

## **A Geothermal Europe - The Ferrara Declaration\***

In pursuit of a sustainable energy supply, humanity has repeatedly lost its way in dead-end roads, or has perceived interim solutions as final ones. We are surrounded by inexhaustible energy resources that allow us to meet our energy needs and that of future generations without taking uncontrollable risks with the life and well-being of our planet. Now the development of modern technology enables us to make use of these energy sources on a scale that meets the requirements and demands of modern civilisation.

A single technology, a single renewable energy can never meet this demand alone. Each alternative has its specific advantages and disadvantages, and has to be applied intelligently and targeted in synergy in those places where it can deliver its optimum strength. Used in combination the renewable energy sources have a chance to meet the demand.

Our environment offers two completely different sources to cover our energy needs, the sun and the earth. The sun supplies energy directly or, as wind, hydropower and biomass, indirectly. However, the sun is capricious, making us dependent upon the time of day and night, upon weather and climate. The earth is stubborn, but reliable: Its potential is available at any time, it only has to be exploited by suitable technologies.

Therefore, success for the renewables is only possible, and a re-orientation of energy supply justified economically and socially, if both sources, sun and earth, can contribute. This statement is valid for our planet in its totality, as well as for our European continent in particular.

On a world-wide scale, geothermal energy already makes an important contribution. More than 50% of installed electric power capacity from "new" renewables (geothermal, wind, tidal, and solar) is realised in geothermal power plants, producing annually circa 80% of electricity from these sources.

In recent years, significant advances have been achieved with engineered geothermal systems (e.g. Hot Dry Rock). Great expectations are justified, in the future possibility of being able to produce geothermal electricity independent of high-temperature resources of steam or hot water. Meanwhile innovative power plants permit the production of electricity using low thermal water temperatures of the order of 100 °C. A major advantage of geothermal energy is the availability of the resource all day, all year. Using geothermal electricity, hydrogen may also be produced as a secondary energy carrier for automotive propulsion or use in fuel cells.

Heat supply from geothermal energy in Europe is primarily realised by using hot water from deep aquifers for district heating, etc., or in a large number of small to medium shallow geothermal plants. Shallow geothermal also supports the use of solar energy for heating, through underground storage of solar heat from summertime until its use in winter, and offers many other opportunities of long-term thermal energy storage.

In total, only a minuscule portion of the potential of geothermal energy is as yet explored and in use in Europe. Thus we agree in working to increase the use of geothermal energy towards the targets listed below, in order to support the struggle for a sustainable, clean energy future in Europe. These targets can only be achieved, if all sectors, politics, science, and business, join forces.

## Targets for a geothermal energy development at the start of the new millennium

	1998	2010	2020
Heat*	920.000 dwellings 5.200 MW <sub>th</sub>	3.000.000 dwellings 15.000 MW <sub>th</sub>	12.000.000 dwellings 48.000 MW <sub>th</sub>
Electricity**	940 MW <sub>el</sub> 4.300 GWh/y	2.000 MW <sub>el</sub> 16.000 GWh/y	without support: 3.000 MW <sub>el</sub> 24.000 GWh/y  ecologically driven: 8.000 MW <sub>el</sub> 64.000 GWh/y

\*Deep and shallow resources

\*\* incl. engineered geothermal systems

We appeal to all decision makers and leaders in politics and economics, in the national governments and parliaments all over Europe, in the European Commission and to all the members of the European Parliament, to support us in the realisation of our goals, and to help to achieve the targets. We request in particular:

- Support for geothermal energy research, development, demonstration, market deployment, information dissemination, etc., and in particular the support within the 5th framework programme of the EC.
- Creation of a political and public environment and market conditions favourable for geothermal energy
- Support in dissemination of information on geothermal energy use at various levels, from decision makers to potential consumers and the public of large
- Support for export of European geothermal technology to other areas of the world

Increasing the use of geothermal energy, and strengthening the geothermal industrial sector, will allow a substantial contribution to the reduction of CO<sub>2</sub> emissions, the saving of primary energy, and the creation and sustaining of many workplaces at various skill levels.

Our task is to make sure, that every European will learn what the words "Geothermal Energy " mean.

We, the Board of Directors and the members of EGECE, and other participants in the seminar, representing the vast majority of companies, organisations and institutions, in fact all of the key players active in geothermal energy development and use in Europe, will do our utmost to advance our goals, will promote geothermal energy use at all levels, and will contribute as our power allows to a successful implementation of a sustainable energy supply.

Ferrara, Italy, April 30th, 1999

For the participants of the seminar signed by

VAINER MERIGHI  
*Vainer*

*C. Boissavy*  
President of EGEC



Vainer Merighi - Vice Mayor Comune di Ferrara

Christian Boissavy - President of European  
Geothermal Energy Council/EGEC

*Signing the Declaration: V. Merighi (l.), C. Boissavy (r), (c) Oliver Joswig*

\* On April 29-30, 1999, the European Geothermal Energy Council (EGEC) invited the geothermal business community from all European countries to a seminar in Ferrara, Italy, a city with a thriving geothermal heating system embedded in rich cultural heritage. The goal of the meeting was to discuss the current situation of geothermal energy in R&D, implementation and market deployment, to hear about examples of successful applications, and to define the future market possibilities, setting also targets for a geothermal energy future.