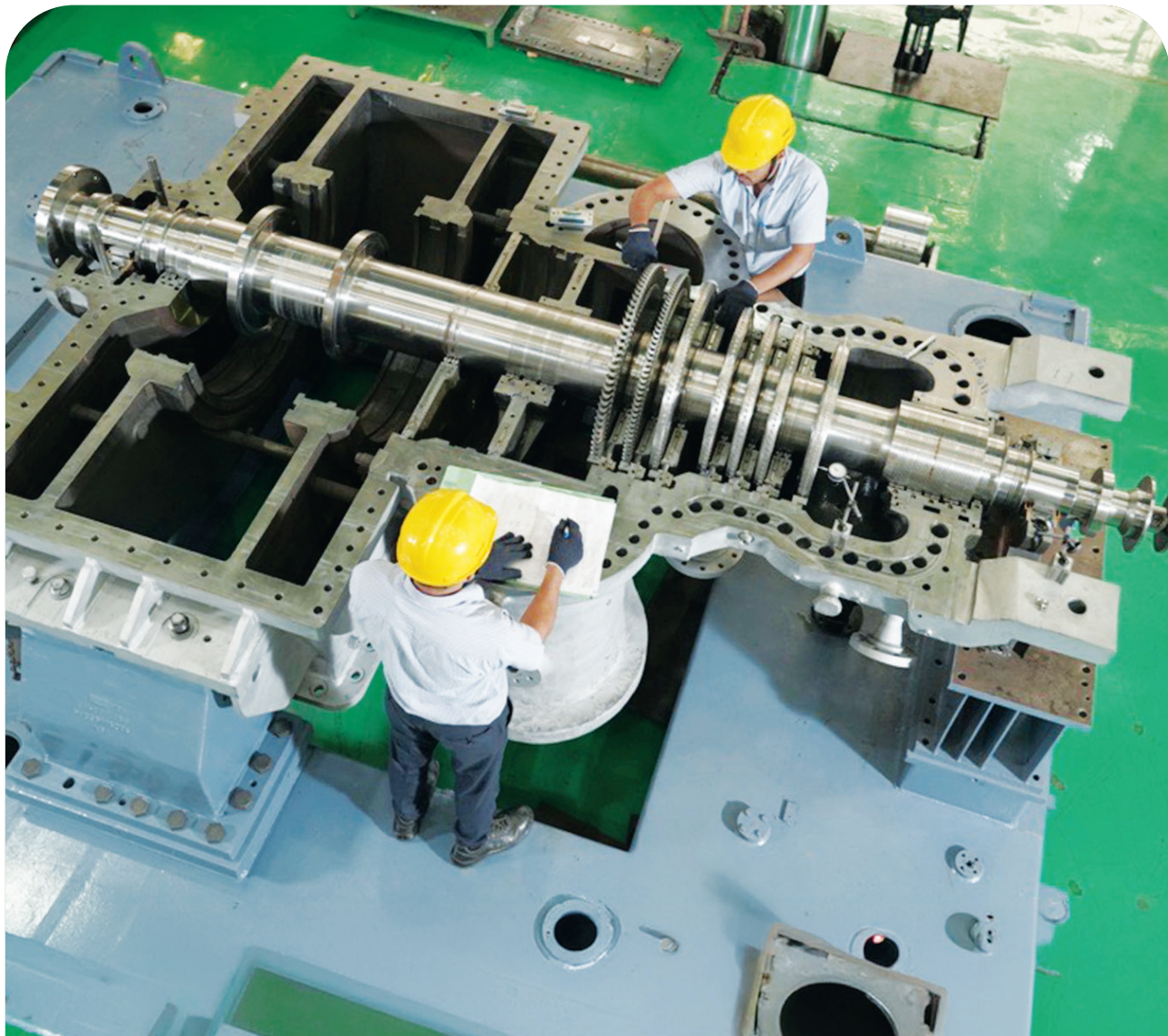
Advantages of *REFURB*™

Up to 15%
improvement in
efficiency

Increased ROI
within 2 years
of operations

100,000+ hrs of
extended
turbine life

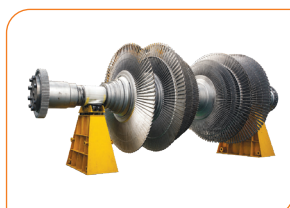
Increased span
between two
overhauls



UPGRADING PERFORMANCE



Industrial Steam Turbines



Utility Steam Turbines



Gas Turbines



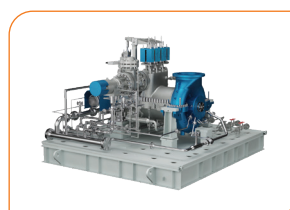
Compressors



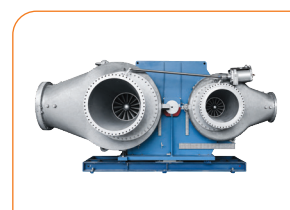
Generators



Geothermal Turbines

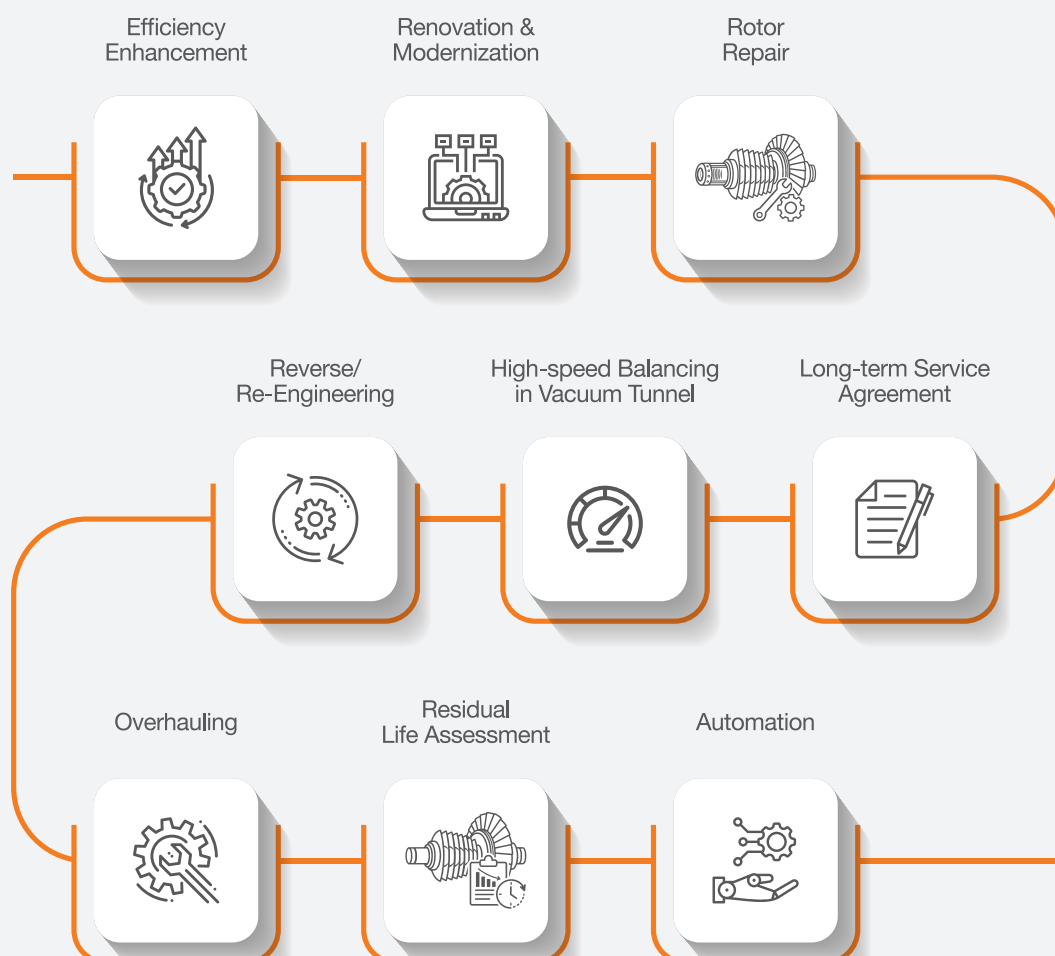


API Turbines



Gas Expander

OUR PORTFOLIO INCLUDES



BRINGING TURBINES BACK TO LIFE WITH BEST-IN-CLASS MACHINERY



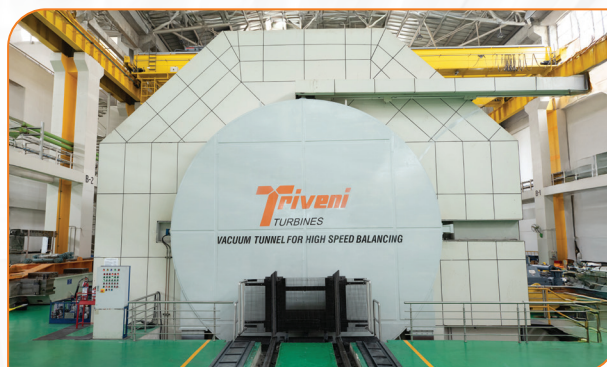
BLADE MACHINING CENTER



TNT BLADE MANUFACTURING



5 AXIS ROTOR MACHINING



HIGH SPEED BALANCING MACHINE



REVERSE/RE-ENGINEERING



UTILITY TURBINES



Enhancing the life of turbine



Up to 1000 MW across all brands



Supply of fully bladed rotor & Stator components.



High-Speed Balancing



Modernization of control system



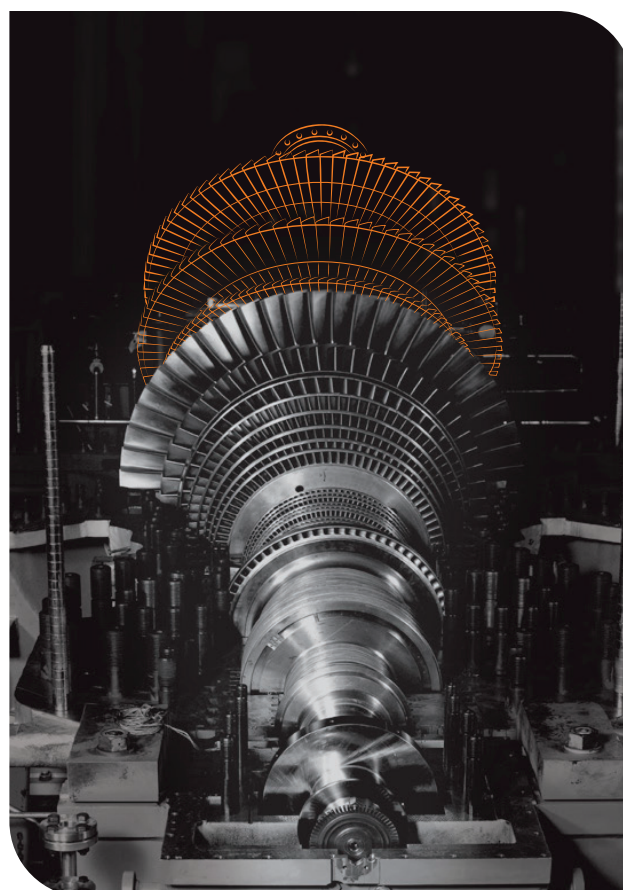
Supply of spare parts



Health assessment



Overhauling



COMPRESSORS

We offer a complete parts solution for high-tech, performance-critical centrifugal and axial compressors.

We offer cost-effective choices that are in accordance with operating requirements..



Spare Parts
Supply



High-Speed
Balancing



Field
Commissioning



EXTENDING THE LIFE OF GEOTHERMAL TURBINES

With proven expertise in Geothermal refurbishment, we have successfully executed complex restoration and upgrade projects across New Zealand, the Philippines, and the USA.

Our solutions have helped extend equipment life, enhance operational reliability, and restore critical Geothermal assets to peak performance.

These successful projects stand as a testament to our technical excellence, global capabilities, and commitment to delivering value in the Geothermal industry.

PHILIPPINES

OEM: Japanese make

Power Rating: 20 MW

Scope: Supply of fully bladed and balanced rotor.

NEW ZEALAND

OEM: US Make

Power Rating: 45 MW

Scope: Efficiency enhancement of existing turbine and supply of modified steam path rotor, stator (Diaphragms) and related auxiliaries.

USA

OEM: Japanese Make

Power Rating: 35 MW

Scope: Supply of blades for last stage blades.

PHILIPPINES

OEM: Japanese Make

Power Rating: 77.5 MW

Scope: Supply of blades for 6th and 7th stage blades for dual flow rotor.

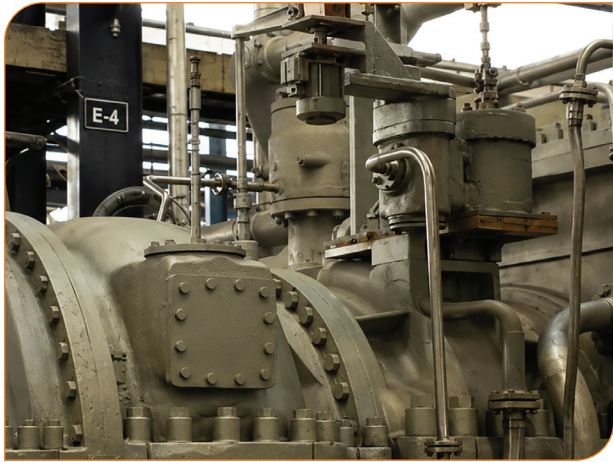


MODERNIZATION

1 Make: Europe | Country: Egypt | Capacity: 12 MW

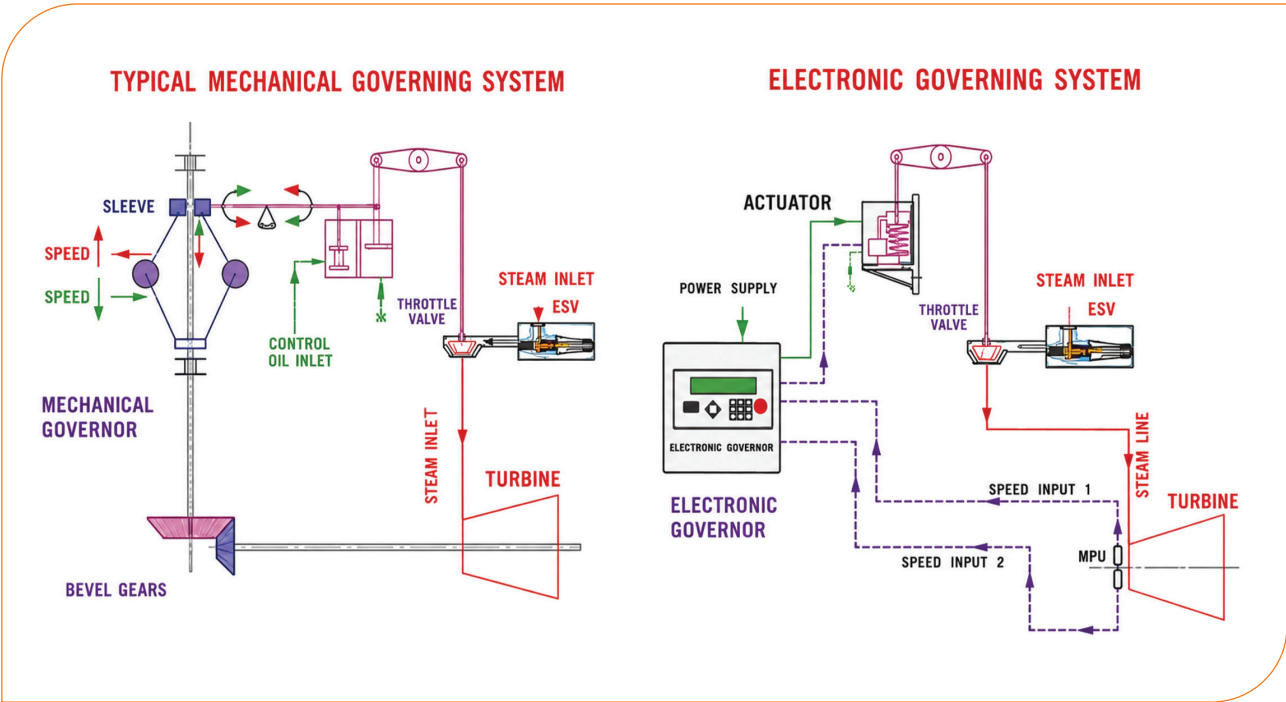


ORIGINAL DESIGN



MODIFIED DESIGN

MODERNIZATION BY CONVERTING MECHANICAL GOVERNING SYSTEM TO ELECTRONIC GOVERNING SYSTEM BY RE-ENGINEERING.



CASE STUDIES

TURBINE

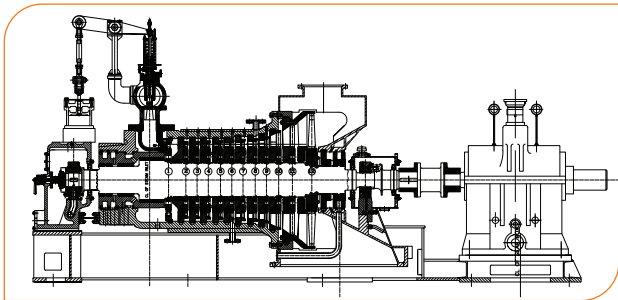
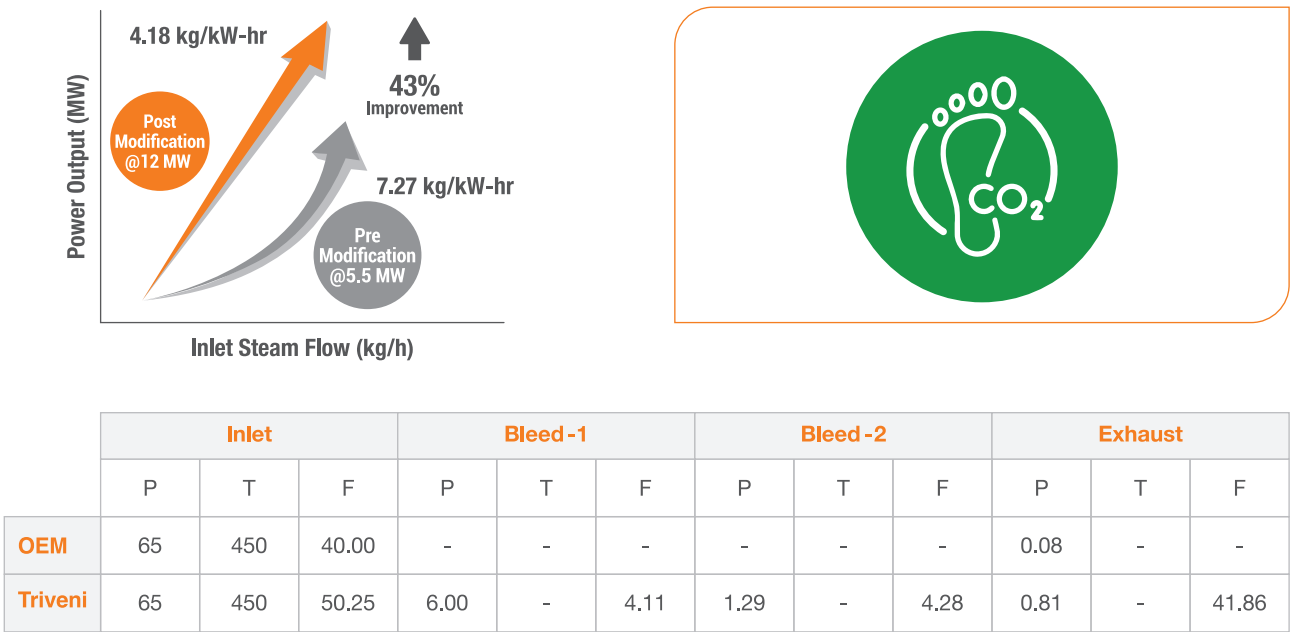
EFFICIENCY ENHANCEMENT

1

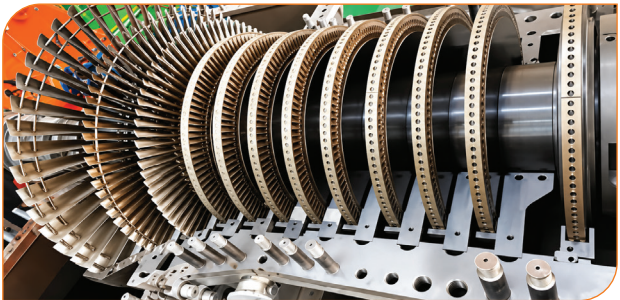
Make: Chinese

Description: Conversion of Impulse to Reaction

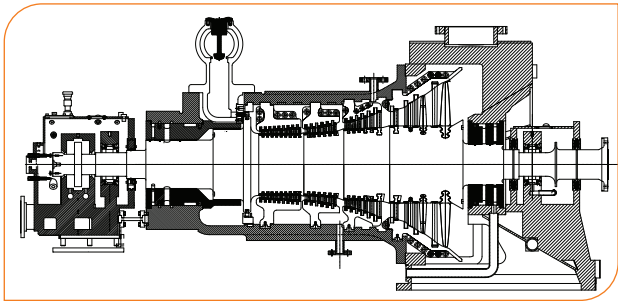
Sector: Waste to Energy



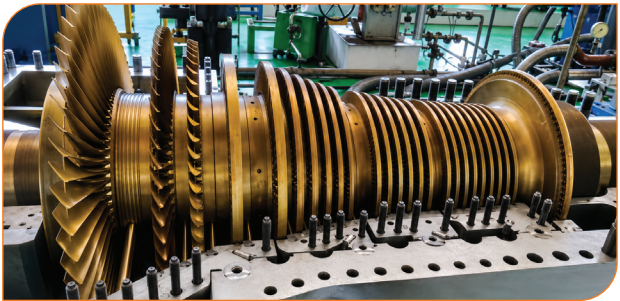
OEM LAYOUT



OEM DESIGN (IMPULSE – 12 STAGES)



TRIVENI LAYOUT



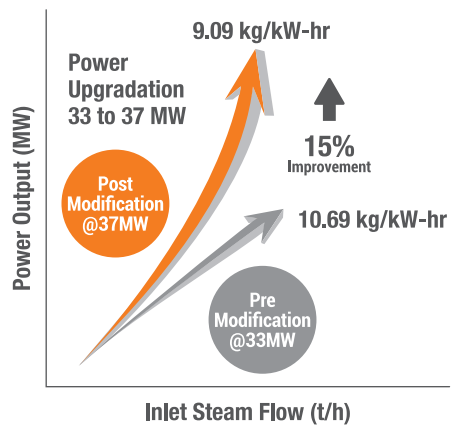
TRIVENI DESIGN (REACTION – 26 STAGES)

P: Pressure in Bar.A | T: Temperature in Deg.C | F: Flow in Tons/hr



Make: European
Description: Power Upgradation

Sector: Oil & Gas

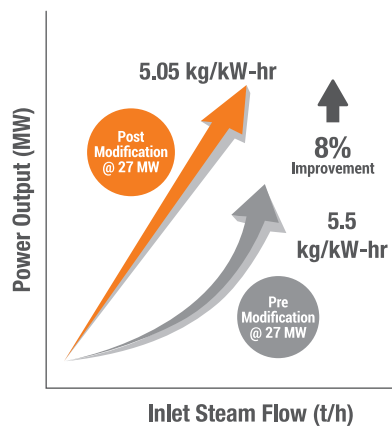


	Inlet			Ext. 1		Ext. 2		Exhaust	
	P	T	F	P	F	P	F	P	F
OEM	106	505	352.75	41.00	158.10	12.00	164.68	0.08	29.97
Triveni	103	505	354.70	41.00	140.00	12.00	154.00	0.11	60.70



Make: Japanese
Description: Efficiency Enhancement

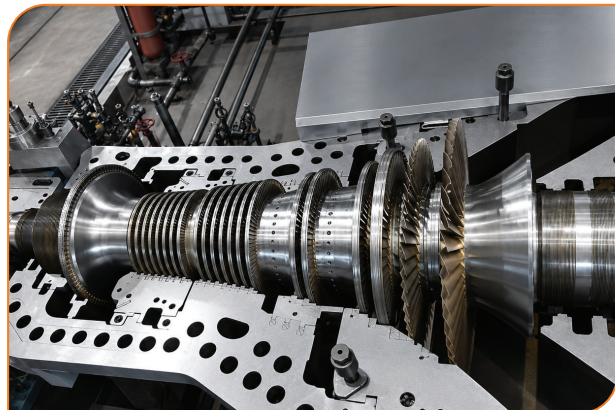
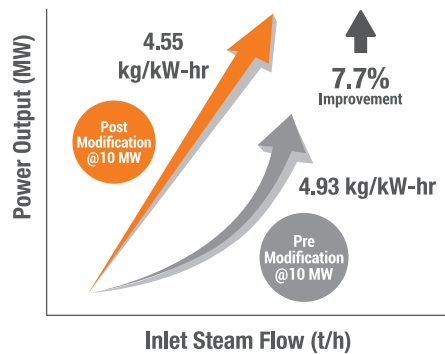
Sector: Chemical



	Inlet			Extraction		Exhaust	
	P	T	F	P	F	P	F
OEM	70	485	121.00	16.00	35.00	0.11	86.00
Triveni	70	485	111.00	16.00	35.00	0.11	76.00

P: Pressure in Bar.A | **T:** Temperature in Deg.C | **F:** Flow in Tons/hr

4

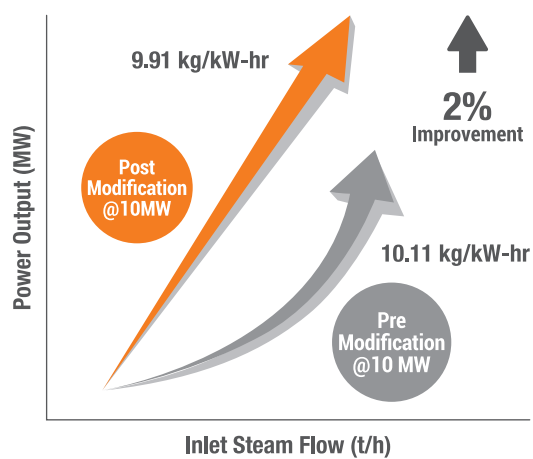
Make: India**Description:** Deration of 24 MW to 10MW► **Sector:** Steel

	Inlet			Bleed-1			Bleed-2			Exhaust		
	P	T	F	P	T	F	P	T	F	P	T	F
OEM	64	485	50.00	3	-	3.00	1.20	-	1.50	0.18	-	44.50
Triveni	64	485	40.14	-	-	-	3.84	-	4.34	0.18	-	35.80

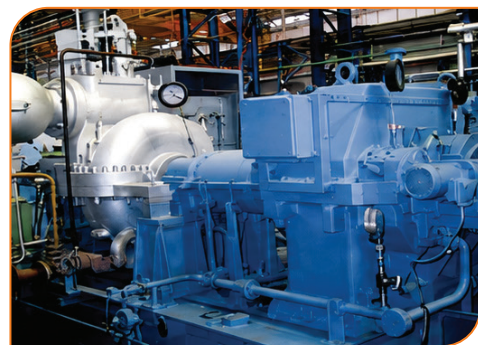
5

Make: Japanese**Description:** Revamping and Efficiency Enhancement

**During operation customer could not go beyond 6.6 MW*

► **Sector:** Sugar

BEFORE



AFTER

	Inlet			Exhaust		
	P	T	F	P	T	F
OEM	21	350	101.10	1.50	-	101.10
Triveni	22	350	99.10	1.50	-	99.10

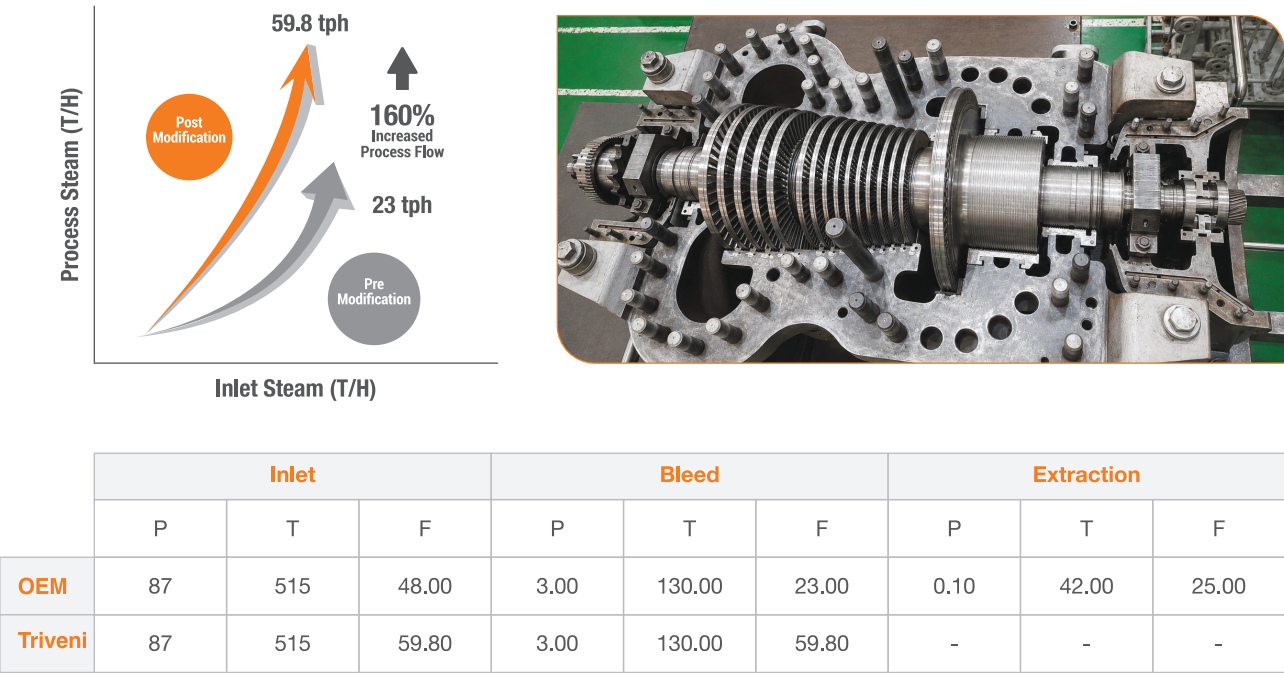
P: Pressure in Bar.A | **T:** Temperature in Deg.C | **F:** Flow in Tons/hr

CONDENSING TO BACK PRESSURE

1

Make: Chinese

Description: 9 MW, Modification and Conversion to BP

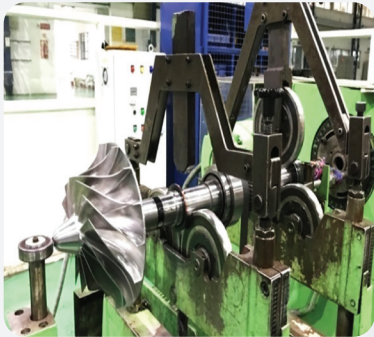


EFFICIENCY IMPROVEMENT / MODIFICATION JOBS ON NON-TRIVENI TURBINES

Advantages



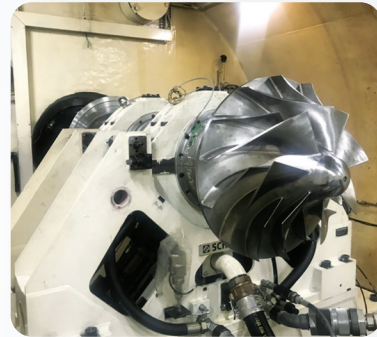
IMPELLERS



Reverse engineering of damaged Impeller at site



Final Inspection of New Impeller



Final Assembly of the Impeller with new pinion shaft and Balancing setup

Challenges

3D Scanning & Model Reconstruction of a Damaged Impeller

A damaged impeller was scanned using a **3D laser scanner** to capture its precise geometry and generate a digital 3D model for manufacturing a new impeller. Following the scan, data from the remaining vanes was analysed and used to reconstruct the manufacturing model, with the geometries superimposed to arrive at the final model.



GLOBAL NETWORK

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IMAGINE
THE UPGRADE,
INNOVATE
WITH REFURB,
INSPIRE
EXCELLENCE



Triveni Turbines
Corporate Film



Website

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