The citizens' initiative in deep geothermal energy

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ABSTRACT

Acceptance has a major impact on the realization of deep geothermal energy projects. Geothermal power plants are only being built in the Upper Rhine Graben, Molasse basin, and North German Plain. The most of the power plants are located in the Molasse basin. Six of nine running power plants, 21 of 33 facilities are there. Despite or perhaps because of these plants, the acceptance is high. On the contrary the acceptance at the Upper Rhine Graben is with three power plants low. The following paper deals mainly with questions of acceptance, acceptance investigation, communication, citizens' initiatives and civil participation.

INTRODUCTION

The acceptance of citizens is necessary to realize deep geothermal energy projects successfully. Nowadays renewable energy projects respectively every project regarding new technologies will or cannot be realized in an efficient and fast way without public acceptance or at least tacit consent of citizens. On one hand public acceptance can act as support of the development of a project, on the other hand it can also be a barrier for the realization. In any case, the non-integration of and non-communication to the people results in the best 'scenario' in increasing costs and in the worst in the cancelation of the project.

The following paper will give you some remarks on the important role of citizens' initiative in deep geothermal energy – the positive and negative aspects of their activities. Chapter one (Culture of Acceptance) will give a short overview about the concept of acceptance, some approaches to investigation of acceptance, and to communication in general. Chapter two (citizens' initiative) is a state description of citizens' initiatives: which channels do they use for communication, how are they connected with other initiatives and what risks grow from a lack of public acceptance. In the last chapter recommended actions will be show for inclusion of committed citizens.

1. CULTURE OF ACCEPTANCE

Acceptance is latin (accipere). It can be translated with endorsement/approvement or even acceptance. Commonly, acceptance is the willingness to accept something or somebody. It is an active form unlike tolerance or acquiescence, which are merely passive. Acceptance is marked by a high grad of knowledge and awareness on the subject. These two factors characterize an attitude towards a specific topic.

To get an idea of the acceptance of a certain topic, some instruments and approaches are needed. This is called acceptance research. Object of acceptance research is the identification of reasons for acceptance or rejection of a particular topic/technology/project by potential users/stakeholders. Acceptance trials are used to determine interactions between the introduction of innovations and their impact and the investigation of evidence for further refinement of technology in terms of its use by the user (Reichswald 1982/Simon 2001/Trevisan; Jacob 2015/Manz 1983).

To ascertain acceptance, there are different approaches. For the deep geothermal energy a multi-method approach has been established, which combines the methods of social and computational sciences. With in-depth interviews, questionnaires, Text and Web Mining positive and negative acceptance drivers are identified. The most common analyses are stakeholder, discourse, frequency, sentiment, site, and trend analyses (Table 1).

Table 1: Overview about different forms of analyses.

Analysis	Description
Discourse	Subject of discourse analysis is the study of how and in which steps opinion proceeds.
Frequency	Target of this analysis is to determine the frequency of occurrence of terms in texts. These terms allow statements about topics of public debate and the quantification and emphasis of results.

Sentiment	It examines at how a subject is evaluated (positive, negative, neutral), which review aspects come into the discussion to bear and which are called objects of comparison.
Site	It is used to determine site-specific factors of acceptance. Depending on the location region-specific differences and characteristics are possible.
Stakeholder	It is designed to determine stakeholder profiles (gender, age, marital/educational status, profession) from involved actors in the public debate.
Trend	Trend analysis determines how perception and evaluation of a topic change over time.

Further analyses are concerned with the environment or have a comparative nature.

Based on these analyses strategies, messages and concepts are developed for a successful project execution with inhabitants on-site. The main objective should be to communicate as early, as comprehensive and as transparent as possible. Usually a communication concept is established and contains important contacts, messages, a communication strategy, senders, mediators and receivers of Public Relations. In the best case it involves all stakeholders including politicians, citizens, institutions and authorities related to the project.

2. CITIZENS' INITIATIVE

The analysis of citizens' initiatives is important, because they are mostly political entities to express doubts and fears against deep geothermal energy projects on-site. For now protesting (e.g. demonstration) appears on every occasion individual, in small or large groups, and is very effective in generating publicity. Furthermore protesters not only occur in person, the internet is also an intensive used platform. The further characterization will be give spotlights on acting groups, communication and type of protest.

2.1 Characteristics

Programs of citizens' initiatives are characterized by a lack of political ideology. They are not part of political parties, since the established parties often offer no projection area for their interest. Contrariwise the phenomenon occurs, that parties try - for example during an election campaign - to misuse citizens' initiatives. In contrast, citizens' initiatives consider itself as the voice of the "little" man. They claim to represent the whole society itself and not only the interests of a particular group. Main actors in these groups are technically affine middle-aged men. These are from the middle-class milieu and have a good too high level of education.

Communication of citizens' initiative is dominated by their matters and interests. They declare clearly, that they have no expert knowledge towards deep geothermal energy and providing only opinions and attitudes. Needless to say that they offer simple answers to complex topics, and enjoy a great trust as a result of this policy. Instead of acquiring new, additional information, they offer existing knowledge on several webpages in order to support other initiatives.

2.2 Communication and Connection

Citizens' initiatives are represented on all channels of communication: per interview on radio or television, as expert for newspaper articles, on the Internet with own websites and on Social Media. Sometimes these activities are supplemented by press releases and protests (demonstrations, flyers, posters, etc.).On the Upper Rhine Graben they now obtain the prerogative of interpretation in the communication with the public. The comments submitted by initiatives rest on the following bases:

- Costs of deep geothermal energy
- earthquake risk
- groundwater endangering
- environment protection
- lack of transparency
- lack of involvement of people on site

Project developers and operators react to this partly very emotional argumentation different, often without concept. The silence or insufficient/incorrect communication of project developers strengthens the initiatives. The pressure on the developers, involved politicians and authorities grows. The risk of a significant project delay or an abort of the project increases.

The citizens' initiatives against deep geothermal energy in Germany are interlinked very well. The platform *geobubi.de* represents the *Bundesverband Bürgerinitiativen Tiefe Geothermie e.V*. This initiative connects several other groups of the Upper Rhine Graben and one group of southern Thuringia. They use similar logos, placards and the same channels. Further research would be needed to better understand the dynamics of such movements.

2.3 Risks

Unattended acceptance and communication provides major risks. The risks are like a domino effect. It always starts with disappearance of public acceptance, followed by a decrease of political support. The probability of legal disputes rises - a loss of prerogative of interpretation is possible. Last but not least, the costs increase. In some cases the costs can reach an uneconomically level.

3. RECOMMENDATIONS

Deep geothermal energy power plants are complex projects with many links between authorities,

economy and public. For the successful realization at a long term project; several things are to keep in mind:

- deal with every project aspect openly, even with the negative ones;
- create for instance language regimes to ensure a clear, efficient and precise communication for all project participants';
- decide which person is the face of the project, that means, which person communicates about the project to every other stakeholder in a proper way;
- Organize routinely meetings with citizens and media and build up a contact point für all belongings regarding your project;
- communicate not only to technical aspects

These elements increase the chances that a geothermal project is accepted. Moreover, citizen participation is even possible, but there is no absolutely prospect of success.

4. CONCLUSIONS

This paper has given a brief overview of acceptance and communication in the context of citizens' initiatives in Germany. After a concise presentation of some approaches to investigation of acceptance, the communication of these initiatives was analysed. Moreover, their connection to each other and potential risk by such initiatives was illuminated. Last but not least some recommendations for communication for project developers and operators were made for a better acceptance of deep geothermal projects.

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