Project Title: Understanding the Relationship Between Hot Spring Aquifers and Geothermal Reservoirs (scheduled for 2025-2028)

Entrusted Parties: National University Corporation Kyushu University, National Institute of Advanced Industrial Science and Technology (AIST), Mitsubishi Gas Chemical Company, Inc. (MGC)

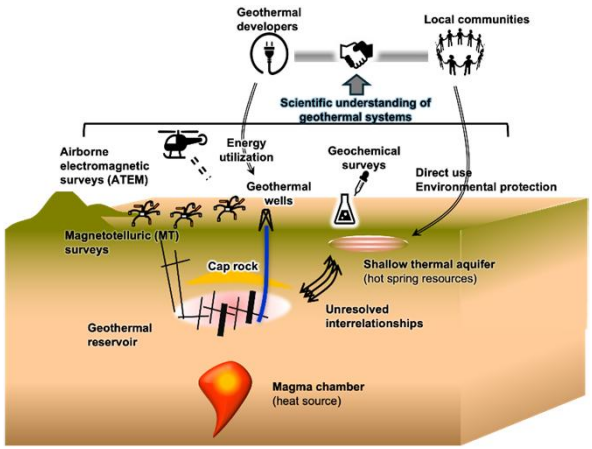
Outline of the Project

Objective

To encourage and expand the use of geothermal resources, this project is investigating best practices in countries that already employ the technology. Based on the results, we look at evaluation indicators that determine the potential impacts of development on hot springs.

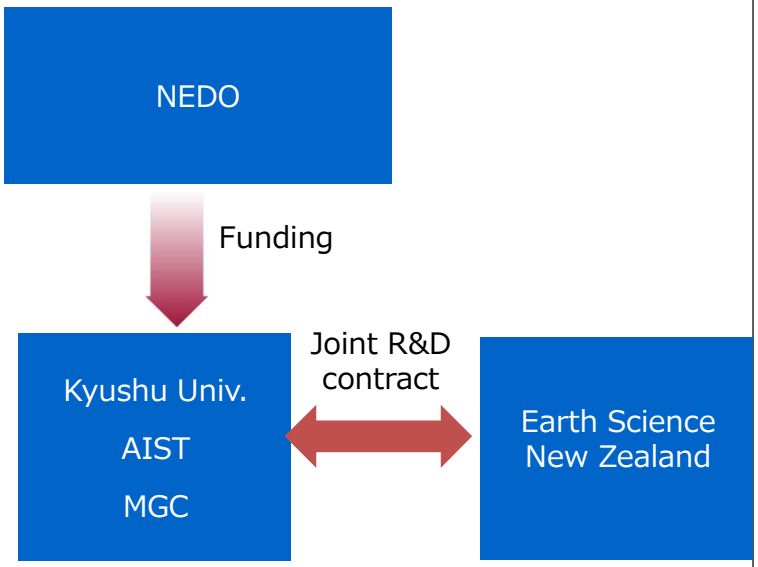
Research and Development Details

- Develop a method for connectivity of shallow and deep geothermal resources
- Evaluate impacts on geothermal hot spring resources
- Compile scientific evidence for the compatibility of geothermal use and hot spring protection
- Prepare visual materials to promote results to the public
- Verify applicability through international collaboration
- Examine application to Japanese geothermal areas



Concept diagram

Project Scheme



Significance of International R&D

- Collaboration with New Zealand allows access to data on geothermal development and hot spring protection, including an empirical study of the Taupo Volcanic Zone, and the use of geophysical and geochemical data from Earth Science New Zealand
- Mutual complementarity with Japan's advanced expertise in magnetotelluric (MT) inversion and geothermal conceptual modeling
- Development of a science-based model for balancing development and conservation
- Potential application to Japanese geothermal regions

Expected Outcomes

Technical Outcomes

- Establishment of a method to evaluate connectivity between shallow and deep geothermal resources
- Development of an integrated geothermal conceptual model

Social Outcomes and Future Prospects

- Improvement of impact assessments and acceptance by the public
- Contribution to geothermal expansion in Japanese regions