BETTER TOGETHER

afilia

The large-scale heat pump by 2G

Air-to-water/Water-to-water

100 to over 1,000 kW

2G Energy AG | 2-g.com

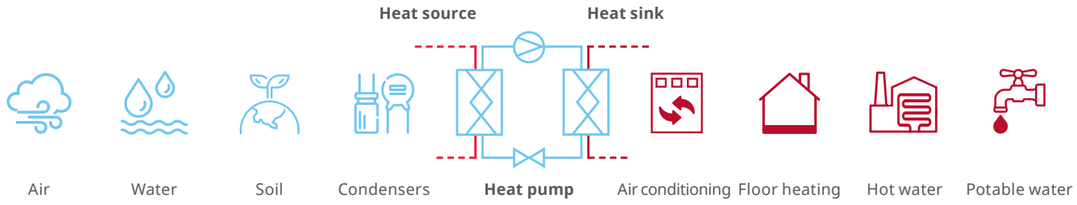
Efficiently use regenerative environmental heat

Heat pump technology is essential to the energy transition. Heat pumps already make a significant contribution to the decarbonization of the energy supply in the housing sector by making the infinite environmental heat usable for heating or warm water.

However, the known and proven concept also plays off its strengths in larger applications. Large-scale heat pumps can supply highly efficient regenerative energy to industries, businesses, municipalities and sizable residential properties.

How does a heat pump work?

No matter the heat source, the heat pump always works the same way: heat is extracted from the source and transmitted to the heat pump circuit using a refrigerant. Compression of the refrigerant increases its pressure and temperature. When the thermal energy is finally transferred to the heat sink, the temperature of the refrigerant decreases, turning it liquid again. In the expansion valve, the refrigerant returns to its original temperature due to a decrease in pressure – and the cycle can start anew.



Potential heat sources

Air
An exterior unit extracts thermal energy from the surrounding air.

Water
Using collectors or wells, groundwater and surface water can be used as heat sources.

Soil
Collectors or probes close to the surface extract thermal energy from the soil.

Condensers
Industrial waste heat or heat produced by other refrigeration systems is perfectly suited to be used by heat pumps.

What refrigerants are being used?

The ecological sustainability of heat pumps is always influenced by the refrigerant used.

The afilia heat pumps by 2G use proven refrigerants with a low global warming potential as well as completely natural refrigerants.

Individual thermal energy solutions up to 2 MW

Air-to-water
up to 65 °C
up to 400 kW

Water-to-water
90 °C
up to 2 MW

The large-scale 2G afilia heat pumps are available as air-to-water and water-to-water systems. This enables the use of various heat sources – also in combination (booster technology).

Even the single-stage version of the water-to-water heat pumps can achieve temperature increases of up to 70 K. Applications with higher temperature rises can be realized with two-stage systems – or even using custom solutions with supply flow temperatures between 90 °C and 130 °C.

A complete package for more benefits

As a global technology leader and full-service provider, 2G can offer customers more than a simple power system. From peripherals and the control system to digital and personal services, we supply the full package so that you can focus entirely on your core business.

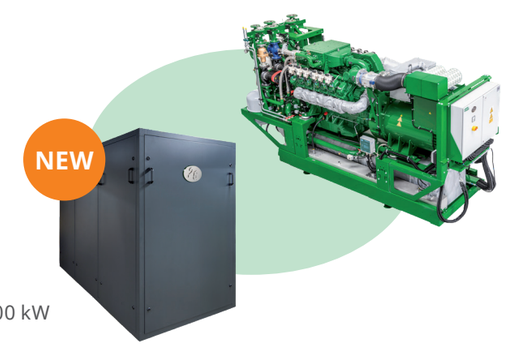
And the best part: our afilia heat pumps fit perfectly into the proven infrastructure of 2G cogeneration systems.

- **Comprehensive control concepts** including auxiliary drives (pumps, mixers, data collection for heat source/sink)
- **Convenient system management** via my.2-g.com (monthly reports, operating range monitoring)
- **Intelligent malfunction prediction** with I.R.I.S.
- **Superordinate control** provided by Mastercontrol
- Integration of **spot market optimization, flex operation, redispatch** etc. via partners
- **Containerized solutions** possible

The best of both worlds – united by 2G

Cogeneration systems and large-scale heat pumps – from a single provider. 2G is the first manufacturer in the world to offer customers the best of both worlds. Combining cogeneration systems with heat pumps turns continuous runners with low emissions into truly green team players. These invaluable synergies can be fully exploited with the comprehensive system solution by 2G, laying the foundation for your ecologically and economically sustainable energy supply.

20 to 4,500 kW



100 to over 1,000 kW

The synergy between cogeneration and heat pumps

Many see cogeneration and heat pumps as competing technologies. In fact, the opposite is true: over the course of a year, the technologies perfectly complement each other.

With the expansion of wind and solar energy, there will be an increasing number of days with low electricity prices **– creating ideal conditions to run heat pumps.**

Nevertheless, regenerative electricity is still subject to natural fluctuations and poses problems for the heating market. **That's where cogeneration systems come into play:** when the days become shorter and colder, highly efficient CHP systems produce heat and electricity regardless of weather conditions. The power can be used to cover the residual load.

2G afilia in action

SS Rotterdam

JRW Waalwijk

Carglass Roosendaal

Zorglandschap Leyhoeve

More information at 2-g.com

What's your energy supply solution? Let's talk about it!

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