



Demonstration of soft stimulation treatments
of geothermal reservoirs

The context of contestation: how cultural, political and informational factors affect the reception of geothermal projects

Philippe Chavot, Olivier Ejderyan, Barend van Engelenburg

This project has received funding from the European Union's
Horizon 2020 research and innovation programme
under grant agreement No. 691728



ES

Introduction

Mining activities under societal debate

- Mining activities like oil and gas production, shale gas production, deep geothermal project development or CO₂ geological storage often meet strong societal debates
- The costs and benefits are unequally divided among stakeholders
- Minimal attention to societal factors that might influence project development
- Project development too time consuming, too expensive or even: projects never reach phase of execution at all

Common practice



Objectives of WP3.3. “Risk governance”

To assess acceptability of deep geothermal energy in various socio-economic conditions in Europe by:

- Comparing national approaches
- Comparing urban and rural areas
- Critically analyzing public communication in ongoing projects

Goal → recommendations for updating regulations for better public acceptance

Comparative case studies approach

Country	Area	Heat/ power	Geology	Urban/ rural	Short description
F	Northern Alsace	Both	Faulted	Rural	3 EGS projects carried by regional public operator; Acceptability is not an issue. The projects are fairly well accepted
F	Euro- metropolis Strasbourg (EMS)	Both	Faulted	Urban	5 EGS projects within the metropolitan area; Different operators (local public & private operators); Strong variation in acceptance (2 projects have been abandoned due to strong contest)
CH	Haute- Sorne, Jura	Power	Faulted	Rural	EGS project carried by private company owned by utilities; On hold because of local opposition
CH	Geneva	Heat	Sediment	Urban	Program carried by the state and local public utility; Multiple project planning from shallow to mid-depth. Strong acceptance but no deep project completed yet
NL	Trias Westland	Heat	Sediment	Rural	Geothermal project in development (drilling phase will be completed before summer). Project is characterized by close cooperation with and support of local stakeholders.

WP 3.3. In-depth case studies location



<http://www.destress-h2020.eu/en/demonstration-sites/introduction/>

Factors affecting the reception of geothermal projects

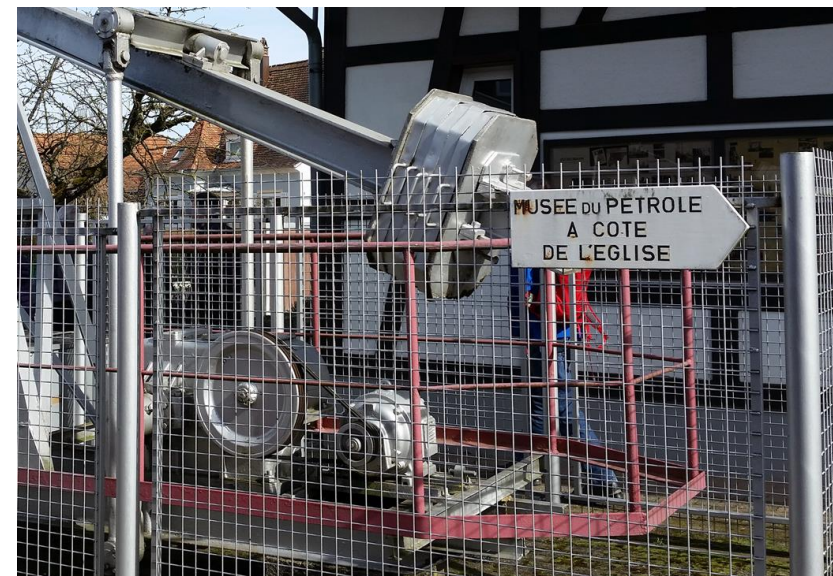
Factors affecting the reception of geothermal projects

- Cultural factors
 - Local characteristics that influence how social actors will interpret/perceive the project (i.e. rural/urban, innovative region, tradition of mining activities, social identity...)
- Political factors
 - Interrelations between (institutional) politics and geothermal projects
- Embeddedness of projects
 - Local roots of a project influence how it is perceived by the inhabitants
- Informational factors
 - How project carriers (operators & authorities) interact with the public

Cultural factors (France)

- History of oil exploration in Northern Alsace
 - Many drillings in the past
 - No notable opposition to geothermal energy
=> “Underground energy, it is our DNA” (Mayor of Soultz)

- La Robertsau case in the EMS abandoned
 - Industrial area where inhabitants were fighting for long time to reduce existing industrial risks
 - Strong democratic ideal in the neighborhood
=> against an imposed project



O Ejderyan



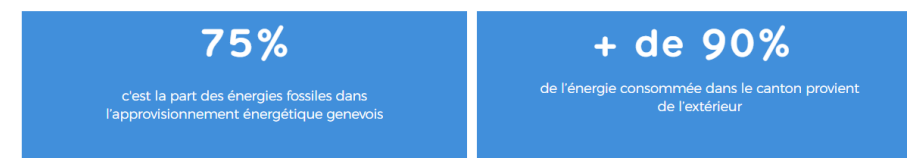
Cultural factors (Switzerland)

- Pioneering role and risk taking attitude of municipalities used to mobilize citizen to support geothermal energy
 - Successful strategy in St.Gallen
 - In Haute-Sorne it served as an argument of opponents to argue they were taken as guinea pigs
- In Geneva project framing oscillates between contribution to fight global warming and a strong focus on the localness of geothermal resources



Les Jurassiens ne sont pas des rats de laboratoires !

Concernant les différences entre la géothermie hydrothermale et la géothermie de faible et moyenne profondeur, ce sont deux procédés bien différents, même si parfois les jurassiens ont tendance à généraliser par exemple lorsqu'ils citent l'Allemagne, Paris, Rittersshorfen ou même Genève qui va se faire dans le Jura. Il n'en est rien ! Ce sont des projets qui ont été réalisés et dont on peut constater ci-dessous :



UN SOUS-SOL MÉCONNU

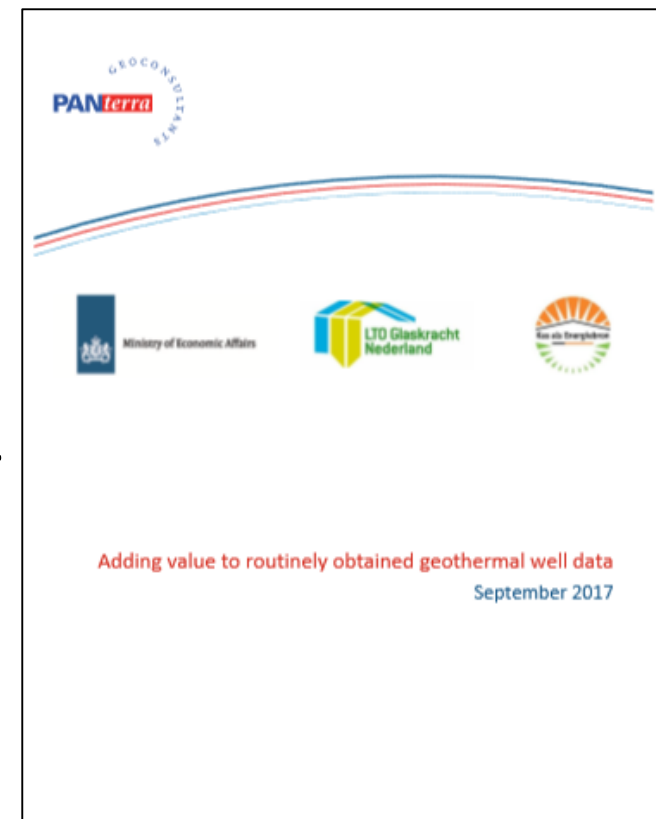
Même si les techniques sont connues, la géothermie de faible et moyenne profondeur s'est peu développée à Genève jusqu'à présent, à l'exception des sondes géothermiques. Cette situation s'explique par une méconnaissance du sous-sol et par un certain manque d'expérience et de bases légales. Ces lacunes sont en train d'être comblées.

L'énergie géothermique est



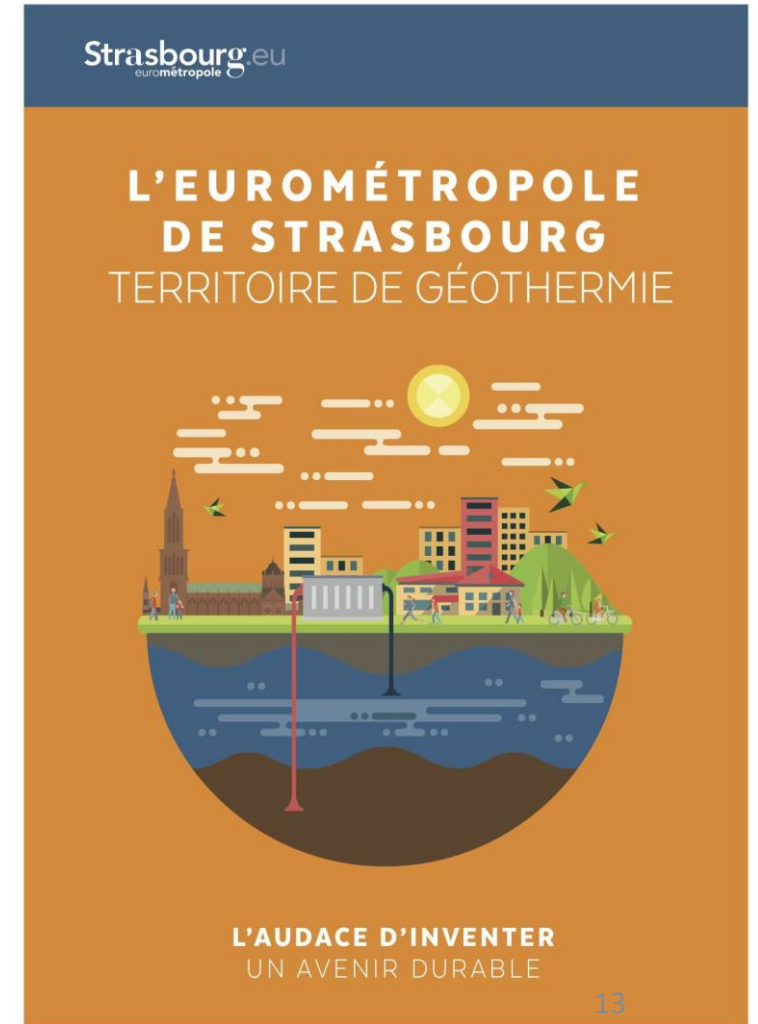
Cultural factors (Netherlands)

- In Westland local greenhouse farmers see themselves as entrepreneurs and innovators
- The geothermal operator, the greenhouse farmers and the community see this geothermal project as a project of common interest (sustainable development of the region and the business)
- Large national banks have a close relationship with the agricultural business in the region and a positive attitude to sustainable development. They see geothermal energy as the way forward in that direction



Political factors: Role of local authorities (France)

- Geothermal energy occupies a strategic position in local policy in the EMS and to some extent in Northern Alsace. Integrated in EMS Climate Plans defined in the mid 2000's;
- Geothermal energy championed by Green/Socialist coalition that governs the metropolis;
- Some marginalized municipalities within the EMS oppose geothermal energy to defend local interest and communal sovereignty



Political factors: Role of local authorities (Switzerland)

- In Haute-Sorne, the project is presented as being in line with the Cantonal Energy plan
 - Authorities emphasize its benefit for local economic development
 - But no visionary discourse linking it to energy futures
- In Geneva geothermal energy is framed as necessary for the energy transition
 - GEothermie 2020 program, launched jointly by the Cantonal government and the local public utility
 - Reflection on the role of institutions



Political factors: Role of local authorities (Netherlands)

- Province and municipality are big supporters of the transition of the region into an area that only will use renewable heat (i.c. geothermal heat)
- Province and municipality lobbied national government to participate in this project



Westland Regional Authority

Embeddedness of projects

Anchored projects

The result of a long matured dialogue between the different actors

- Useful for local communities
- They can contribute to local economic value chains

Off-ground projects

Projects prompted by economic benefits and/or national political programming, often ignoring the specificities of the local territory

- No or rare up-stream concertation
- Not chosen by local communities
- Aiming at producing electricity first and eventually feeding heat network

Embeddedness of projects (France)

- Within the EMS, some geothermal energy projects first related to urban heat provision. Local utility, planned slowly in relationship with local authorities
- Other projects were initiated due to the increase of feed-in tariffs by new operators not anchored regionally and without dialogue. These off-ground projects faced strong contestation

EUROMÉTROPOLE Séminaire sur la géothermie profonde

Géologie du... débat



Ils ont mouillé leur chemise sur le thème des risques. PHOTO DNA – LAURENT RÉA

Embeddedness of projects (Switzerland)

- In Haute-Sorne, the project is perceived as off-ground
 - The operator is active at a national level
 - Perceived as “outsider” from Zurich
 - Locals do not see the benefits of power production
 - No use of the residual heat
 - Setting up of a local branch to pay taxes locally, did not change the perception



La Tuile n° 532, 2017

Embeddedness of projects (Netherlands)

- The project was anchored right from the start as “local for local”:
 - Business case developed in cooperation with the end-users (greenhouse farmers)
 - The greenhouse farmers organized a representative board that was involved in all major decisions of the Trias Westland project
 - After 15 years the project will be owned by a cooperative of participants

Overzicht deelnemers



Informational factors (France)

- In off-ground projects, operators usually communicate to the general public only a few months before the organization of the legal public consultations
 - Controversy is already there
 - Public consultation are used by citizen to express their opposition;
- Regional authorities and operators talk about geothermal energy in general
- Inhabitants, local NGOs and local mayors talk about particular geothermal projects in relationship to a territory



Informational factors (Switzerland)

- In Haute-Sorne:
 - Information/consultation early on during the authorization process;
 - Opposition raised after the authorization was given;
 - NGOs support the project, opposition raised by inhabitants;
 - No formal channel for the operator to engage the public after the authorization phase.
- In Geneva
 - Issues about the appropriate scale of communication;
 - Making geothermal energy visible, before the start of concrete projects;
 - Challenge of communicating on a regional program that will be implemented differently at local level.



Aux habitants des communes de Haute-Sorne et de Boécourt

Voici le premier Bulletin d'information du groupe d'accompagnement du projet de géothermie profonde en Haute-Sorne. Ce bulletin accompagnera toutes les séances de travail du groupe afin de vous tenir informés de l'évolution du projet. Ce premier numéro vous rend compte des présentations et discussions de la première réunion du



Sommaire

- Page 1: Présentation du groupe d'accompagnement
Présentation du projet
- Page 2: Fonctionnement de la centrale géothermique
Etapas de réalisation des travaux



Informational factors (Netherlands)

- Focus on worries and questions of the neighbors:
 - Anticipation
 - Hotline
 - Neighbor-meetings during the drilling phase
- Clear and understandable language
 - Messages and documents made by the stakeholder management
 - Process diagram of the whole project
- Good use of social media/internet:
 - Attractive and convenient website
 - WhatsApp group for the neighbors
 - Fast email procedures
 - Newsletter by mail



Conclusion

Conclusion

- Acceptance is not just a matter of weighing benefits/risks, but is multifactorial
 - Anchoring is really positive – (connect to local living environment, social identity, meaningful, coherent with local politics)
 - Trust and relation building are essential – Initiators and operator must be trustful and in for a long standing relationship
- Recommendations for initiators/operators
 - Have a fair and dynamic vision of the public and stakeholders
 - Engage with your stakeholders & public – Go beyond established formal procedures if needed
 - Think in terms of project embeddedness instead of acceptance
- The context of contestation is responsive to the project

Liability claim

The European Union and its Innovation and Networks Executive Agency (INEA) are not responsible for any use that may be made of the information any communication activity contains.

The content of this publication does not reflect the official opinion of the European Union. Responsibility for the information and views expressed in the therein lies entirely with the author(s).

DESTRESS is co-funded by

National Research Foundation of Korea (NRF)

Korea Institute for Advancement of Technology (KIAT)

Swiss State Secretariat for Education, Research and Innovation (SERI)