Electric Heat Pumps: Decarbonising with Resilience

Clivet

1989
founded

1.000+
employees

€400M
sales

2
R&D centres

MBT Climate



€1B
sales

4.000+
employees

8
EU production hubs

1
top EU – fancoils, rooftop

Midea Group

1968
founded

190.000
employees

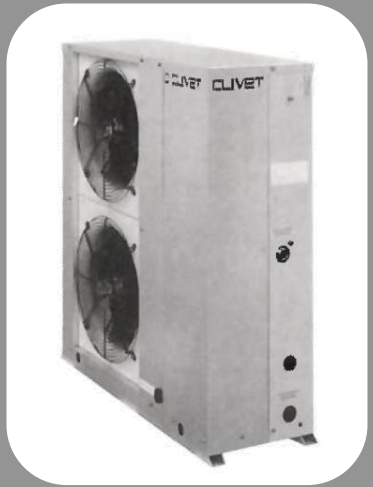
$64B
sales

231
Fortune Global 500

YEAR-ROUND COMFORT

NO LOCAL EMISSION





HIGH ENERGY EFFICIENCY

HIGHLY VERSATILE ‘INGREDIENT’

PIONEERING HP TECHNOLOGY

Our vision since 1989

Today:

- Is mature and globally recognised
- Massive use of renewables
- Ambient energy / Waste energy
- Efficient cooling when needed
- Sustainable and Resilient
- Unique opportunity for Europe

SPECIALISED HP SOLUTIONS

Commercial Buildings → The electric shift is done








ELECTRIC HEAT PUMPS

Specialised on Primary Air

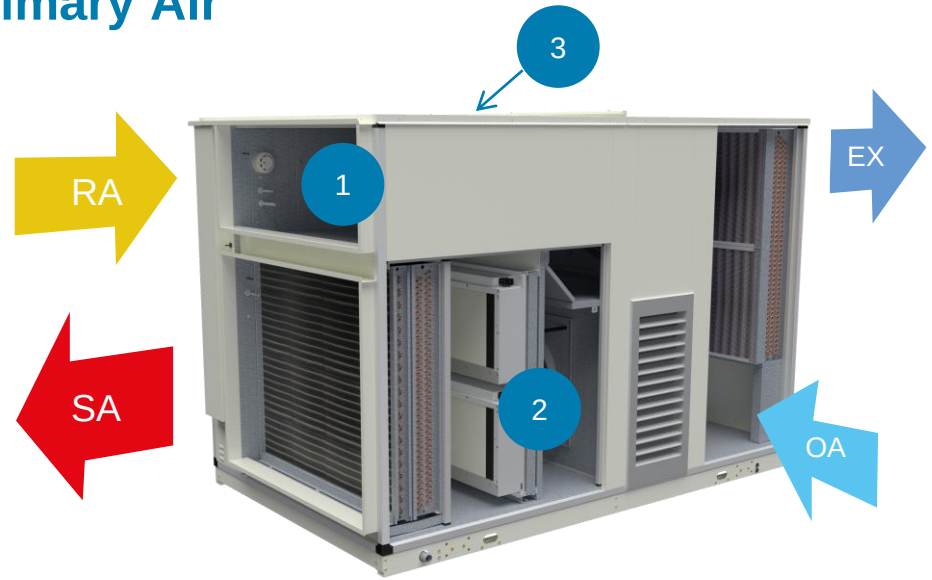
Return air is the thermal source

Thermodynamic energy recovery

Modulating capacity control

Hot gas recovery reheat

Electronic air filtration



1. Return air and energy recovery
2. Air purification, handling and supply
3. Thermodynamic full-inverter section and controls

Constant temperature supply

Constant or variable airflow

Highly compact

No piping

Universal

SCALABLE TECHNOLOGY

Heat Pump factory, Italy

- ATW Electric Heat Pumps
- Residential and Multi-family
- Modular, 30 to 120 kW each
- Native for Natural Refrigerants
- Fully Electrified
- 9,000 pcs/yr → 20,000+



ELECTRIC HEAT PUMPS

Full function system

Residential applications

‘Double-door-fridge’ size

All-in-one = No external unit

Heating + Cooling + Ventilation + DHW

The Water Storage module can be displaced

Perfect match in new buildings

Free DHW throughout summertime



ELECTRIC HEAT PUMPS

Smart Living

PV → Use / Storage (Thermal / Electric)

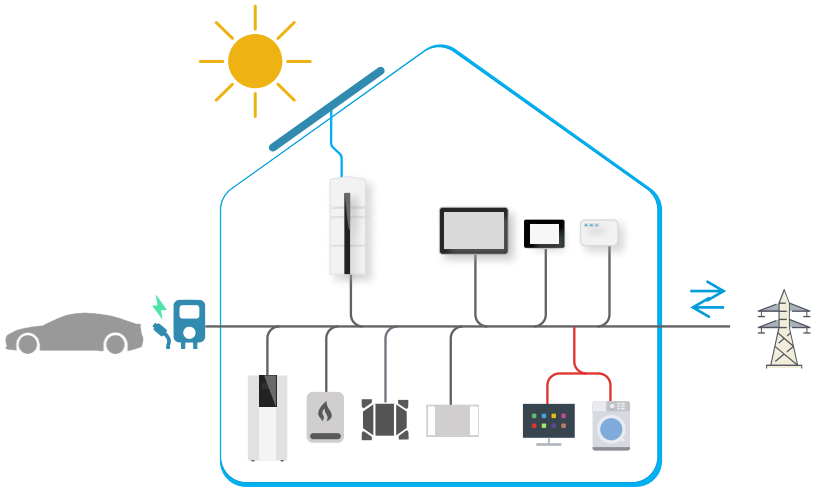
Optimal comfort and air quality

Maximise the use of Renewables

Producer ←→ Consumer

Energy Independence → Resilience

Scalable at Community / City / Regional level



EXQUISHEAT: Industrial Heat Pumps in Food & Beverage

EXQUISHEAT

EU Budget (LIFE)
1.7+ M€
Co-funded by the European Union

Transnational Consortium
9 Partners | 6 Countries
BE, DE, PL, AT, ES, IT

Clivet Contribution
OEM & Technology
Application consultant

Project duration
33% (Year 1)
Oct 2025 – Sep 2028

A Team covering the *Full Value Chain*

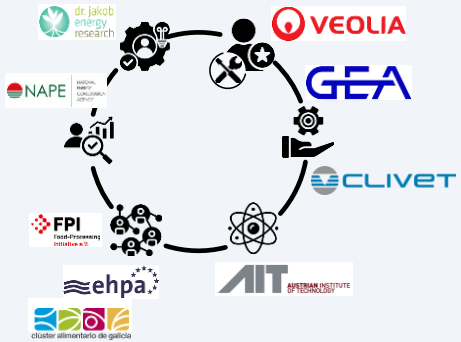
End-to-end integration from applied research to on-site operation:

R&D & Technical Coordination
Dr. Jakob energy research (Technical Coordinator), AIT

OEM & Heat Pump Manufacturing
CLIVET & GEA

Installation & Operation
Veolia (Project Coordinator)

Sector Clusters & Validation
EHPA, FPI, Clusaga, NAPE



Key Project Objectives

Removing adoption barriers to speed up industrial decarbonisation:

Process Heat Analysis
Map thermal demands & waste heat in the F&B sector.

Standardised Solutions
Develop modular heat pump packages to cut lead times & CAPEX.

Industry Roundtables
Direct dialogue between F&B processors and technology providers.

Awareness & Guidance
Concrete guidance to achieve direct CO_2 reduction in plants.

Co-funded by the European Union

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ZEnITh: Zero Emissions Industrial Technologies

EU Budget (HORIZON)
9+ M€
Funded by the European Union

Transnational Consortium
17 Partners | 6 Countries
IT, BE, NL, ES, NO, UK

Clivet Contribution
Project Coordination
Management, Technical and User study

Project duration
10% (Year 1)
Jun 2026 – May 2030

A Multidisciplinary *R&D Consortium*

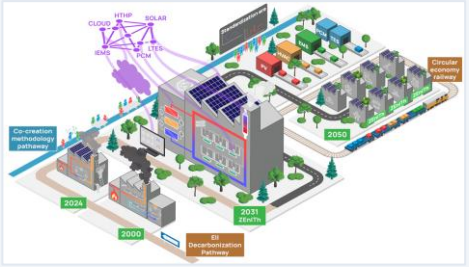
Universities, leading RTOs, technology OEMs and Energy-Intensive Industries:

Technology Providers
Clivet, Danfoss, Petronas, Hexxcell

Top-Tier European Universities
Università degli Studi di Padova, NTNU, Universitat de Lleida, KU Leuven

Premier Research Institutes
SINTEF Energy, TNO, Eurac Research

EIIs, Eng. Firms & Associations
Pandolfo, Unifarco, ARCbcn, Studio Burani&Nocetti, EHPA, EAA



The 5 Project Pillars

A holistic roadmap from early co-creation to large-scale market penetration:

1. Co-creation Methodology (Stakeholder involvement & Alignment)
Inclusive dialogue to identify barriers and co-design actionable NZT deployments.

2. Technical Design (Innovation & Design, Integration & Management)
Modular NZTs (HTHP + LTES) managed by AI-powered IEMS.

3. Demonstration & Replicability (Validation)
Validation through real industrial pilot and virtual demo case.

4. Assessment (Sustainability & Viability)
Techno-economic, (s)LCA, and circularity assessments driving triple bottom line impact.

5. Penetration (Market Adoption)
Scalability toolkit, regulatory readiness analysis, dissemination and training.

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Thank you