

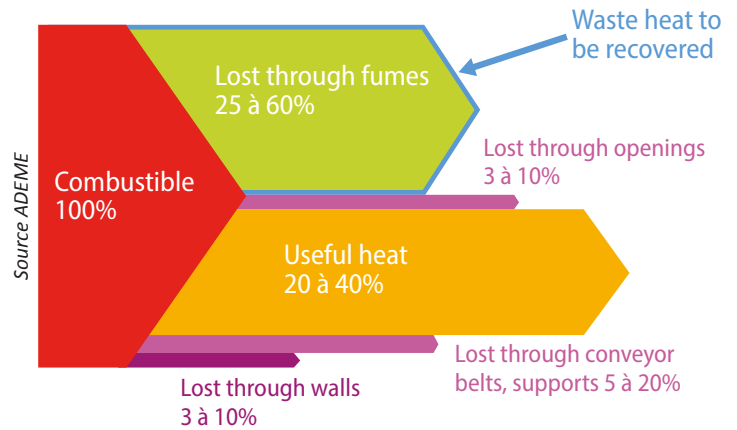
# TURBOSOL:

## INNOVATIVE AND COST EFFECTIVE PROCESS TO TURN WASTE HEAT INTO ELECTRICITY

### WASTE HEAT : A FREE RESOURCE TO BE RECOVERED

50% of the global energy consumption is wasted through lost heat ! Here is a **considerable pool of energy** to be used and also an **ecological emergency**. However, existing solutions are still expensive and delicate to implement. Thus, only a few real realizations have been made. In the fact of such situation, our objective is :

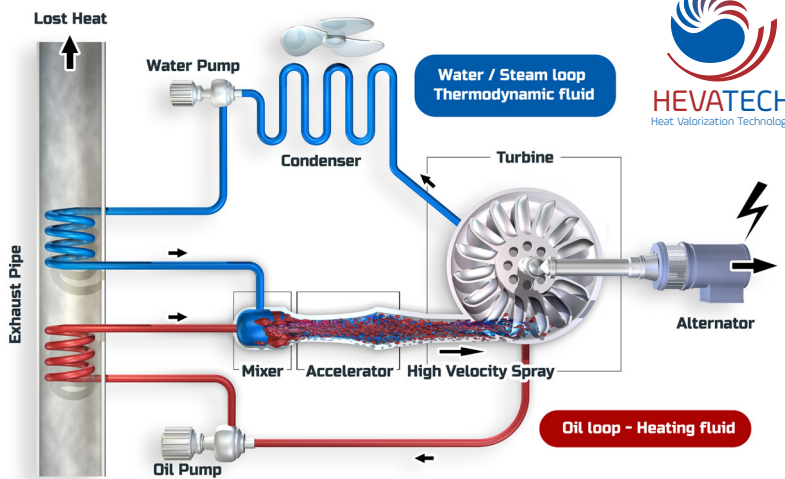
**To offer an innovative, robust and environmentally friendly solution, which would drastically shorten the return on investment**



### AN INNOVATIVE TECHNOLOGY FOR AN ECONOMIC DISRUPTION



Heat source



- 1 2 fluids loops in order to collect maximum of waste heat from exhaust pipe
- 2 A two-phase flow accelerator converts thermal energy into kinetic energy
- 3 A tailored impulse turbine coupled to an alternator

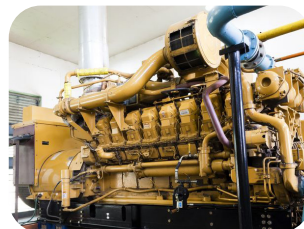
### REACHABLE AND ATTRACTIVE MARKETS



Waste and biomass



Heavy industry

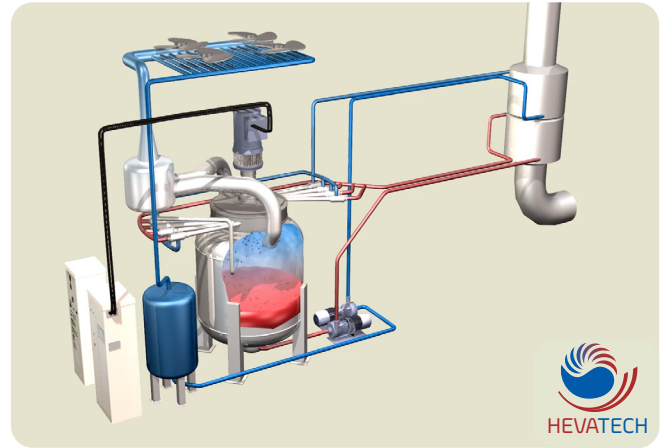


Generator sets

**The European market is estimated at over 5 bn €**

# AN ECONOMIC DISRUPTION ON THE MARKET

- **Easy** to process and implement
- **Low costs** especially regarding investment, implementation and maintenance
- **Safe and secure** (fluids, low pressure, rotation velocity...)
- **Modular power** (from 30 kWe to 1 MWe)
- **Cogeneration** opportunity (electricity/heat/cold)



## TECHNICAL SPECIFICATIONS



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- **Electric power output** :  $TS_{small}$  30-50 kWe  
 $TS_{med}$  50-200 kWe  
 $TS_{large}$  200-1000 kWe
- **Waste heat usable temperature** : > 300 °C
- **Pressure** : tank 1 bar, pipes 12 bar
- **Turnkey system** : process, components including heat exchangers, implementation and starting phase

## TURBOSOL : A REWARDED TECHNOLOGY



Laureate 2021 AAP GRDF, dedicated to the decarbonization of industry



Laureate 2021 AAP ADEME "EETE"



Laureate I-NOV 2020 and AAP IPME 2017



Finalist 2018



Labelised Innovative company 2018 from Tenerrdis



Laureate 2017 Energy & Environment



Laureate 2013 AMI Total-ADEME



Member of the green rooster community

PEFC 10-31-3258 - do not litter

## OUR PARTNERS



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## TO GO FURTHER

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Heat Valorization Technology