# GEOELEC Project Overview

## 2nd Training Course

Philippe DUMAS

European Geothermal Energy Council

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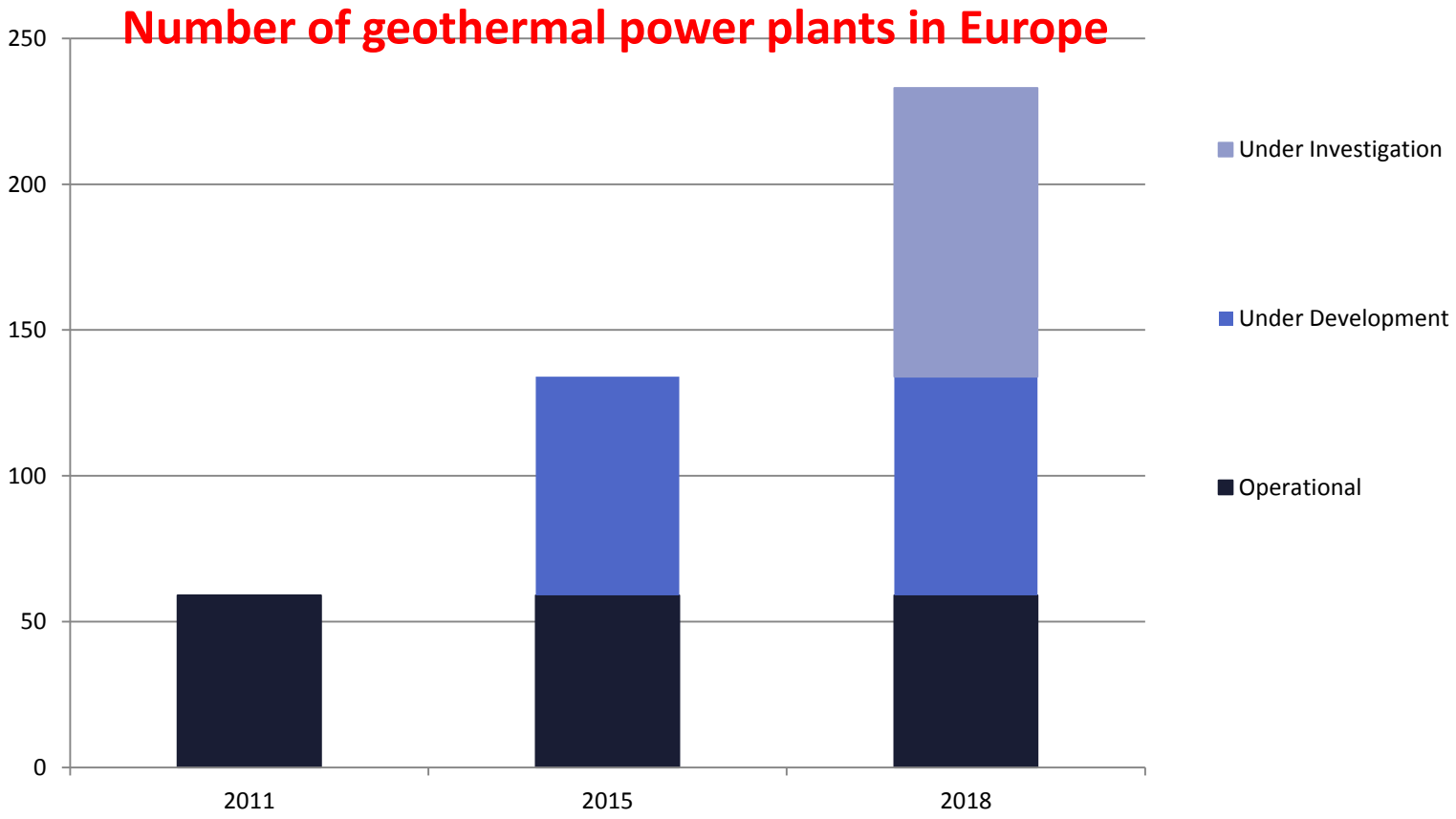
GEOELEC

INTELLIGENT ENERGY EUROPE

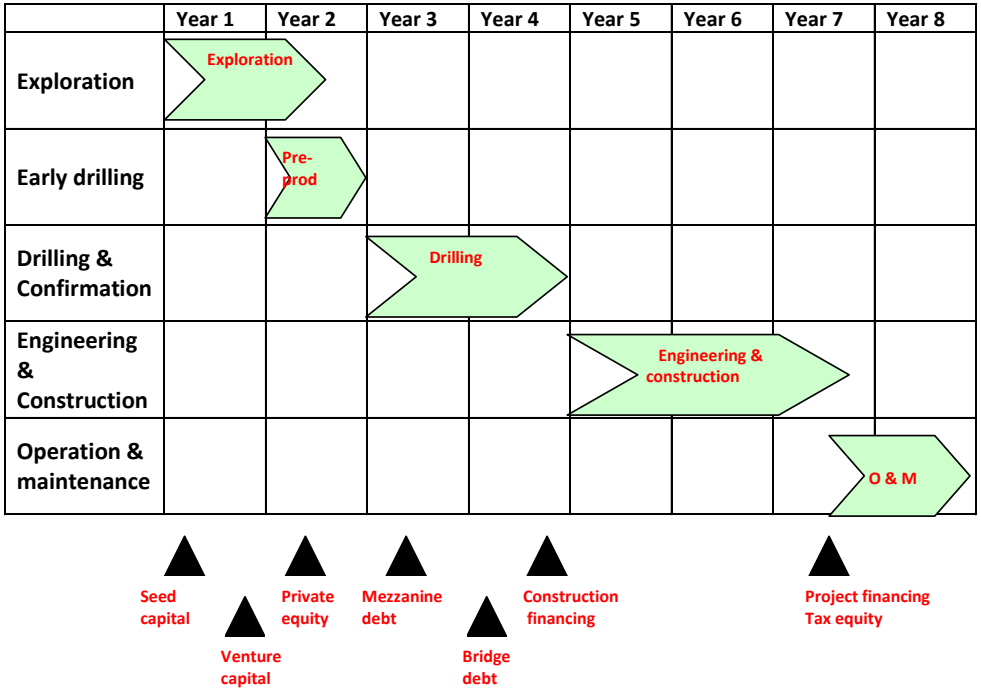
## *Objective of GEOELEC project is to*

- ***convince decision-makers about the potential of geothermal electricity in Europe: Create awareness and improve perception among policy makers***



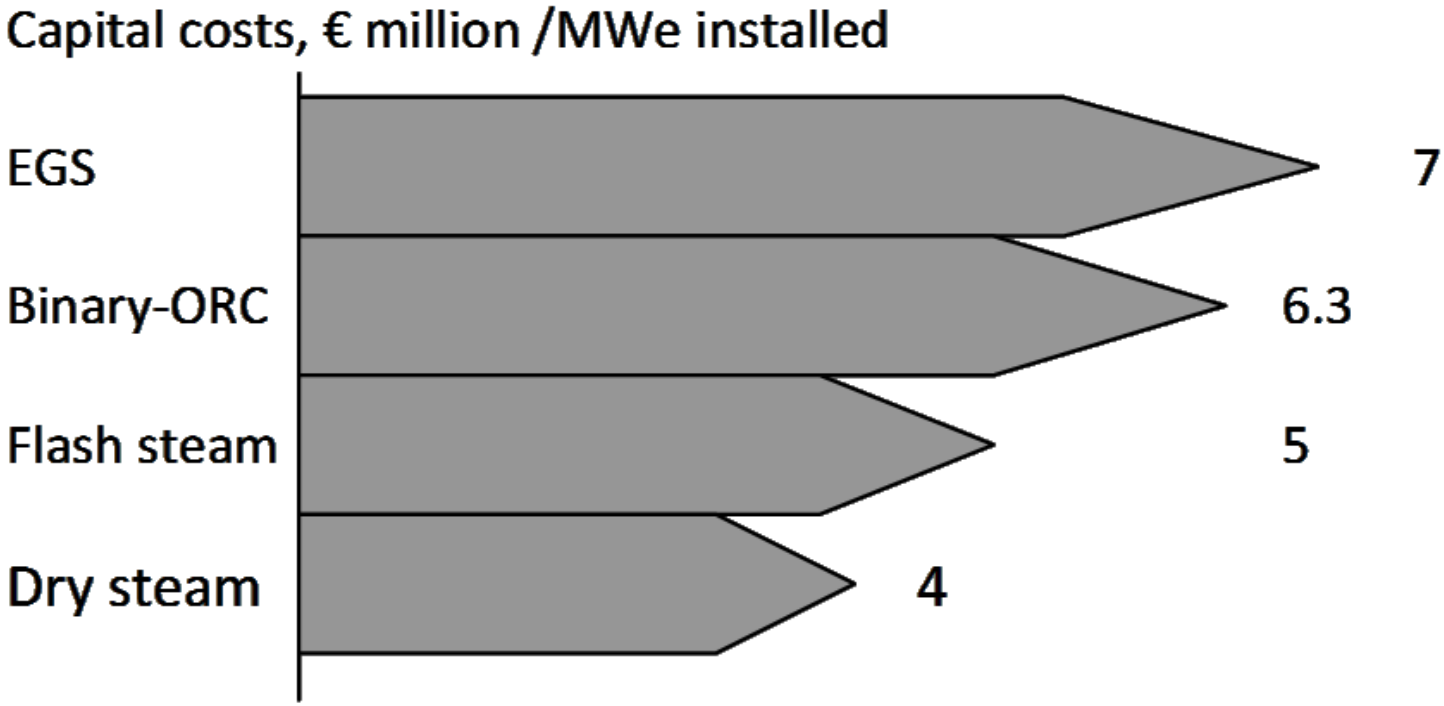
## *Objective of GEOELEC project is to…*

- ***stimulate banks and investors in financing geothermal power installations.***
- ***Geothermal project development has high upfront costs and can take several years: 3-6 years, need innovative mechanisms for funding***



## *Objective of GEOELEC project is to…*

- ***attract key potential investors such as oil and gas companies and electrical utilities to invest in the geothermal power.***
- ***Geothermal projects are capital intensive***



## *Results*

- *GEOELEC will result in an **action plan towards more geothermal electricity generation in Europe**, with the objective to double installed geothermal power capacity in Europe by 2020.*

- *GEOELEC will also result in setting concrete actions to reach these objectives:*

➢ *conditions for financial feasibility,*

➢ *a regulatory framework, and*

➢ *public acceptance.*

# *List of Participants*

| | | |
|---|---|---|
| European Geothermal Energy Council | EGEC | BE |
| Bureau De Recherches Géologiques Et Minières | BRGM | FR |
| Centre For Renewable Energy Sources And Saving | CRES | EL |
| Consiglio Nazionale Delle Ricerche<br>Istituto Di Geoscienze e Georisorse | CNR-IGG | IT |
| Asociacion De Productores De Energias Renovables | APPA | ES |
| Gaßner, Groth, Siederer & Coll. | GGSC | DE |
| EnBW Energie Baden-Württemberg AG | EnBW | DE |
| Mannvit | Mannvit | IS |
| Helmhotz Zentrum Postdam - Deutsches Geoforschungszentrum | GFZ | DE |
| Nederlandse Organisatie Voor Toegepast-Natuurwetenschappelijk Onderzoek - TNO | TNO | NL |

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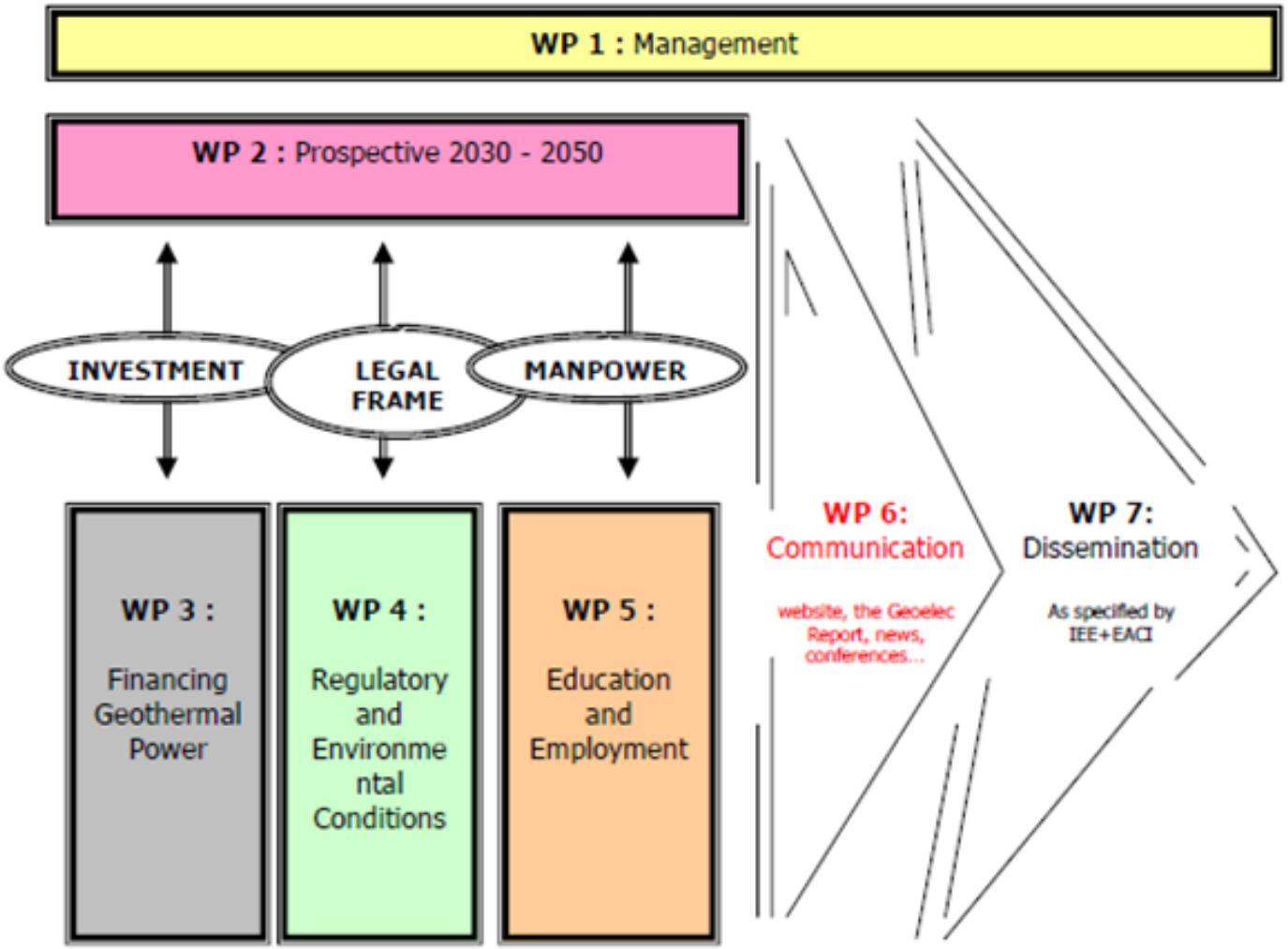
# Work Flow Chart (June 2011 – November 2013)

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# Work Programme

## *Prospective for geothermal electricity in Europe*

### *Resource assessment*

- Methodology: Geoelec Resource Assessment Protocol
- Data compilation with 7 regional workshops (London, Valencia, Milano, Athens, Utrecht, Offenburg, Vilnius)
- **An online web GIS on EGS potential in the EU-27**

### *Electricity demand and grid infrastructures*

- **Technical conditions for grid access**
- Match the demand: site selection

### *Forecasts and prospective*

- **A prospective study 2020/2030/2050 on the geothermal potential in Europe (January 2013)**

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# Work Programme

## *Financing geothermal power projects*

**Project financing & estimating of costs**

- **A software to evaluate financial viability of geothermal projects**
- LCOE

**Risk insurance**

- **Promote the creation of risk insurance schemes**

**Drilling costs & rigs**

- **A European database on drilling costs & performance**
- Best practice drilling handbook

**Guide to boost investment in the geothermal sector**

- **Practical reference tool for banks, developers and investors**

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# Work Programme

## *Regulatory, social and environmental conditions*

**Regulatory barriers**

- Licensing procedures, legal conditions for grid access
- Geothermal reporting code review

**Environmental issues**

**Public acceptance**

**Potential CO2 emissions reduction**

# Work Programme

## Education and employment in the geothermal sector

### Employment survey

### Training activities

- 3 Training courses in France, Italy and Germany (2012/2013)

# Work Programme

## Communication

Website: www.geoelec.eu

Publication

- Geoelec Final Report (5500 copies in total, 100 pages, several languages)
- Geoelec Factsheets (4000 copies, brochure 16 pages, several languages)
- Newsletter (First in October 2011, every 4 months)

Events

- 7 promotional workshops (FR,DE,EL,ES,IT,HU,NL) and 1 Final Conference
- Face-to-face meetings with decision makers, banks, investors etc.

Promote the creation of National Geothermal Committee

- **Official body providing recommendations for geothermal development**

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# EGC 2013

European Geothermal Congress

## GEOTHERMAL ENERGY TOWARDS A NEW HORIZON

**When?** 3-7 June 2013

**Where?** Palazzo dei Congressi, Pisa, Italy

**Why?** EGC2013 gathers together the entire European geothermal sector providing a stage to present and discuss new developments in the science, technology, industry, and policy of geothermal energy on our continent.

Call for abstracts is now ongoing!

You can submit your abstract online until 30 November 2012!

For more information, please visit www.geothermalcongress2013.eu

# Concept of the Courses

- **3 courses: in France (2012), Italy & Germany (2013)**
- **4 days:**

Day 1: Course on Market, legal, environmental, financial aspects

Day 2-3-4: Technical Courses on Geothermal electricity + Site visit

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# Agenda

- **Day 1: Course on Market, legal, environmental, financial aspects:**

-Session I: Market aspects
-Session II: Legal, environmental & financial aspects

- **Day 2-3-4: Technical Courses on Geothermal electricity:**

-Session III: Geothermal Exploration
-Session IV: EGS Technology
-Session V: Drilling
-Session VI: Flash steam & binary technology
-Session VII: Plant operation, energy supply and grid integration

- **Site visit to In situ Laboratory Gr. Schoenebeck**

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# Support Materials

- A Manual in EN, 64 pages

- Presentations available online

# Evaluation

**Training Course on Geothermal Electricity**
**Strasbourg , from 5 to 9 of November 2012**

Please take a moment to fill out this survey so we may learn from your experience and use the information to improve future workshops.

**To The Evaluator:** To what degree are you familiar with the topic of the training course?

- ☐ I am actively working in this specific area.
- ☐ I have carried out research/developmental work in the past in this specific area.
- ☐ My experience is in the general area but I have not worked in this specific area.

Other Comments:

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Please rate the following on a scale of 1-5 (1 = poor, 3 = neutral, 5 = excellent) by circling your answer:

1. Your overall experience with this workshop:
   1 2 3 4 5

2. The overall quality of the material presented in the workshop:
   1 2 3 4 5

3. The quality of the session you attended:

I. Market aspects
Content
1 2 3 4 5
Tools
1 2 3 4 5
Trainer
1 2 3 4 5

II. Legal, environmental & financial aspects
Content
1 2 3 4 5
Tools
1 2 3 4 5
Trainer
1 2 3 4 5

III. Geothermal Exploration
Content
1 2 3 4 5
Tools
1 2 3 4 5
Trainer
1 2 3 4 5

IV. EGS Technology
Content
1 2 3 4 5
Tools
1 2 3 4 5
Trainer
1 2 3 4 5

V. Drilling
Content
1 2 3 4 5
Tools
1 2 3 4 5
Trainer
1 2 3 4 5

VI. Flash steam & binary technology
Content
1 2 3 4 5
Tools
1 2 3 4 5
Trainer
1 2 3 4 5

VII. Plant operation, energy supply and grid integration
Content
1 2 3 4 5
Tools
1 2 3 4 5
Trainer
1 2 3 4 5

Please answer the following questions by circling Yes, No, and providing comments where necessary:

4. Do you feel that there was sufficient time allotted for discussion?
   Yes No

5. Were you satisfied with the structure of the workshop?
   Yes No

If No, please comment and provide suggestions:

_____
_____
_____
_____

6. Did we meet your expectations for outcomes from this workshop?
   Yes No

7. Please provide us with any additional comments or feedback.

_____
_____
_____
_____
_____

# Objectives

- New project developers
- Geothermal team: companies from Sub-surface or surface
- Reconversion from other energy, drilling sectors
- Financial sector

# Thank You!

**Visit www.geoelec.eu**

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