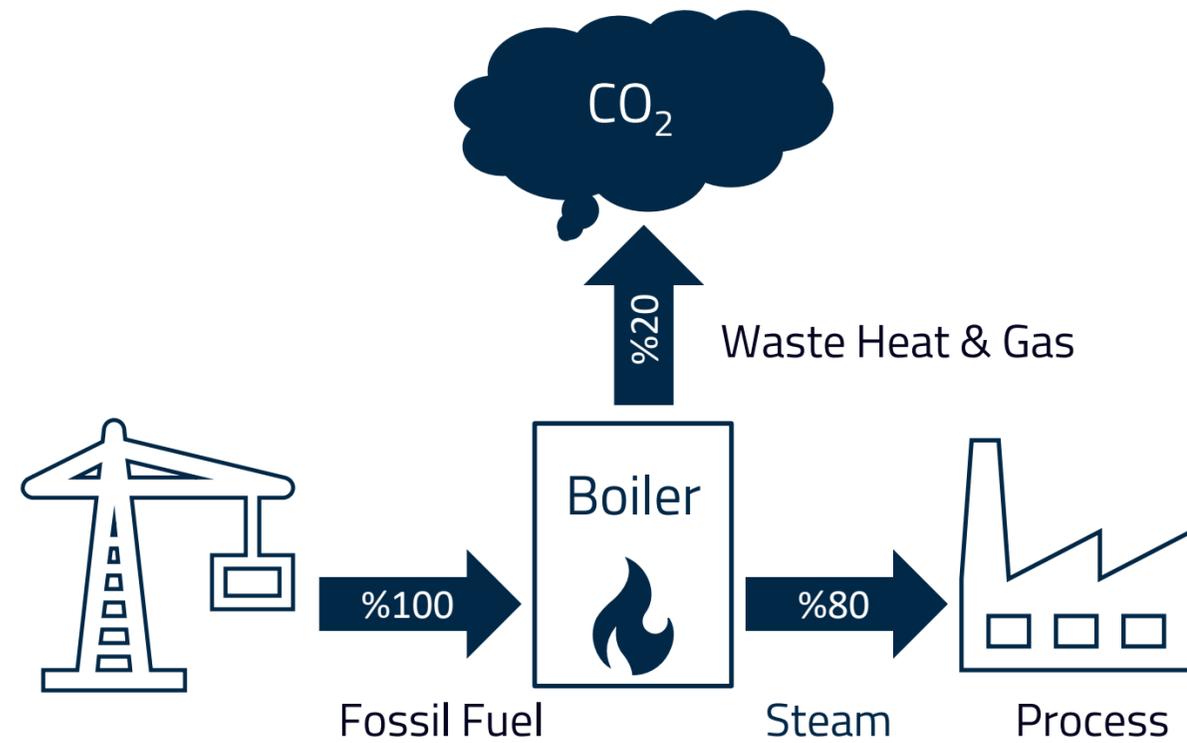


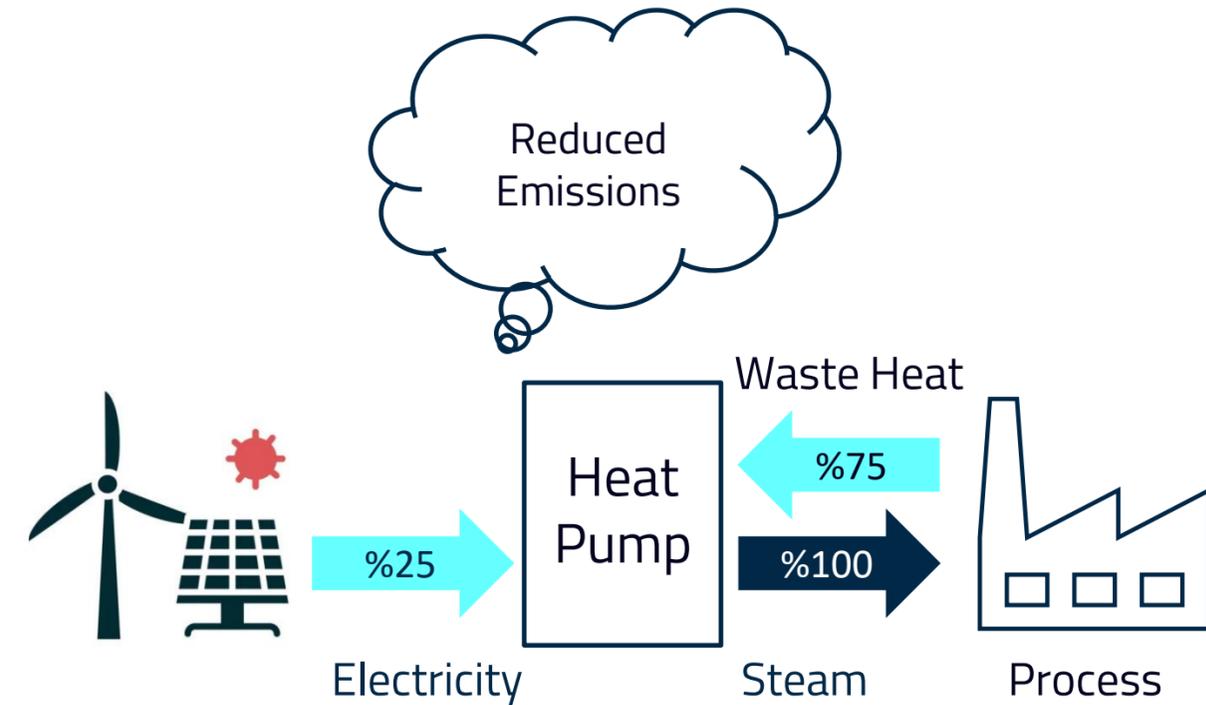
SU  TEAM

Steam-Generating Industrial Heat Pump

Re-define Process Heating

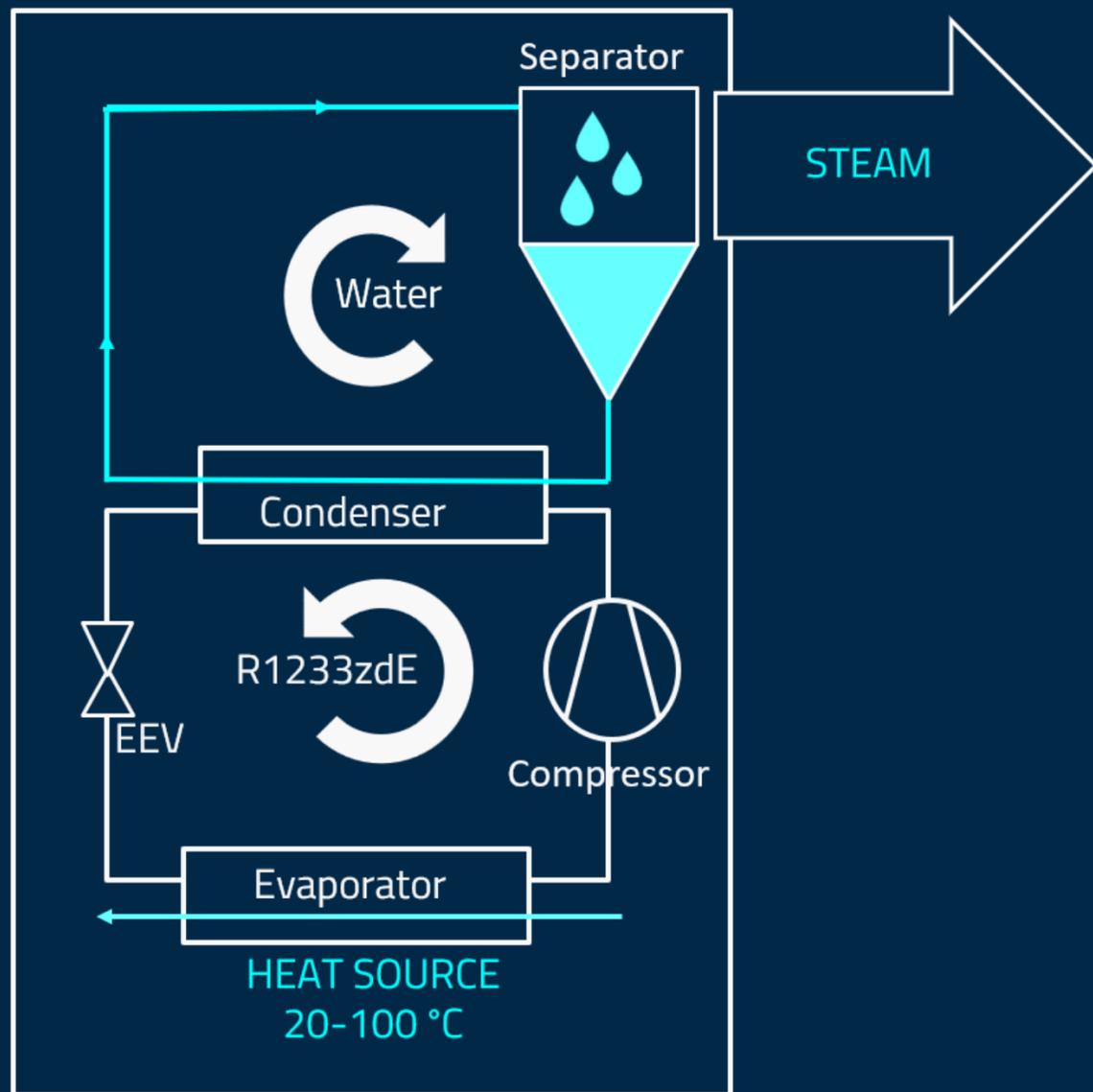


- Fossil Driven
- Waste Heat
- Increasing Operational Cost
- Complex steam lines & control



- Electricity Driven
- Waste Heat Recovery from 20 °C to 100 °C
- Up to %50 operational cost saving
- Process- Adaptive control

Steam Generating Heat Pump



- Process Adaptive Steam Generation (up to 150 °C)
 - Pressure-controlled steam aligned with process demand
- Waste-heat driven, electrically powered
 - Uses 20–100 °C sources,
- Scalable industrial system
 - Modular and standard industrial components, low OPEX & CAPEX
- In-house designed high-pressure compressor core

Why Others Failed?

- **Stirling-based heat pumps**
- **Only MVR Approaches**
- **Electrical Boiler**

Stirling-based heat pumps

- High CAPEX
 - Large heat exchangers, not standardized components
- Fundamentally incompatible with iso-thermal steam generation
 - Steam requires latent heat at constant temperature
- High mechanical complexity & OPEX
 - Seals, regenerators and bearings fail under cyclic thermal stress
 - Not suitable for 24/7 industrial duty

Only MVR Approaches

- MVR works only if steam already exists —
 - not when starting from low-grade waste heat

Electrical Boiler

- Electrically simple, systemically inefficient

State of the Art & Why It Was Not Enough

- SUSTEAM Heat Pump → up to 150 ° C steam
- MVR → powerful but steam-dependent
- Electric boilers → simple but inefficient
- PCM Modules → can be used for waste heat source stability

No single technology solves stable high-temperature steam

Our answer as system architecture

Heat pump + MVR + PCM



Why SUSTEAM fits industrial demonstration calls

- Direct replacement of fossil steam boilers
- If you fall in love with your boiler, Hybrid operation possible with boiler w/condensate heat recovery
- Integration with existing industrial steam networks
- Modular system suitable for pilot & full-scale demos
- On-site commissioning & performance validation support

Related Calls :

- HORIZON-CL5-2026-02-D4-06: Phase out fossil fuel in energy intensive industries through the efficient integration of renewable energy sources
- HORIZON-CL5-2026-09-D4-08: Full-scale demonstration of heat upgrade solutions in industrial processes .

Partners we are looking for

HORIZON-CL5-2026-02-D4-06: Phase out fossil fuel in energy intensive industries through the efficient integration of renewable energy sources

HORIZON-CL5-2026-09-D4-08: Full-scale demonstration of heat upgrade solutions in industrial processes .

Industrial demo sites

- Food & brewing
- Pulp & paper
- Textile
- Chemicals & Pharmaceutical
- Automotive & Surface Treatments

EPC / system integrators

Research partners for performance monitoring

Shared Process Characteristics

- Low-to-medium pressure steam demand (≤ 6 bar)
- Waste heat availability (20–100 °C)
- High fossil fuel dependency in process heating
- Strong electrification and CO₂-reduction pressure

Our Team & Technical Expertise



**Aykut
Yıldırım**

Founder &
Mechanical Engineer



**Ferhat
Akpınar**

Structural Analysis
Engineer



**Ulaş Cem
Erten**

Computer Scientist
Data & Control



**Caner
Yıldırım**

Mechanical Designer
CAD & Tolerancing



Let's Talk.

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