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***From the Ferrara Declaration (1999) to
the EGEC' Brussels Declaration (2009).
- Introduction to Session 5 -***

by

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From the Ferrara Declaration (1999) to the EGEC' Brussels Declaration (2009).

Introduction to Session 5

A GEOTHERMAL EUROPE: THE FERRARA DECLARATION...

... is a milestone of the recent development of geothermal energy in Europe

1. Ferrara was 10 years ago one of the very few towns in the world to have made the “geothermal choice” for its district heating. This is why, it was chosen by EGEC as the venue of its first official meeting (29-30 April, 1999).

2. Promoters

Dr. Boissavy (Founding President EGEC , France) and ***Dr. Sanner*** (Present President EGEC, Germany).

3. Sponsors

The Municipality and the former Energy and Gas Company of Ferrara (now HERA).

4. Participants

200 geothermal and energy experts from 20 European and overseas countries.

% Introduction to Session 5

5. Scopes of the meeting

- a) Review the EU' R&D programs in the geothermal sector;**
- b) Hear examples of successful geothermal projects;**
- c) Discuss opportunities of the geothermal market of the time, and examine possibilities of its further deployment;**
- d) Set targets for the geothermal development in Europe.**

6) The Ferrara Declaration: see ANNEX I

(slides 4 & 5)

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.

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A GEOTHERMAL EUROPE: THE FERRARA DECLARATION

Tab. 1: Targets set by the Ferrara Declaration for the development of geothermal energy in Europe

	1998	2010	2020	
Heat (a)	920,000 dwellings (5200 MWt)	3,000,000 dwellings (15,000 MWt)	12,000,000 dwellings (48,000 MWt)	
Electricity (b)	<u>Current economy and trend</u>		<u>I) without support</u>	<u>II) ecologically driven</u>
	940 MWe (4300 GWh/y)	2000 MWe (16,000 GWh/y)	3000 MWe (24,000 GWh/y)	8000 MWe (64,000 GWh/y)

(a) Deep and shallow resources

(b) Including engineered geothermal systems: HDR (known at present as EGS).

- 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 at 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 CO2 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 EGEC, 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

% Introduction to Session 5

7) Structure of the Ferrara Declaration

- i) A preamble outlining general aspects and wide availability of the Earth's heat;**
- ii) A Table with forecasts of geothermal growths in Europe by 2010 and 2020;**
- iii) An appeal to politicians and energy decision-makers for immediate actions aimed at fostering the intensive use of the Earth's heat in Europe, both for electrical generation and direct uses;**
- iv) The Commitment of the geothermal community to disseminate information on, and to promote the accelerated use of the natural heat in Europe.**

8) Remarks on Tab. 1

- **No remarks from me on targets set for 2010 by the Ferrara Declaration vs/ present situation in Europe because the 3 outstanding Speakers of this Session will speak certainly about this subject.**
- **I only want to call your attention on two points:**
 - 1. All figures given in Tab. 1 refer to entire Europe, and not to the EU27 only;**
 - 2. Concerning heat uses:**
 - the amount of heat indicated as “dwellings” actually refers to the whole of direct uses, expressed as “equivalent flats of 100 m²/each, heated by geothermal heat “;**
 - therefore, for comparison with other data on direct uses, reference should be made to the capacity installed (MWt), rather than to the number of “dwellings”.**

% Introduction to Session 5

9. Preliminary conclusions vs. International Round Table (IRT)

- ❖ **No final, but preliminary remarks only will be made at the end of this Session. In fact, this Session has been devised to lay down the technical grounds for the discussion to be made by the IRT that will follow in a couple of hours.**

- ❖ **The subject of the IRT, as you know, is to recap the theme of this Congress**
Geothermal energy in Italy and Europe. What future?
Ideas and Proposals for Actions.

- ❖ **In this spirit and with this aim in mind, this Congress, our Session, and the coming IRT, in a certain way represent the follow-up and continuation of the *Ferrara Declaration*, and meanwhile the celebration of its 10th anniversary. Here, in the same splendid town that is hosting us.**

Let us start now with our work, for which I have the privilege to introduce my old friend and colleague, worldwide renown geothermalist, Dr. Boissavy who opened 10 years ago the meeting from which the *Ferrara Declaration* saw the light. Today, however, he will speak about another important Declaration recently co-issued by him: ***THE EGENC' BRUSSELS GEOTHERMAL DECLARATION.***
