



KNOWLEDGE INTEGRATION SERVICES (INDIA) PVT. LTD.

Innovative Cost Saving Technologies



Green Energy Turbine Solutions



**High Efficiency Multistage
Steam Turbines and
Auxiliaries ranging from
40 KW to 20 MW.**

We Create Ways to Save Cost & Environment

Versatile Product Line Overview

The industrial steam turbine product line serves as auxiliary units in large utility plants, and in smaller independent power plants. Their application may vary from driving generators to main-unit feed pumps, compressors, blowers and fans. The range of operating speed, power output and inlet conditions are also vast.

Serving a Wide Array of Industries

KIS Industrial Steam Turbine (GETS) business has extensive experience In Steam Turbines for both generator drive and mechanical drive applications in the following industries:

- ❑ Palm Oil Mills/Refineries
- ❑ Paper Plants
- ❑ Sugar Plants
- ❑ Distilleries
- ❑ Steel & Foundries
- ❑ Chemical & Petrochemicals
- ❑ Chemical & Dye
- ❑ Solvent Extraction Units
- ❑ Food processing
- ❑ Rice & Flour Mills
- ❑ Textiles
- ❑ Pharmaceuticals
- ❑ Dairies
- ❑ Solar thermal Plants



Modular Designs for a Variety of Applications

The modular based design of a GETS permits a high degree of customization to meet specific steam cycle needs and can provide controlled or uncontrolled extraction/injection of steam at any possible intermediate pressure level required.

Steam Casings (HP & LP) are of horizontal & vertical split design for ease of maintenance. Steam entry to the turbine is governed by Single/Multi-throttle valves with hydraulic boosters (relay system) with full or partial arc of admission. Similar controls incorporated for controlled extraction.

Impulse Blades provide high reliability and efficiency over a broad range of operating conditions used in back pressure or condensing configurations.

Steam Seals are spring backed labyrinths between the rotating and static parts which ensure optimum efficiency of steam turbine over time.

State-of-the-art Governing Systems such as Mechanical Hydraulic Governor (MHG) / Electro Hydraulic Governor (EHG) by reputed manufacturers are offered with GETS for complete reliability and enhanced performance.



GETS turbines are designed for top thermodynamic and mechanical performance as stand-alone drivers or as part of a complete turbo set. GETS system capabilities ensure the optimization of the match between the steam turbine and the driven machines and provide all the advantages of a single interface for the complete unit. Its thermal cycle design capabilities also enable it to offer integrated, multi-product, optimized solutions for industrial and utility power generation.

GETS Industrial Power Generation Modalities

- ❑ Combined Cycles
- ❑ Co-generation/Tri-generation
- ❑ Waste to Energy

Non Conventional Energy

- ❑ Solar thermal / Solar - Bio Hybrid Power Generation



Next Generation Product Range

- ❑ Power Rating - 40 to 20000 KW
- ❑ Speed Range -1500 to 28000 RPM
- ❑ Inlet Steam Pressure -1.5 bar to 65 bar
- ❑ Inlet Steam Temperature - D&S to 510° C.
- ❑ Exhaust Steam Pressure - 0.08 ata to 20 bar

Cutting- Edge Features

- ❑ Single/Multi Inlets
- ❑ Impulse Design
- ❑ Condensing or Back pressure
- ❑ Single/Multi throttle valve
- ❑ Extraction/Injection
- ❑ Exhaust (Upward/Downward/Lateral)
- ❑ Optimized Foundation Mounting

Replace Pressure Reducing Valves (PRV) With Our GETS to Get Free and Green Power

All PRV's used in the steam boiler system are sources of huge energy losses. Every time the steam pressure reduced using PRV, there is a loss of energy.

By replacing PRV's in the steam system with our GETS, we can produce green power which shall be absolutely free. The replacement of PRV with our back pressure GETS has proven track record of consistent and reliable operations.

Depending upon the cost of Electricity in different country / region, the investment cost for replacing PRV with GETS has return on Investment which varies from 16 months to 30 months. Our experts can identify the suitable opportunities and offer best solution to get FREE and GREEN power.

The Hallmark of Reliable Service

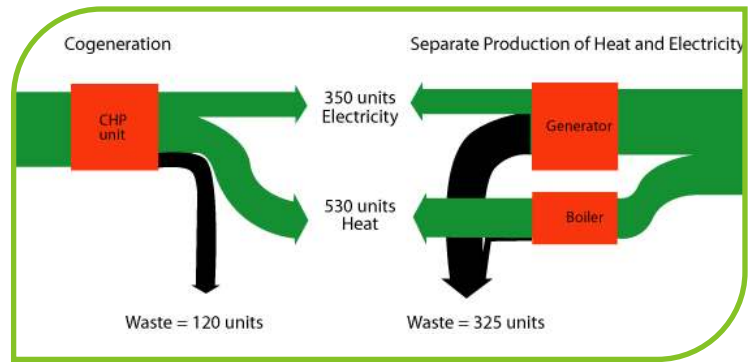
KIS is dedicated to providing the highest quality service solutions for the entire steam turbine product line. KIS provides a broad range of value-added services to keep machines operating at peak performance. The company also provides field service support for installation, start-up, commissioning, on-site inspections, overhauls and emergency repairs.

Advanced Training

KIS offers training for the operation and maintenance of all GETS units. This training can be provided either at the client's site or at the Learning Center located at the KIS's facility in Bengaluru, India. Training is highly recommended for on-site operational and maintenance personnel in order to ensure safety and superior equipment efficiency.

CO-GENERATION POWER PLANTS

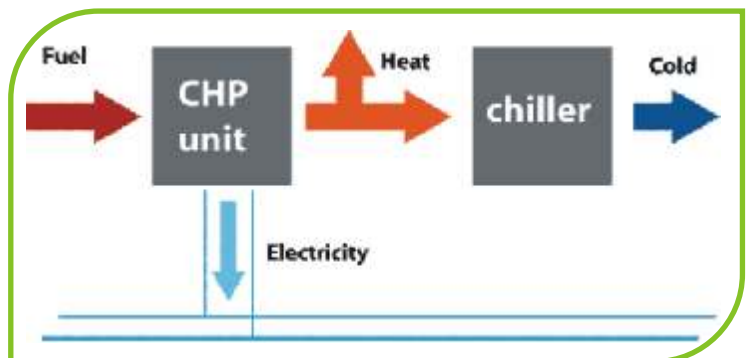
We offer total solution/design for Co-gen plants starting from feasibility study, basic and detailed engineering and project management.



TRI GENERATION

Tri generation is the conversion of a fuel into simultaneous 3 energy products: electricity, hot water or steam, and chilled water. A tri generation power plant is a co generation power plant that has added absorption chillers for producing chilled water from the heat that would have been wasted from a co generation power plant for air conditioning of building and building complexes. Tri generation plants can reach system efficiencies that exceed 90%.

With KIS tri generation power plant you will reach the same output with notably less fuel input compared to separate power and heat generation. KIS have ready-made solutions for tri generation which can easily be adapted to different market and customer requirements. The plant can flexibly run at high total efficiencies, producing heat and cooling for factories/office and building complexes, etc., and can interchange smoothly between supplying heating and/or cooling. At the same time it supplies the needed electrical power.





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