

## **What Is Geothermal Energy?**

Geothermal energy = Energy produced using the Earth's heat.

Hot water is pumped up to the Earth's surface (production well), where it can be used in different ways, such as heating buildings and driving turbines to generate power. The water is then reinjected into the ground (injection well).

Boreholes, where a heat transfer fluid flows round a closed loop, may be used.

Did you know that the deeper below the Earth's surface you go, the higher the temperature? Every 100 meters, the temperature increases by 3°C.

Three types of geothermal energy:

“Very low-temperature” geothermal energy. Water under 30°C. / Depths of up to 200 meters. / Applications: Heating houses, apartment blocks and commercial buildings.

Deep “low-temperature” geothermal energy. Water between 30°C and 90°C. / Depths of 200 to 2,500 meters. / Applications: Heating neighborhoods with thousands of inhabitants and industrial parks.

High-temperature geothermal energy generating electricity. Water or steam above 150°C. / Depths of 1,500 to 5,000 meters. / Applications: Generating electricity or a combination of heat and power.

Disadvantages of geothermal energy.

Reserves depleted after 30-50 years of use.

Significant heat losses when the water is transported over long distances.

Advantages of geothermal energy.

Permanently available energy reserve found everywhere on Earth.

Non-polluting, quiet installations.

No water consumption because the water used is sent back underground.

### **Summary:**

Geothermal energy = Energy produced using the Earth's heat to generate electricity and heat buildings.

Extraction of water at temperatures that can exceed 150°C at depths of up to 5,000 meters.

- Permanently available energy reserve.
- Non-polluting installations.

No water consumption.