



Assessment of cognitive representations among the populations of Dominica, Guadeloupe and Martinique regarding the use of geothermal energy and renewable energy

Caribbean Geothermal 2

Summary of results

May 2015

Section 4 - T.4.6 – Opinion poll

Study carried out by BVA France, managed by the ADEME, Communication Department, Patrice Grouzard

Project partners:



Background and objectives of the survey

To enable the current and future use of geothermal techniques for the generation of electricity, Guadeloupe and Martinique, along with ADEME, in collaboration with other partners, have initiated the **Geothermal Caribbean Project - Phase 2**. This project aims to prepare the necessary conditions for developing geothermal projects in the Lesser Antilles.

This **Geothermal Caribbean - Phase 2** project is part of the INTERREG IV Caribbean program, and it is scheduled to last two years (2013-2015).

It comprises five sections, covering the following topics:

- environmental excellence and the successful integration of facilities,
- electricity consumption control policies needed to support the development of projects for the generation of geothermal power,
- the establishment of a mining risk hedge fund and the financing of the upstream phase of projects,
- communication and the rising of public awareness regarding geothermal power, the organisation of a seminar in Guadeloupe to present the results of the project,
- training with a view to developing geothermal skills in the region.

As part of this project, the various stakeholders wish to enhance the acceptability of various power generation site projects, some of which already exist (Bouillante), the others being under construction (Vallée de Roseau Wotten Waven) or just being considered.

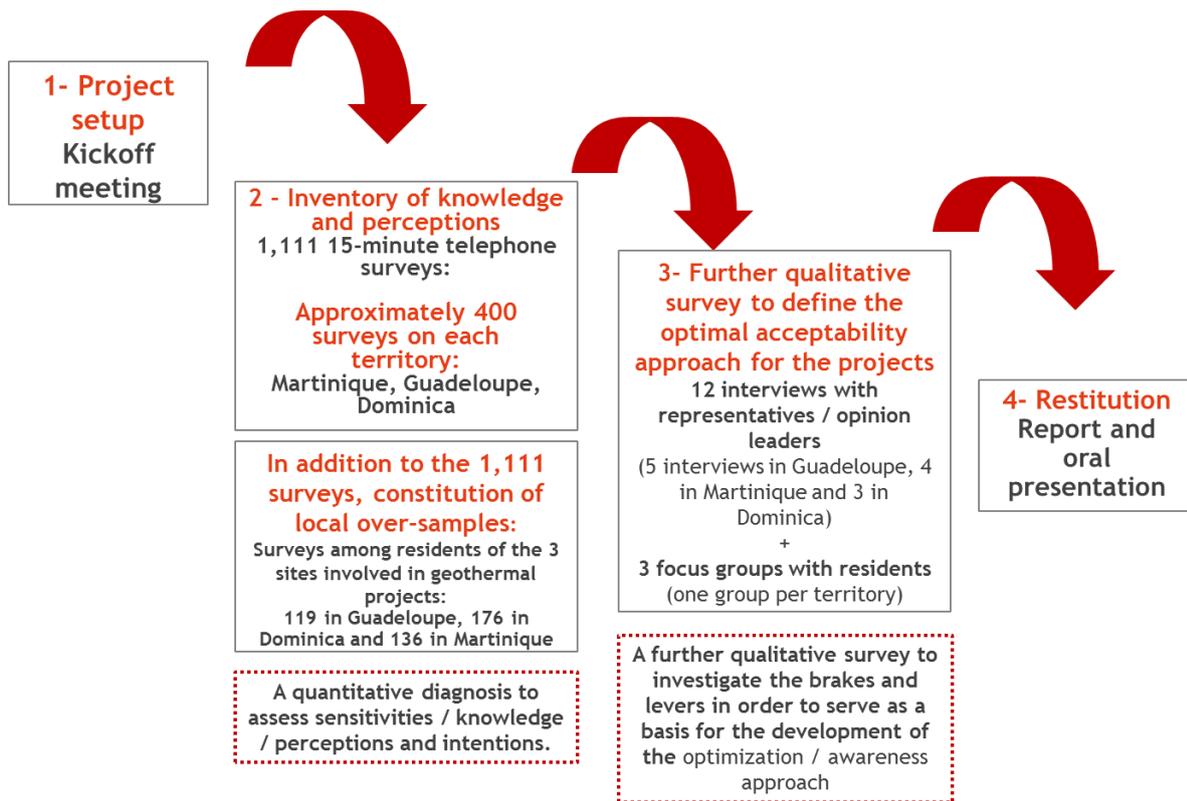
BVA is assisting ADEME and its partners in conducting a survey to determine the optimal approach to communication and awareness raising likely to promote the acceptance of power generation projects based on geothermal or renewable energy techniques.

The survey aims to gather the population's perception of geothermal and renewable energy in order to identify levers to promote the acceptability of projects.

As such, it aims to meet the three following objectives:

- 1. Identify what the population knows about geothermal and renewable energy**
- 2. Assess the perception of the various projects**
- 3. Identify the needs and expectations in terms of information to refine the communication process**

The survey was conducted in 4 sequential steps including a quantitative phase that consisted in collecting the population's perception, and a qualitative zoom to refine the insight regarding the communication needs and expectations (see description below)



During the quantitative phase, 1,411 15-minute telephone interviews were conducted from 19 June to 30 July 2014 with representative samples of the population of the territories of Guadeloupe (505 interviews), Martinique (504 interviews) and Dominica (402 interviews) with specific zooms (100 interviews per site) nearby the projects:

1. **Bouillante**
2. **Montage Pelée and Anses d'Arlet**
3. **Vallée de Roseau**

For the qualitative phase, we organized three groups of residents:

- **Bouillante; group on 30 October**
- **Diamant: 4 November**
- **Roseau: 30 October**

and 12 in-depth interviews with elected representatives/opinion leaders: 5 in Guadeloupe, 3 in Dominica and 4 in Martinique

This summary outlines the main findings of the survey and incorporates both the quantitative phase and the qualitative phase.

Main findings

1) A specific local context ... which is reflected by the population's desire to be associated with any development project

A strong attachment to nature and a high environmental sensitivity:

- Nature is highly valued, it is at the actual heart of the territory and of the identity of each island: an almost visceral attachment. It is perceived as providing many benefits, both social and economic. Its preservation is a major issue, although it is difficult to reconcile with economic and industrial development.

Strong economic concerns in terms of employment: A high unemployment rate, especially among young people.

... and a **certain distrust vis-à-vis decision-makers and politicians**, who are suspected not to always take into account the interests of the local population ... which is a source of an active word of mouth phenomenon

- Greater distrust in Guadeloupe, where the population expresses the feeling of not being sufficiently informed and of having to go and fetch information on its own

"Today, for example, we don't even know when the municipal council is meeting. Then we are told that we ought to go and fetch the info, as it doesn't come to us"

- In Dominica and Martinique, the population has the feeling of being asked for its opinion, in particular through local public meetings.



In the end, the population is happy to accept the development of power generation projects, provided that they meet the conditions of environmental integration and prove their usefulness in terms of benefits for citizens.

It expresses its desire to be involved in the project design process.

Production and self-supply of energy: a very important issue for the population...

In the context of projected rise in energy prices... the population believes that the resources available on the territory are under-exploited.

The production and supply of energy are a very important issue on all 3 territories (96% of the population) ...

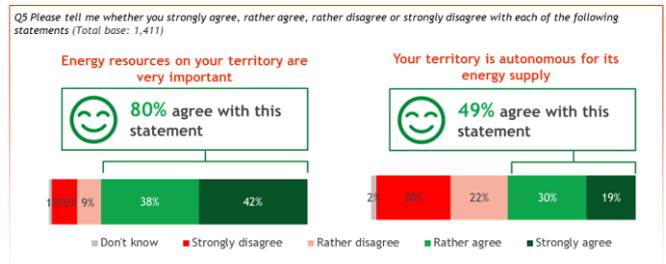
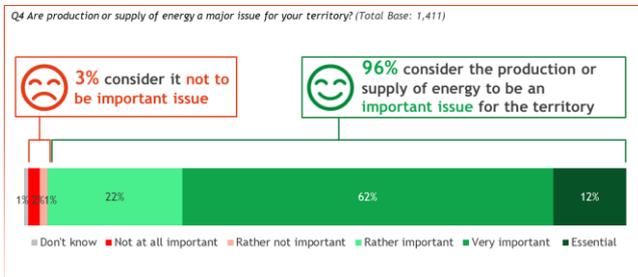
- *...this is even more marked in Dominica (97% and 99% for the oversample)*

A projected increase in the price of energy for 70% of respondents within the next 5 or 10 years.

- *They are less likely to anticipate an increase in Dominica (about 55%).*

Resources are available on the territory (80%)... but they are viewed as underexploited (less than 1 respondent in 2 states that his territory is energy-autonomous)

- A capacity for autonomy considered more important in Dominica (62%)

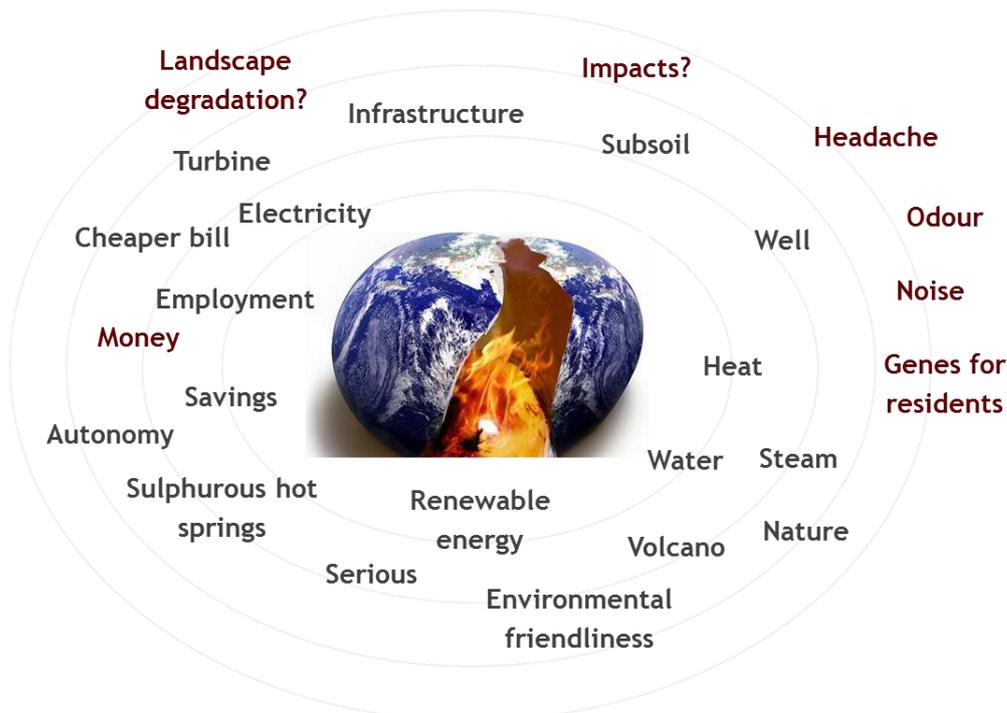


A fairly good knowledge of geothermal energy, with is associated with the energy of the earth and the production of electricity ...

An evocation territory that is rather positive, logically richer for the population of Bouillante:

(the mapping reuses the evocations mentioned by the respondents during the focus groups to qualify geothermal energy. The closer the terms are to the centre, the more they have been mentioned.

We colour-coded in red the negative evocations, in order to differentiate them from the others)



40% associate geothermal energy and the heat of the earth. 30% mention renewable energy or environmental friendliness.

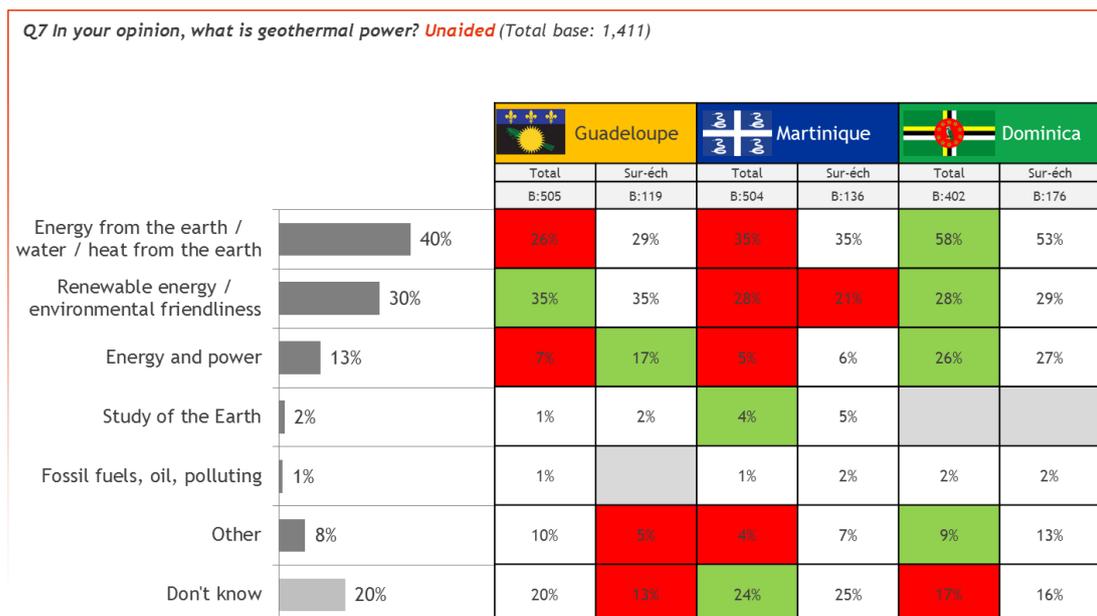
- Greater knowledge in Dominica (58%).

Most respondents think that geothermal techniques can generate more electricity (more than 3/4 on each territory).

- They are more likely to mention heat in Martinique (61% vs. 46%).

...the knowledge of existing facilities is much vaguer... yet the closer one gets to the facilities, the greater the knowledge (greater knowledge in Bouillante in Guadeloupe). Few facilities are mentioned spontaneously. 1/3 of respondents mention Bouillante.

- Knowledge increases when one gets closer to the actual geothermal sites, whether present or future (87% of respondents in the Guadeloupe oversample mention Bouillante).



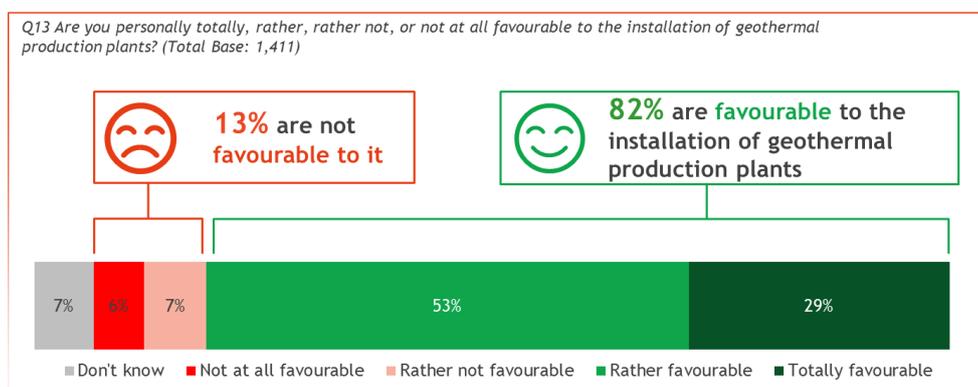
Very high acceptability of geothermal power, regardless of the territory

The local population is favourable to geothermal energy (82% of respondents), which it considers to be a clean form of energy that contributes to economic development and energy independence ...

- In Dominica, the economic benefits are overvalued

Critics mention the risk of natural disasters and pollution (18% each), the lack of efficiency (25%) and health risks (11%) ... but more than 1/3 of them are unable to justify their opinion.

- More than 1 in 2 unfavourable individuals in Martinique mentions no particular reason.



The perceived benefits of geothermal energy are the price (50%) and the limited environmental impact (42%).

- *If the price is more often mentioned in Dominica (72%), the environment is a more important issue in Guadeloupe and Martinique (50% and 46%, respectively).*
- *Security of supply is more often mentioned in Bouillante (20%) and Dominica (19%).*

The perceived disadvantages are quite diverse and stem from a lack of knowledge of the way it operates and its effects: some mention environmental risks (17%), health risks (13%), the cost of the facility (12%) and the inconvenience to local residents (12%).

- *In Dominica, it is the environmental and health risks that bother most (1/3 and 26%, respectively), while in Bouillante, the most frequently mentioned drawback is the inconvenience for local residents (1/3).*

A means of production which raises many questions:

1. How does it work technically?
2. What is its environmental impact?
3. What is its level of economic profitability?
4. What is the induced risk for the population?

The questions raised are specific to each island, depending on the context in which geothermal energy is implemented:



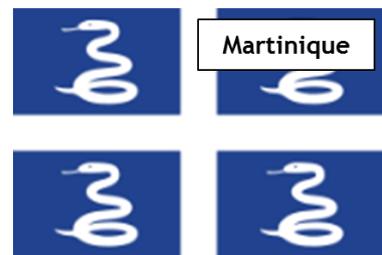
Guadeloupe

The deep questioning of a population that is **already equipped**, that wants to find out **more** and take advantage of a costly facility



Dominica

The deep questioning of a population that is **about to become equipped** and wants to find out **concretely** how the geothermal plant will impact its daily life and its environment



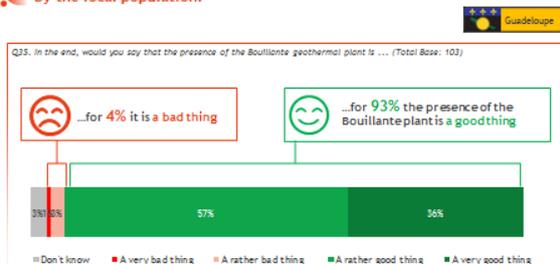
Martinique

The deep questioning of a population that **already wants to know** what it can expect from geothermal energy and to what extent its soil has potential

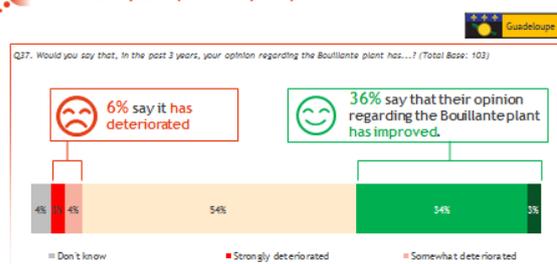
Decreasing knowledge

At Bouillante, the population considers the presence of the plant to be a good thing and expresses the feeling of a trend towards improvement, in particular thanks to the communication efforts... This approach should be maintained given the population's expectations in terms of information

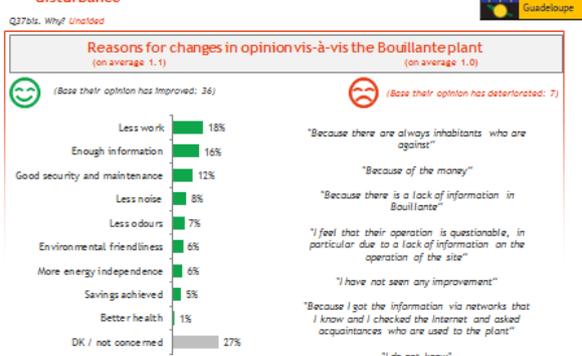
The presence of the Bouillante plant is nevertheless unanimously accepted by the local population.



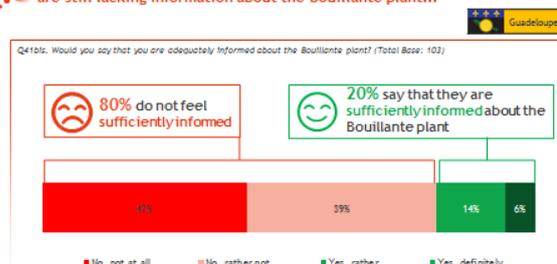
... a tendency to improve the perception ...



... An improvement that is associated with the fact that the works have stopped, with information and security operations on the site / limitation of disturbance



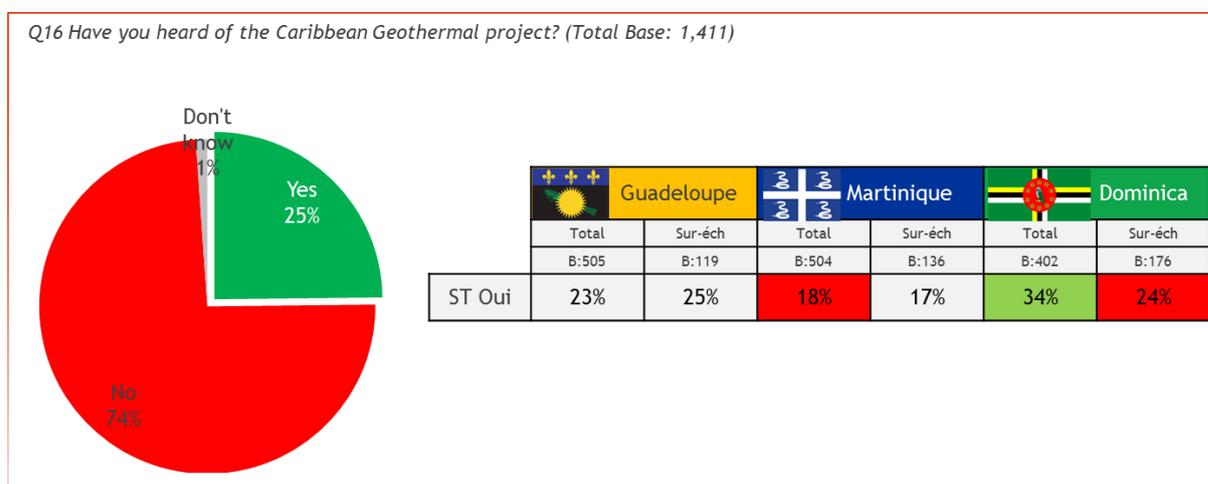
In the end, however, despite recent efforts, most respondents said that they are still lacking information about the Bouillante plant...



2) The Caribbean Geothermal project: a famous project that is well accepted; however, there are expectations in terms of information

1 in 4 respondents says he/she has already heard about the Caribbean Geothermal project

- 1/3 in Dominica and 18% in Martinique (average for Guadeloupe).



A fairly good knowledge of the project: a project for local energy (47%), a local project (38%).

- *The local character is more strongly marked in Guadeloupe (69% and 59%, respectively), while in Dominica what is most often mentioned is the energy of the earth (49%) and lower energy prices (21%).*

The funding is allocated to 3 main players: the State (47%), the region (27%) and the EU (24%).

- *The State is most often mentioned in Dominica (66%).*

In the end, almost total acceptance of the project throughout the 3 territories (91%) ... but expectations in terms of information: 67% say they are not sufficiently informed about the project.

- *A lack of information felt by 3/4 of respondents in Martinique and Guadeloupe, but less in Dominica (1 in 2 respondents).*



The challenge for the project does not seem to be so much the need to convince, but rather to mobilise: shift from the perception of a lesser evil (vs. oil) to that of a real opportunity for the populations concerned.

Whilst acceptability is high throughout the territories, there are some local features related to the culture and the age of the projects.

In Guadeloupe, the fact that the Bouillante plant has been in place for quite some time has helped limit the health and environmental risks perceived and consolidate the acceptance of geothermal energy. The population, however, expressed the need to be more informed, in line with recent efforts put forth in Bouillante. Its concerns are more specifically focused on the maintenance of the facilities (technical upgrade) and the current ("who benefits from the facility?") or potential economic impact ("how about developing eco-tourism?"), with, finally, a few questions on the health impact of noise and odour pollution. In the end, the questioning focuses on the benefits that the population could finally gain from using geothermal energy.

In Dominica, the presentation of the project attracted more contrasted reactions than on other territories, with greater value attached to the economic potential (less expensive energy, energy independence), along with more concerns regarding the health and environmental risks.

In the end, there is a **need for information focused on the environmental & health impact** (toxicity of gases? Impact on the drinkability of the water? How long will the disturbance last? Pollution of the subsoil?) **or the material organisation** (resettlement policy?).

Finally, in Martinique, the question arises regarding the potential of the project through, in particular, the capital expenditures (surveys, drilling). The population appears to be basically rather confident vis-à-vis the environmental and health issues, it is mainly concerned about the geographic delineation of the project (affected areas?) and the related means of financing (what players? premises?)

3) Great knowledge and strong acceptability of renewable energies

Great knowledge of renewable energies. The respondents mentioned more than 8 on average: solar, wind and hydro are mentioned by more than 70% of respondents.

63% mentioned geothermal energy (of which 14% unaided)

- *The knowledge of renewable energies is greater in Guadeloupe, especially regarding geothermal energy (67%), and less significant in Martinique (58%).*

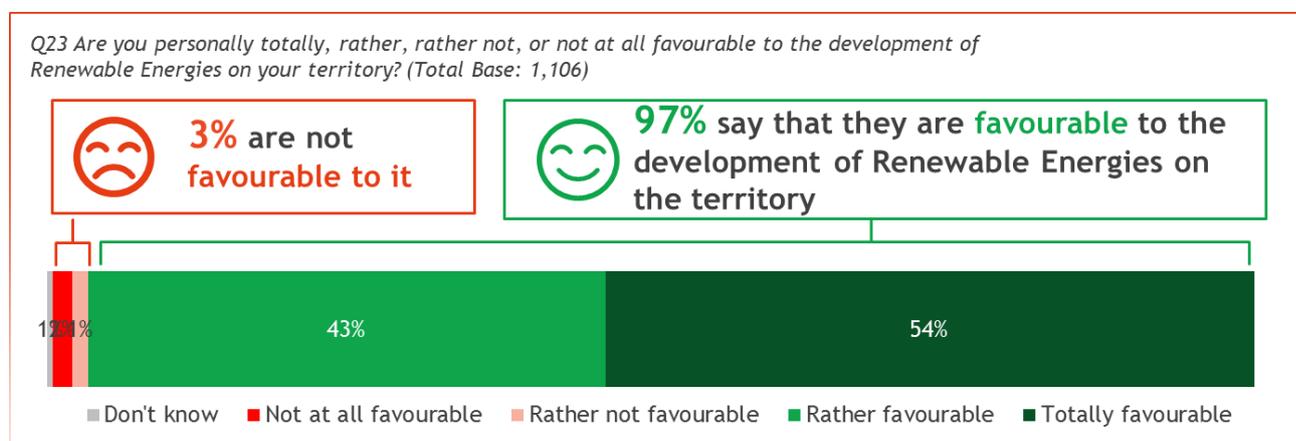
However, only few respondents are aware of the renewable energy facilities located on their territory:

- *few unaided references and vague knowledge.*

A very positive attitude to renewable energies throughout the 3 territories (97%). Almost 3/4 of respondents believe that these forms of energy would contribute to energy independence on their territory

- *Such feeling is particularly marked in Dominica (86% vs. 73%).*

Critics primarily mention a lack of information (40%), as well as damage to the environment (21%) and health (11%).



The acceptability conditions of the development of renewable energies: mainly information (24%): more than 1 respondent in 2 states that he/she is insufficiently informed about renewable energies.

- A feeling that is stronger in Dominica (58% vs. 56%).

Renewable energies considered to be priorities that should be developed are solar (71%) and wind power (42%). Geothermal energy is mentioned by about 1/4 of the respondents.

- Geothermal energy is more often contemplated in Dominica (48%).

4) OVERALL ASSESSMENT: a very favourable context ... that should be consolidated through consultation

In the end, the context is highly favourable to the development of geothermal energy and renewable energies. The situation ought to be consolidated by the establishment of a consultation process and the involvement of the population

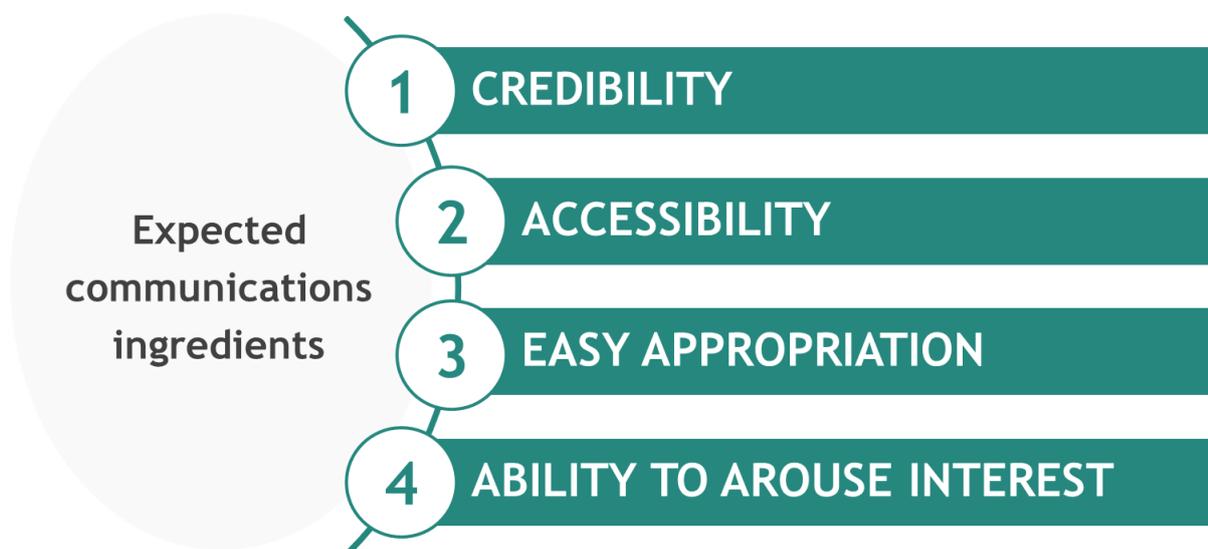
Knowledge of the projects varies from one territory to another but acceptability is high because of the projected economic benefits ... which far outweigh the few hesitations associated with health or environmental hazards or disturbance...

Whatever the site, the projects mentioned generate very strong support ...

...but also strong expectations in terms of information and consultation.

5) Expectations in terms of communication

The communication to be established with contacts throughout the 3 territories should meet 4 main requirements:



Beyond these requirements, it should be considered that the **strong acceptance of geothermal energy is an asset for the project** but this does not mean that nothing should be done: **it is primarily a capital that should be maintained.**

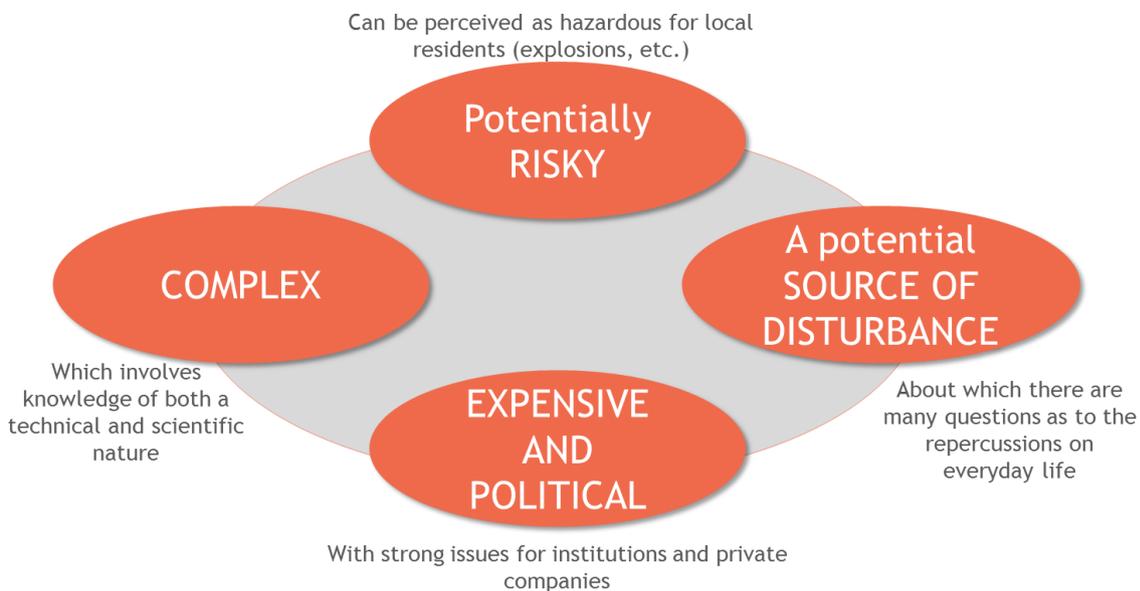
In fact, geothermal energy does not generate any obstacles per se, **and it is rather the lack of information that can arouse fear**: delivering information is therefore a necessity in order not to cause the demise of a project to which the populations are basically favourable.

In order to accept the project fully, the population expresses the need to contextualise it, i.e. to know who does what? How? When? And who are the beneficiaries?

"Saying is less risky than doing nothing"

Basically, the 4 major brakes triggered by geothermal energy ought to be addressed

- The perceived brakes to geothermal energy are a system. It is perceived as:



6) The communication approach to implement:

If there are territorial specificities, in terms of culture and in terms of the experience of geothermal energy or renewable energies, we recommend implementing the following 5 action and communication procedures on each island:

1. **NEUTRALITY: only give the floor to the legitimate entities and encourage experts to speak up: INDEPENDENCE / SCIENCE / NO POLITICAL AFFILIATION**
2. **PEDAGOGY: give the means to UNDERSTAND WHAT GEOTHERMAL ENERGY is from a TECHNICAL point of view, through the geological resource being exploited and the way it is exploited: FUN / SIMPLICITY / POPULARISATION / EDUCATION**
 - Possible actions: build a scale model of a plant, open days/visits, teaching in schools

- 3. TRANSPARENCY: give access to ALL THE INFORMATION: do not hide anything, the benefits of geothermal energy have a future, but people also need to know what the DISADVANTAGES are (risk, safety rules, cost, role of the players, etc.)**
- Possible actions: publication of experience feedback regarding existing sites, access to the players' identity datasheets (company in charge of the plant)
- 4. INVOLVEMENT: provide evidence of the involvement of the PROJECT PARTICIPANTS and encourage the mobilisation of the POPULATION: use local resources (employment) and publicise it, organize meetings, provide information continually regarding the progress of the project: "Do not let misconceptions spread"**
- Possible actions: local information meetings, hiring of local engineers and technicians, consultation book with the project schedule
- 5. VALUE: give value to the project and to the upcoming plant: make people want to participate; turn the plant into a central, cultural and economic tourist attraction; highlight the potential for energy independence, the economic and social benefits and the potential technical expertise: UNIQUE / FUTURE / ADVENTURE**
- Sample slogans:
 - A BETTER FUTURE FOR OUR CHILDREN: jobs, a cleaner, healthier earth
 - GEOTHERMAL ENERGY, THE ENERGY OF OUR ISLANDS: Caribbean identity, sharing

The means of communication used must be adapted to the needs of close exchanges and interaction based on the usual communication codes and means available on each territory:

- Ascending information system along the lines of co-construction (particularly in Guadeloupe)
- Roaming physical meetings/discussions with the population based on oral transmission and word of mouth to convey the message and value the project

These means of communication may be supplemented by more massive media (local TV, radio, press) as soon as the bulk preliminary work is completed.

Given the peculiarities of each island, the approach should be fine-tuned to address the following specific expectations:

- **In Guadeloupe**, insist on TRANSPARENCY, INVOLVEMENT and VALUE for the population to have the feeling of reaping the fruits of the facility.
- **In Dominica**, insist at this stage on NEUTRALITY, PEDAGOGY and TRANSPARENCY in order to reassure the population as to the health and environmental impact of the project
- **Lastly, in Martinique**, emphasize the NEUTRALITY, the PEDAGOGY and the VALUE in order for the population to be able to project itself on the potential of the project.



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GÉOTHERMIE CARAÏBE 2 PRODUIRE NOTRE ÉLECTRICITÉ AUTREMENT

