

F. No. 113/14/2015-GT
Government of India
Ministry of New and Renewable Energy
(Geothermal Division)

14, CGO complex, New Delhi-110003
5th September, 2016

Office Memorandum

Subject: Exemption for Geothermal Drilling of Bores/wells for Heating/cooling Applications in India

This Ministry has the mandate for deployment and utilization of Ground Source Heat Pumps (GSHP) in India for heating/ cooling applications. Geothermal technology can be used for comfort air conditioning or industrial process heating. As compared to conventional HVAC system, GSHP technology can result in 30 to 60% electricity savings and 100% water savings as this technology rejects heat using conduction/ convection where as conventional HVAC system exchanges heat using cooling tower via evaporation which results in substantial water loss.

2. i) Implementation of geothermal GSHP technology requires drilling of bore/wells up to 200 meters depth. Definition of GSHP bore/well for technology implementation is defined as under:-

a) **GSHP bore** can be defined as any uncased artificial excavation that uses the heat exchange capacity of the earth for heating and cooling in which excavation the ambient ground temperature is 30 degrees Celsius or less and which excavation uses a closed loop fluid system to prevent the discharge or escape of its fluid into surrounding aquifers or other geologic formations. The bores shall be designed and constructed according to International Ground Source Heat Pump Association (IGSHPA) standards.

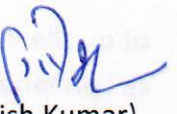
b) **GSHP well** can be defined as any uncased artificial excavation that uses heat exchange capacity of the earth and its aquifers for heating and cooling in which excavation the ambient ground and water temperature is 30 degrees Celsius or less and which excavation uses an open loop fluid system which does not add any chemicals (for HVAC water treatment or for other reason) to the water removed and injected from the wells. At least two wells shall be used for this purpose, a source well that is used to draw water and an injection well that is used to return water to the ground after it is used for HVAC heat exchange. The source and injection wells shall be designed and constructed according to IGSHPA standards.

ii) In case of any variations in ground water temperature beyond permissible limits set as per International/ national standards, an expert committee of MNRE comprising of various stakeholders from Central Ministries/developers/users will examine the case.

3. This Ministry considers GSHP as part of utility/ HVAC system of the structure/ premises (existing as well as under construction). Therefore this Ministry being competent authority hereby exempts drilling of GSHP bore/well from any separate permission required as earth is used only as heat source/sink. Also Drilling of Geothermal bore/ wells does not exploit groundwater nor contaminate it with any foreign substance. Already acquired permission for structure/building/ industrial plan from concerned Administrative/ Engineering authorities will serve as necessary clearance for drilling geothermal applications as well.

4. Necessary certification regarding GSHP applications will be issued and documented by respective state nodal Renewable energy agencies and MNRE will be Appellate authority. State nodal agencies (SNAs) may consider keeping a provision for processing fees not exceeding the half percent (0.5 %) of GSHP project cost to offset the additional expenditure involved in the establishment. The matter will be reviewed after five years or early as required. The information may be disseminated to all authorities/ agencies concerned for accordingly necessary clearances required.

This issues with the approval of the competent authority.


(Girish Kumar)
Director

To

All Ministries/ Departments of the Government of India (As per standard list)

Copy to:-

- 1) Chief Secretaries of all states/ union territories
- 2) Renewable energy Agencies of all states/ union territories