



TURBOSOL[®]
Heat to Power turbines



HEVATECH
Heat Valorization Technology

TECHNICAL DATA SHEET TURBOSOL TS-30/250

Generate electricity and useful thermal energy from industrial waste heat

What is waste heat ?

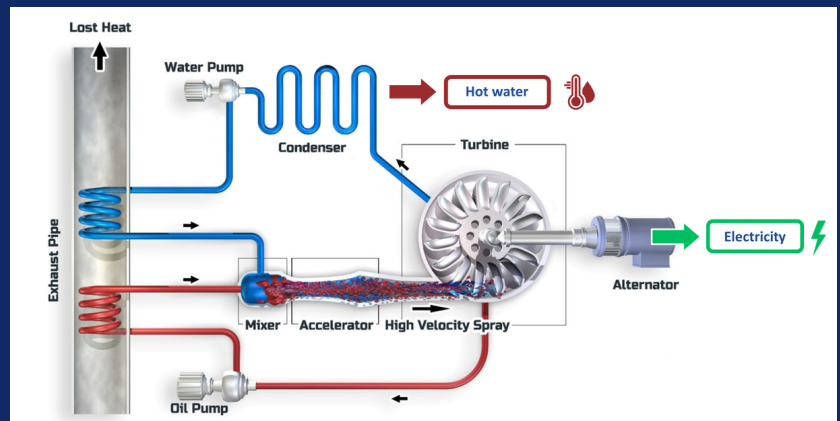
Waste heat is the residual thermal energy produced by industrial processes usually released into the environment.

What is TURBOSOL ?

TURBOSOL is a turnkey solution developed by HEVATECH to help industries lower their carbon footprint and energy costs.

Heat exchangers capture heat with two fluids: thermal oil and water/steam. Both fluids are mixed and accelerated through a nozzle. The spray is directed onto an impulse turbine, generating electricity. Residual heat from the condenser may also be used as hot water (up to 120°C).

Heat recovery potential: 200-1000°C



Possible uses of recovered energy:

Combined heat and power (CHP) generation to meet on-site energy needs (process integration, drying processes, facility heating...) or to supply nearby heating and cooling networks.



- **Optimized design based on MAEVA study**
- **Combined heat and power generation (CHP)**
- **Operational reliability**
 - **No hazardous fluids: water/steam and thermal oil only**
 - **Low pressure system**
 - **Rotational speed <3000 rpm**
- **Simplified installation and maintenance**
- **24/7 remote monitoring and control**
- **Power modularity: 30-250 kW_e**

Reduce your electricity and gas bills and your carbon footprint



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Industrial furnaces



Waste Incineration & VOCs



Gensets

Targeted applications

TURBOSOL product range & features:

	TS-30	TS-60	TS-80	TS-160	TS-250*
Nozzle number	2	4	5	coupling of 2 TS-80	16
Net power output	26 kWe 400V, 3ph, 50Hz	58 kWe 400V, 3ph, 50Hz	73 kWe 400V, 3ph, 50Hz	146 kWe 400V, 3ph, 50Hz	245 kWe 400V, 3ph, 50Hz
Cogeneration thermal production	380 kWth hot water (90°C)	755 kWth hot water (90°C)	945 kWth hot water (90°C)	1890 kWth hot water (90°C)	3050 kWth hot water (90°C)
TURBOSOL Dimensions	6,0 x 2,4 x 2,6 m 2000 kg	6,0 x 2,4 x 2,6 m 2500 kg	6,0 x 2,4 x 2,6 m 3000 kg	2x 6,0 x 2,4 x 2,6 m 6000 kg	6,0 x 2,4 x 2,6 m 5000 kg
Waste heat	from 1000 kW thermal power, from 200 to 1000°C Sizing and optimization thanks to MAEVA studies				
Cooling system	Included in the WHR package Or Flanged connection to existing cooling system				
Fluids	Water/steam Thermal oil				
System control	Schneider PLC (Siemens or other options available) Flexible communication protocols (EtherCAT, Profinet, etc.) 24/7 remote monitoring				
Installation	Available for indoor installation or as a containerized system				
Standards	Machinery Directive 2006/42/EC Pressure Equipment Directive 2014/68/EU Low Voltage Directive 2014/35/EU				

* soon available

Prepare for future environmental standards



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