Addressing the public acceptance in deep geothermal projects

best practices and lessons learned

Dario Bonciani – COSVIG

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General framework and challenges of geothermal energy

- Geothermal energy is a renewable and local energy source
- It can contribute to meet the global energy demand and prevent climate change
- It can be made flexible and can provide heating, cooling and power

… but its deployment may face challenges, including social resistance…

- Lack of awareness on geothermal technologies among citizens and policymakers
- Poor or not clear communication on opportunities and risks linked to geothermal projects
- Lack of engagement of local communities in geothermal projects

The importance of social acceptance in deep geothermal projects

Consequences of social resistance

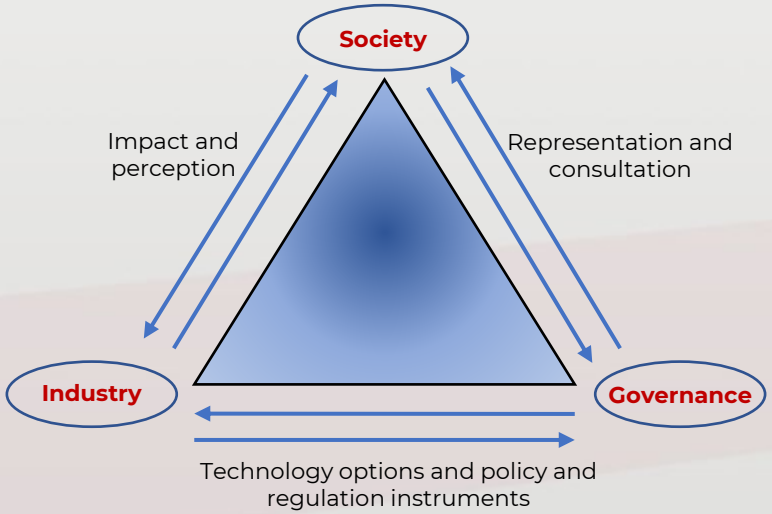
- Local action groups
- Networks of local action groups

Influences on politics

- Delays or stop of geothermal projects
- Rejection of requests for authorization
- Influences on national or European policies and damages to the entire sector

Factors influencing the social acceptance

- Local socioeconomic conditions
- Culture
- Geographical aspects
- Complex matter: sub-surface technologies are perceived out of sight and out of mind
- Communication, engagement, benefits



Project developers, operators, public authorities and researchers are putting in place efforts to study, prevent contestations and the Not In My BackYard syndrome

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The research on best practices and geothermal NIMBY interventions

Objectives:

- Review of previous experiences and strategies to raise the acceptance of geothermal projects
- To establish the basis to elaborate and implement a method for acceptance raising, within the Horizon Europe COMPASS project

Methodology:

Understanding actions implemented or suggested to:

- raise the social risk-benefit awareness and acceptance
- engage with the civil society

Source of information:

- More than 40 references
- case studies from 9 European countries and 5 countries in other continents
- scientific literature, EU project results, reports, websites

Technology:

- deep geothermal, including drilling, power production and heat uses

Identified **strengths** and **drawbacks** allowed to propose **tips** to plan communication and social engagement

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Case studies - communicating and engaging with local communities

St. Gallen (Switzerland):

- Inquiry on public perceptions, expectations fears and awareness
- Large scale seismic monitoring
- Open and transparent communication about risks

→

Minimal public oppositions and positive perception

Positive impact on population even after 3,5 magnitude earthquake

Project closed due to insufficient water

Trebur and Groß-Gerau (Germany):

- Study of the local stakeholders and their views on geothermal energy conducted by the developer
- Public meetings to share information and discuss on the project
- Implementation of a stakeholder group to discuss on geothermal energy
- Report to summarise discussions and describe conditions to accept the project

→

Friendly and supportive public environment for project development

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Case studies - communicating and engaging with local communities

Upper Rhine Area (Germany):

- Specific events to engage with local communities, organised by the operator
- Clear operator website with information on geothermal energy, projects and recordings of events
- Communication centre, education initiatives and visits organised by the operator

→

Increased awareness

Higher relationships between the operator and local communities

Alleviation of local concerns

United Down Deep Geothermal Project (UK):

- Identification of local concerns by the operator
- Public events organised by the operator
- Direct communication and educational outreach

→

Higher level of engagement

Higher awareness

Higher support

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Case studies - communicating and engaging with local communities

Haute-Sorne (Switzerland):

- The public was informed immediately after the site selection
- A committee of local politicians and representatives of local companies and NGOs acted as a bridge between the operator and local communities
- Informative events and guided tours

Residents preferred municipal council discussions

Concerns of a local group about noise and negative impacts on the landscape and water resources

Collection of signatures to vote for the ban of geothermal projects in Canton of Jura

Monte Amiata (Italy):

- Information on the project and on geothermal energy on the company website
- LCA on the project
- Public event to present the project to local communities

Project supported by the municipality

Contestations from a group of citizen, probably due to the presence of previous long-lasting oppositions and poor citizen direct participation in decision-making

Case studies - communicating and engaging with local communities

Basel (Switzerland):

- Press releases from the developers
- Conferences and guided tours
- Highlighting potential benefits
- No active outreach to engage with the public

Local communities and authorities contested the lack of information and risk assessment on project consequences and management, after a 3,4-magnitude seismic event

The project was abandoned due to concerns on risks

Case studies – proposing benefits

St. Gallen and Geneva (Switzerland):

- Emphasis to geothermal heat direct uses by project promoters

→ Geothermal projects accepted by local communities

Theistareykir (Iceland):

- Electrical stability in the region
- Increased power availability
- New industrial opportunities in the region

→ High level of satisfaction among the local communities

Tolhuaca (Chile):

- Face to face interviews with citizens and workshops
- Energy vulerability and high level of energy poverty
- Offering of waste heat for direct uses

→ Too high expectations of benefits

Necessary to better understand cultural and social factors

Projects in Strasbourg and sorrounding (France):

- Low reliability of the operator due to lack of previous experiences
- No compensations for territories
- Projects location too far from existing district heating
- Poor respect of local planning

→ Oppositions from the residents' associations and municipalities

Projects abandoned (or approved despite oppositions)

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Lessons learned and good practices

	Positive examples ✓	Negative examples ✗
Communication	• Communication starts from early stages of the project development • Communication tailored to different kind of stakeholders and local conditions • Communication of risks and mitigation measures • Involve local authorities and scientists. • Clearly explain benefits (including heat direct uses)	• Top-down communication • Communication only from operators • Partial or incorrect communication • Creation of high expectations • Communicate benefits only
Social engagement	• Engage with local communities and citizens from the early stages of the project development • Citizen involvement in decision making processes • Involvement tailored to different kind of local stakeholders	• Plan the actions without involving local actors and authorities • Top-down approach • “Closed doors” initiatives, without involving local communities

Recommendations to address NIMBY syndrome in geothermal projects

1. Before the exploration – study of the local background

- Assess the energy strategies and local authorities, their awareness and position on geothermal
- Analyse the political, social and cultural background
- Map the stakeholders, analyse their interests and positions
- Identify potential “allies”
- Plan a strategy to start communications tailored to different stakeholders
- Define acceptability-related topics: risks & benefits for the environment, economy and society

2. During the explorations – communication and information

- Liaise with local authorities
- Communicate the project locally through transparent and bottom-up communication, including benefits and risks
- Organize a first round of meetings with a selection of representatives to discuss on risk, benefits and co-design
- Update the website with information on the project and provide contacts for further details

3. Before the exploitation permit submission – co-design process

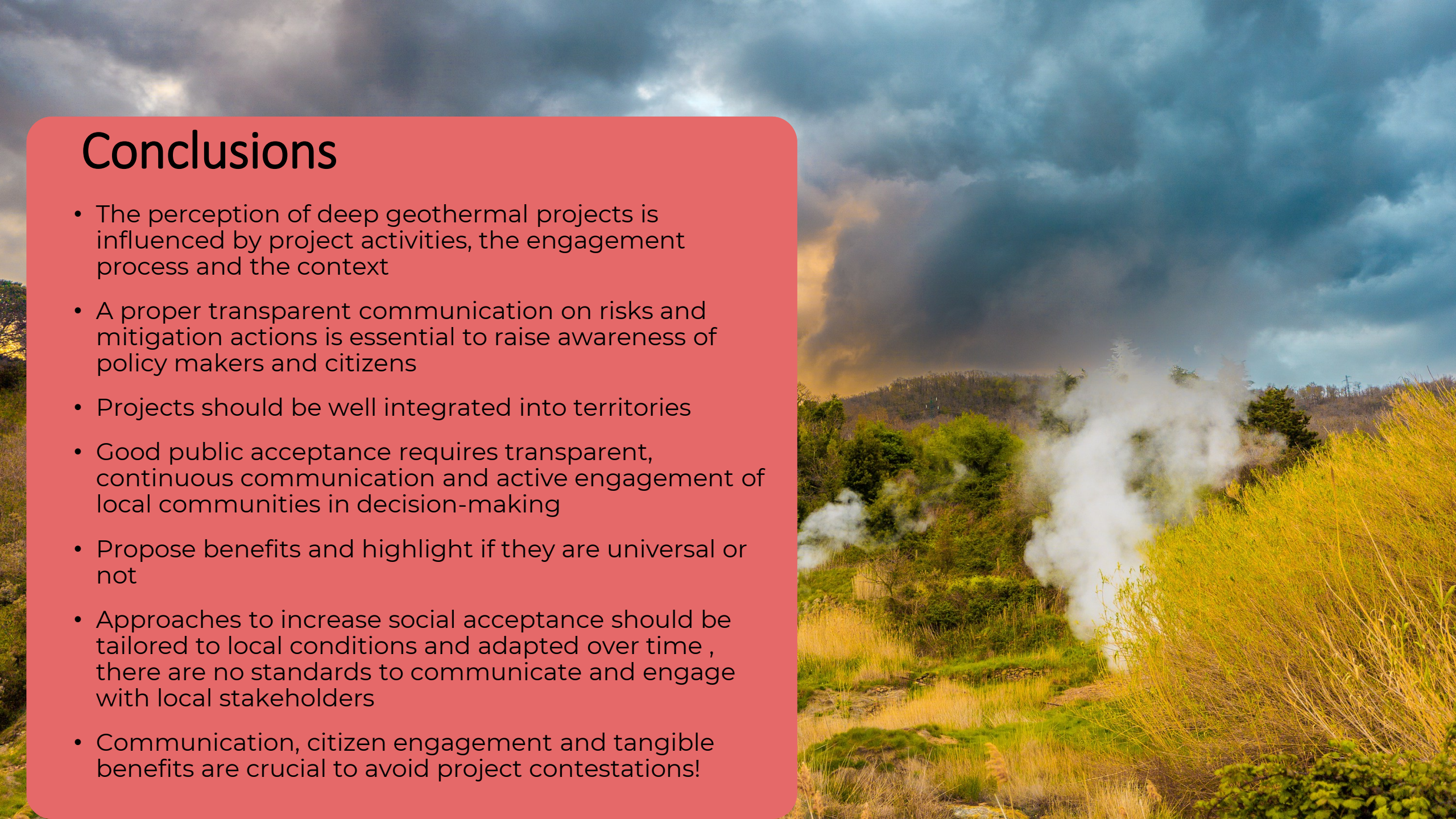
- Elaborate a range of possible developments grounded on the meetings results
- second round of meetings to present and discuss project developments

4. After the exploitation permit – communication

- Communicate the project and its locally agreed development

Conclusions

- The perception of deep geothermal projects is influenced by project activities, the engagement process and the context
- A proper transparent communication on risks and mitigation actions is essential to raise awareness of policy makers and citizens
- Projects should be well integrated into territories
- Good public acceptance requires transparent, continuous communication and active engagement of local communities in decision-making
- Propose benefits and highlight if they are universal or not
- Approaches to increase social acceptance should be tailored to local conditions and adapted over time , there are no standards to communicate and engage with local stakeholders
- Communication, citizen engagement and tangible benefits are crucial to avoid project contestations!



Survey on social acceptance and opportunities for local community engagement

Objectives:

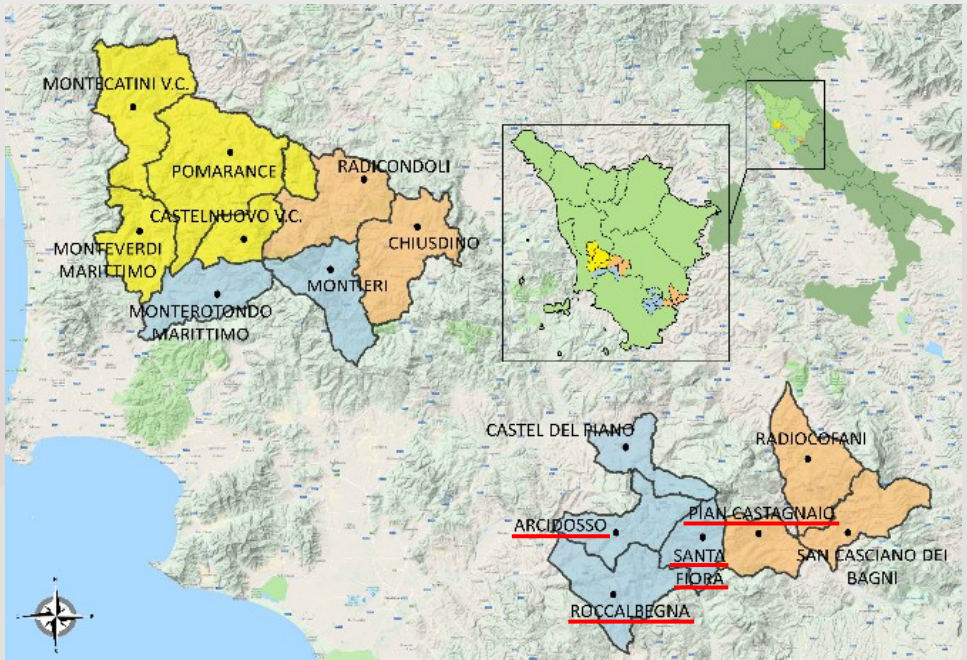
Interviews to representatives of the local communities to understand:

- the awareness of geothermal technologies,
- opinions on geothermal technologies and new projects and related influencing factors,
- risk/benefit perception,
- geothermal project location preferences and procedural justice positions

- Improvement of the communication campaign being carried out at local level
- Organization of engagement workshops
- Information for geothermal operators on the social acceptance

General information on the research:

- ✓ Research area: 4 Municipalities in Monte Amiata, Italy
- ✓ Population in the 4 municipalities: 11,570 inhabitants
- ✓ Number of installed powerplant in Monte Amiata: 5+2
- ✓ Method used: snowball sampling



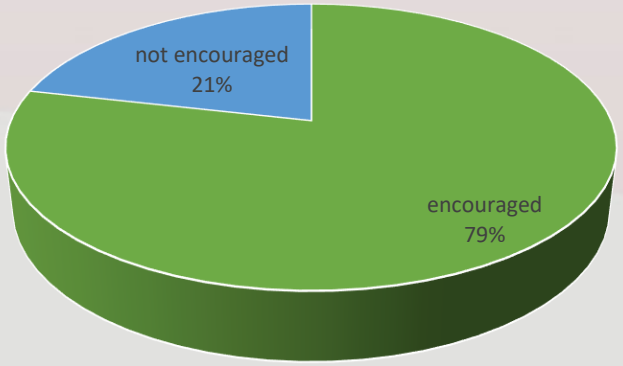
Survey on social acceptance and opportunities for local community engagement

Preliminary results of ongoing interviews:

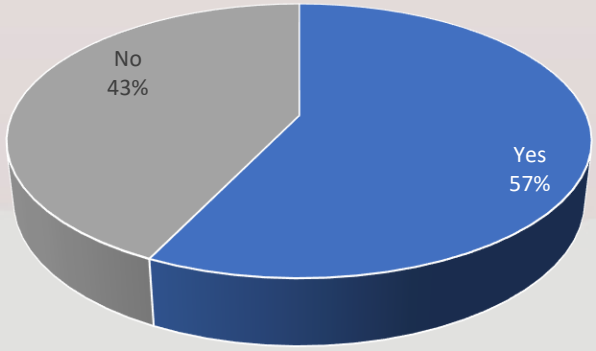
Subjects so far interviewed:

- ✓ Representatives of network of local companies 2
- ✓ Representatives of local authorities 3
- ✓ Entrepreneurs 2
- ✓ Union 1
- ✓ Representatives of network of residents 6
- ✓ Representatives of local environmental action groups against geothermal energy ... 0

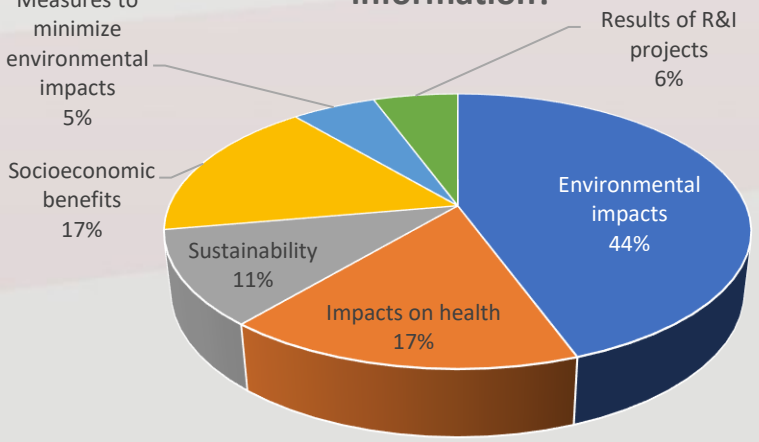
Do you think that geothermal energy in your region should be…



Do you think that local communities should be involved in decision making processes related to the development of a geothermal project?



On which argument related to geothermal energy would you like to receive more information?



Thank you!

Dario Bonciani

CoSviG – Consortium for the Development of Geothermal Areas

www.cosvig.it

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