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.
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
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

Action

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
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 be proposed as a 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)
  o Resources and Reserves
  o Sustainable exploitation

Session I (1h, 3x20’) Mitigation and adopted measures
The examples from Vapor-dominated fields
  ▪ Larderello-Travale
  ▪ The geyser
  ▪ Kamojang

Session II (1h)
  o Utilization strategy - renewability
  o 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
  o Reinjection
  o 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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