

Willingness to Pay for the Preservation of Geothermal Areas in Iceland: The Contingent Valuation Studies of Eldvörp and Hverahlíð

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Abstract : The approval of development projects with significant environmental impacts implies that the economic costs of the affected environmental resources must be less than the financial benefits, but such irreversible decisions are frequently made without ever attempting to estimate the monetary value of the losses. Due to this knowledge gap in the processes informing decision-making, development projects are commonly approved despite the potential for social welfare to be undermined. Heeding a repeated call by the OECD to commence economic accounting of environmental impacts as part of the cost-benefit analysis process for Icelandic energy projects, this paper sets out the results pertaining to the nation's first two contingent valuation studies of geothermal areas likely to be developed in the near future. Interval regression using log-transformation was applied to estimate willingness to pay (WTP) for the preservation of the high-temperature Eldvörp and Hverahlíð fields. The estimated mean WTP was 8,333 and 7,122 ISK for Eldvörp and Hverahlíð respectively. Scaled up to the Icelandic population of national taxpayers, this equates to estimated total economic value of 2.10 and 1.77 billion ISK respectively. These results reinforce arguments in favour of accounting for the environmental impacts of Iceland's future geothermal power projects as a mandatory component of the exploratory and production license application process. Further research is necessary to understand the economic impacts to specific ecosystem services associated with geothermal environments, particularly connected to changes in recreational amenity. In so doing, it would be possible to gain greater comprehension of the various components of total economic value, evolving understanding of why one geothermal area – in this case, Eldvörp – has a higher preservation value than another.

Keywords : decision-making, contingent valuation, geothermal energy, preservation

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