

Minute of the meeting held on Friday, 12th of July 2013, at ES-Group, in Strasbourg

French-German cooperation for the development of geothermal energy

Participants:

Christian BOISSAVY: President of AFPG, treasurer of EGEC, member of the IGA until the end of the year (christian.boissavy@orange.fr)

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Virginie SCHMIDLE: Secretary General of AFPG (virginie.schmidle@afpg.asso.fr)

Excused:

Waldemar MULLER-RUHE: President of GtV-Bundesverband Geothermie

Presentations, in copy:

Presentation of the ES-Group by B. KEMPF

Presentation of the WfG by E. KNAPEK

French geothermal market - AFPG

“Financial geothermal energy” - EGEC

Quick overview of both French and German geothermal sectors

AFPG was created in 2010. Today, AFPG is well recognised and is the key-contact for the Ministries. Around 90 companies, universities, research centres... are members of AFPG. AFPG structuration is quite similar to WfG because we are essentially representing the professionals involved in the geothermal field. Nevertheless, AFPG is gathering professionals from all sectors of geothermal energy whereas WfG only represents the deep geothermal sector.

Besides that, GtV has nearly 900 members coming from the industry, the economic and energy sectors for all geothermal fields: from geothermal energy assisted by heat pump to deep energy, production of heat and cold, electricity. GtV lost some members these last years because they preferred joining the Heat Pump Association, which is really strong in Germany has opened a HP geothermal department.

Renewable energy sector

In Germany: big competitors are the biomass sector and solar.

In France like in Germany, the government, when talking about energy focuses more on electricity and gasoline which are considered of paramount importance even they represent less than 50% of the total energy consumption of the country.

Deep geothermal energy

- About the French Mining Code, the main clauses of geothermal energy are:

- Article 3 of the mining code

“Underground deposits from which thermal energy can be extracted are considered as mines”

- The Mining code characterises between “high temperature” and low temperature” deposits, with the following limits:

Low temperature <150 °C <High temperature

- A mining resource does **NOT** belong to the owner of the land. Rights to research or to exploit mining resources can only be granted by the state.
- Operations called of “very small importance” benefit from light administrative procedures when:
 - . The geothermal deposit is between 0 and 100 m deep
 - . AND the maximum possible heat flow rate, calculated with reference to a temperature of 20 °C, is below 200 thermie/hour equal to 232 kW)

The French Mining Code should be modernized before end of 2014 and AFPG is involved in the commission driven by the Conseil d’Etat put in place by the government and works as representative of the geothermal sector.

In the same time a special “Décret Loi warsmann” will redefined the very small importance with extension of the depth to be drilled at 200m and the power extracted to 500 KWth for water doublet and 250 KWth for dry geothermal systems.

- In Germany:

Under 100m, heat is considered as a raw material and therefore depends on the Mining Code.

Several high enthalpy projects will be stuck until the elections. Some changes are expected but nothing is sure.

The support to geothermal will start at the beginning of the project which is much different compared to the procedure at the moment which begin after the realisation of the doublet scheme. Feed in tariffs will certainly be changed.

- Deep EGS projects in France

Few permits have been signed for exploration. We are quite at the beginning. The sector should be developed in the next years. The permits recently signed in France:

In Alsace: Moore (Norway), Endura (german developer), ES Géothermie and Geopetrol (French companies)

In Auvergne: Electerre, Geopetrol and Fonroche (French companies)

In the south-west and Rhône region: Fonroche

In the Parisian region: Fontroche

Shallow geothermal energy

Geothermal energy with heat pump is facing a hard competition from aero heat pumps that are really appreciated in France because of low prices of electricity. This technology is also easier to implement than geothermal heat pump and cheaper even if the rentability is lower because of a reduced COP of the installation.

In France the economic situation of this sector, responsible for nearly 80% of the geothermal market turnover, is in very bad shape (in 2012 70% of decrease compared to 2008).

The economic crisis can explain part of this situation but there are other parameters to be considered:

- Lack of communication in comparison to other renewable energies,
- Lack of visibility of the regulatory framework,
- Lack of transparency and standardisation of the financial support schemes
- Problem of competitiveness (air heat pump is easier to install...)

Direct uses of energy

Direct uses are more connected to high energy. Not so developed as in France where the technology is mature. We have to compete with gas only.

Prices of electricity

Price of electricity (in France) 0, 142 centimes per kWh in 2012 (31% of charges)

Price of electricity (in Germany) 0, 2574 centimes per kWh in 2012 (45% of charges dedicated to the funding of renewable energies sector)

Feed in tariffs in Europe

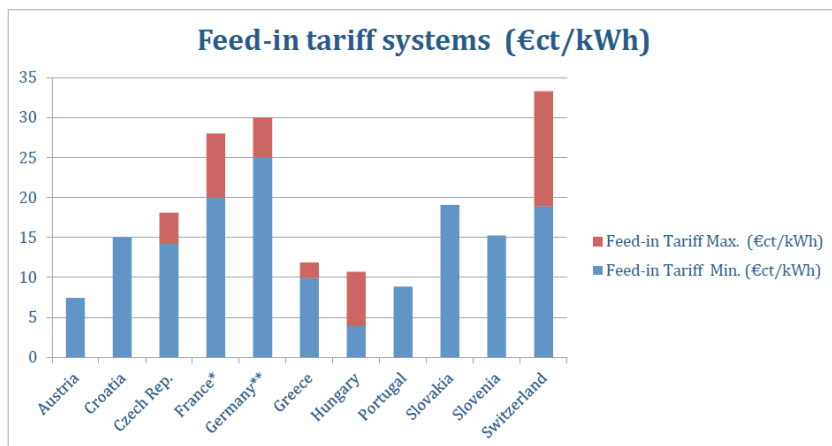


Figure 9 Feed-in tariff systems in the EU countries

*Applies to the produced net power

** Applies to the produced gross power

Figure from EGEC report "Financial geothermal energy"

In Germany, there is a lack of visibility regarding the feed-in-tariff; it is hard to anticipate its evolution.

In France, there is no real problem with the feed in tariff even if AFPG is asking to have the same tariffs in the islands (200 instead of 130€/MWh at the moment).

In the future

In Germany, geothermal energy will be oriented in project based on co-generation, with production of electricity +heat.

But there are some problems for energy model: flexibility of the power plan and storage.

In France, our future developments is linked to co-generation onshore and in the Caribbean and Indian islands, it is expected to developed new deep geothermal energy projects. Nevertheless, the NO GO from EDF regarding the Wotten Waven project in the Dominic Island (investment of 0, 5 billion euros for 100 MWe including the submarine line in between Dominica and Guadeloupe) is not a good signal for these developments.

Shale Gas / Geothermal energy

In France, “fracking” is forbidden for oil & gas wells, since only 2011. Therefore, oil & gas companies used the opportunity to contest the authorization allowed to geothermal energy. That’s why nowadays, geothermal energy could suffer from an amalgam with deep oil and gas wells. The official position in France but also in Brussels (EGEC report on fracking ...) is to admit that even if the technical concept is similar, it is not the same magnitude at all.

Moreover, the argument of geothermal sector is we do “stimulating” to open existing fractures and to increase the flow rate, as what have been done for ECOGI project:

- 1) Chemical stimulation with biodegradables acids...
- 2) Pressure Stimulation/cleaning with water from 0 to 80 l/s and a result of 2,6 injection index at the end starting from 0,5.
- 3) Thermal stimulation.

In Germany, the word “fracking” is not mentioned in the mining code, it is totally forbidden.

Should we apply to the French-German Office for renewable energies?

At the moment, this Office clearly deals with wind and solar and if we don’t subscribe, geothermal energy will certainly not be represented by another organizations/companies. As usually our sector will run the risk to be out of the discussions.

- Each geothermal association try to get in touch with the national representative of the French-German renewable energy office. For France: Mélanie PERSEM and Christian OESER
- We have to negotiate the same subscription for both German Associations even a joint subscription with a good prize!

What are the main actions we can carry out together? How do we need to collaborate to introduce geothermal energy in the « Transition énergétique »/ “Energiewende » works?

- To continue our lobbying for the promotion of renewable energies capable of producing heat, cold and electricity (not only electricity)
- To have a follow up with “Georg Project” for example. We can start our collaboration with EGS projects and all related subjects such as fracking...
- To expand our collaboration to “Pôle Avenia”, to geothermal Switzerland associations?
- To set up a commission “shallow geothermal energy”: regulations, standards, administrative points, norms, potential map etc...
- To organize workshops and thus have the possibility to invite politicians, from Federal and State level but also members of ADEME, BMU. Subjects to be presented: geothermal potential, energy, costs (maximum 3 topics and no focus on seismicity neither on radioactivity...)

For information: organisation of the 3rd edition of our Geothermal Energy Days in Paris, in April 2014: focus on the « D-GEO-Days »

Soon more information available on a dedicated website. A. GENTER is the head of the scientific committee with other members such as J. Schmittbuhl (EOST), ES, Jürgen Steiner, and B. Sanjuan (BRGM).

Horst Rüter and Thomas Kölbel would like to join the committee. JJ Graff agrees with these propositions.

As a good new Horst inform us that Albert Genter has been elected as member of the board of IGA and also Rolf Bracke from Bochum University.

Proposed dates for the next meetings

The next will be in Karlsruhe with a date to be chosen before the end of 2013.
We propose a meeting in 2014 during the venue of Offenburg fair.