



Presentation at the ENGINE Conference by Philippe VESSERON

Chairman of BRGM

Address on 13 February 2006

Ladies and Gentlemen,

Do let me say what a pleasure it is to welcome you to BRGM's auditorium. One of the ongoing responsibilities of a public institution such as BRGM is to bring together as often as possible all the partners concerned by an issue, whether this be in research, its applications, economic growth or expertise to help resolve the major challenges facing today's society. BRGM assumes this role in terms of geology in conjunction with the other French institutes and with the support of European institutions and that of our colleagues from the European Union's 25 Geological Surveys.

So let me reassure you that today you are in the right place at the right time.

I am delighted to have this opportunity to talk geothermal energy together.

Against a backdrop of mounting fossil fuel prices, I am convinced that promoting the use of geothermal energy is an asset of prime importance for the future of France. This is also the case for Europe, and this launching conference for the ENGINE co-ordination action represents an important milestone. Indeed, we are here today because the European Community has shown interest by assessing the state-of-the-art and defining the most suitable methods for developing Enhanced Geothermal Systems. My sincerest thanks accordingly go to the European Commission, represented today at this conference by Mr. Jeroen Schuppers, for this show of confidence in all those committed to this action.

As I was saying, at a time when each nation is both forced to adjust to the rising energy prices and feels concern over the effects of climate change, the use of renewable energy sources is certainly one of the keys to the answer. In this connection, I never cease to be amazed at the fact that so little mention is made in France of geothermal energy. I see two main explanations for this.

Firstly, let's not forget the difficult outset: in the wake of the oil crisis in 1973, France was quick to develop district heat-supply systems that drew upon hot-water aquifers in the Paris Basin. This pioneering attitude made our country a worldwide reference for this type of heat-exchange reservoir, but it also revealed some unforeseen problems. The economic model of the time, based on high interest rates and strong inflation, did not last. The ensuing slump in

oil prices in 1986 then came as a bad surprise. Also unforeseen was the corrosion effects on piping, which led to high maintenance costs before we had had the time to learn to deal with such situations. This crisis has left unpleasant memories even though the installations that have survived operate properly today, to the satisfaction of both the urban areas and the contractors concerned, in excellent economic conditions and exceeding all initially predicted life expectancy.

The second obstacle encountered in geothermal energy is related to the wide variety of sectors it encompasses, implicating a range of communities, including users, companies and researcher workers. It is as if four geothermal categories were co-existing, with a varying degree of success.

Firstly, very low-enthalpy geothermal energy, using heat pumps, is clearly well adapted to new single-home construction and to substantial renovation of existing housing. In France, like other European countries, this technology is proliferating, although it is not systematically counted as a form of geothermal energy for statistical purposes.

Secondly, low-enthalpy geothermal energy extracted from basins, which abound in Europe ranging from the Paris Basin to the northern plains of Germany and Eastern Europe, such as the Pannonian Plain in Hungary. The main drawback here is the existence of urban heat networks.

Thirdly comes high-enthalpy geothermal energy related to volcanic islands, for example Iceland and La Guadeloupe, particularly used for electricity production.

Lastly, geothermal energy drawn from rocks at great depth, exemplified by experiments at Soultz-sous-Forêts, but accompanied by all the obvious technical and economic difficulties of exploiting this heat from more than 5,000 meters beneath the Earth's surface. Here, we are in a context of full development, with sufficient work for the coming 20 years.

Clearly the lack of links between the key players of these four geothermal categories has hindered the construction of a united community around the promotion of geothermal energy, which has contributed in France, and no doubt also in Europe, to projecting an ambiguous image of this energy resource. This has not been the case, for example, for aeolian energy and biofuel technologies.

So how can we improve this situation? How can we promote geothermal energy as a renewable energy source that can contribute under positive economic conditions to the reduction of greenhouse gas emissions?

I believe wholeheartedly in the concrete actions such as the recent incentives the authorities have introduced in France in 2005, namely tax credits for the installation of heat pumps, and fiscal reductions in Europe for heat networks.

We must provide actions to the authorities and to investors that are tailored to geothermal energy's varied forms of application, ranging from very low-enthalpy resources to deep geothermal ones. Here, I take advantage of the presence amongst us of Madame Michèle Pappalardo, Chairwoman of Ademe, to express our appreciation to her for the Agency's support of the upturn of geothermal energy. Ademe contributes not only to projects on heat

pumps or to giving new impetus to geothermal energy in the Ile-de-France region, but also to R&D initiatives that concern modelling fractured media, prospecting for geothermal resources in the Overseas Departments, and conducting a survey of resources in deep sedimentary basins in France.

For this situation to change, we also need to propose blueprints for development for the different types of geothermal energy, by providing decision-support tools such as best practice handbooks, potential maps, or even 3D models of the geothermal resource. Finally, France must succeed in its Bouillante 1, 2, and 3 projects in Guadeloupe and promote ambitious new projects in the EU and surrounding areas. An example of this is the Caribbean Islands, with the support of our subsidiary CFG Services to Dominica, with assistance from the French Agency for Development and European cooperative structures. In addition, it is up to us to mobilise the scientific community so it will address problems concerning the distribution of thermal properties and permeability in the subsurface, there again, ranging from very superficial to very deep layers. We must also master the technologies needed to exploit low-permeability geothermal reservoirs. Lastly, we will need at European scale to reinforce communication between R&D teams, partners from industry, target agencies and investors.

So this conference marks the launching of a very important step the launching of a European project that will last two and a half years, and bring together 31 partners from 16 different countries. We certainly haven't seen this in the European geothermal sector for a very long time! I vow that in parallel we will take similar initiatives to develop other forms of geothermal energy!

Allow me to say once more how happy I am to have the opportunity of hosting this event, here at BRGM. My particular thanks go to the Centre Region, that counts among its R&D priorities the organization of a regional centre for energy-related activities, notably in the area of renewable energy sources. Thus, Mr. Michel Sapin, Chairman of the Regional Council, has kindly expressed his support to us in person for this conference, congratulating us on the event's European dimension.

I do hope that your exchanges and discussions during this conference will be fruitful.

I now propose to turn the floor over to Madame Michèle Pappalardo, who honours us with her presence here at the inaugural session in order to present Ademe's point of view on geothermal energy.

