Geothermal social perception

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https://www.crowdthermalproject.eu/

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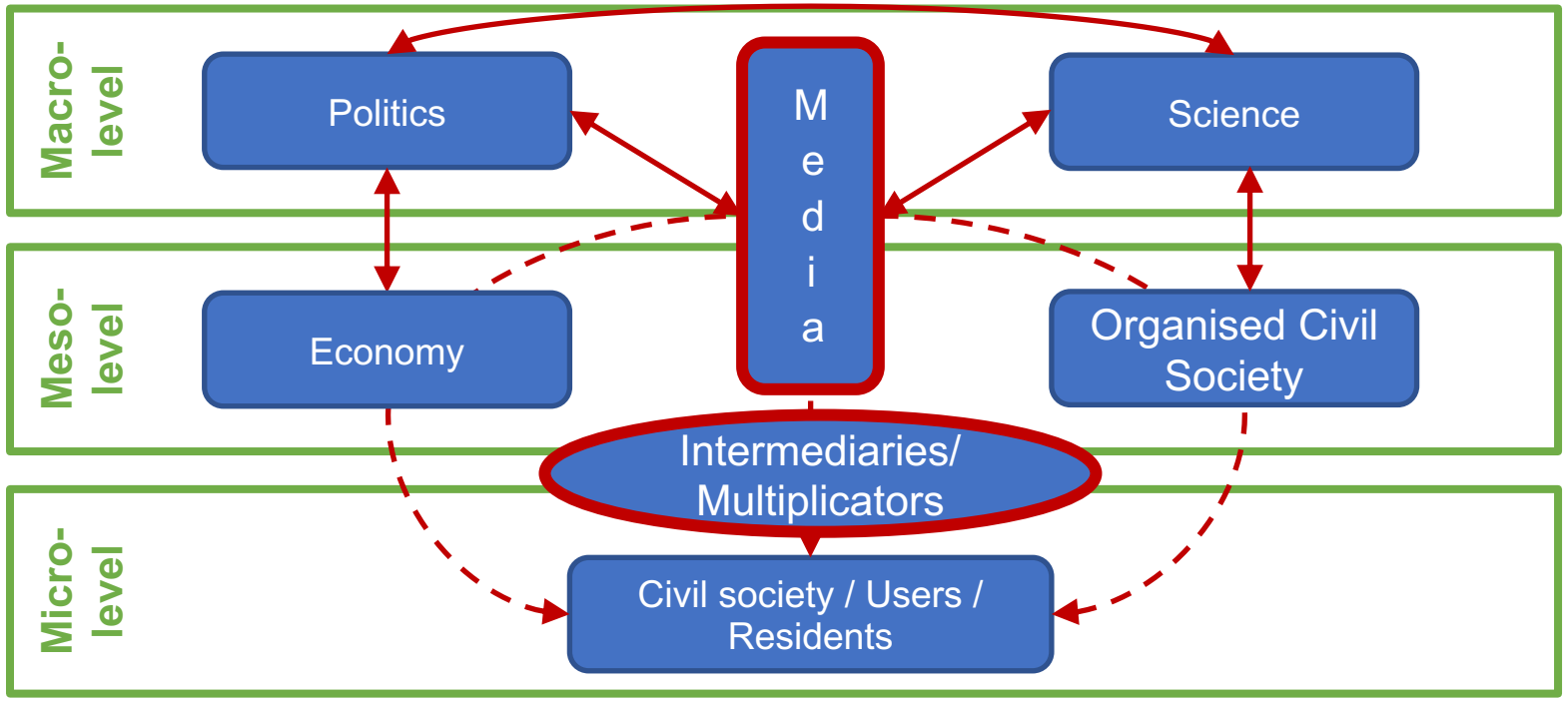
Social Perception / Public acceptance of renewable energies



- Social discourse and acceptance formation processes
- Different groups of actors with specific roles/functions
- Different levels (e.g. Geels, 2016, Wüstenhagen et al, 2007):
  - Socio-political acceptance
  - Market acceptance
  - Local acceptance

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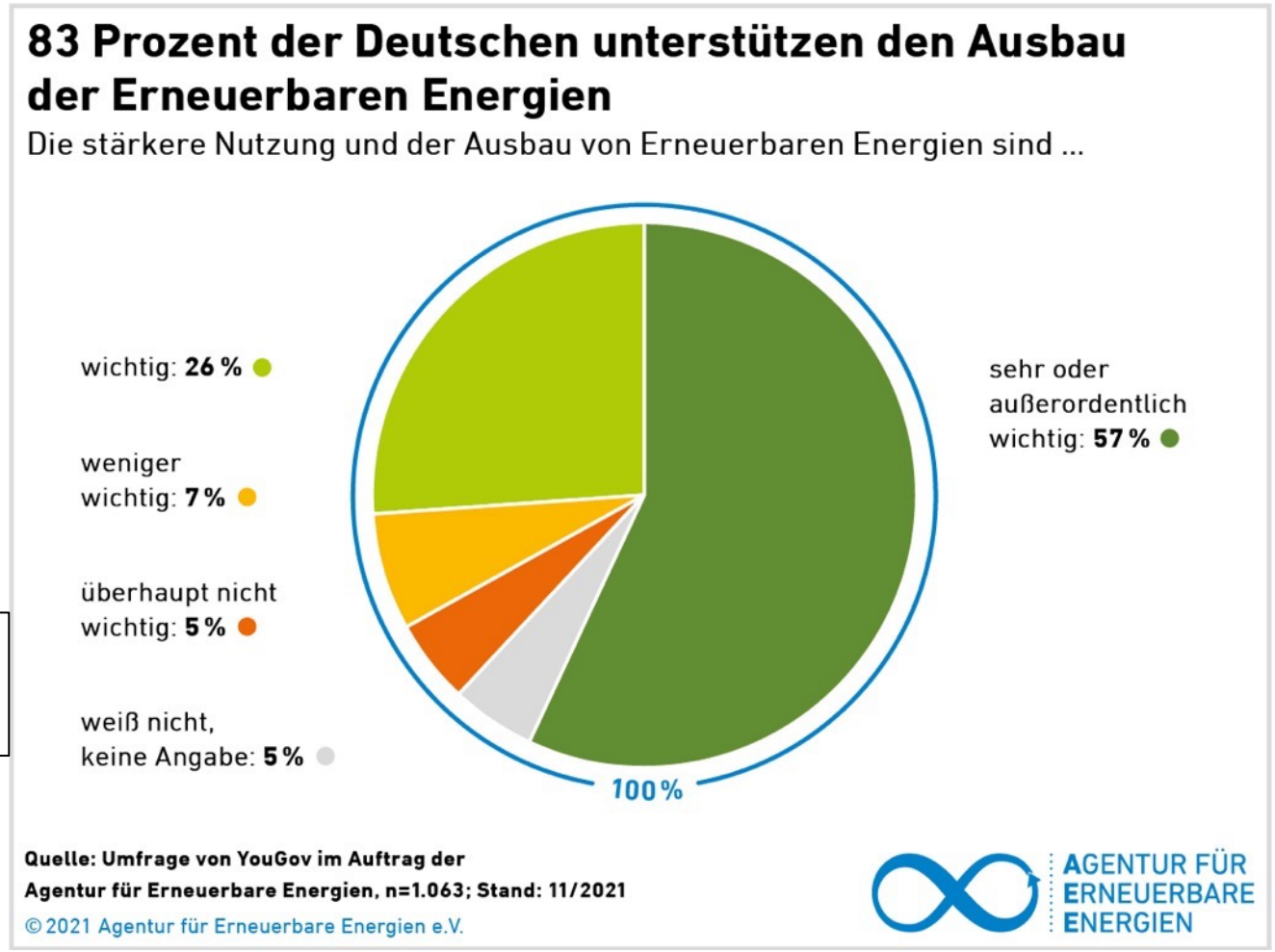
Public Acceptance of Renewable Energies in Germany

- Representative polls show a strong support for renewable energies on a general level
- Question asked: „the increased use and expansion of renewable energies are …extremely important …to …not at all important"

Sum of important
and very/extremely important: 83%



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Public Acceptance of Renewable Energies / Geothermal in Germany

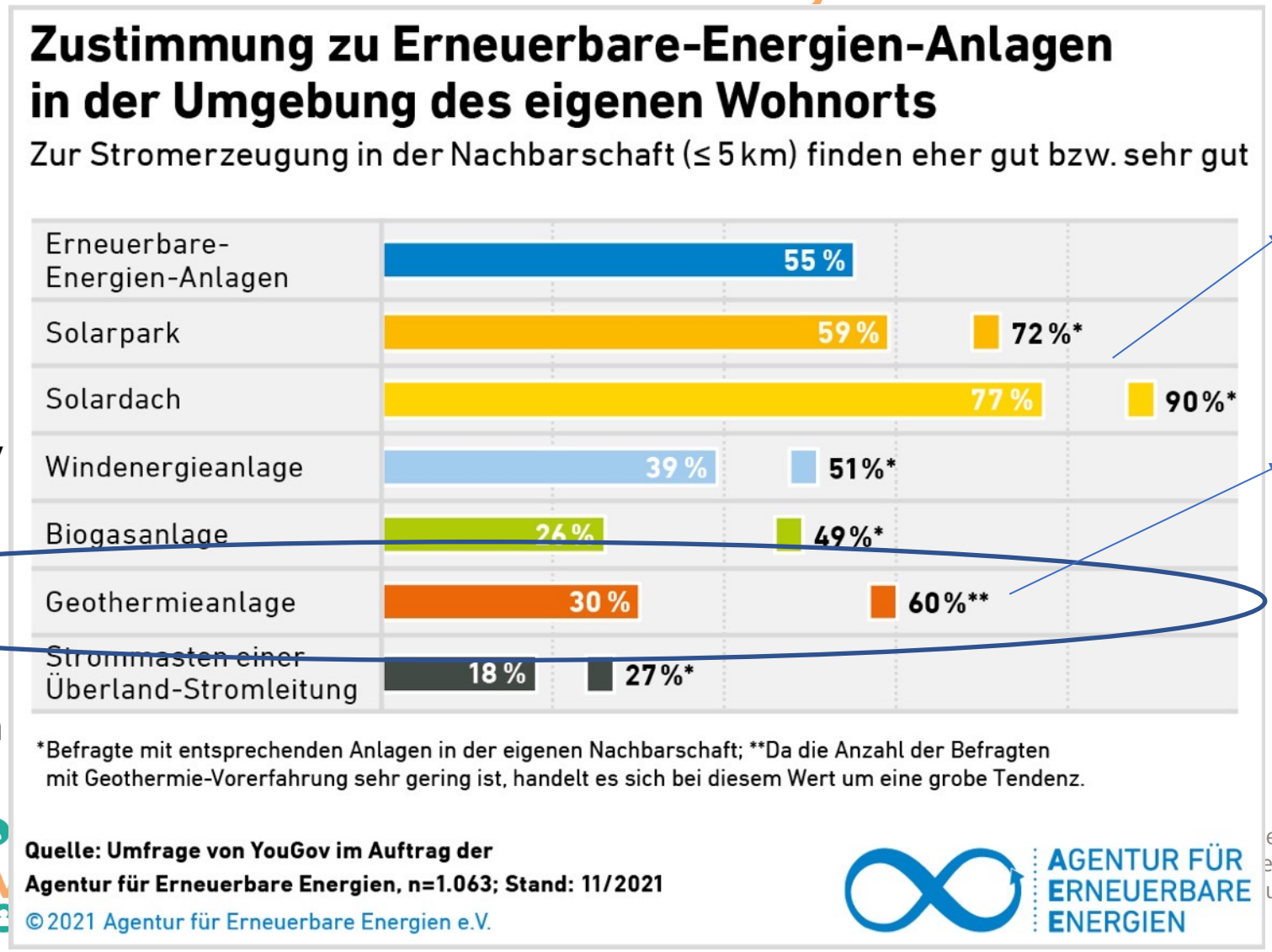
RES-project

Solarfarm
Solar roof

Wind energy
Biogas

Geothermal

Pylons of transmission lines



*Persons polled with corresponding energy projects in their neighborhood

**Due to less experiences with geothermal the value is only a rough tendency

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Acceptance of Geothermal Energy: Media Coverage: Risks

Media reports on Geothermal related earthquakes in Alsace, France (December, 2020)

08.12.2020, 12:26 Uhr

„After earthquake in Alsace: Geothermal project is stopped“

Nach Erdbeben im Elsass: Geothermie-Projekt wird gestoppt

Nach einem Erdbeben im Elsass hat die örtliche Präfektur ein Geothermie-Vorhaben in der Nähe von Straßburg gestoppt. Am vergangenen Freitag hatte die Erde in der Region gebebt. Das Beben war auch im benachbarten Baden-Württemberg zu spüren gewesen.

https://www.br.de/nachrichten/deutschland-welt/nach-erdbeben-im-elsass-geothermie-projekt-wird-gestoppt,SIZix7t

Kommentar Dossier: Geothermie

Erdbeben-Schäden: Die Bürger werden allein gelassen

bo+

„Damages caused by earthquakes: Residents are left alone“

Jetzt Artikel teilen:

13. Januar 2021 Lesezeit < 1 Minute **Autor:** Michael Müller

https://www.bo.de/lokales/ortenau/erdbeben-schaeden-die-buerger-werden-allein-gelassen

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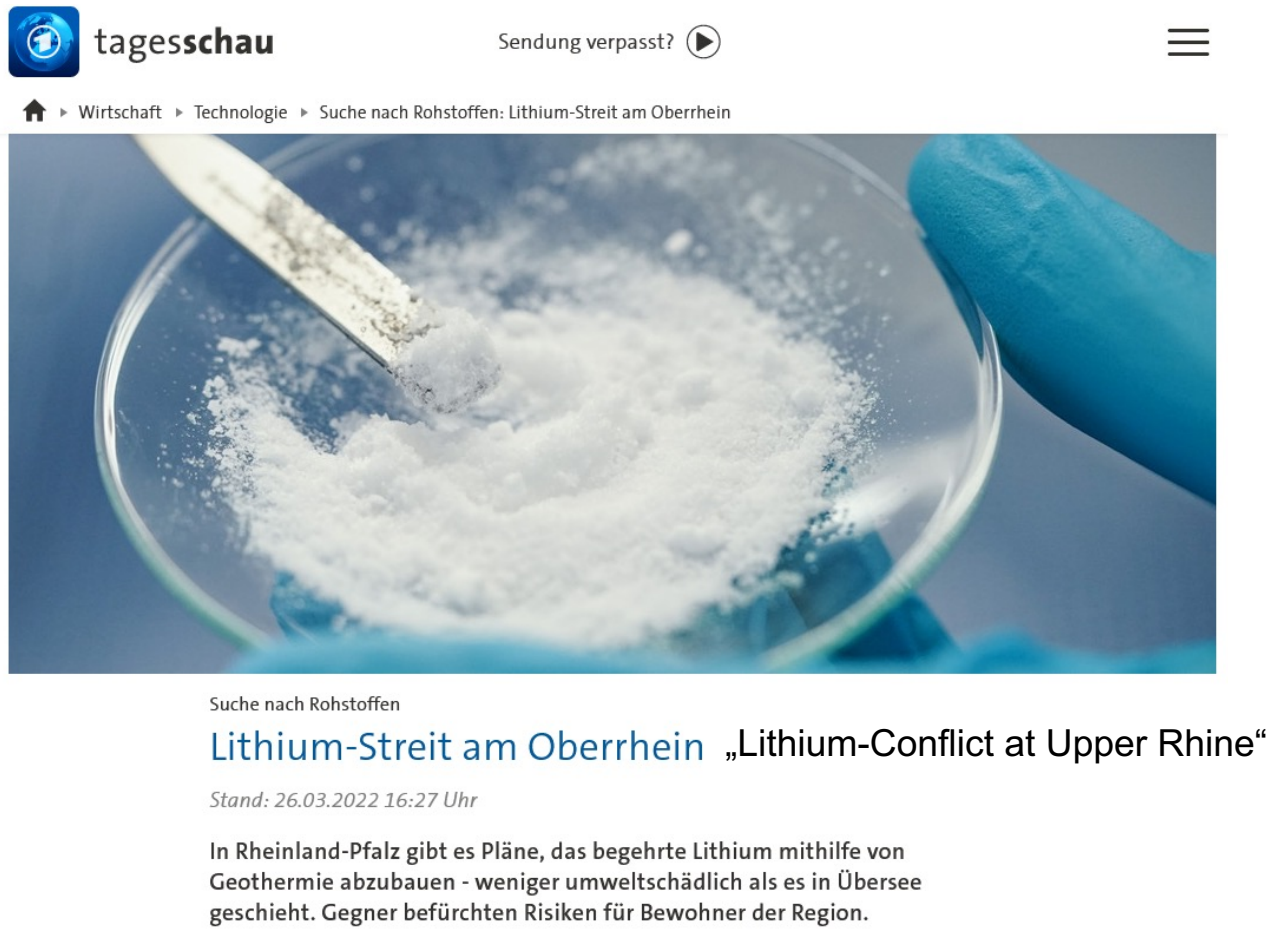
Acceptance of Geothermal Energy: Media coverage

- March 2022
- Report on combined renewable energy production and lithium: hope for positive effects of ecological and economical potentials
- Trade off with risks and induced seismity
- Potential for a „success story“



https://www.tagesschau.de/wirtschaft/technologie/lithium-abbau-geothermie-101.html

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4 Factors of Public Acceptance*

- **Orientation and insight**: If people understand the necessity of a political decision and support the goals and means envisaged by this decision, they are more likely to accept it. Therefore, transparent information is needed about what they will face. Crucial elements are transparency about pros and cons and potential alternatives.

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- **Positive risk-benefit balance**: Acceptance is more likely the more the planned consequences of the decision benefit oneself or related groups. This includes the perception of low or at least acceptable risks. In this context, the risk assessments of experts and those of laypersons are often not congruent.

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*Hildebrand, J. & Renn, O. (2019). Akzeptanz in der Energiewende. In: Jörg Radtke, Weert Canzler, Berlin (Hrsg.). Energiewende. Eine sozialwissenschaftliche Einführung. Wiesbaden: Springer VS. S.261-282.

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4 Factors of Public Acceptance*

- **Self-efficacy:** Energy transition means the change of infrastructures and daily life environments. It is important to experience one's own impact and influence within this transformation process.

meaning of participation

- **Identity:** The more people can identify emotionally with a measure, the greater their willingness to accept it. This means that infrastructure measures must also be recognized emotionally as elements of one's own living environment. This is more likely to happen the more local stakeholders are involved.

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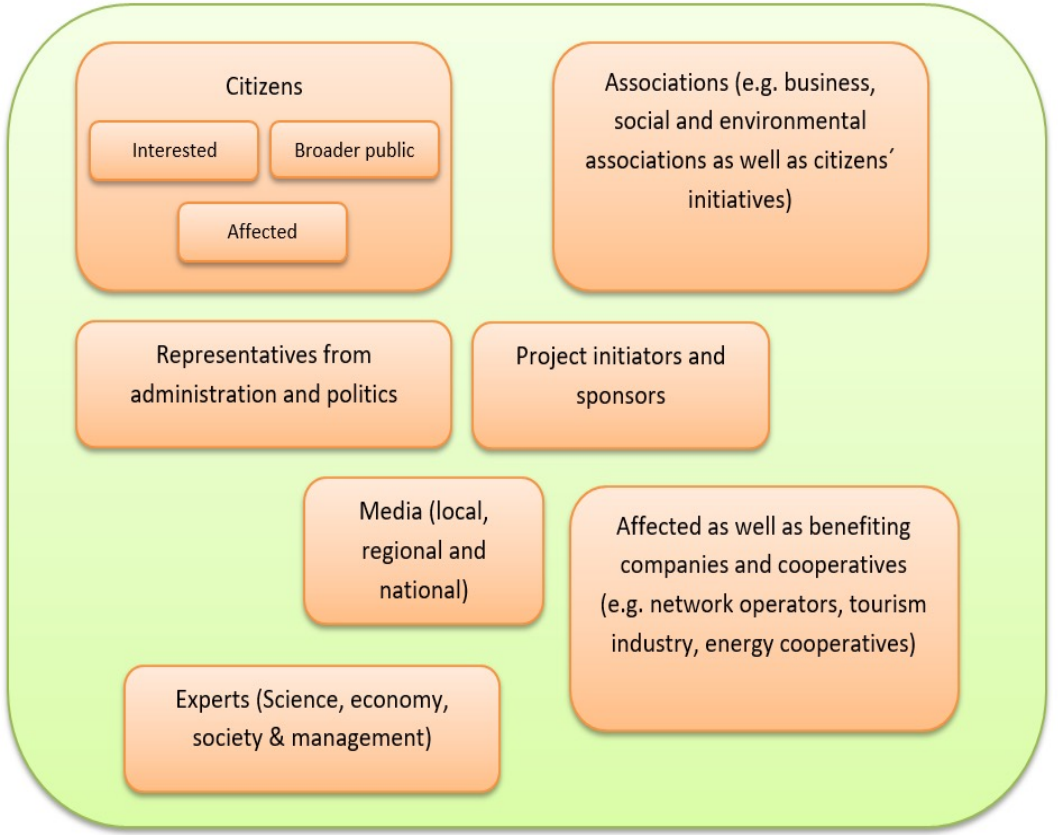
Stakeholder Engagement

CONTEXTUAL ANALYSIS/ CONTEXTUAL FACTORS

- Community and Stakeholder analysis
- Socio-economical context
- Historical Context
- Vision -> renewable energy goals
- Political Context
- Knowledge on Geothermal Energy

METHODS preparing public engagement

- Stakeholder map
- Media Analysis
- Interviews / Surveys



GUIDELINES FOR PUBLIC ENGAGEMENT (IZES D1.4, 2020)

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Project phases for the social dimension/ Guidelines for Public Engagement (D1.4, IZES, 2020)

	1) Project Definition	2) Exploration	3) Drilling	4) Construction	5) Operation	6) Decommissioning & Post-Closure
Formal Participation (legally binding)	• Information of responsible authorities • Announcement of the project	• Information of responsible authorities • Planning permits: information/ hearing of the stakeholders/ public according to legal framework	• Drilling permits: information/ hearing of the stakeholders/ public according to legal framework • Documentation	• Construction permits: information/ hearing of the stakeholders/ public according to legal framework	• Monitoring-information to the stakeholders/ public according to legal framework	• Decommissioning-information to the stakeholders/ public according to legal framework (focus environment, risks, post-utilization)
Informal Participation		• Asking for need of information/ communication • Offering financial participation opportunities	• Regional information markets, topic tables (risks, financing, environmental impacts etc.) • Dialogue groups	• Regional information markets, topic tables (risks, financing, environmental impacts etc.) • Dialogue groups	• Offering further financial participation opportunities • Spin-off to other joint energy projects (RES, efficiency)	• Dialogue with citizens for future plans
Communication (permanent task)	• Correct and factual information • Identification of opportunities and risks • Far-reaching transparency, accessibility of information materials, e.g. through newspaper, website, social media, etc.	• Description of the process, different phases, what is happening • Direct communication with relevant stakeholder groups	• Local office with sufficient consultation times • Site visits of existing projects/ video/ VR/ 3-D-presentations	• Public construction diary	• Operation starting party • "local energy festival" on a yearly base • operation diary, website showing produced energy/ saved CO_2 emissions	

-> Procedural justice, Distributional justice & Interpersonal justice

Outlook: Protocol for Monitoring Acceptance of Geothermal

1st Block
- Opinion on/acceptance of renewable energies in general
- Acceptance of geothermal energy in specific
- Associations with geothermal energy

2nd Block
- Pro´s & Con´s of the geothermal energy project
  - Benefits & Distributional Justice (Pro)
  - Risks (detailed, short) (Contra)

3rd Block
- Process & Planning Procedure
  - Procedural Justice
  - Interpersonal Justice
  - Credibility
  - Trust
  - Shared Values

4th Block
- Effects induced by the project
  - Social Capital
  - Identity
  - Knowledge

5th Block
- Participation

I feel like I have a say in the planning and implementation process.

I feel that the project leaders share the same values as our community.

In my opinion the geothermal energy project had a positive impact on our community cohesion.

I feel like the geothermal energy project has become part of our community identity.

I feel that my knowledge of geothermal energy has been improved by the project.

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Conclusion

- Comprehensive approaches needed to understand acceptance issues and the public perception, considering stakeholders on different levels
- Risk perception connected to seismity is currently the dominant factor in conflicts, positive effects should be shown „good examples and succes stories“
- Regional approaches promising for a local connection, emphasize the meaning of regional benefits and identification
- Providing stakeholder engagement and participation opportunities is crucial for acceptable solutions ->co-ownership

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Thank you for your attention!

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