



TURBODEN

LARGE HEAT PUMP

MORE HEAT OUT OF HEAT

## SINCE 1980

Turboden is an Italian firm and a global leader in the design, manufacture, and maintenance of **Organic Rankine Cycle (ORC) systems**, highly suitable for distributed generation, which produce electric and thermal power exploiting multiple sources.

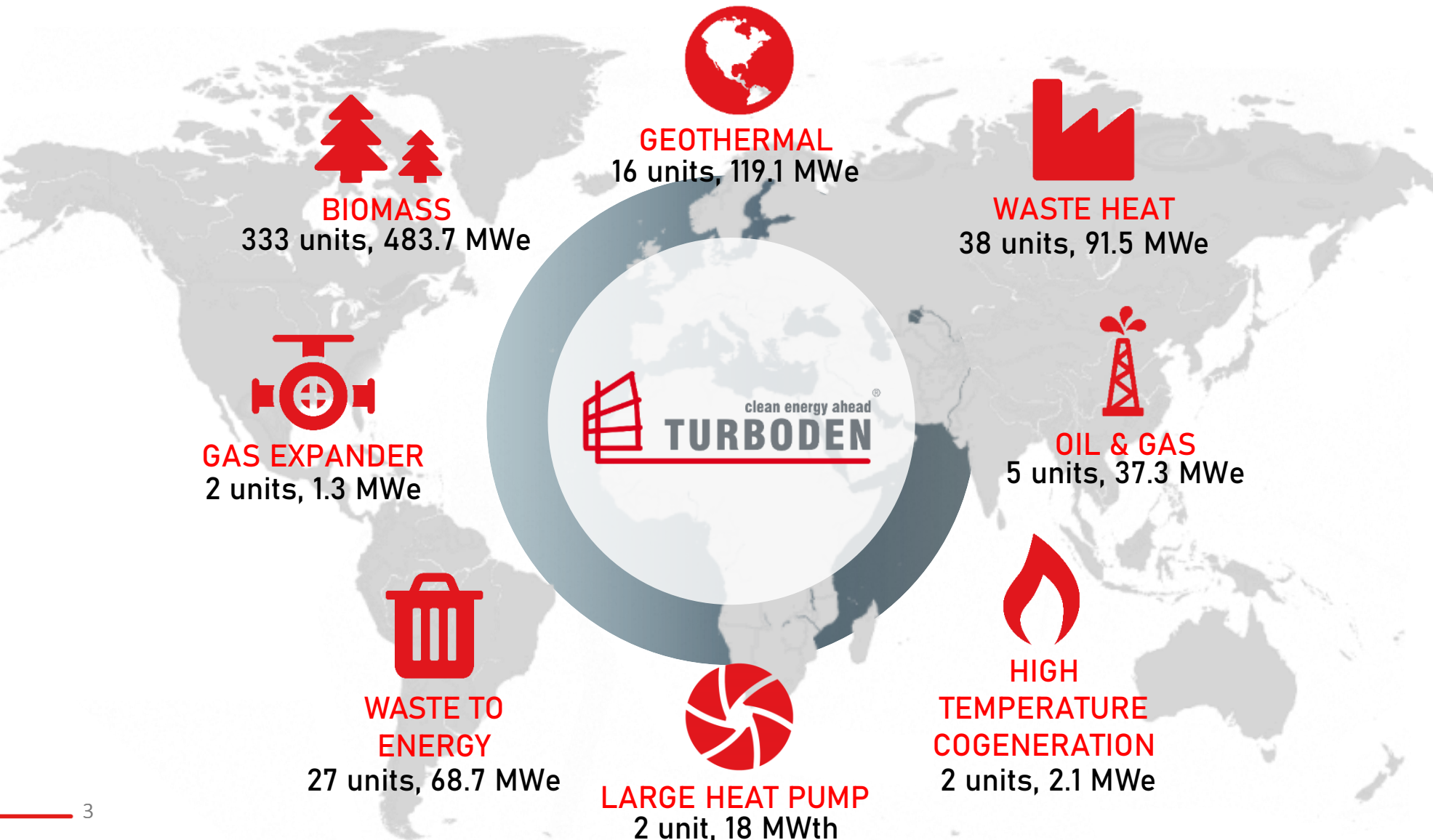
Thanks to its long experience in the energy efficiency sector, today Turboden expands its solutions offering with **gas expanders and large heat pumps**.

**MOVE THE WORLD FORW▶RD**





# GLOBAL AND PROVEN EXPERIENCE



Experience in over  
**50**  
countries

With  
**430+**  
installations

Installed power  
**750+ MWe**

Electric power generated  
**25 thousand**  
GWh

Cumulative operation time  
**19 million**  
hours

Average availability  
**98.4%**

Last update: January 2023

# TURBODEN EXPERTISE APPLIED TO LARGE HEAT PUMPS

## HEAT TRANSFER

Expertise in design of custom equipment with **different heat streams**.

## HIGH TEMPERATURE

40+ years experience with operative temperatures up to 400°C

## WORKING FLUIDS

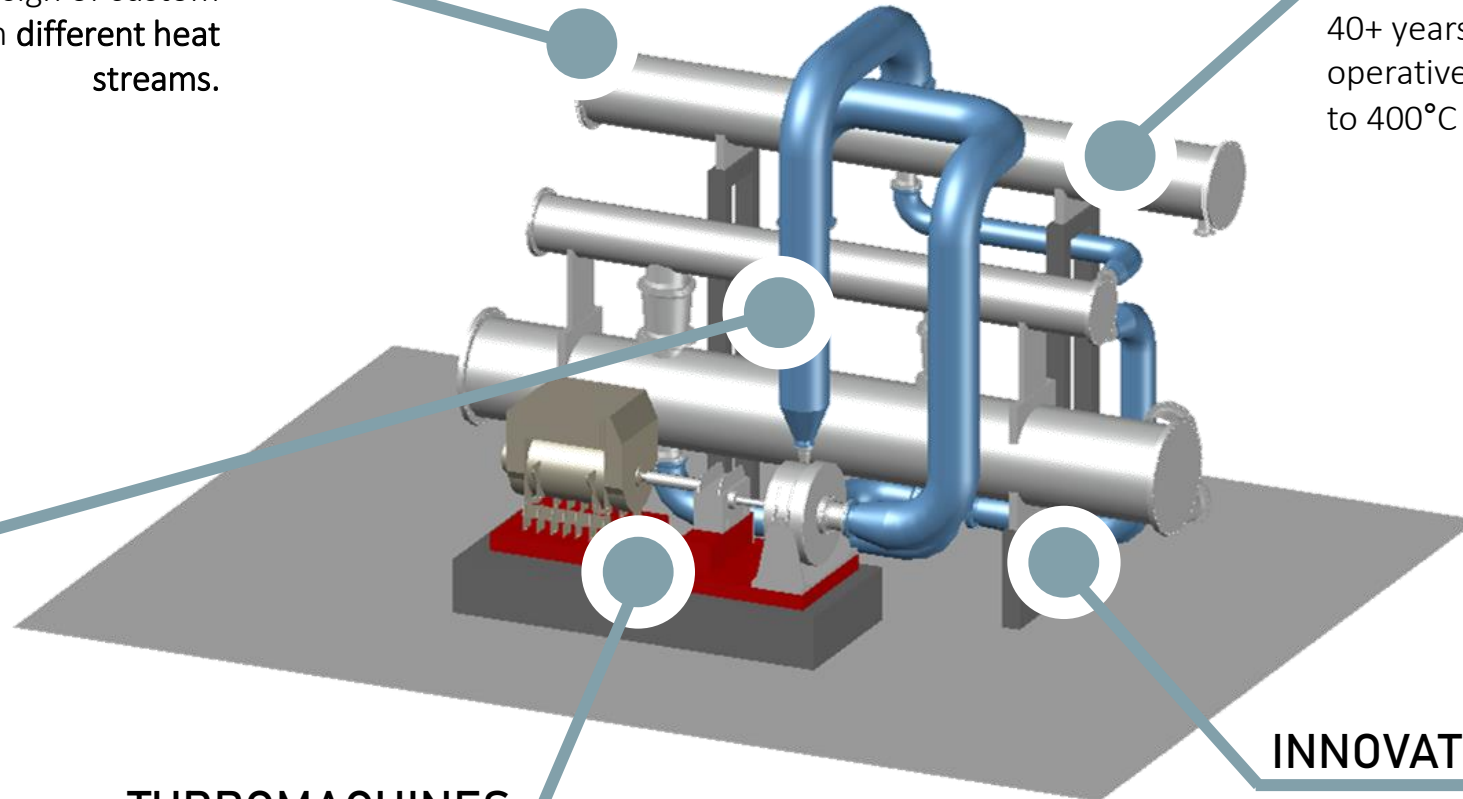
Selection of most suitable fluid case by case. Use of **low GWP**, **low ODP** and not harmful fluids.

## TURBOMACHINES

Own design for more than 60 different turbines. Compressor shares **common technical features** and solutions with Turboden turbine.

## INNOVATIVE DESIGN

Custom-made design with multiple possibilities of optimization.



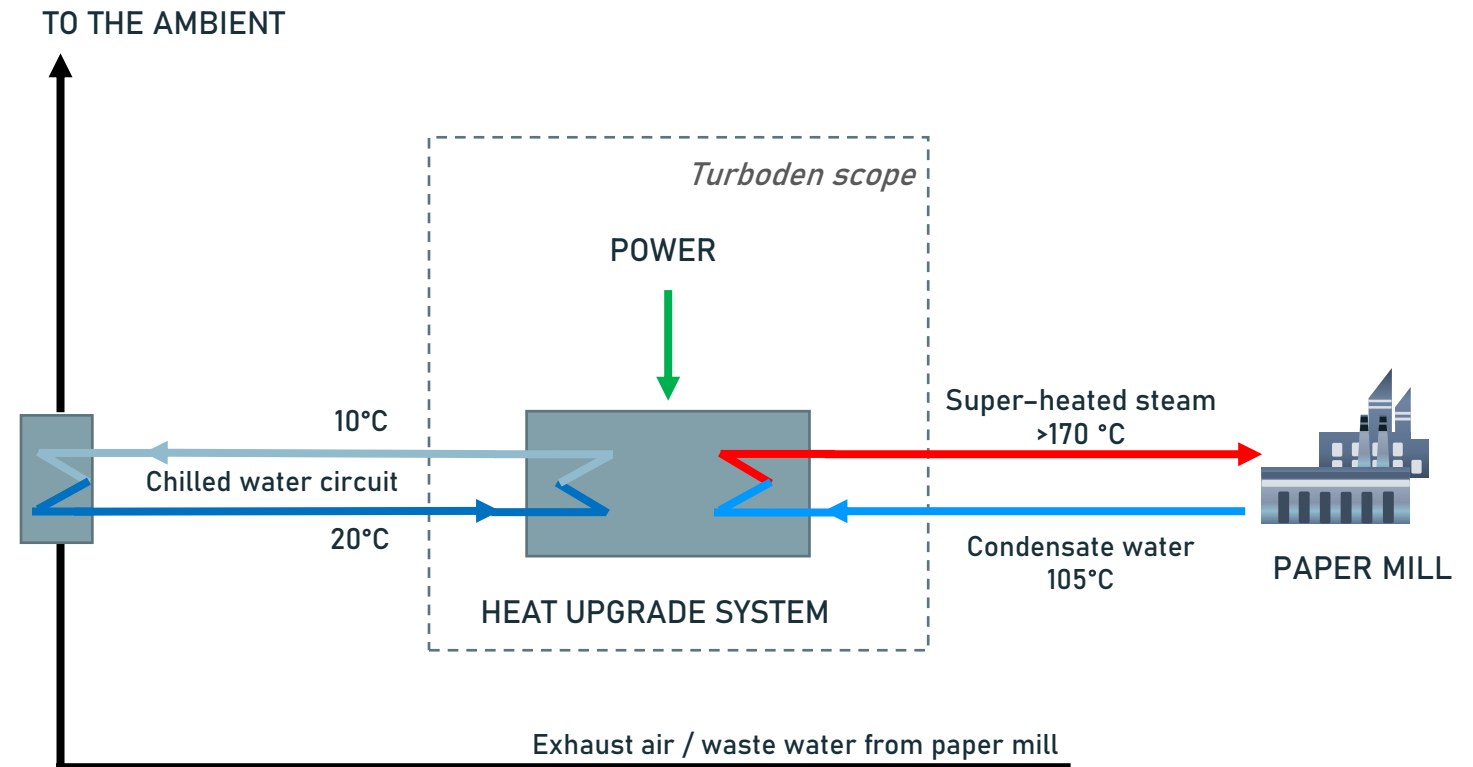
# HOW TO DECARBONIZE PULP&PAPER INDUSTRY: TURBODEN CONCRETE SOLUTION

## PROJECT FEATURES

- Project Name: UNDISCLOSED
- Client: UNDISCLOSED
- Country: Northern Europe
- Status: under construction
- Size: 12 MWth

## TECHNICAL FEATURES

- Delivery: superheated steam at  $>170\text{ }^{\circ}\text{C}$
- Turboden scope: EPC
- Centrifugal compressor from MHI
- LHP working fluid: hydrocarbon



# MEET OUR SPEAKER



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Thank you!

*Let's accelerate the transition to a world  
powered by low-carbon technologies*



FIND OUT MORE



OUR EXPERIENCE. YOUR POWER.