

# Geothermal

Geothermal energy has been used for centuries for bathing and heating water. It is extracted from the earth's natural heat in dry, steam or liquid form and can be used for electricity and heating.

Deep geothermal resources include: hydrothermal (hot water and/or steam trapped in fractured or porous rock), geo-pressured (hot water aquifers under high pressure), and enhanced geothermal systems (geological formations that are dry but abnormally hot).

In Europe, the 'heat pump' is the most promising way of using geothermal energy. This consists of extracting heat from hot, shallow geothermal fluid and transferring it to water or air which is used to supply heat for space heating.

Even at shallow depths of 50-100m, the earth harbours heat that can be extracted by heat pumps – often located in the gardens of suburban houses – and used directly in domestic heating. Heat can also be returned to the earth for storage as a way of 'air conditioning' homes and buildings.

**GROUND-MED** : Advanced ground source heat pump systems for heating and cooling in Mediterranean climate (2007)

[CORDIS](#) / [Project website](#)

**TERRA THERMA** : Terrestrial Energy Recovery using Advanced Stirling Heat-pumps for Residential temperature Management (2006)

[CORDIS](#) / [Project website](#)

**LOW-BIN** : Efficient low temperature geothermal binary power (2005)

[CORDIS](#) / [Project website](#)

**GROUNDHIT** : Ground coupled heat pumps of high technology (2003)

[CORDIS](#) / [Project website](#)