Raising awareness about geothermal energy among the community of Universidad Nacional del Comahue (Comahue University)

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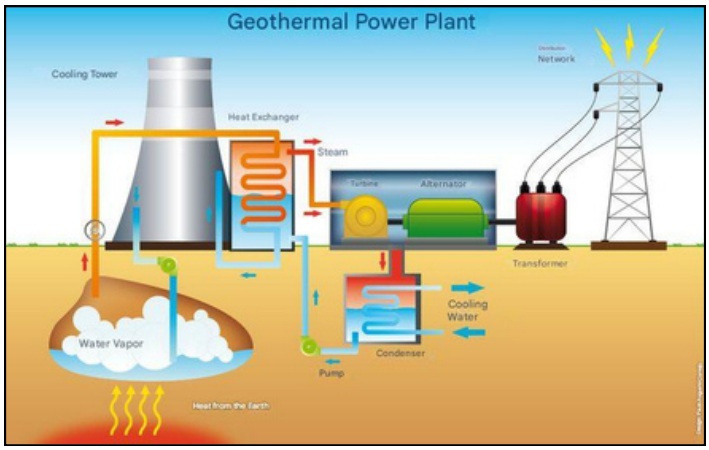
Introduction

The transition towards renewable energy sources stands as one of the main challenges and opportunities in the pursuit of global sustainability. Among these alternatives, geothermal energy emerges as a particularly valuable option due to its renewable, stable, and low-emission characteristics, aligning directly with the objectives of SDG 7: Affordable and Clean Energy (Tester et al., 2021). Despite these advantages, the global and regional implementation of geothermal energy remains relatively limited when compared to other renewable energies such as solar and wind sources.

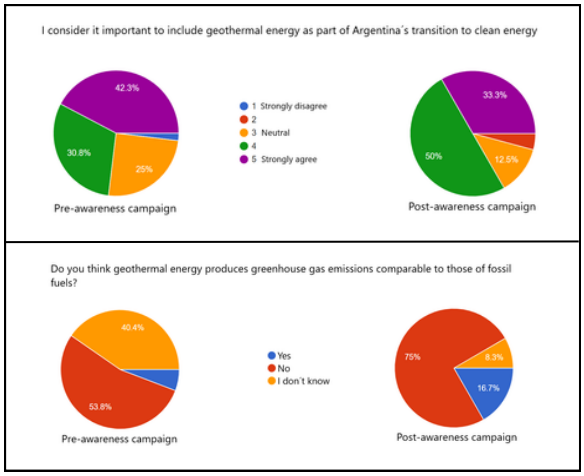
In this context, our project aims to promote awareness and understanding of geothermal energy among students and the academic community of Neuquén, Patagonia, Argentina

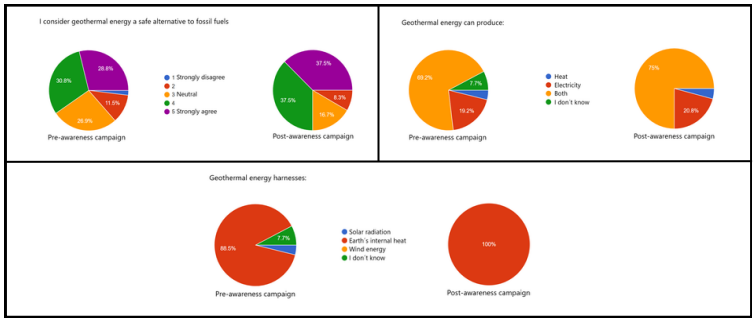


Methodology and results

The project employed a quantitative-descriptive and participatory approach to collect data, design educational materials, and assess the impact of an awareness campaign on geothermal energy. The campaign included the development of printed brochures, digital infographics, and informative reports, designed to promote understanding of geothermal energy within the university community. To evaluate its effectiveness, two structured digital surveys were conducted using Google Forms (one before and another after the awareness activities) following the frameworks proposed by Cees et al. (2020), Fernández Fuentes et al. (2022), and Balzan-Alzate et al. (2021). Each survey contained 15 questions covering consent, demographics, prior exposure, knowledge, perception, and willingness to change.

The results show a clear improvement in participants' understanding and perception of geothermal energy after the campaign. Students, mainly from the Facultad de Ingenieria (Engineering College), deepened their knowledge, recognized its dual capacity to produce both heat and electricity, and refined their views regarding environmental and technical risks. Awareness of its low greenhouse gas emissions and its relevance to Argentina's energy transition also increased. Overall, the initiative effectively strengthened both informed and positive attitudes towards geothermal energy, highlighting the importance of science-based communication in fostering renewable energy awareness within the academic community.





Discussions and conclusions

The results show that the educational intervention significantly improved the participants' knowledge and perception of geothermal energy. After the awareness campaign, participants demonstrated a better understanding of its origin, applications, and environmental advantages compared with fossil fuels. Misconceptions (such as high pollution) decreased notably, and confidence in geothermal energy as a safe and sustainable resource increased.

These findings confirm that scientific communication and educational strategies are effective tools to promote informed and positive attitudes towards renewable energy. The main barrier identified was the lack of accessible information rather than public rejection. Therefore, incorporating geothermal energy topics into academic programmes could enhance awareness and support Argentina's transition towards cleaner energy sources.

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