My speech at European Geothermal Energy Congress 2013

Pisa, 4th to the 6th of June

Good morning Ladies and Gentleman,

I am glad to be able to connect with you today from Brussels.

As I had the chance to underline in the past, the second industrial revolution was accompanied by a period of rapidly increasing demand for electricity. It was then that Prince Piero Ginori Conti first tested the geothermal power generator on 4th of July 1904 in Larderello, Tuscany, and Italy became the world's only industrial producer of geothermal electricity until 1958.

Today much has changed. Electricity is presently produced from geothermal steam in 21 countries all over the world with European electricity standing at around 4.300 GWh/y. It is currently concentrated almost exclusively in one Member State: Italy and two candidate countries, Iceland and Turkey. Another 15 EU countries have direct heat uses while large infrastructure heating is mainly used in France, Germany and Italy.

This is a technology providing multiple benefits, offering cost-effective, renewable and clean energy for industry and domestic applications, displacing oil, gas and other sources of electricity. It is flexible, and can provide base load electricity complementing other variable renewables. Geothermal heat applications too offer broad market opportunities both directly and indirectly, with for example electricity or gas compressors in ground-source heat pumps, the fastest-growing application of the geothermal energy technologies. New thermal fluids are allowing the exploitation of lower temperature heat sources.

What is, however, the long term potential of Geothermal heat and power in Europe and how does the EU go ahead and foster the applicability and deployment of these technologies?

On the energy side, the European Commission published in March its first Renewable Energy Progress Report under the framework of the 2009 Renewable Energy Directive. This is the corner stone document driving the EU's ambitions to get 20% share of renewable energy and a 20% increase in energy efficiency.

These goals are part of the integrated policy framework of the European 2020 strategy for growth, contributing to industrial innovation & technological leadership, through the reduction of emissions, and the improvement of security of supply, by reducing energy import dependence. These targets are a stepping stone in the EU's move towards a majority of renewable energy sources in our energy mix, as defined in the Energy Roadmap 2050.

Renewables will be the core of the European energy, which means our internal energy market will undertake a shift, from technology development to mass production and deployment, from small-scale to larger-scale, integrating local and more remote sources, and from subsidised to competitive.

Since 2009, introduction of legally binding renewable energy targets, most Member States have experienced significant growth in renewable energy consumption. This is a continuation of an upward trend since 2003, resulting in an EU renewable energy share of 12.7%. We are on track to reach the overarching objectives. That said, this growth is an expansion in two renewable energy sources, a tripling of biomass production and a seven-fold increase in wind turbines. While the use of geothermal energy in Europe has also expanded significantly over the last 20 years, this growth has meant a comparative share decrease for the sector.

Currently there is a total installed capacity of geothermal energy in Europe of 1.7 GWe producing 11,38 TWh of electric power. Other estimates however show that the estimated maximum potential for geothermal power in the EU-27 could be up to 6 GW by 2020 and 8 GW by 2030. Moreover with 70 other projects online, and commercial projects capitalising on the work done in Soultz-sous-Forêts with a higher

grade enhanced geothermal systems, or EGS, the geothermal energy sector has a great future ahead of it.

Moreover, there are currently over 200 Geothermal District Heating systems in operation in Europe with a total capacity of approximately 4,9 GW. In the heating sector, the estimated maximum potential for geothermal is up to 40 GW by 2020 and 70 GW by 2030 (direct and indirect use combined). These are environmentally friendly, competitive systems that can be installed everywhere.

The challenge becomes therefore 'how' to realise this long term potential and how to support European industry to overcome longstanding inhibitors.

This will require a combination of actions, from increasing the awareness of the role this technology can play among decision makers, to creating the right policy environment, and to promoting financial support mechanisms. Overall we will need to ensure investments in research and development, bring down costs and make geothermal technologies more attractive. This will also create European expertise in green technology, a basis for long term competitiveness.

In energy generation, the demonstration of a reliable Enhanced Geothermal Systems would ensure that these technologies have a long term role to play in our energy mix, but challenges remain. In resource assessment and characterisation, for example, there has not been an improvement in over two decades in the success rate for geothermal exploration leading to electricity generation. Exploratory drilling, therefore, still represents one of the major challenges to the sector. The ability to direct exploration and follow-on verification activities towards higher-grade resources is critical because subsurface drill ing is both costly and risky. Effective, nonintrusive capabilities are required for improved mapping, characterization, and analysis of geothermal resources, which will allow for more efficient and effec tive prospecting.

This is particularly true for two reasons. On one hand Hot Dry Rock resources, or HDR are located further underground and the characteristics that determine their

quality and development potential for EGS applications are not understood well enough. On the other hand, ongoing competition between RES and conventional energy sources means that we need to undertake underground regional planning to optimise resource allocation between geothermal energy and other possible underground uses.

Once a potential site is found, commercial-diameter production wells must be drilled to deliver the fuel required to support the deployment of geothermal capacity. A few meters in the vertical or horizontal direction may make a substantial difference in the productivity of a well, highlighting the importance of subsurface characteristics and the complexities and risks associated with resource verification and delivery. Emerging technologies from other sectors have not yet demonstrated an ability to reduce well costs. New technologies for drilling geothermal wells - which due to their wider bore may currently cost up to 30% more than oil and gas wells of the same depth - offer significant potential to increase the competitiveness of geothermal power plants. Improved knowledge of factors which control the efficacy of hydraulic fracturing for creating artificial reservoirs in HDR formation is also needed to reduce the costs and risks of EGS deployment.

In power generation systems too there is room for improvement. Direct-steam plants are commercially mature but resource-con strained, while continuing incremental advances in flash-steam tech nology are expected. Substantial cost-performance gains are antici pated for binary and reverse air conditioning cycles to reduce costs, increase productivity, and unlock access to abundant and broadly available HDR resources.

Political support and public acceptance are important components which need to be considered. Decisions by policymakers, the public and other stakeholders ultimately will determine the extent to which geothermal power is employed for meeting future energy needs. To foster economic, political, and social conditions conducive to investment, the technical attributes and “public good” aspects of geothermal power options must be integrated within the decision-making frameworks employed by diverse stakeholders. This is a call for stronger engagement with decision makers to

ensure that the benefits associated with technologies are taken into account when it comes to planning. To complete the internal energy market in the next 10 years, concerted effort by Member States will be necessary to reach their 2020 targets in energy and energy efficiency. Key barriers to renewable energy growth will need to be removed. Administrative regimes will need to be simplified and, together with improvements to the electricity grid, market access for electricity from renewable energy will, finally, increase.

Moreover, the negotiations surrounding the EU budget and Horizon 2020 scheme are entering their final stages. Since 2002 and the FP6 research programme, the EU has funded around 10 projects with a total budget of more than 20 million Euros. In particular, the flagship project EGS Pilot Plant in Soultz-sous-Fôret, France was awarded 5 million Euros. Under the current 7th Framework Programme, research is funded for understanding and mitigating induced seismicity associated with geothermal field development.

Unfortunately Member States have signalled that given the current economic climate the EU budget will suffer, as will the Horizon 2020 funding programme. While the recently agreed figure of 70 billion Euros may seem like a substantial increase on FP7funding, it comes with the burden of an expanded scope - meaning more participants, more stakeholders and less money for all. Additionally large EU projects will have their cost overruns not financed by the Member states independently, but by the EU's research budget.

It is my sincere hope that we will be able to defend the original significant allocations for clean and secure energy to support ongoing research activities on geothermal technologies.

Financial support is, however, only one aspect of EU activity. Equally important is the element of bringing together different organisations from Europe and other parts of the world, active in the same scientific area. By working together on projects they exchange experiences, create links and can continue cooperation even after the project

has finished. Thus they contribute to the creation of a European Research Area (ERA).

Through ERA, Member States will strengthen their scientific and technological bases, their competitiveness and their capacity to collectively address grand challenges. For Geothermal Energy this has manifested itself in the European Energy Research Alliances' Joint Programme Geothermal Energy, which I hope will continue to progress.

There are also opportunities for District heating and Cooling in the "Smart Cities and Communities European Innovation Partnership" which was launched in 10 July 2012. The "Smart Cities & Communities Initiative" supports cities and regions in taking ambitious measures to progress by 2020 towards a 40% reduction of greenhouse gas emissions, through sustainable use and production of energy. This partnership proposes to pool resources to support the demonstration of energy, transport and information and communication technologies (ICT) in urban areas. This is an important opportunity for a smart thermal grid to contribute in the development of intelligent heat distribution, in the context of sustainable cities. So far this year we have seen 365 million Euros awarded in 2013, through yearly calls for proposals.

This is where we start to see how the geothermal sector can contribute to a wider set of European policy objectives. The continuing economic crisis has put Europe's industry under pressure: production is 10% lower than before the crisis and over 3 million industrial jobs have been lost. Europe needs new industrial investments when lack of confidence, market uncertainty, financing problems and skills shortages are holding it back.

Europe needs to reverse the declining role of industry from its current level of around 16% of GDP to as much as 20% by 2020. To achieve this, a comprehensive vision is needed, focusing on investment and on innovation, but also on mobilisation of all the levers available at EU level, notably the single market, trade policy, SME policy, competition policy, environmental and research policy.

This new industrial policy should support long run societal goals; it should make synergies out of conflicting policy strands and prevent energy policy to turn away from the targets. It should promote a European competitive advantage by fostering new, clean energy technologies, ultra low carbon technologies and higher energy efficiency.

In short now is the time for your sector to ensure better market conditions are put in place for support, and that access to finance for project development is maintained. Now that budgets around Europe are being threatened by belt-tightening, we need to support the critical sectors of our industry in order to ensure long term competitiveness.

It will be an interesting time for us all.

Vittorio Prodi, MEP