

Chapter Market update

Webinar consultation 24/05/2019



ETIP-DG

European Technology & Innovation
Platform on **Deep Geothermal**

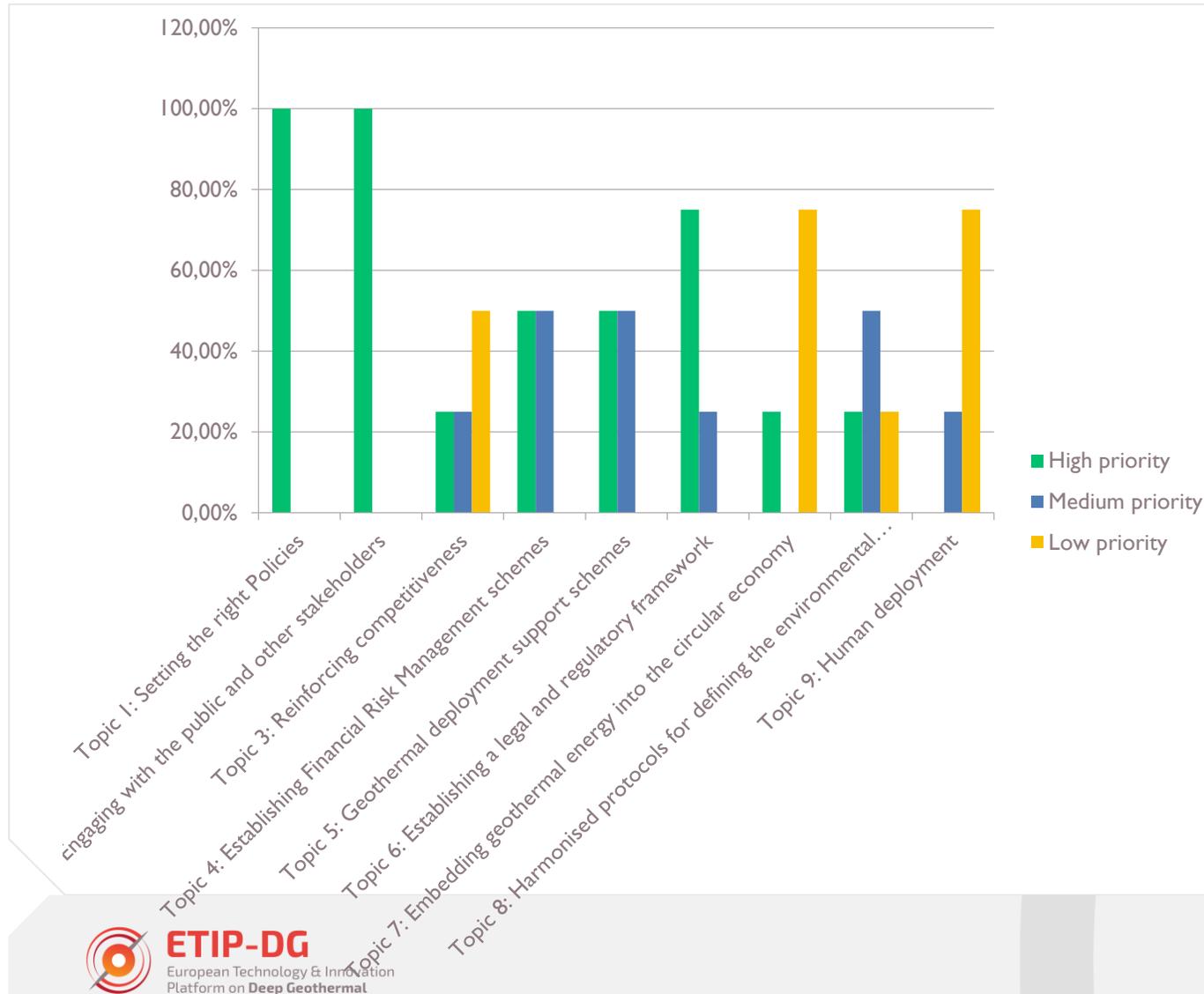
www.etip-dg.eu



Co-funded by the European Union's Horizon 2020 Research and Innovation Programme [GA. N. 773392]

Steering Committee assessment

Level of priority



Merge suggestions:

Topic A: Improving the Policy & Regulatory framework (topics 1+6)

Topic B: Ensure Public engagement & mitigation environmental and health impacts (topics 2+8)

Topic C: Develop Innovative financing & reinforce competitiveness (topics 3+4+5)

Topic 'MISSION' (topic 7+8+9):
* Embedding geothermal into the circular economy (topics 7+8)
* Human deployment (topic 9)

Action 1: Improving the Policy & Regulatory framework

Objective

- Sets up a level playing field at the European and national levels
- Establish dedicated policies & a long-term vision and strategy for the development of deep geothermal in Europe
- Appropriate European and national legislation and regulations

Target

1. Developing a welfare analysis of the increase of deep geothermal energy in the energy mix
2. replicating best practices on policies relevant for R&D&I in deep geothermal energy
3. A long-term vision and strategy for deep geothermal
4. Providing recommendations for European harmonisation, including mutual recognition of adequate national regulations: codes, licensing, permitting...

Action 2: Ensure Public engagement & acceptance

Objective

- Better understanding of a range of social and cultural aspects and factors which shape individual and community acceptance of geothermal
- Foster mutual learning amongst stakeholders, enhancing contributions from all societal actors and unleashing the potential of geothermal
- Include perspectives from the public and other stakeholders as part of the innovation process for geothermal
- Respond to environmental concerns and highlight the benefits of the deep geothermal market uptake, focusing on the environmental and health impacts

Target

- 1) Definition of guidelines for systematic information
- 2) Education and information campaigns about geothermal energy technologies and developments
- 3) Definition and testing of public engagement strategies and practices in the geothermal field
- 4) Promote a life cycle assessment (LCA) model for geothermal installations
- 5) Communicate effectively with the general public regarding environmental and health concerns

Action 3: Develop Innovative financing & reinforce competitiveness

Objective

- Develop innovative financial support schemes to deploy geothermal
- Establish financial schemes to mitigate resource risk
- Developing a fair competition between energy sources, beyond a unique LCoE approach
- Establishing fair competition globally with the geothermal stakeholders from across the world

Target

- 1) Establish financing mechanisms adapted to the specificities of geothermal technologies and the maturity level of markets and technologies, notably to allow market deployment of innovation
- 2) Creation of a risk sharing facility at national level and across borders (Pan-European)
- 3) Develop a comparison model about full costs of competitive heat and power energies.
- 4) Establish carbon pricing in order to integrate the costs of external factors into the full costs of an energy source.
- 5) Develop new business models for geothermal developers and operators, allowing them to sell their heat and power on different markets

« Mission » system approach

- Embedding geothermal into the circular economy:
 - 1) Adopting geothermal standardisation procedures and quality branding
 - 2) Improving the applicability and use of recycled/secondary materials/waste in geothermal plants
- Human deployment:
 - 1) Enhancement of the educational and training process & Create Networks for Geothermal Energy Education and Training
 - 2) Develop an Employment action plan in order to transfer knowledge and absorb the workforce of declining industries while promoting the mobility of workers in Europe
 - 3) Launch international cooperation, especially for EGS

From R&I to deployment - targets

- Set ambitious policies at EU and national levels to allow the development of the geothermal market and the penetration of innovation in the sector
- Adapt policies and markets. Research and assess the economic incentives and support mechanisms for geothermal (as well as legal and regulatory frameworks) that will enable fast deployment at a low price
- Minimise the uncertainty associated with geothermal energy by addressing and quantifying exploration risk, and develop financial tools that help mitigate such risks
- Comply with the European concept of the "circular economy"
- Ensure public engagement and acceptance. Further research is needed to understand the drivers of public engagement and develop a more effective way to communicate key aspects for public acceptance such as environmental and economic elements
- Ensure access to first-class skills and human resources and consolidate the scientific base for geothermal energy in order to cement progress and educate the next generation of geothermal pioneers



The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No [773392 — DG ETIP]

