

Develop Geothermal Electricity in Europe to have a renewable energy mix




First period of the GEOELEC Project

The GEOELEC project, supported by the Intelligent Energy Europe initiative of the European Commission, has been kicked off in June 2011. This project gathers partners from 8 European countries, and the objective of GEOELEC project is to convince decision-makers about the potential of geothermal electricity in Europe, to stimulate banks and investors in financing geothermal power installations and finally to attract key potential investors such as oil & gas companies, and electrical utilities to invest in the geothermal power.

During the first 10 months of the project, the Geoelec partners have focused their work primarily on assessing the deep geothermal resource all over Europe. Firstly, a common methodology on resource assessment (Geoelec protocol) has been developed, in coherence with already existing international Codes for reporting.

Secondly, a series of 7 workshops has been organised in UK, Spain, Italy, Greece, Netherlands, Germany and Lithuania for covering all EU-27 Member States, Iceland and surroundings countries (Turkey, Balkans, Norway, Switzerland, Ukraine). The objective of these workshops was to present and discuss the resource assessment protocol; and to have a brief presentation on the geothermal situation in the different countries.

Objectives of GEOELEC

-  Convince decision makers of the potential of geothermal electricity in Europe, creating awareness and improving the perception of geothermal among policy makers.
-  Stimulate banks and investors in financing geothermal power and installations. Geothermal project development has high upfront costs and can take several years (approximately 3-6) and needs innovative mechanisms for funding.
-  Attract key potential investors, such as oil & gas companies, and electrical utilities to invest in geothermal power. Geothermal projects are capital intensive.

DID YOU KNOW?

While in 1904 the first ever demonstration of geothermal electricity generation took place in Larderello, Italy, in 1913, an emerging steam was used for the first geothermal electricity production.

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Breaking Down the Barriers: GEOELEC Work Plan

The work programme for GEOELEC is divided into 3 phases: the prospective phase, the socio-economic phase and the dissemination phase.

Phase 1: Prospective for geothermal electricity

Apart the resource assessment, the Geoelec consortium has started to work on the demand side. A First report has been published (available online) by EnBW on Grid infrastructure for geothermal power.

Phase 2: Socio-economical conditions for a sustainable development

This phase will address three specific issues:

- Financing geothermal: ongoing work on creating European geological risk insurance schemes, evaluating the LCOE, creating a software on financial feasibility of geothermal projects , improving market conditions for deep drilling
- Regulatory, social and environmental conditions: next step is to start this part of the project with simplifying the administrative procedures and dealing with public acceptance.
- Education and employment: ongoing employment survey, see the form online ! 3 training Geoelec courses will be organised with already in the end of 2012.



Phase 3: Dissemination

Promoting geothermal electricity!

Policy Environment for Geothermal Electricity

Energy Roadmap 2050

Last December 2011, the European Commission unveiled its long-awaited Energy Roadmap 2050, which is intended to provide a framework to cut EU's domestic energy-related CO₂ emissions by 85% by 2050, while at the same time ensuring security of supply and preserving industrial competitiveness.

The Roadmap points out that the transition to a low-carbon energy system is feasible and can be cost-effective. In addition, it highlights that an increase of the share of geothermal energy and other renewables will be a major no-regret option which can bring down emissions effectively and in an economically viable way. As regards to geothermal electricity, the Commission's modelling envisages a significant growth of both capacity and production.

EGEC, coordinator of the GEOELEC project, thoroughly analysed the Roadmap and published a Policy Paper illustrating its main implications for the geothermal sector. A section of this paper is entirely dedicated to the future contribution of geothermal electricity to the decarbonisation of the EU's energy system.

The EGEC Policy Paper on the European Commission's "Energy Roadmap 2050", is available [here](#).

The Energy Roadmap 2050 will be then be followed by a further Commission's Communication on "Renewable energy strategy", expected to be published in May 2012. This upcoming document aims to examine the necessary conditions for a further development of renewable energy in a medium term perspective – i.e. until 2030.



Regional Workshops: Prospective for Geothermal Electricity in Europe

A series of 7 regional workshops (please see table below) was held as a means to mobilise existing data of the potential of geothermal, and to create a common agreed methodology for further research.

During the workshops the GEOELEC partners presented and discussed with participants the resource assessment protocol. Apart from assessment of data for expected values for identification of prospects, their temperature, and sustainable flow rate, considerable effort will be towards assessing uncertainties in expected values and expert opinions on Probability of Success of exploration.

REGION	VENUE	DATE
Ireland and United Kingdom	London	26/09 2011
Spain & Portugal	Valencia	10/11/2011
France, Italy, Slovenia and the Balkans	Milan	05/12/2011
Greece, Cyprus, Malta, Bulgaria, Romania and Turkey	Athens	20/12/2011
The Netherlands, Belgium, Luxembourg, and Denmark	Utrecht	24/01/2012
Germany, Poland, Slovakia, Czech Republic, Hungary, Austria, Switzerland	Offenburg	29/02/2012
Finland, Latvia, Lithuania, Estonia, Sweden and Ukraine	Vilnius	22/03/2012

The long-term success of geothermal energy technologies depends upon a detailed characterization of geothermal energy resources Europe-wide. Hence, during the first 10 months of the project, the GEOELEC partners have focused their work primarily on assessing the deep geothermal resource all over Europe.

Firstly, a common methodology on resource assessment ([GEOELEC protocol](#)) has been developed, in coherence with already existing international Codes for reporting.

The on-going work is to gather as much data as possible in order to assess the deep geothermal potential for geothermal electricity production. To this end, you can provide your valued contribution by filling in the "Data Acquisition Sheet" which you can find [online](#) or download it from [here](#).

Please fill in the questionnaire and return it by email to com@egec.org by end of April 2012. Don't hesitate to forward it to your relevant contacts!

Assessing the Electricity demand: Geoelec Technical report on grid infrastructure

The climate & energy targets 2020 have an impact on both the European power production market and the power exchange structure in Europe: the highest volumes of cross-border exchanges will be in the heart of Europe in future, the cross-border exchange already quadrupled over the last 20 years. In the framework of more variable energy sources fed into the grid, the expansion of a renewable base load & flexible energy source such as geothermal energy will become more and more important to ensure the security of supply.

The electricity market design will see important changes which are rendering the supply/demand equilibrium more and more complex to maintain. There is indeed the need to both answer to a constantly increasing demand and to absorb important peak loads from a more decentralized and variable production of electricity. It means integrate rapidly and massively more variable and flexible renewable energy sources. The integration of national markets into a single electricity market at the European level creates cross-border exchanges, which are enlarging opportunities for balancing the grid. In order to integrate these new parameters, the market design must be more flexible in integrating more smart infrastructures and more smart energy sources, geothermal being then most suitable one.

Find out more in the [GEOELEC Technical report on grid infrastructure!](#)



EVENTS

European Geosciences Union Assembly 22-27 April 2012 Vienna, Austria	 European Geosciences Union General Assembly 2012 Vienna Austria 22 – 27 April 2012 EGU.eu
GeoPower Mexico 15 May 2012 Mexico City, Mexico	 GeoPower Mexico
International Geothermal Conference 22-25 May 2012 Freiburg, Germany	 IGC 2012
International Geothermal Showcase 23 May 2012 Washington, DC, USA	International Geothermal Energy Showcase May 23, 2012 Washington, DC
Renewable Energy World Conference 12-14 June 2012 Cologne, Germany	 RENEWABLE ENERGY WORLD CONFERENCE & EXPO EUROPE Conference & Exhibition 12 – 14 June 2012 Koelnmesse, Cologne, Germany INTEGRATING THE RENEWABLES SECTOR



For more info:
GEOELEC.EU

PROJECT PARTNERS

- * European Geothermal Energy Council (EGEC)
- * Bureau De Recherches Géologiques Et Minières (BRGM)
- * Centre For Renewable Energy Sources And Saving (CRES)
- * Consiglio Nazionale Delle Ricerche, Istituto Di Geoscienze e Georisorse (CNR-IGG)
- * Asociacion De Productores De Energias Renovables (APPA)
- * Gaßner, Groth, Siederer & Coll. (GGSC)
- * EnBW Energie Baden-Württemberg AG (EnBW)
- * Mannvit
- * Helmholtz Zentrum Postdam – Deutsches Geoforschungszentrum (GFZ)
- * Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek (TNO)