



Warming up to geothermal? The effect of participation on acceptance of local geothermal energy projects in the Netherlands

Geothermal energy provides a reliable and abundant source of heat without carbon emissions or additional load on the electricity grid, making it an attractive renewable energy option for the built environment. Despite these benefits, geothermal projects—like other renewable technologies—have faced societal opposition in several countries. Social acceptance is therefore a critical factor influencing project feasibility and success, requiring attention from operators, policymakers, authorities, and citizens. Understanding what drives acceptance is essential, particularly given the novelty and controversy surrounding geothermal energy, which may shape local attitudes and the relevance of different determinants.

This study addresses the question: *What is the role of public participation in social acceptance of local geothermal energy projects?* We conducted an online between-subject experiment to examine how different forms of participation influence acceptance of decisions within geothermal projects and whether these effects are moderated by outcome favorability and trust.

A total of 1,883 Dutch citizens were randomly assigned to one of nine treatment groups combining participation type (informing, consulting, co-deciding) and trust level (high, low, control). Each respondent evaluated five decisions for a hypothetical geothermal project in their neighborhood, indicated acceptance after learning the decision outcome, and assessed overall project acceptance.

Results analyzed using a cumulative link mixed model reveal no significant effect of participation type on acceptance of decisions or projects. Instead, outcome favorability and high trust are relevant to acceptance. These findings suggest that participation without genuine influence may be perceived as instrumental and ineffective. Additionally, the results might indicate that participation is not a static intervention, challenging the adequacy of experimental methods and pointing to the value of qualitative inquiry.