



June 24, 2019

Dr. Sommai Techawan  
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**Subject: Cooperation on Ground Source Heat Pump**

Dr. Sommai Techawan,

I would like to express my sincere gratitude for your strong support to the collaborative activities between the Department of Mineral Resources (DMR), Ministry of Natural Resources and Environment, Thailand and the Geological Survey of Japan (GSJ), AIST. I recognize there have been active mutual visits of researchers between the two institutes in the past year.

Now I understand that a new project on the application of the ground source heat pump (GSHP) system in Thailand was started in April 2019 as a JICA-funded joint research between DMR, GSJ, and Misawa Environmental Technology Co. Ltd. The title of the project is "Energy-saving Cooling System using Groundwater Heat Source." The three parties will jointly work for the demonstrational installation of a groundwater-based GSHP system in Bangkok in order to evaluate the efficiency of the system for electricity consumption reduction in Thailand.

In this regard, GSJ would like to add "ground source heat pump system" as a new collaborative research topic in the current MOU between DGR and GSJ/AIST, which was signed on July 6, 2018 and made effective for five (5) years. Therefore, the research areas of cooperation under the MOU include:

- a. geology and tectonics,
- b. coastal and marine geology,
- c. mineral resources,
- d. geological hazards,
- e. geological museum,
- f. geopark, and
- g. ground source heat pump system

I hope the new GSHP project will be carried out successfully and can provide a new scenario for reducing the emission of greenhouse gas in Thailand.

Sincerely yours,

Dr. Yusaku Yano  
Director General, Geological Survey of Japan  
National Institute of Advanced Industrial Science and Technology