Developing communications and engagement strategies for complex, cross-border geothermal energy projects

An example from the island of Ireland

Gemini Geothermal Energy Momentum

www.geminigeothermal.com

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Introduction

GEMINI (Geothermal Energy Momentum on the island of Ireland) is a four-year, multi-partner, cross-border demonstration project designed to develop and support the geothermal energy sector across the funding programme area of Ireland and Northern Ireland.

Public perception of geothermal energy on the island of Ireland

To tailor communication activities an all-island questionnaire was undertaken in February 2025.[2] Completed by a demographically representative sample of 1,300 adults in Ireland and Northern Ireland, the questionnaire collected data on views on heating and energy supply, knowledge about using geothermal energy, benefits/drawbacks of geothermal energy systems and attitudes on exploring for geothermal resources.

Key findings from total number of respondents, include:

- 91% have positive or neutral feelings about geothermal energy **(Fig. 1)**;
- >40% do not know or misunderstand what geothermal energy is;
- >50% are unaware of it as a heating resource (**Fig.2**).

Fig. 1 Sentiment towards geothermal energy on the island of Ireland (% of total respondents; n=1300)

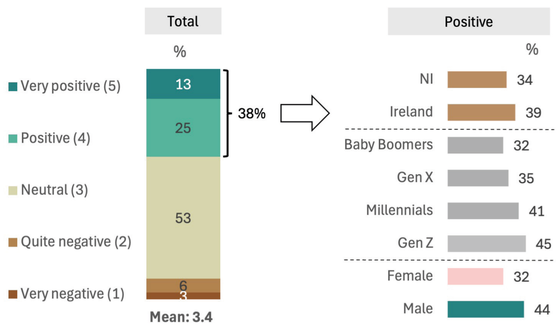


Fig. 2 Knowledge about using geothermal energy for residential heating (% of total respondents; n=1300)

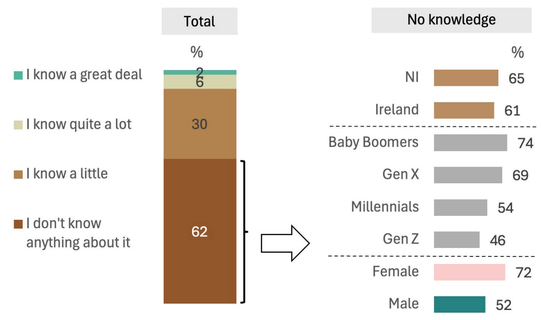
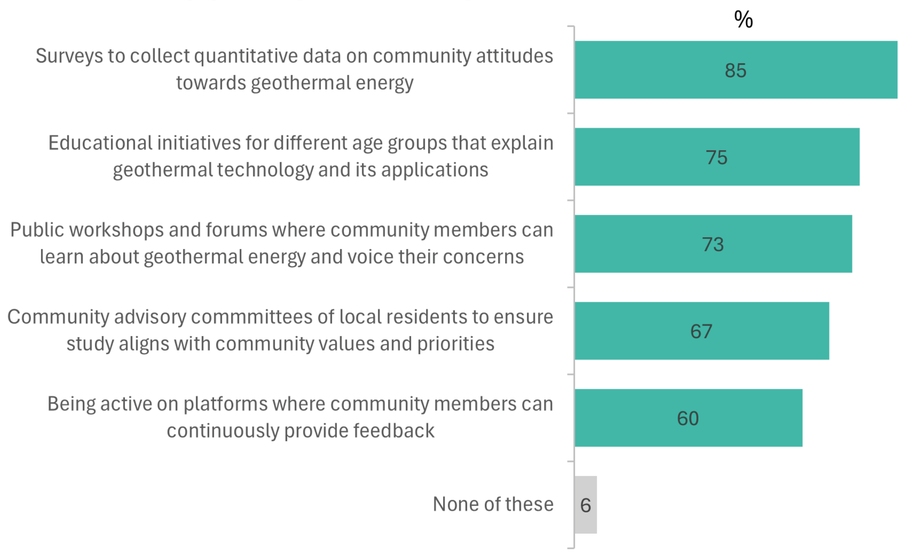


Fig. 3 Types of public participation initiatives respondents would engage in for geothermal energy (% of total respondents; n=1300)



Interestingly, younger generations know less about geothermal energy but are more positive about its use. On an encouraging note, 94% of all respondents would participate in engagement activities surrounding geothermal energy installations in their community (**Fig. 3**), confirming the value of well-designed engagement programmes.

Fig. 4 Map indicating the locations of four GEMINI demonstration sites: two in Belfast, one in Dublin and one in Sligo. The Lough MacNean and Antrim areas are foci for community engagement, and geological and geophysics research respectively.

The role of the demonstration sites in communications

Four geothermal installation demonstration sites – two in Northern Ireland and two in Ireland – provide the focus for communications activities (**Fig. 4**). They have an obvious value as real-world examples of what can be achieved and have the following benefits:

- They are public sector buildings = enhanced visibility to general public.
- They are situated in different localities (urban, suburban, edge of town) = variety of options for different circumstances.
- They have a wide geographical spread = site visit is straightforward for many stakeholders in education and community developments.
- They will host diverse geothermal and technological resource solutions – shallow, deep, open- and closed-loop = variety of options for different circumstances.

Each site has a niche role to play in supporting specific stakeholders.

The Net Zero Centre of Excellence, NI Housing Excecutive will facilitate training and skills development and public information on site.

The Northern Ireland Water site will facilitate site visits for planners and regulators.

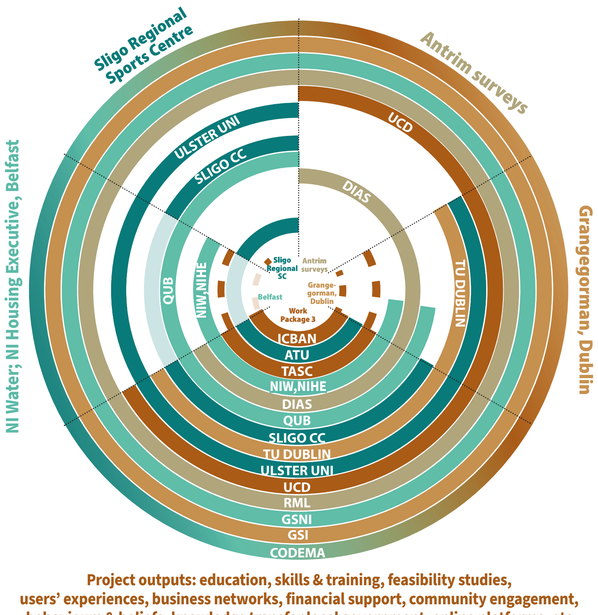
Sligo Regional Sports Centre will be used by the community and a locus for school and local authority visits.

Grangegorman campus, Dublin will host the island's first deep geothermal borehole, providing data for subsurface research, planning, operational activities, economic and social engagement.

GEMINI partners TASC[3] and ICBAN[4] will explore citizen participation and deliberative democracy methods in the cross-border area around **Lough MacNean**, as well as with communities at demonstration sites, to create new 'best practice' public engagement guidelines for all types of community geothermal projects.

Geophysical surveys (MT, gravity, passive and active seismic) are being undertaken across 100km^2 in **County Antrim**. Field scientists from GEMINI partners DIAS[5] and GSNI[6] have contributed to a variety of communications activities with landowners to raise awareness of geothermal energy exploration (**Fig.5**).

Fig. 5 Passers-by leaflets were amongst material produced to publicise geothermal during geophysical surveys; gravity survey at the 4th tee – photo used in social media engagement.



Project outputs: education, skills & training, feasibility studies, users' experiences, business networks, financial support, community engagement, behaviours & beliefs, knowledge transfer local government, online platforms, etc

Fig. 6 Graphic showing the interconnectedness and complexity of GEMINI's 15 partners[7] at demonstration sites/focus areas (shown as 4 segments) and all-partner involvement in whole project outputs (base segment). These outputs have been designed to have long-term, far-reaching impacts for geothermal energy resource development on the island of Ireland.

Table A. Stakeholders, Outputs, Impacts and Communications

Stakeholder/ target audience	Project output	Expected impact	Communications and engagement activities include:
All stakeholders	**Website**	Far-reaching repository for all project outputs and contacts	**Phase 1**: Frequently updated, diverse and educational content. All core material available in Irish language. Continual content; encouragement to engage two-way. **Phase 2**: Online portal and geothermal toolkit.
Landowners and community groups in demonstration and research focus areas	**Information packs, posters, boards** – using data gathered via project partners, from online surveys, personal interations, etc	Inform and engage; experience of and participation in data collection	Advertising local surveys – traditional/digital channels. Doorstep conversations with landowners and passersby; direct phone number to scientist. In-person public meetings.
Policy makers, regulators, planners, developers	**Free-to-access online portal**; bespoke training workshops in how to use and access the data and utilise various products	High quality open access data and data products to support stakeholders	Invited international speakers on policy and regulation. Networking opportunities – geothermal advisory groups. Demonstration site visits during and after construction, supported by e.g. timelapse imagery, 360 degree video capture, graphics, 3D models, etc
Homeowners, business owners, public authorities, developers, systems designers	**Free-to-access geothermal toolkit**: shallow geothermal maps, comprehensive guide to geothermal energy, interactive ground source heat pump costing tool (Ireland & NI), deep geothermal resource estimates, deep geothermal economic calculator.	High quality data and data products for decision making	**Phase 1**: Public engagement activities, community workshops, demonstration site visits. Events, workshops, project meetings to embed new networks. **Phase 2** (upon geothermal toolkit delivery): Communications plan will be developed. Final conference to showcase.
Teachers (2nd, 3rd level), and skills training (CPD, short courses)*	**Teaching and training material** * More detail: Braiden & Russell, EGC 2025, Session 6D Policy Strategies	To support teaching, training programmes & professional bodies	Teacher training workshops utilising existing teaching support programmes. Supported by general materials (see below).
General public and non-expert audiences	**Materials** – general and site-derived	Raising awareness of geothermal energy potential	Digital and printed information on all aspects of resource development e.g. factsheets, graphics, animations – general and site-focused. Onsite engagement. Mobile and fixed exhibitions, north and south of border.

GEMINI stakeholders, project outputs and communications activities

External stakeholders include policy makers, national and local government, planners and regulators, training networks, educators, businesses and business development agencies, community groups, homeowners and individual citizens. This variety is mirrored by the 15 GEMINI partners (and 8 associated partners)[7] from both sides of the border, who will themselves continue to support geothermal solutions beyond the life of the project.

All project partners, and by association their stakeholder groups, contribute to the project communications strategy and produce project outputs to support it (**Fig. 6**).

Whilst many outputs may be utilised for a non-technical target audience, some are tailored to specific stakeholder groups with varied knowledge bases (**Table A**). In addition, cross-border and cross-community knowledge sharing is a requirement for all groups and needs to be considered at every stage.

CONCLUSION

The development of a communications and engagement strategy across two distinct legal and cultural jurisdictions requires careful consideration and planning: risks are not only geological, environmental and financial, but also social and political. Therefore:

- Involvement of all project partners and stakeholders from an early stage is paramount.
- Cultural aspects and experiences need to be carefully integrated, including language, consistency of messaging and community practices.
- Perceived and real safety concerns need to be addressed and will play an important role in gaining support from (local) government and the wider public.
- Results need to be open and accessible.

Ultimately, the GEMINI project is working towards a future in which geothermal energy on the island of Ireland is managed through clear, open and transparent engagement, with projects involving and gathering contributions from industry, government and citizens.

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[2] Details of how the survey was conducted and further results are outlined in our EGC 2025 conference paper. A report will also be available from www.geminigeothermal.com
[3] Think-tank for Action on Social Change [4] Irish Central Border Area Network
[5] Dublin Institute for Advanced Studies [6] Geological Survey for Northern Ireland
[7] All GEMINI partners and associated partners are listed at www.geminigeothermal/partners

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