

Joint Activity Proposal



Reservoir Sustainability ReSus

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WP4/WP7 – Implementation of Joint Activities



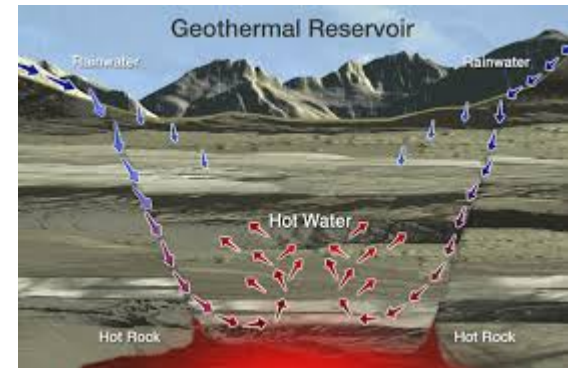
Background I

Delivering energy from the geothermal system to the wellhead is mainly related to specific reservoir properties:

- ✓ geological conditions
- ✓ pressure
- ✓ temperature
- ✓ chemical properties



are quite unique to each reservoir



Different geological conditions, pressure, temperature and chemical properties makes reservoirs different.

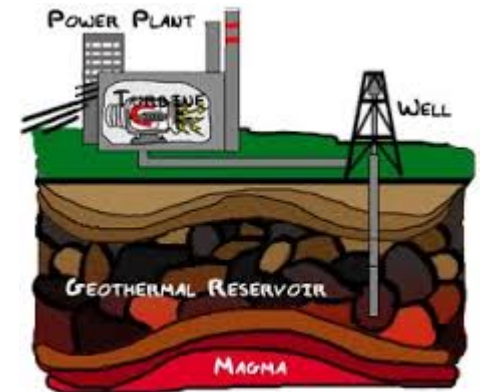
Background II



The energy production from geothermal system is mainly related to the specific reservoir properties.

Key factors allowing a sustainable use of the resource balancing **commercial viability**, **environmental impact** and **impact on people**:

1. reliable reservoir **models**
2. **operation and maintenance** schemes
3. specific **arrangement of surface**
4. installations careful selection of system **components**



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Target Group



Research, Industry, Project developer

Aims

- Encourage collaboration and knowledge exchange between existing studies on "Geothermal Reservoirs"
- Encourage collaboration and knowledge exchange between operators
- Evaluation of possible topics for a joint call



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To **foster** sustainable and safe use of geothermal reservoirs as well as **increase** the lifetime of the resource, boreholes and system components, it is very important to understand the physical properties of the **reservoir rocks** and **fluids** and their interaction during the exploitation process.

Starting point:

- Annex I by IEA-GIA (e.g. Environmental mitigation workshop – 2012 Taupo (NZ))
- Results of an international workshop on sustainability modelling held in late 2008 in Taupo (NZ)

Comparing the current practice used by the operators, highlighting the best solutions and studying the unsuccessful cases, we will animate a fruitful debate to capture the current state-of-the-art and explore possible scenarios for future economic and sustainable exploitations.



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Target Community

- ❖ Geo ERA-NET community
- ❖ regulatory authorities
- ❖ EERA-JPGE
- ❖ European geothermal operators

Workshop/Round-table gathering selected speakers

Topic: bring together existing practices used in various geothermal systems

Outcome: final summary on the state-of-the-art with regards to the sustainability of the reservoirs and identification of a possible topic for a future research project call

Action

JA Participants:



National Research Council of ITALY



Bureau de Recherches Géologiques et Minières - FRANCE



Julich - Germany



OS Orkustofnun – ICELAND



Swiss Federal Office of Energy (with Swiss Geological Survey)



Magyar Foldtani és Geofizikai Intézet – HUNGARY



Tubitak - Turkey

Classification of Joint Activity: JA1 which can proposed as topic for a call

Start date: 15/03/2015 **Kick-off:** 15/04/2015 **End:** 04/2016 **Duration:** 13 months



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Workshop/Round-table organization as:

- stand alone event
- side-event of an important EU conference
- Session in a EU conference

When:

- by the end of Geo ERA-NET
- Beyond the end of Geo ERA-NET

Invited participant:

- Easier and cheaper with session or side-event option
- Expensive with a stand-alone event



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Workshop/Round-table very draft Agenda:

Introduction session (1h)

- Resources and Reserves
- Sustainable exploitation

Session I (1h, 3x20') Mitigation and adopted measures

The examples from Vapor-dominated fields

- Larderello-Travale
- The geyser
- Kamojang

Session II (1h)

- Utilization strategy - renewability
- Economical evaluation of sustainable development

Session III (1h, 3x20') Mitigation and adopted measures (topic: well water table dropping, subsidence, wells evolution, temperature depletion)

The examples from water-dominated fields high enthalpy

- Taupo/wairakei (NZ)
- Central America: Guatemala or Auachapan or Miravalles
- Nesjavellir

Session IV (1h, 3x20') Mitigation and adopted measures (topic: well water table dropping, subsidence, wells evolution, temperature depletion)

The examples from water fields medium enthalpy

- Paris
- Beijing
- Reykjavic

Session V (1h) final remarks

- Reinjection
- Modelling and Resource management



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Result: the keynote

Dissemination: widely, among others through the Geothermal ERA NET website and newsletter



Possible call topic description



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Thank you for your attention

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