

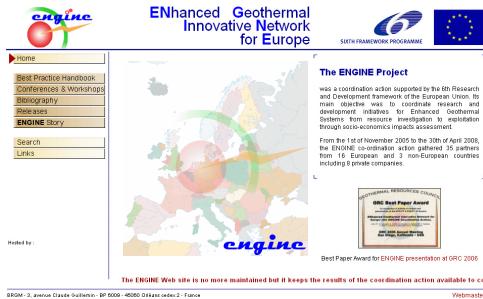


Results from ENGINE (ENhanced Geothermal Innovative Network for Europe)



In the past two years and half, the ENGINE European project aimed to coordinate the efforts of those involved in Enhanced Geothermal Systems (EGS) development. The main products of ENGINE are a handbook defining best practices and a road map for future demonstration projects. The enhancement challenge requires the development of innovative methods for exploring, developing and exploiting geothermal resources that are not economically viable by conventional methods. This definition embraces different methods for enlarging access to heat at depth in order to provide continuous base load-power and to contribute to reach the target of the European Strategic Energy Technology Plan (i.e. 20% renewable market penetration in 2020). On one hand, it is important to evaluate the investment and the expected savings on cost operation for each R&D initiative and industrial project. On the other hand, it must be demonstrated that geothermal energy can contribute to achieving the goals defined in the European Strategic Energy Technology Plan through EGS demonstration projects. The active ENGINE task force is motivated to develop EGS at the European scale, willing to work within the international community, and also eager share information about geothermal energy.

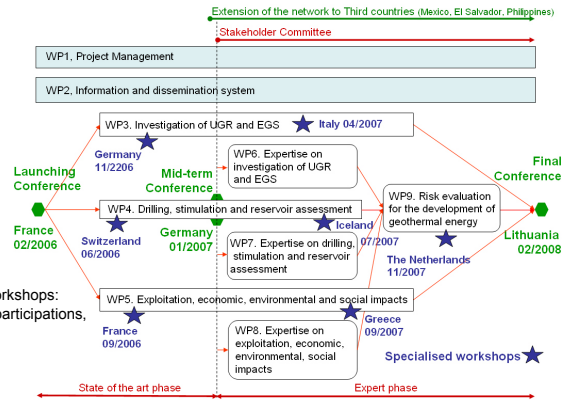
ENGINE Website



> From 1st November 2005 to 30th April 2008 (30 months), 2.3 ME.

> 3 conferences & 7 workshops:
498 participants, 714 participations,
421 contributions.

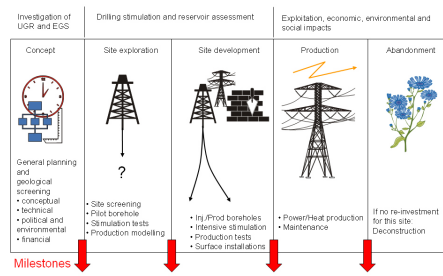
ENGINE Story



> Major scope is the identification of gaps that hamper the development of geothermal energy and definition of research targets for the future.

> 31 European partners + 4 from Third Countries, 16 European + 3 non-European countries, 8 private companies.

Best Practice Handbook



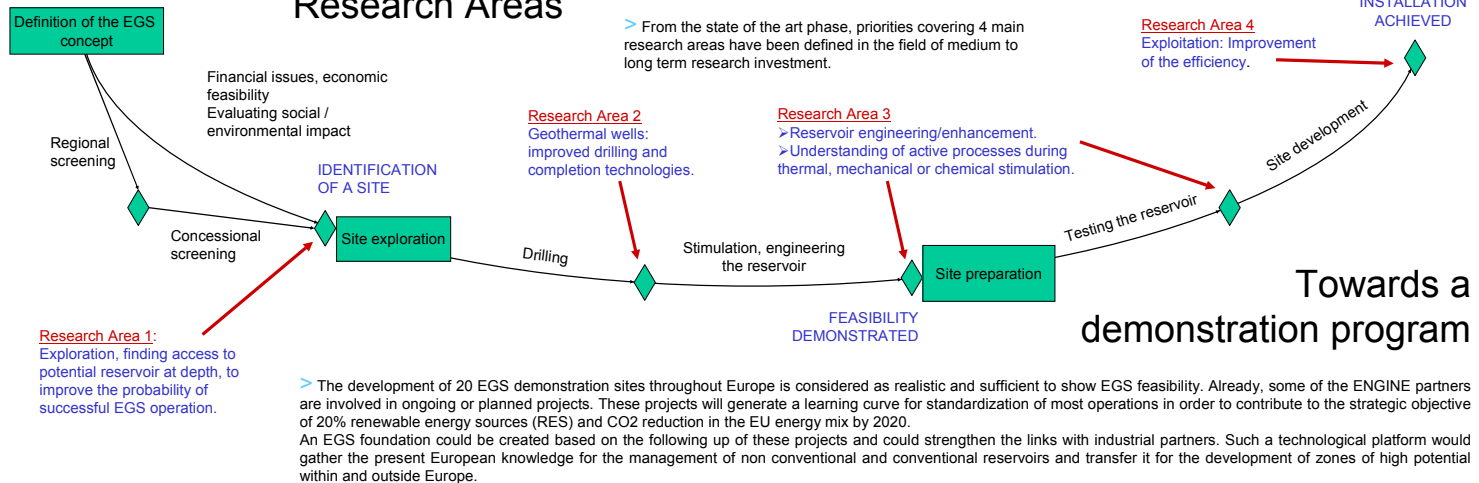
> The Best Practice Handbook is designed for different groups of interest such as engineers, politicians, and decision makers from industry. The entire EGS life cycle is covered in four chapters:

1. Site investigation,
2. Drilling, stimulation and reservoir assessment,
3. Exploitation,
4. Environmental and socio-economic impact.

<http://engine.brgm.fr>

> Through the Website, the ENGINE information system is a reference base of knowledge for EGS in Europe. It keeps the results and material, collected during the coordination action, available after the end of ENGINE (i) for disseminating, (ii) to facilitate our network continuation, (iii) to help new project proposals.

Research Areas



> The development of 20 EGS demonstration sites throughout Europe is considered as realistic and sufficient to show EGS feasibility. Already, some of the ENGINE partners are involved in ongoing or planned projects. These projects will generate a learning curve for standardization of most operations in order to contribute to the strategic objective of 20% renewable energy sources (RES) and CO2 reduction in the EU energy mix by 2020. An EGS foundation could be created based on the following up of these projects and could strengthen the links with industrial partners. Such a technological platform would gather the present European knowledge for the management of non conventional and conventional reservoirs and transfer it for the development of zones of high potential within and outside Europe.

References

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The geothermal sector still needs: (i) generic technologies to expand the use of geothermal heat and power, (ii) public acceptance mainly by reducing induced seismicity, and (iii) a common strategy and a roadmap for future R&D projects and demonstration sites. Moreover, international cooperation must be strengthened to stimulate global development, commercialisation, deployment and access to technologies. A specific Strategic Energy Technology Plan for geothermal energy must mobilise additional financial resources, particularly for industrial-scale demonstration projects, early market deployment, and new infrastructure. It must also design support schemes for co-generation and heating and cooling, energy efficient vehicles, and energy efficient buildings, combining other renewable energy sources and other low-carbon technologies. By making full use of the FP7 People Programme, this plan will also promote education and training needed to deliver the requisite quantity and quality of human resources necessary to achieve these goals.

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