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# Information and public consultation exercises concerning geothermal projects. "The Strasbourg case"

Philippe Chavot[1], Anne Masseran[2], Yeny Serrano[1].

[1] LISEC, Université de Strasbourg, 7, rue de l'Université, 67000 Strasbourg, France

[2] CREM, Université de Strasbourg/Université de Lorraine, 2 Allée René Capitant, 67000 Strasbourg, France

philippe.chavot@unistra.fr

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## ABSTRACT

Four public inquiries on deep geothermal projects in the Eurometropolis of Strasbourg were conducted during the Spring of 2015. These consultation exercises were carried out in a context of public controversy over the risk related to deep drilling. Residents' associations have been deeply involved and the media largely covered the issue. Following these consultations, three of the four projects received a negative opinion from the investigating commissioners. Later, prefectural authority granted two of the four projects.

How to interpret this opposition to urban geothermal projects? And what can we say about the way residents, stakeholders and public authorities engage with the public inquiries? To answer such questions we have decided to work on three distinct corpuses:

- The public inquiries per se, taking into account the input from citizens during the enquiry and all the documents produced in the framework of these consultation exercises.
- Local media, these public inquiries having been widely reported in the media. It is therefore crucial to examine the way journalists feature stakeholders and geothermal issues.
- A series of interviews we have carried out with different stakeholders (scientists, industrialists, associations representatives, elected officials, inquiry commissioners, etc.).

We will analyse these three corpuses according to two main guidelines. First, we will focus on the public inquiry system. Indeed, it is important to understand how it works and how the publics, the stakeholders and the investigator commissioners tackle it. At a more global level, it is important to analyse what public inquiries have led to. Has a social dialogue been established? Or, have the public inquiries led to the strengthening of demarcation lines between opponents and supporters of geothermal projects? In the background, of course, it is the public perception of the public inquiry system that becomes apparent.

The second line of enquiry concerns the public perception of deep geothermal projects and the dynamics of the public controversy. For example, how are the different issues related to geothermal projects perceived by the different stakeholders? Are geothermal projects perceived to serve populations and/or the state energy policy? How are the economic, political and social dimensions of these projects perceived? It is also important to understand the purpose for which citizens engage in the debate on geothermal projects: is it to preserve their close environment and their quality of life? Or is this engagement related to philosophical or political convictions? In this context, it is crucial to understand how the citizens get informed about the geothermal issues and the public inquiries. And more particularly, what roles do the media and the residents' associations (among others) play in this public controversy?

## 1. INTRODUCTION

In the spring of 2015, four public inquiries (PI) were held within the Eurometropolis of Strasbourg (EMS): in Strasbourg's Robertsau district near the oil port and in the towns of Mittelhausbergen, Eckbolsheim, and Illkirch-Gaffenstaden. Local residents had to express their opinion on the implementation of projects regarding exploration drilling for deep geothermal energy in order to produce heat and/or electricity. The PI are legally binding when major projects are planned in relation to urban planning, to environmentally-sensitive facilities or that may affect the quality of life of local residents. They are also needed for a variety of projects relating to mining rights, as is the case for deep geothermal energy. The process is initiated and regulated by the Prefecture (CNCE 2016).

These PI prompted a strong mobilization of French and German residents. Of the four projects under investigation, the construction of a plant near a site with a Seveso 2 classification, itself close to a

residential area and the German border, has had the strongest mobilizing effect on the population.

During these PI, the lack of information was particularly highlighted by the residents and investigating commissioners (IC). This may seem paradoxical, as industrial operators, local politicians and the media have indeed been communicating about these projects. In this paper, we will try to figure out how this "misunderstanding" came to be. It is necessary to take into account the fact that deep geothermal energy is staged and takes its meaning depending on the stakeholders' intentions, professional or "social worlds" affiliations (Garrety 1997). Citizens are informed about this still relatively unknown technology through these different frameworks. And communication actions are crucial for the firms as well as for the opponents, each seeking to convince the public. Therefore, when the promoters claim to have given enough information, they do not understand that local residents are not being more sensitive to their arguments. However, it is unrealistic to believe that a "well" informed population necessarily supports said project (Batellier 2015, p. 113-118). It is important to perceive the public as a real actor in the information production process (Hall 1994). Information must make sense to them, it must meet their interests and concerns in order to be considered. It is only then that people will decide whether the project is acceptable or not, according to their roots in a community or territory, according to their worldview or their personal, political or economic interests. Wynne (1996), when analyzing other fields, shows that once the authorities - industrial or elected - neglect or even despise the social identity of local residents, new information frames can arise, legitimized by alternative social worlds that feed the opposition to these projects.

In order to grasp these dynamics, we worked on three different corpuses. All contributions from citizens as well as impact studies, position papers and different reports made during the PI were collected. Observations were conducted on the survey areas, notably when the investigating commissioners (IC) were on site, and at public meetings held during or after the PI. An analysis of media coverage by the local media was also undertaken. In addition, we conducted twenty-two in-depth interviews with the different stakeholders: scientists, industrial operators and industry partners, representatives of pro- or opposing associations, elected officials, IC and experts requested by the prefectural authorities. This research is currently supplemented by data collected from local residents.

## 2. COMMUNICATION STRATEGIES VERSUS INFORMATION

### 2.1 Chronology of deep geothermal energy projects within the Eurometropolis

Which informations were disclosed and received throughout the timeline of the projects and from which social actors did they come from? The answer to this question will shed light on the apparent misunderstanding between citizens who feel poorly informed - even misinformed - and project promoters who think they appropriately communicated.

Since the early 2000s, geothermal energy has been mentioned in local energy policies, in particular through the development of national and regional climate plans. A strong potential for geothermal energy in Alsace, as seen in experiments in Soultz-sous-Forêts since 1986, suggests a bright future for this technology. Given this favorable context, the city of Illkirch-Graffenstaden, as soon as 2009, solicited *Electricité de Strasbourg (ES)* to explore the geothermal potential on its municipal territory. In April 2011, the company filed a research permit application with the Ministry of Environment. The following year, the project is exposed during the transrhinan seminar organized by the *Secrétariat Permanent pour la Prévention des Pollutions Industrielles (SPPPI)*. ES displays its commitment to operate in full transparency. Before an audience of elected officials, heads of associations and some "representatives" from the public, the seminar provide an update on the progress achieved in the pilot plant in Soultz-sous-Forêts. The risks associated with this type of project are discussed as well as the evolution of stimulation techniques. Consequently and in this case, upstream information was made available. Opinion leaders that were present could then pass on this information to a wider audience, including associations or local residents near these new projects. However, this is an isolated case.

During the summer of 2013, a private Aquitaine company, *Fonroche*, shows interest in this market and files two work requests within the EMS to the *Direction Régionale de l'Environnement, de l'Aménagement et du Logement* (DREAL), which add up with two other requests filed from ES. It was not until autumn 2014 that the applications were validated. During those two years, with the exception of the Illkirch-Graffenstaden project, the general public has not been consulted or "informed" on these projects. Most local residents only find out about it during the PI.

Thus, from summer 2014, due to the lack of official information documents, the local residents of the oil port project are warned by their German neighbors, which are already involved in actions against geothermal energy across the Rhine. The leaders of the *Association pour la Défense des Intérêts de la Robertsau* (ADIR) launch their campaign a few months later. A case file is later published by the ADIR journal, *L'Echo* de *la Robertsau,* in September. It is one of the first "general public" documents: the emphasis is on the "environmental impacts". Jean-Daniel Braun, engineer and main advocate of the techno-scientific arguments against the projects, provides a list of the potential risks: seismic activity, pollution of the groundwater, radon gas release, risk of

explosion, trickling water contamination. He is largely inspired by the study on the risks of geothermal drilling, which was presented by a Soultz-sous-Forêts researcher during the *SPPPI* seminar in 2012. Braun then deconstructs the arguments of *Fonroche*, the oil port project operator, by highlighting all the uncertainties plaguing the assertion that seismic risk and groundwater contamination are under control. Geothermal energy is thus presented in terms of risk. The only advantage mentioned, at the end of the article, refers to a quote from the former EMS president, which states that geothermal energy "ensures energy self-sufficiency" and cheaper heating costs.

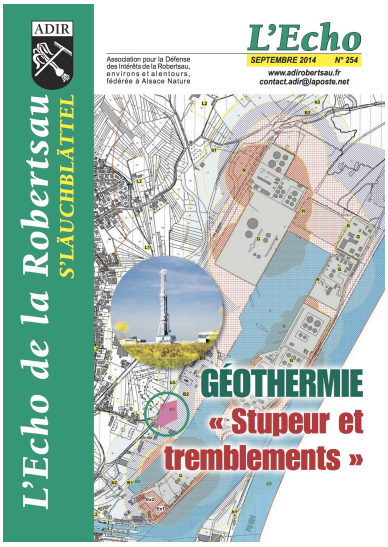


**Figure 1: Front page of the September 2014 ADIR newsletter**

In December, 300 people attended a public meeting on geothermal energy in the Robertsau district, organized by a group comprising three residents' associations: the ADIR, which associated itself with the *ASsociation pour la Sauvegarde de l'Environnement de la Robertsau* (ASSER) and the *Association de Défense des Intérêts des Quartiers centre-est de Strasbourg* (ADIQ). In March 2015, this collective urges the major candidates in the departmental elections to take a public stance on the project.

Everything seems to happen as if a large part of the official communication was prepared in response to the mobilization of local residents. ES and Fonroche launch communication actions late in the game. They produce an information/popularization brochure a few months before the inquiries. In January 2015, geothermal energy is also the subject of a small exhibition held by Fonroche in the Esplanade district in Strasbourg, which is located remotely from the planned sites for the projects, and then in Eckbolsheim. ES published a web documentary on the subject on its website (http://www.geothermie.es-groupe.fr/), in which the Illkirch-Graffenstaden project is backed by an interview with the mayor and by researchers from the *Labex G-EAU-THERMIE profonde* of Strasbourg.

In November 2014, the EMS published a 4 page article on geothermal energy in issue 63 of its magazine. Six projects expected to help rebalance the energy mix are mentioned. Unlike the ADIR article, geothermal energy is presented in a positive light, as an "energy of the future". The rhetoric is meant to be reassuring, citing claims by representatives of the EMS, the EOST *(École et Observatoire des Sciences de la Terre)* and ES. It is stated that the unfortunate incidents of Lochwiller or Basel cannot happen in Strasbourg, and that the risks are under control.

The communication strategy of the project sponsors (EMS and promoters) is to focus on the economic and energetic benefits of geothermal energy. The EMS also demonstrates its commitment to "democratic control" by announcing the creation of a wise men committee and by displaying its willingness to create a debate on the issue. Consisting of elected officials and association representatives, the committee wanted to create a dialogue by keeping the businesses at bay. But the EMS broke this rule in April 2015 by inviting ES to present their project, which lead the ADIR to withdraw itself from the committee. The EMS and the promoters have therefore, belatedly and quite superficially, provided information on the scientific, technological, and political aspects of the projects.

Organized on already contentious grounds, the spring 2015 PI have hardened positions even more. In-depth files presenting the projects, their impacts and the precautions taken to limit the dangers are shown to the general public via the DREAL website and in relevant town halls. These were very technical files. Fonroche offered comprehensive and detailed documents, but the data was presented in a relatively crude way, so that the chapters on dangers study may have given the impression that the technology was not under control. The ES files were less complex, but only presented elements of information deemed necessary, thus going back on the transparency promised during the 2012 SPPPI seminar: for instance, there was no more any mention of radioactive pollution.

However, the technical aspect of the files did not deter the local residents. Each case was examined and the inaccuracies and gaps were used to counter the projects. Thus, certain information omitted by the firms has been put back into the spotlight: subjects like Plan for the Prevention of Technological Risks (PPRT), Local Development Plan (LDP), radioactivity, energy policy... The interpretation/refocus of these files are publicized in various ways: on blogs, in local or associative newspapers, and of course in the PI records, which are read by local citizens. In addition, meetings are organized locally to alert the people, like in Oberhausbergen where the issue of geothermal energy is addressed in neighborhood councils. Lastly, the actors were also using traditional media as a tribune.

### 2.2. The media: influential forums?

Local media were invested by the different stakeholders - project leaders, local communities, scientists, favorable or opposing associations - with the objective of getting citizens to support their interpretation of geothermal energy. Local residents associations, for example, are mobilized not only by publishing articles on the Internet, but also by sending their texts to the local newspapers, such as the daily *Dernières Nouvelles d'Alsace* (DNA). However, the media are subject to standards, format, editorial and audience constraints that determine the form and visibility of its content (Charaudeau 2005). Thus it is clearly important for stakeholders to attempt to influence the media agenda and news framing and encourage journalists to deal with these issues in a favourable light (Voirol 2005). If a social actor manages to become a journalistic source, he/she would be first to describe the reality, using his/her own words and narratives. For example, in the present case, the opposing associations have often used the letters to the editor section as a tribune.

Who were the social actors and what were the themes favored by the media? We established a corpus of 173 articles published over the period extending from the announcement of the public inquiries to the decisions made by the Prefecture (September 2014/December 2015). The local news media (Les DNA and Rue89), blogs from local residents and environmental associations, and local communities magazines were taken into account. Our analysis shows that the media favors local authorities (elected officials from municipalities and the EMS, whether favorable or not to the project), representing 28% of the 530 sources cited. The most often quoted sources were the Mayor of Strasbourg, Roland Ries, and his assistant in charge of energy transition, Alain Jund – who are mostly in favor of geothermal energy, while also claiming to understand the concerns of citizens - and city councilor Thierry Roos, opposed to the geothermal energy project in Robertsau. Local residents associations represent 18% of the quoted sources. The promoters are next, representing 9% of cited sources (Fonroche is more often cited than ES). Finally, experts like the EOST are not really represented: because of their obligation of scientific integrity, they rarely communicate with the media.

Two media gave more importance to deep geothermal energy projects: *Les DNA* and *le Blog de la Robertsau*. Both media have a mission, a status, and a way to operate that are very different and representative of the two types of communication strategies that marked the controversy. *Les DNA* is a "traditional" news media which claims a certain "objectivity" of information; it still cannot escape the constraints of audience and format (Maigret 2015). *Le Blog de la Robertsau*, meanwhile, represents an alternative media, free of the constraints of a conventional redaction committee and more interactive (Cornu 2013; Grilo and Pélissier 2006).

Both media are prioritizing the issues related to geothermal energy differently. *Les DNA* rely on local institutions' statements to explain the legal and administrative aspects of the projects: PI procedure, deadlines, decision-making body, etc. Some elected officials are also quoted on their position regarding the expected location within the oil port. *Les DNA* newspaper is relaying statements from the ADIR, the ASSER and the ADIQ, demanding more information and transparency. Some elected officials, such as Theo Klumpp, Mayor of Oberhausbergen, are on par with the associations. Klumpp says "that before taking positions, the elected officials must have full information about a complex and sensitive subject. This is far from being the case" (DNA 10-12-2014). By reporting the comments from the associations, *Les DNA* are also highlighting their demands for abandoning the drilling project in the oil port. In addition, the associations are using this media forum to criticize Fonroche by emphasizing their lack of experience. The main risks mentioned by the newspaper are seismicity and pollution. In conclusion, the daily newspaper is often simply relaying some of the arguments from each party, favorable or unfavorable. This also means that the project is almost never treated as a whole, the voices are heard but not put into perspective.

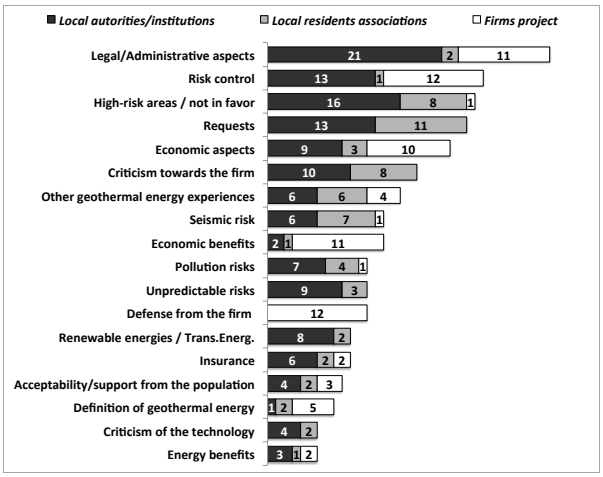


**Figure 2: Occurrence of issues related to the stakeholders in the controversy by *Les DNA* (analysis via the ATLAS.ti software).**

In the *Blog de la Robertsau*, local residents associations are the main source used by the blog, followed by local institutions (figure 3). The firms behind the project are less visible than in *Les DNA*. Based on the local residents associations' rhetoric, the *Blog de la Robertsau* tries to convince that the oil port project poses serious problems. Similarly, the blog relays the voices of some elected officials when they are sharing the same views. For example, the blog published Thierry Roos' entire speech to the city council on April 20, 2015, where he said to the mayor of Strasbourg: "What measures do you intend to take to honor your executive's commitments regarding this project, namely the abandonment of geothermal

drilling in the oil port?" Conversely, the blog is critical towards the EMS elected officials, who had apparently not sufficiently informed the population before the PI: " …while the EMS has never held a single information meeting for the public, it has authorized Fonroche to start taking measures, and it now wants us to believe it is as pure as a newly born lamb" (26-07-2015). The blog calls for "participatory democracy" that would take into account the local residents considerations. Thus, when the blog relays the requests for information made by the associations on the potential risks, it is mainly to argue for the rejection of the project. It points out that some information is missing from the files submitted to the PI by Fonroche and ES and that it is not appropriate to leave these geothermal projects in the hands of private companies.

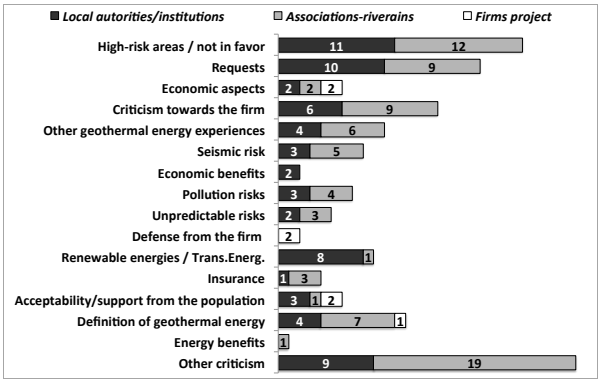


**Figure 3: Occurrence of issues related to stakeholders in the controversy by the Blog de la Robertsau.**

In summary, the blog authors are developing a dual communication strategy: giving visibility to criticism on the Robertsau project and on deep geothermal energy, and limiting the scope of the voices defending the projects, including those of ES and Fonroche. A closer examination of the corpus shows that, contrary to the articles published by *Les DNA* – which are rather short, descriptive, and limited to quoting the sources –, the articles published by the *Blog de la Robertsau* are relatively long and detailed. The blog, being an associative media, intend to be an informative partisan-expert/protoexpert to online communities. Conversely, *Les DNA* addressed geothermal energy by conventional journalistic standards, claiming to be "objective".

## 3. PUBLIC INQUIRY: A PLACE OF DEMOCRATIC EXPRESSION?

### 3.1 Taking part in the public inquiry

The PI is hosted by the town hall and put under the responsibility of an investigating commissioner (IC) mandated by the administrative court. Participation is opened to all citizens: it is possible to give its opinion on a register available in the town hall, to address it to the IC by mail, email, or to present it orally (figure 4).

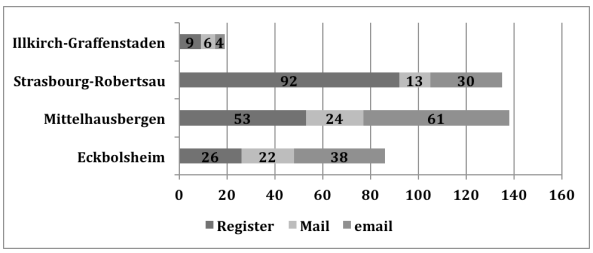


**Figure 4: Amount of the different forms of contributions from French citizens in the four EMS public inquiries.**

We took into account all French written opinions submitted during the four public inquiries. Of all these, only about twenty are positive. The Illkirch-Graffenstaden project has attracted the least participation (19 written opinions) and criticism. In all three other sites, however, local residents have strongly contributed to the PI to demonstrate their opposition to the project: 86 contributions in Eckbolsheim, 138 in Mittelhausbergen and 135 French contributions in Strasbourg and Robertsau (related to the oil port project), to which must be added 756 contributions from Germany. At first glance, the geographical proximity of the project(s) with dwelling places seems to motivate participation in these inquiries (figure 5). Thus, Oberhausbergen's residents have largely contributed to the investigations regarding the projects in Mittelhausbergen and Eckobolsheim, which are close to the boundaries of their municipal territory.

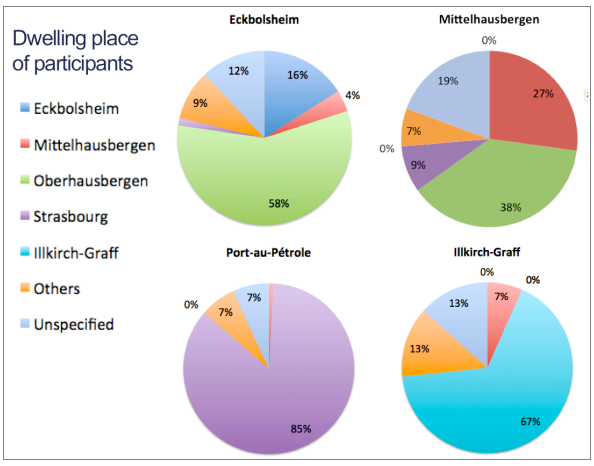


**Figure 5: Breakdown of participation to public inquiries by area of residence.**

The form of contributions varies: a simple "no" to the project (30% of opinions) is seen alongside more developed arguments (15% of opinions) or even sometimes highly detailed ones (16% of opinions). The most elaborate documents are mainly deliberations of the municipal councils, opinions of political groups (Europe Ecologie Les Verts) and opinions from local residents associations (ADIR, ASSER, ADIQ) or from environmental protection associations (Alsace Nature, Arbres). These documents, which often have been circulating through

blogs, then served as information sources to other participants.

The opinions of collective actors, as well as many individual contributions, are fed by multiple informations, sometimes cited as references: reviews of seminars organized by the SPPPI, appraisals from the *Institut National de l'Environnement Industriel et des Risques* (INERIS) commissioned by the prefecture, deliberations from municipal councils and opinions of local residents associations. Local media are rarely mentioned, however, even if they have contributed to the debate. If they have an influence, it would be rather indirect, by providing information which is then discussed in interpersonal circles, as we have seen during observations of the discussions happening in the PI location.

Most citizens who have submitted their opinions to the PI are informed, some have acquired the necessary proto-expertise (Nowotny 1993) to handle highly technical data. Their proto-expert identity contrasts with the unrealistic image of the naïve and common sense citizen which still prevails in the philosophy of French culture (for an example of this philosophy, see Hermitte 2013).

### 3.2 What are citizen contributions saying?

The opinions are listing several types of risks: induced seismicity, pollution of groundwater, fluid radioactivity, risks of explosion, surface pollution (figure 6). Local residents also mention the potential negative impacts of drilling on the quality of life, on dwellings or on all nearby activities (research structure, education, trade and hotels). The opinions are therefore echoing the hierarchy of meanings suggested by the media, especially by the *Blog de la Robertsau*, and other information instances such as Oberhausbergen' neighborhood councils and the ADIR newsletter.

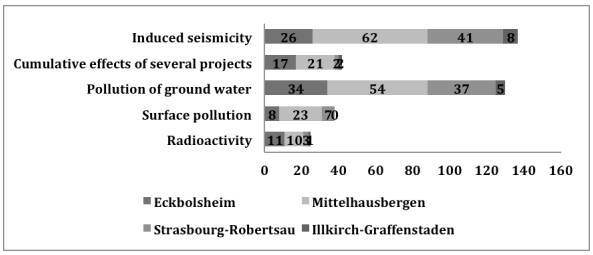


**Figure 6: Occurrences of different risks in French citizens' opinions in the four EMS public inquiries**

By contrast, it is as if the "official" presentation of the risk-limiting measures did not meet the expectations of citizens: these informations are faulted by local residents-cum-proto-experts, either because they believe that they are not convincing, or because they fail to address certain issues. In addition, the documents prepared by the contracting authorities and third-party appraisals conducted by the INERIS, made available to the public at the PI, are primarily written to meet the demands of the prefectural authority, and not to inform/reassure.

Therefore, when the projects advocates are claiming that they are limiting the risks, local residents are drawing the conclusion that these risks actually do exist. Dialogue consequently becomes impossible. The same goes for impact studies as well as the 2012 SPPPI seminar, during which researchers discussed the scope of the risks and the precautions taken to limit its expression. Evaluating all these arguments, local residents believe that these explanations are in some way pleading for the application of the precautionary principle.

Finally, some risks not mentioned in the files are revealed by local residents: radon pollution - missing from the ES files - or the cumulative effects of different planned drilling projects within the EMS. Citizens are thus raising questions about issues overlooked by industry players, and also missing from traditional news coverage.

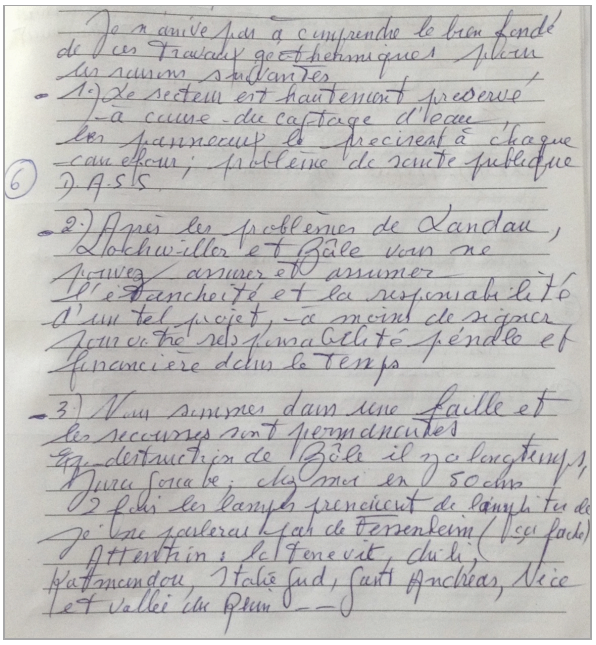

**Figure 7: Excerpt of a citizen contribution to the Mittelhausbergen public inquiry.**

The location of drilling sites is also subject to diverging interpretations. While operators and partners are stressing the opportunities linked to industries in the oil port, Robertsau residents find it absurd that a "risky" project could be implemented in an industrial complex which is the subject of a PPTR (Plan for the Prevention of Technological Risks). Another example, the industry insists on the geothermal drilling benefits for district heating in a Strasbourg neighborhood, Hautepierre, when citizens are instead noticing that the installation site is located near shops, a high school and a research center. In addition, residents are questioning the fact that many projects are emerging a few kilometers apart from each other. Are the risks accumulating? They point out that the impact studies provide no answer to these questions.

Everything happens as if the companies and the EMS politicians had failed to take into account the human, environmental and urbanized side of these projects layout. Official documents are coded according to their interests and their "philosophy": to develop a "green" technology and to make it profitable. This “oversight” is coupled with the fact that no consultation has been made before the public inquiries: it could have defined, with the help of municipalities, local residents and associations, the conditions for the installation of geothermal power plants. Lastly, the lack of a clear political framework from the EMS adds to the confusion around the debates. Indeed, the collectivity commits itself by buying prospective land for drilling while neglecting to campaign for geothermal energy; local residents are consequently not motivated to support the projects with which they will be neighbors. Besides, they doubt that the project will be profitable, while also not trusting the reliability of Fonroche. The inconsistency of politicians’ attitude, the technicalities as well as, in some cases, the complacency of a company claiming to control everything, and lastly poor communication, all are considered with suspicion. Many opinions can attest to this, calling the technology "non-mature science" and the decision-makers “sorcerers’ apprentices”.

## 4. INDIRECT CONFRONTATION AND MEDIATION: CAN THE PUBLIC INQUIRY SOLVE PROBLEMS?

### 4.1 The investigating commissioner as a gatekeeper

The first task of the IC is to take ownership of the technical and legal elements of the case via the documents provided by the operator and the environmental authority, actors that it generally seeks to meet. To do this, the IC often receives training and is designated according to their prior knowledge. The IC must then make itself available to the public: during the investigation and through its constituency offices, it provides/facilitates access to the project's files by explaining and discussing them with citizens. It helps them to understand the subject, to answer their questions in order to encourage them to express their own informed opinion. When the participating phase of the PI is completed, the IC gathers, sorts and summarizes all the comments, opinions, and proposals from the audience. It is thereby fulfilling its role as a *gatekeeper* (White 1964), valorizing, prioritizing some of the arguments/questions that will form the basis of the report that will be given to the operator. The latter will have to answer with a memorandum.

Ideally, the PI should promote dialogue between the parties involved, be mediated by the IC, and should clarify responsibilities. Did this indirect dialogue take place in the case of the EMS’ PI?

The promoter’s memorendum to the IC’s report reveals the gap between the companies’ intentions and the expectations of citizens. On at least three levels: responsibility of risks, communication, and insertion of geothermal energy in local residents’ environment.

First, the promoters provide answers about risk issues. They seek to show that risk management is possible and that they are assuming responsibility. Within this framework, the precautionary principle is discussed. However, this is a rhetorical and conceptual answer: according to them, the precautions are already integrated into the scientific method on which the project is based. Yet, citizens support their claims with concrete examples: microseisms and other hazards that may affect their living environment. For the promoters, the precautionary principle means that the risks are under control, while for the residents, it should be used to postpone the projects.

Second, the memorandum allows the operators to justify themselves regarding critics about their lack of communication. Hence, Fonroche saying that they communicated about their projects as early as July 2013 and took the initiative of organizing several meetings with the different stakeholders before the public inquiries. However, these actions have apparently not been withheld by local residents. It appears that they do not expect information solely produced to convince them of the merits of a project. They insist they are entitled to be informed and that they have the right to knowingly choose the best attitude to deal with these projects. These “unrewarded” efforts show that the concept of information is different according to whether one is the initiator or the receiver. On the other hand, it also seems unrealistic to believe that public information would necessarily guarantee public acceptance of technological innovations.

Finally, regarding the insertion of a central plant in an urban environment and the political and economic dimensions of these projects, the promoters relinquish all responsibilities: these strategic choices are fall within the EMS and the municipalities’ jurisdiction. Again, no discussion can take place.

Enlightened by the public’s open inquiries and by the answers provided by the promoter, the IC ultimately issues its opinion on the matter: it delivers its feelings about the feasibility of the project and its human environment. A feeling that turns out to be negative for the Mittelhausbergen, oil port and Eckbolsheim’s IC.

Which arguments are selected, the ones the gatekeeper "lets through"? The Mittelhausbergen and oil port IC put forward the precautionary principle. The implantation site was poorly chosen in both cases: located near homes and a water catchment area, or in a Seveso zone. The IC also note the weaknesses in the companies’ case files: about the cumulative effects of several drillings, the lack of accurate information about the explored fault lines and drilling directions, for example.

Finally, the *gatekeeper* must settle the contradiction between the promoters' memorandum, whom believe they have given enough information, and the citizens who regret the lack of information. Rejecting the arguments from the industry, the IC confront them to their responsibilities in terms of quantity and quality of information. According to them, richer, more transparent information and a serious consultation would have allowed local residents to consider deep geothermal energy projects in a more constructive way. In this context, the IC provide three functions to the informational issue:

- According to the Mittelhausbergen investigator, "good" information would lead to the acceptability of projects.
- The oil port IC defines the information: it must both answer citizens' questions and reassure. However, he considers that the documents provided by the promoter do not allow to figure out that all risks would be avoided. The information is neither able to reassure nor to answer.
- Finally, the Eckbolsheim investigator gives a more noble mission to information: if it was honest and thorough, it would allow for social appropriation of the issues related to geothermal energy, be they technological, political or social. However, these issues were not sufficiently addressed – even omitted - by the promoters and the EMS.

**4.2 Discussion**

The prefectural decrees authorizing the opening of mining operations in Illkirch-Graffenstaden and Eckbolsheim were signed in autumn 2015. On October 15, Christian Riguet, Secretary General of the Prefecture, reflects back on the PI during the 12th Plenary Assembly of the SPPPI:

"Citizens now feel entitled to obtain increasingly complete information and never feel sufficiently informed about the projects that affect them. [...] The decision-making process must integrate this new reality, while making sure that the audience understands that public interest comes first. General interest is not the sum of particular interests. [...] Opinions are then often expressed vehemently, sometimes irrationally. It would therefore be advisable to make use of upstream information work."

Citizens asking for information are therefore seen as "a problem" (Felt 2010). All it would take, according to this interpretation, is better education - which is the responsibility of promoters and politicians – to make them go along with the projects. Thus, their concerns could be eliminated and the general interest respected. The IC's role would be limited to relaying questions from local residents and answers from promoters, a far stretch from its *gatekeeper* mission.

This conception of information contains three classic assumptions underlying the rhetorics from promoters of controversial technological projects (Batellier 2015): (1) the "opponents" do not understand, they are ignorant and/or uninformed; (2) citizens are requesting information; (3) if citizens were more familiar with the project, they would display a more positive attitude.

In short, acceptance of a project would be embodied in the maxim the more you know the more you like. Yet as we have seen, citizens are often well informed. This has also been highlighted by an IC which saw a major peak in attendance following an information campaign by a municipal official. In addition, more information does not necessarily lead to a more positive attitude towards the projects. Citizens are less "suggestible" and/or "reactive" than what a quick read of the controversy in terms of acceptability may suggests. Anyone and everyone has information resources that allows them to decode information about projects with which they will have to live: resources linked to their experience of a territory, to its history, its micro-culture; information relayed by opinion leaders (elected officials, neighbors, family, activists ...) and, on a more global level, websites, blogs, social networks on the Internet. "Official" information, even if it came from upstream, is only one element among all these possible references...

Thus, when the public requests more information when preparing their contributions to the PI, it is in many cases about unthought aspects of the projects: their inclusion in a/their territory, the cumulative effects of individual projects, the place of geothermal energy in the energy policy of the EMS... These requests have a critical dimension: the promoters may only be handing out informations in order for their projects to be accepted, projects from which they will draw benefits. Hence, the critical questions of local residents reflect, as is highlighted by Batellier, a lack of confidence in project promoters (operators and policy-makers).

What if, rather than seeing citizens as "problems" in the development of projects, the perspective was reversed? Questions, criticism, citizens' contributions should all be taken into account to build, through real dialogue, a public policy related to energy. Yet, a meaningful dialogue can only be established if the projects are still open for discussion...

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