

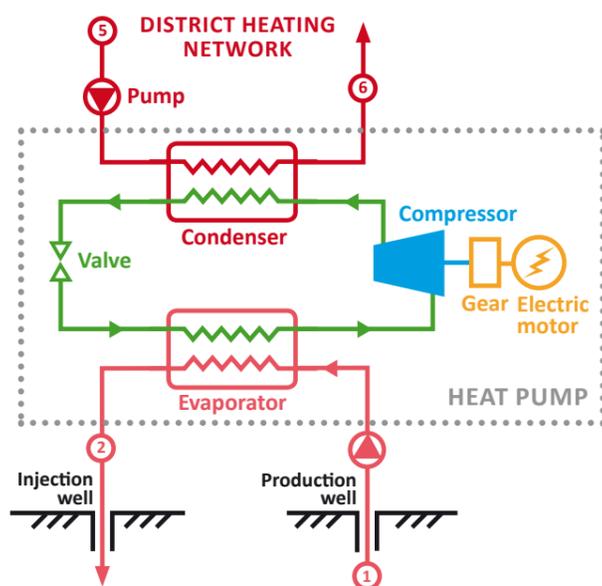
HIGH TEMPERATURE HEAT PUMPS FOR DISTRICT HEATING

HARVESTING RENEWABLE ENERGY

Enertime Heat Pumps allow the valorization of geothermal or waste heat at temperatures too low to be directly used in district heating networks or converted into electricity by ORC. With our high coefficient of performance Heat Pumps, district heating network managers are able to produce and distribute renewable heat under favorable economic conditions.

WORKING PRINCIPLE

Our Heat Pumps use a refrigerant that evaporates under a low to medium temperature heat source. The gas is then compressed through a high efficiency centrifugal compressor that is tailor-made by Enertime for the application, reaching a higher temperature and pressure. The fluid is then condensed, transferring its heat to the district heating system before expansion.

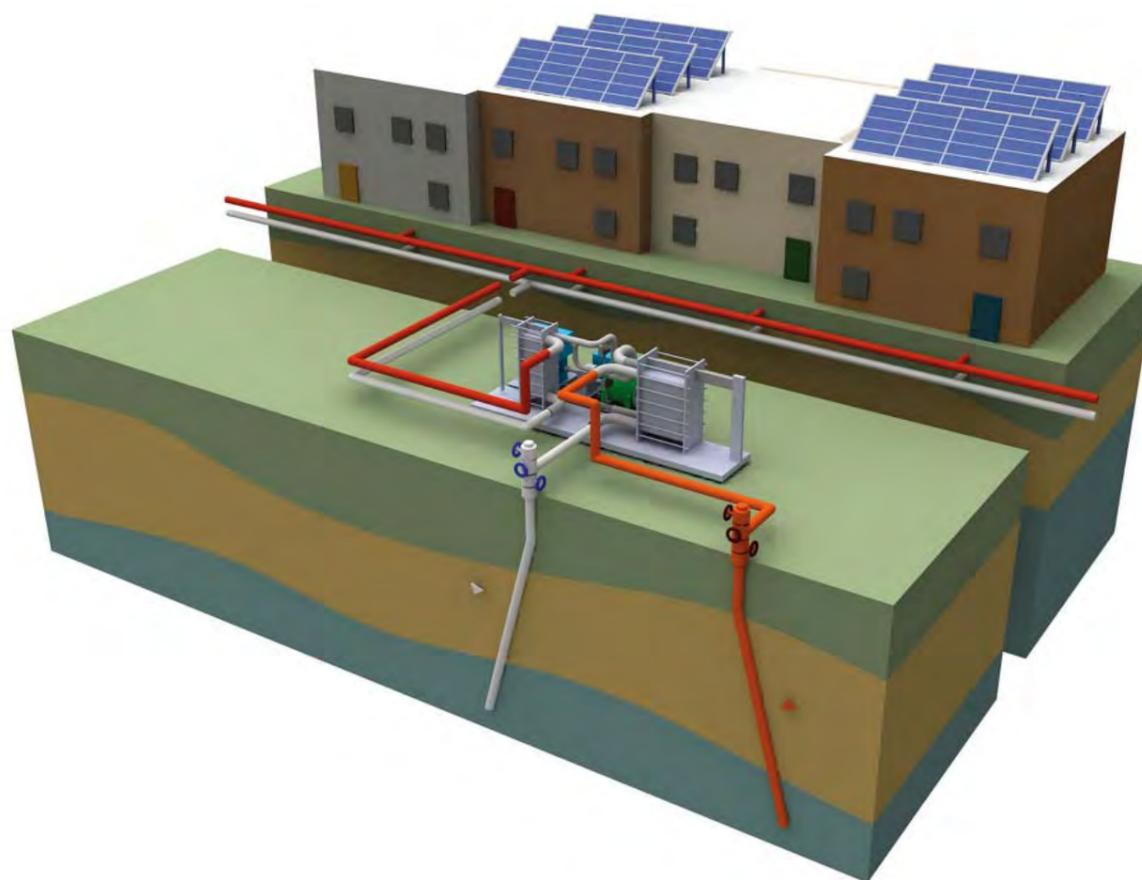
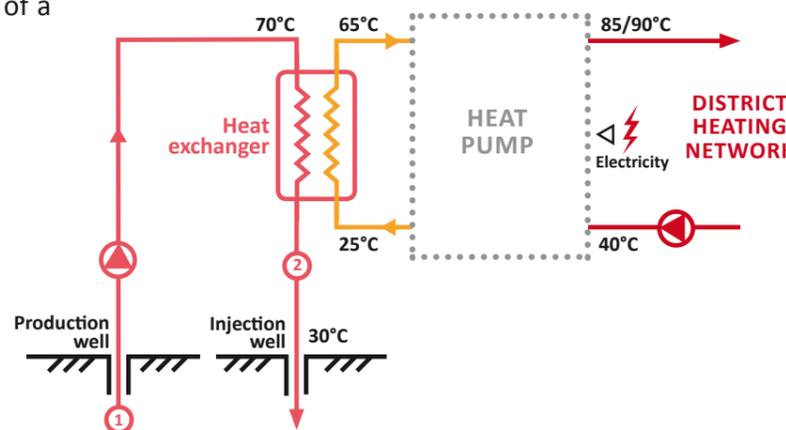


FROM LOW TEMPERATURE GEOTHERMAL ENERGY TO DISTRICT HEATING

Despite the efforts made towards achieving the energy transition, heating remains extremely dependent upon fossil fuels and their related economic and environmental constraints.

The use of Geothermal Energy sources combined with high performance Heat Pumps allows to quickly decarbonize district heating through valorization of a free energy source available in the ground.

Having a good Coefficient of Performance (COP), the Heat Pump can convert electricity from renewable sources into useful heat while quadrupling the used power, transforming 1 MW of electricity into 4 MW or more of useful thermal power.



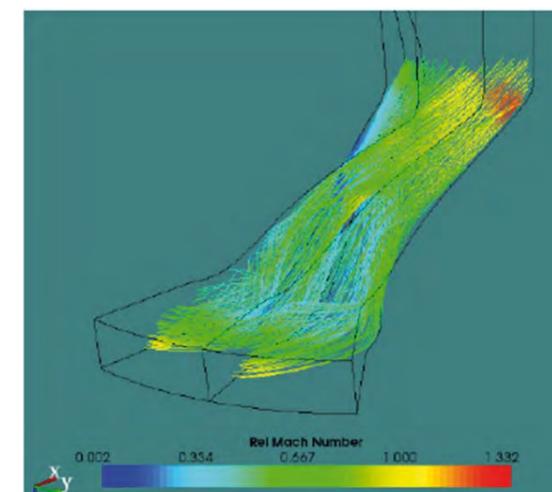
NEW GENERATION ENVIRONMENTAL-FRIENDLY WORKING FLUID

Enertime uses a new refrigerant with very low global warming potential (GWP < 5) and zero ozone depletion impact (ODP=0) in our equipment, thus complying with the most demanding environmental standards. This fluid is neither toxic, nor flammable, ensuring an easy and risk-free integration in an urban environment.

HIGH-EFFICIENCY CENTRIFUGAL COMPRESSOR WITH VARIABLE SPEED DRIVE

Benefiting from our experience in turbomachinery design and manufacturing, Enertime undertakes the complete development and fabrication of the heat pump system and offers a centrifugal compressor that is specifically designed for district heating and optimized for the needs of our customers.

This turbocompressor achieves a high efficiency in a wide range of power outputs, allowing for flexible operation of the heating network.



A LOW-MAINTENANCE AND EASY TO OPERATE SYSTEM

With a robust design, Enertime Heat Pumps benefit from low maintenance and limited operational constraints. Automatic control allows for quick starts and stops, and remote supervision for a high availability factor.

Enertime also offers complete after-sales services, including predictive and standard maintenance, and 24/7 monitoring.

A GLOBAL APPROACH TAILORED TO CLIENTS' NEEDS

Enertime's turnkey solutions are modular, easy-to-transport and easy-to-install, requiring little civil and connection works. Proposed solutions are tailor-made and adapted to customers' specific needs such as in geothermal energy sources and district heating networks.

The complete mastery of our product allows us to intervene in detailed technical choices. In close relations with our suppliers, we innovate together to offer cutting-edge technical solutions in various fields (organic fluids, materials, heat transfers, etc.). Our implementation and operational experience allows us to integrate and optimize technical constraints from the beginning of the design process.

Depending on customers' specifications, our heat pumps have the following characteristics:

Condenser power — heat production	2 MW to 6 MW	6.8 MBH to 20.5 MBH
Heat production temperature	60°C to 90°C	140°F to 194°F
Evaporator — cold source inlet temperature	30°C to 60°C	86°F to 140°F
Electrical power	0.5 à 1.5 MW	670 hp to 2010 hp

ENERTIME: HARVESTING GREEN ENERGY

Enertime offers solutions for power production using heat sources at low or medium temperature. Enertime offers MW-size turn-key solutions in various applications including:

- Energy efficiency with waste heat recovery on industrial processes
- Geothermal energy
- Renewable and distributed energy
- Energy storage.

The company design and manufacture turbomachinery and their associated Organic Rankine Cycle and Industrial Heat Pumps for geothermal district heating network to store and harvest green energy at competitive costs with a low impact on the environment.



CONTACT

Enertime
1 rue du Moulin des Bruyères
92400 Courbevoie France
Tel: +33 (0)1 75 43 15 40
Email: contact@enertime.com