

Latest and Future Developments in Geothermal District Heating

Christian Boissavy, AFGP

**2012 Annual Conference on Renewable Heating and Cooling
Copenhagen, 26 April 2012**



Introduction

Increasing Momentum

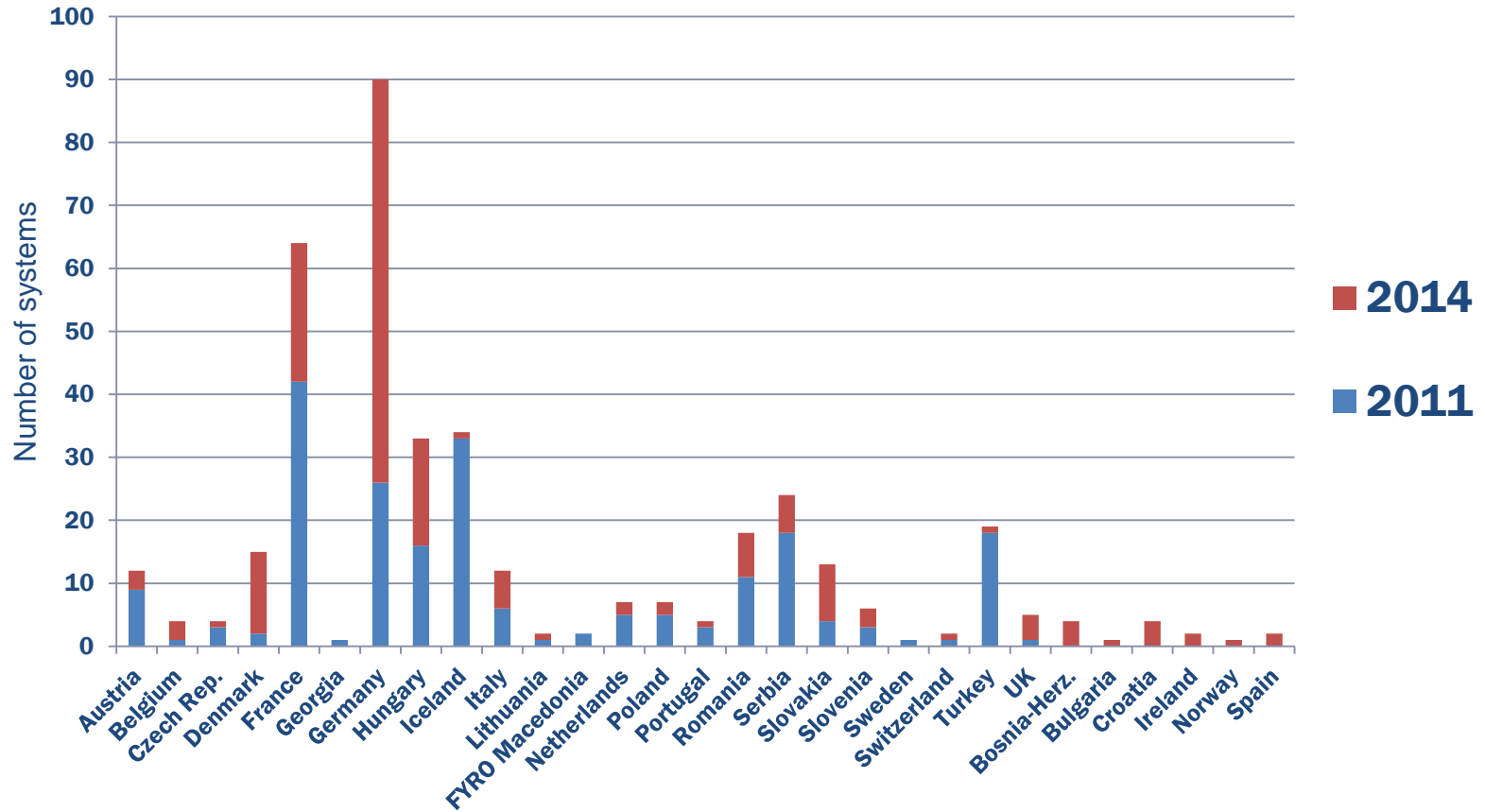
- 212 GeoDH systems in operation in Europe
- Total capacity of approx. 4,700 MWth

Geothermal Attractive Option for H&C

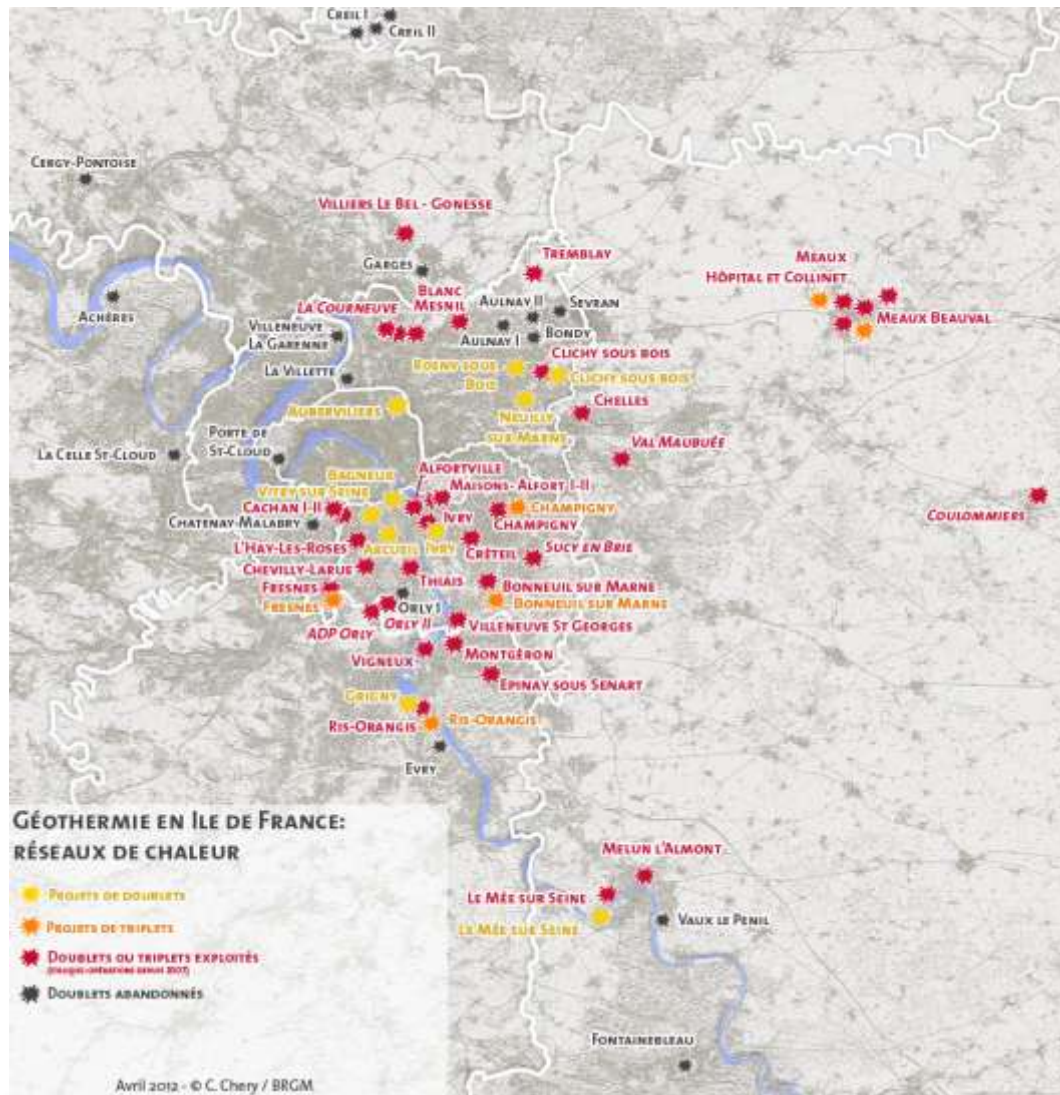
- Competitive
- Can be installed everywhere



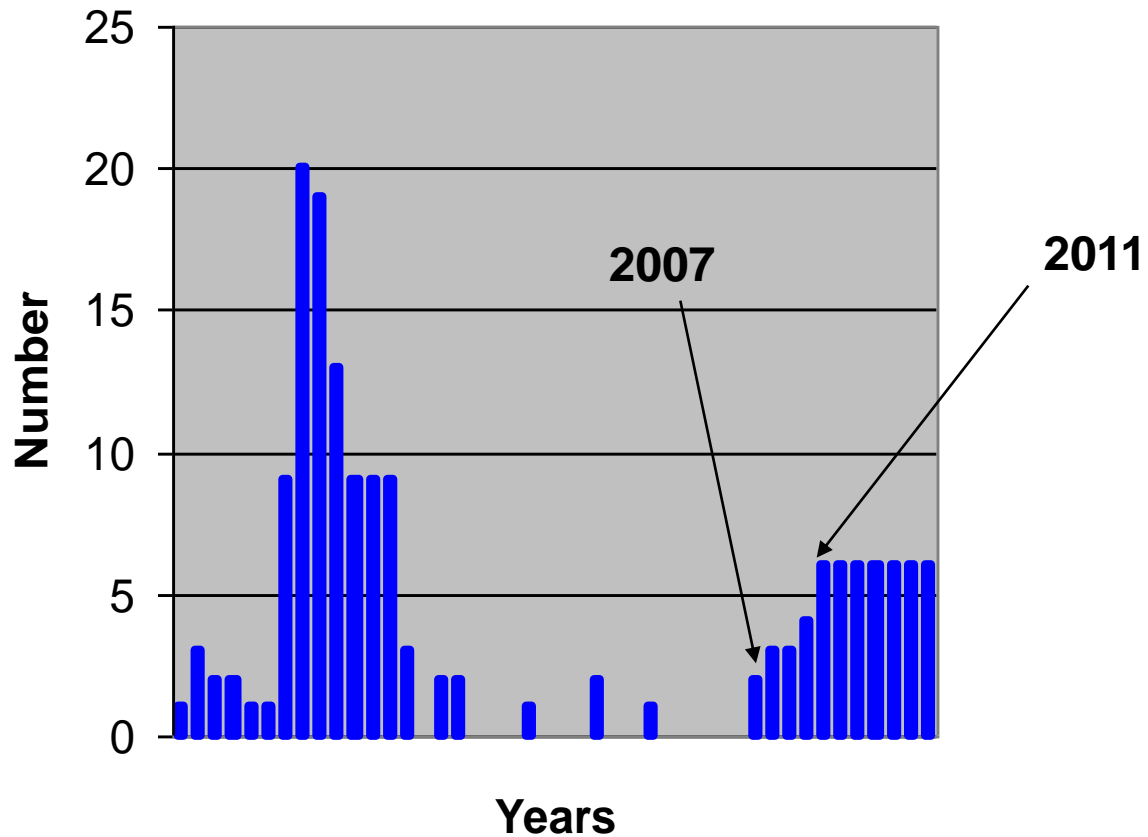
GeoDH Systems in Europe



Situation in the Paris area



Deep geothermal drilling for geothermal direct uses from 1974 to 2020



Barriers to Geothermal Development District Heating

Technical barriers

- Understand the potential of GeoDH all over Europe
- Lack of high skilled professionals

Regulatory barriers

- Adopt the right geothermal regulatory framework
- Simplify administrative and licensing procedures for exploration and drilling;
- Lack of clear rules for competition over underground sites

Barriers to Geothermal District Heating Development

Financial barriers

- Insure the Geological Risk
- Innovative financial tools to overcome high capital investment costs;
- Develop new business models to make GeoDH economically viable despite the foreseen decrease in heating demand; cascade uses
- Fragmented and very limited financial support; unfair competition with conventional sources

Barriers to Geothermal Development District Heating

Technological challenges

- Towards low temperature GeoDH systems with HP
- Large versus Small GeoDH installations
- Increase operational time: from doublet to triplet
- GeoDH from CHP: new opportunities with EGS
- EGS purely for industrial heating: case of Roquette project
- What about GeoD Cooling ?
- GeoDH for combining smart electricity and thermal grids in a City
- To which source combine the GeoDH ? Biomass, solar etc.

... yet many barriers to overcome:



GeoDH- IEE Project

(From April 2012 to Sept 2014)

The objective of the GEODH project is to promote the use of GeoDH by:

- Proposing the removal of regulatory barriers;
- Developing innovative financial models;
- Training technicians and increasing awareness among decision-makers.

GEODH covers 14 countries with different market maturity

- **Juvenile geothermal DH markets:** Netherlands, UK, Ireland, Bulgaria;
- **In transition:** Slovenia, Slovakia, Czech Republic, Poland, Denmark, Romania;
- **Mature:** Germany, France & Italy, Hungary;



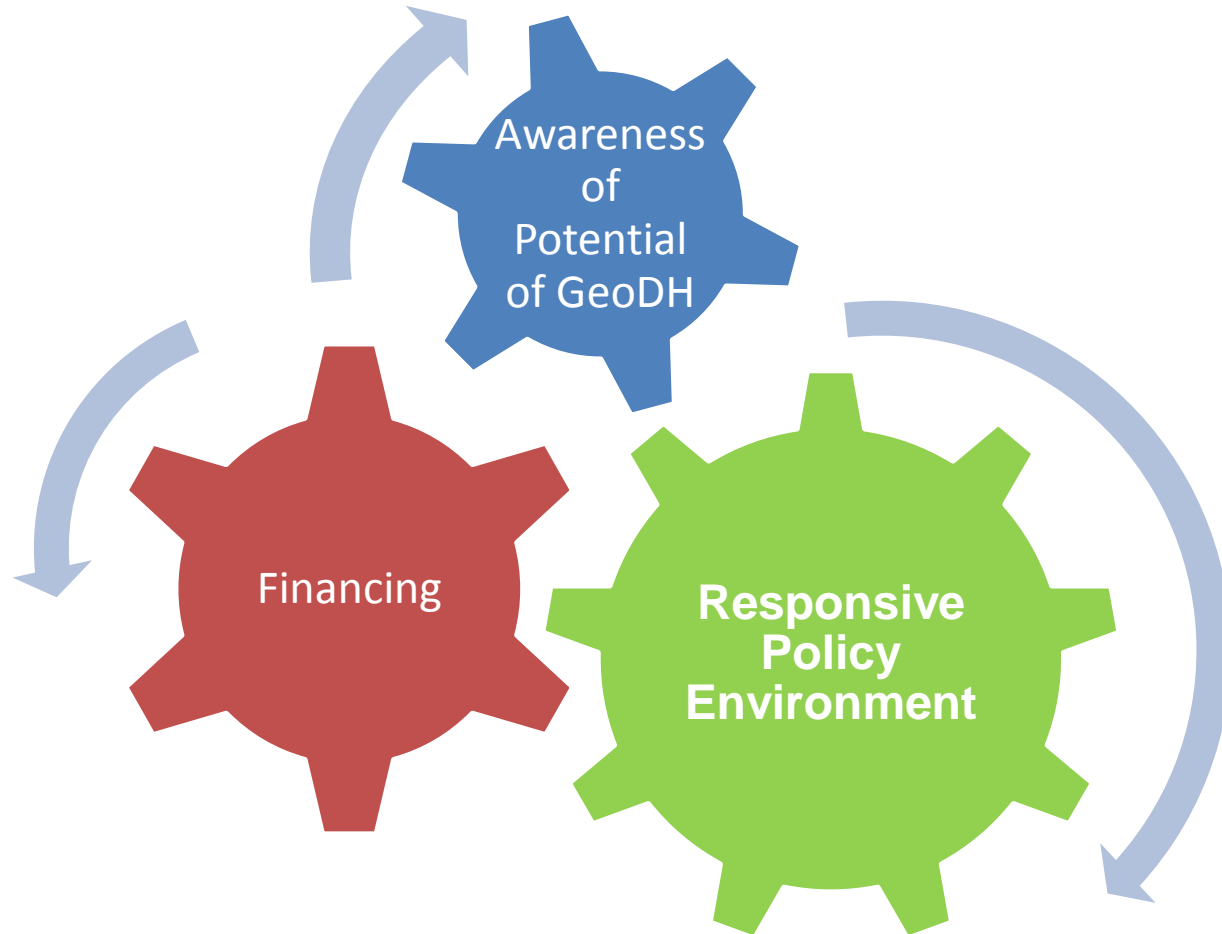
Future of GeoDH in Europe

By 2015

200 New
Plants

Ca. 4,000
MWth

Conclusions: 3 factors





***Thank you
for your attention!***