



Integrated Methods for Advanced Geothermal Exploration

*EGEC Geothermal Technology Workshop*

*Brussels, 2016.09.08*

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# Goals of Meeting

1. To inform Geothermal Industry
2. To get feedback from Geothermal Industry
3. Invitation for Collaboration

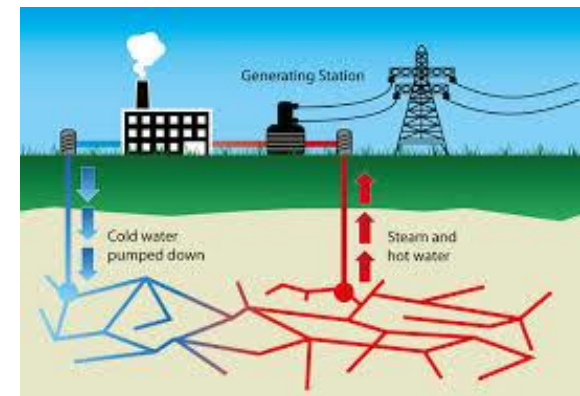


# Approach: Expected impact



Reduced pre-drill uncertainty of exploitation of the geothermal reservoir through reliable exploration and assessment methods for geothermal reservoirs

Enhance the potential of geothermal energy in the energy mix while also strengthening the leading role of the European Union in geothermal energy

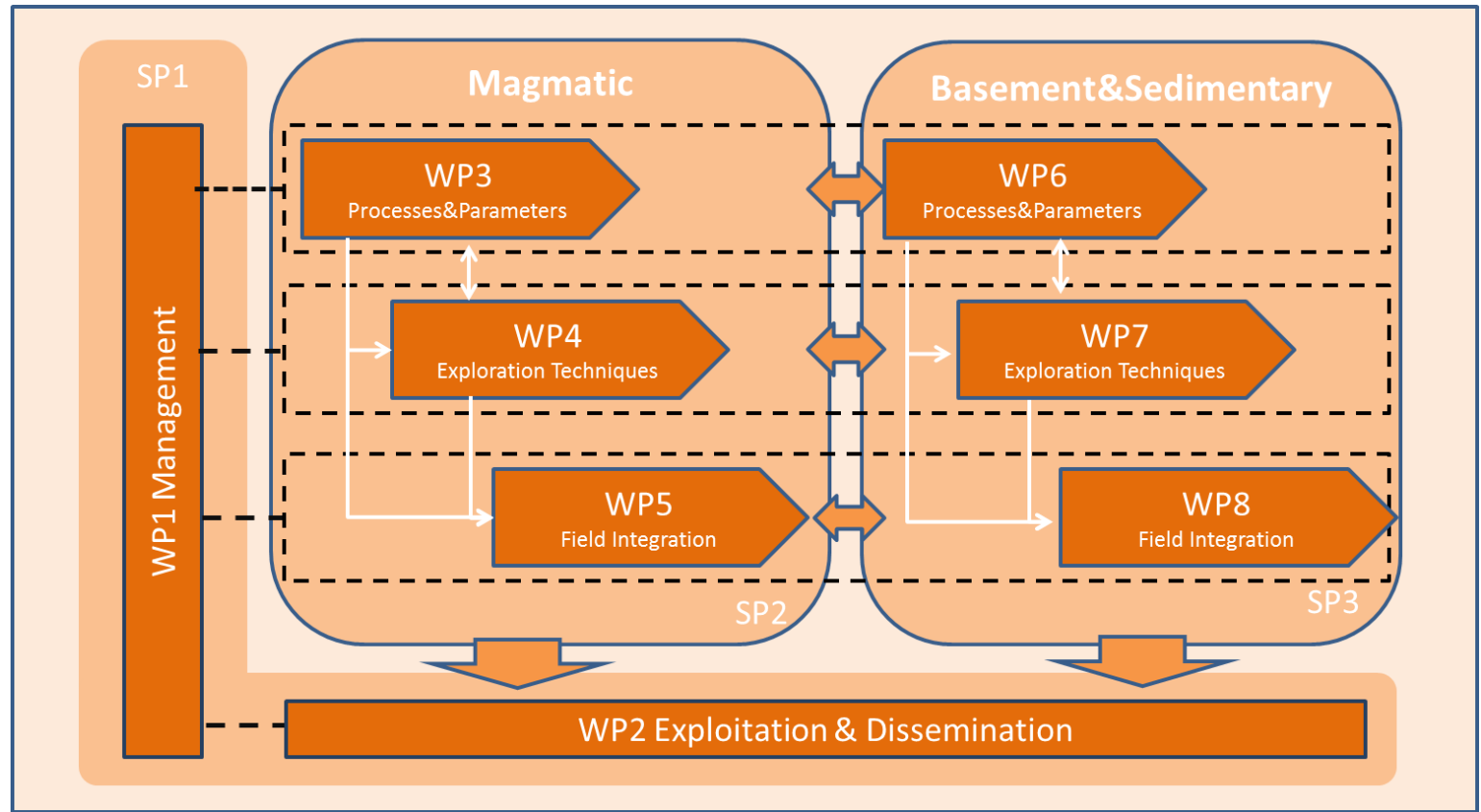




# Approach: Philosophy of IMAGE

- Develop and test **novel** methods
  - Building on state of the art from participants
  - Multidisciplinary
  - Co-Work in international science teams
- Driven by needs from **industry**
  - Driven by WP for different play systems
    - Magmatic/Supercritical
    - (Hot) Sedimentary systems
    - Basement systems
  - Applied to brownfield and promising greenfield sites
  - Beneficial to industry and with EU-27 spin-off

# Approach: Work Packages





# Consortium

## R&D

- TNO - NL (coordinator)
- BRGM - F
- CNR - I
- ETHZ - CH
- GFZ - D
- IFE - N
- ISOR - IS
- TU-Darmstadt - G
- Unibari - I
- University Montpellier - F
- VBPR - N
  
- University of Delft - NL (AP)
- University of Geneva - CH (AP)
- University of Neuchâtel - CH (AP)

## Industry

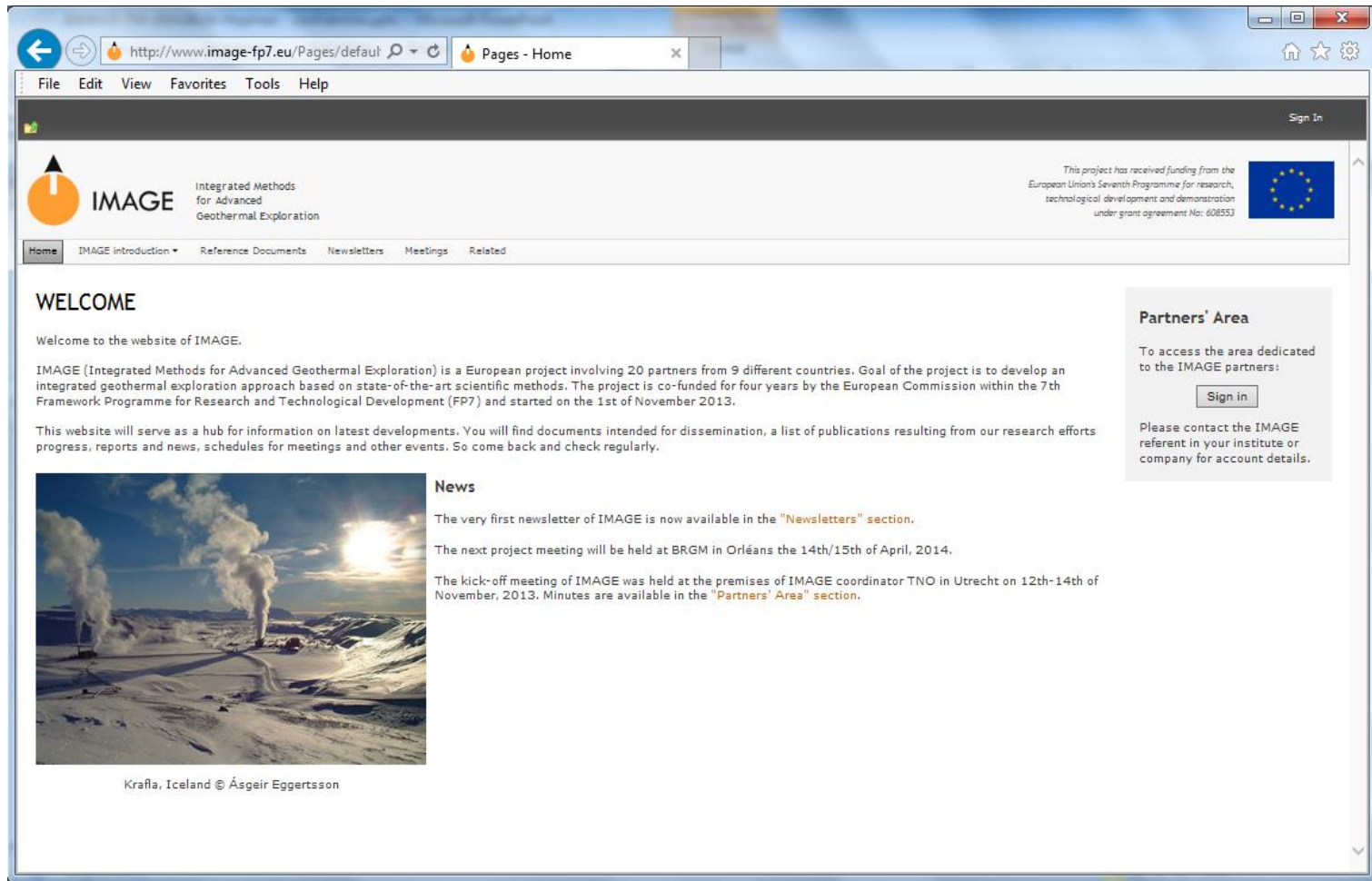
- AXPO - CH
- BKW - CH
- ENEL - I
- Fonroche - F
- ~~Geomedia - CZ~~
- HS-ORKA - IS
- Landsvirkjun - IS
- ~~Petratherm - E~~
  
- Electricidade dos Açores - P (new)
- SIG - CH (AP)
- Stadtwerke Bad-Waldsee - D (AP)



# IMAGE summary

- Goal: To develop reliable exploration and assessment methods
- Plays: Magmatic/Supercritical & Sedimentary/Basement
- Partners: 14 Science + 9 Industrial
- Duration: 4 years (2014-2017)
- Budget: 13.5 Meuro (EC funding 75%)

# Website: [www.image-fp7.eu](http://www.image-fp7.eu)



The screenshot shows a web browser window displaying the homepage of the IMAGE project. The browser's address bar shows the URL <http://www.image-fp7.eu/Pages/default>. The website header includes the IMAGE logo and the text "Integrated Methods for Advanced Geothermal Exploration". A navigation menu contains links for Home, IMAGE introduction, Reference Documents, Newsletters, Meetings, and Related. A "Sign In" link is located in the top right corner. The main content area features a "WELCOME" section with a paragraph: "Welcome to the website of IMAGE. IMAGE (Integrated Methods for Advanced Geothermal Exploration) is a European project involving 20 partners from 9 different countries. Goal of the project is to develop an integrated geothermal exploration approach based on state-of-the-art scientific methods. The project is co-funded for four years by the European Commission within the 7th Framework Programme for Research and Technological Development (FP7) and started on the 1st of November 2013. This website will serve as a hub for information on latest developments. You will find documents intended for dissemination, a list of publications resulting from our research efforts progress, reports and news, schedules for meetings and other events. So come back and check regularly." Below this is a "News" section with three items: "The very first newsletter of IMAGE is now available in the 'Newsletters' section.", "The next project meeting will be held at BRGM in Orléans the 14th/15th of April, 2014.", and "The kick-off meeting of IMAGE was held at the premises of IMAGE coordinator TNO in Utrecht on 12th-14th of November, 2013. Minutes are available in the 'Partners' Area' section." To the right of the main content is a "Partners' Area" box with the text: "To access the area dedicated to the IMAGE partners:" followed by a "Sign in" button and the instruction: "Please contact the IMAGE referent in your institute or company for account details." At the bottom left of the main content area is a photograph of a geothermal field with steam rising from the ground, captioned "Krafla, Iceland © Ásgeir Eggertsson".

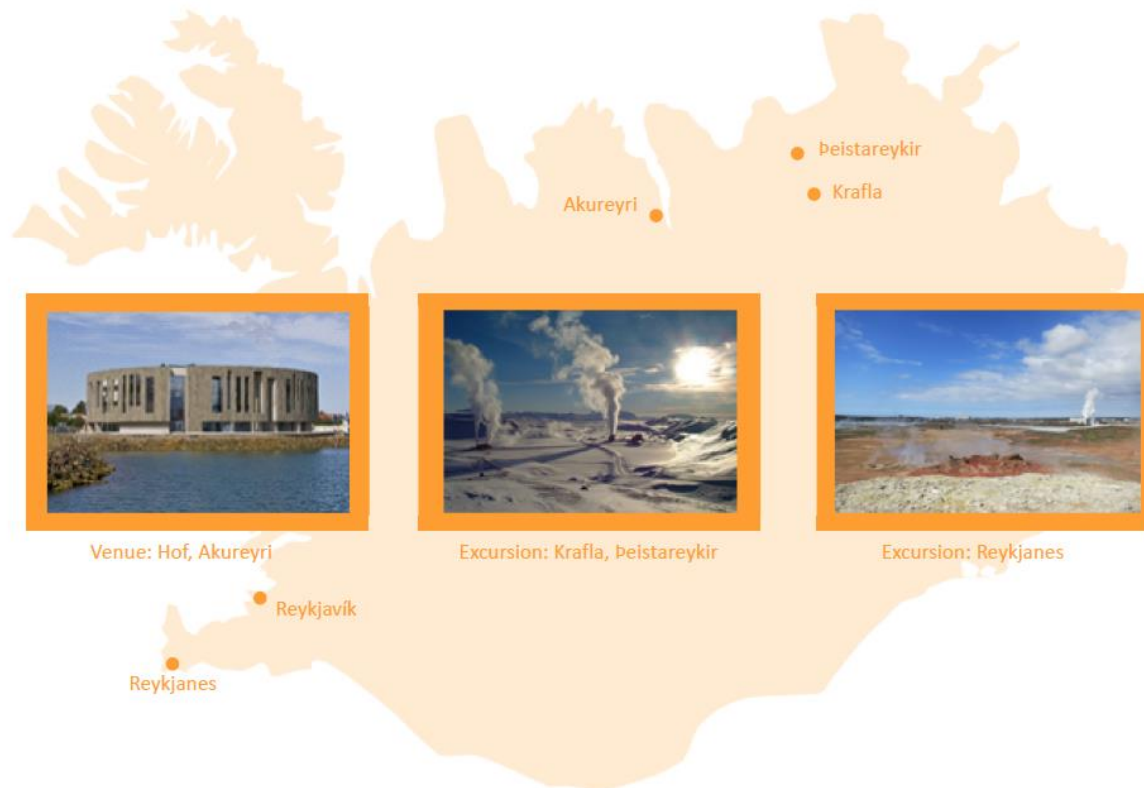
Designed by: Philippe Calcagno (BRGM)



# Final Conference

October 2 – 7, 2017

Akureyri, Iceland



Venue: Hof, Akureyri



Excursion: Krafla, Þeistareykir



Excursion: Reykjanes



# Agenda

14:00 Introduction (Hopman)

14:30 SP3 methods for basement and sedimentary systems - overview (vanWees)

15:00 SP3 electromagnetic methods and measurements (Darnet)

15:30 SP3 industry presentation by Stadtwerke Bad Waldsee (Uhde)

15:45 Break

16:00 SP2 methods for magmatic systems - overview (Hersir)

16:30 SP2 industry presentation by HS-Orka (Fridleifsson)

16:45 Discussion and Final remarks (Bruhn)

17:30 Drinks

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