

## SFI Public Service Fellowship 2023

<b>1. Name of Governmental Department or Agency</b>
Geological Survey Ireland, Department of the Environment, Climate and Communications
<b>2. Title of the Project</b>
<b>GS16</b> Examining current planning requirements for geothermal energy projects in Ireland
<b>3. Description of the Project</b>
<p>Geothermal energy is a secure, reliable, local, renewable source of energy that can be used for heating and cooling buildings and generating electricity. Advances in technology, proven over the past decade, mean that geothermal energy can now play a significant role in our transition to a carbon neutral and circular economy. Geothermal energy can also help us achieve energy security. The Department's Geoscience Policy Division (GSPD) have prepared a Policy Statement to address the barriers to the development of geothermal energy in Ireland. This policy statement sets out the approach to regulating shallow and deep geothermal systems, including licensing the exploration for and the utilization of deep sources of geothermal energy. The next steps are the preparation of geothermal legislation and the development of a regulatory framework, to be carried out by the Geoscience Regulation Office (GSRO). A particular cross-cutting area of interest within the Department is the development of district heating projects, including geothermal district heating.</p> <p>We anticipate that large-scale geothermal developments, including geothermal district heating projects, will commence in Ireland in the near-term. At present there is a need for a clear planning framework for geothermal energy projects, particularly those that involve deep drilling (more than 500 m), and particularly in relation to environmental protection directives and policy. This project has been devised to better define current requirements and identify any gaps for future policy development. This project will also examine priority candidate areas for district heating roll-out on a case-by-case basis and assess the existing planning landscape for a potential geothermal energy heat source.</p> <p>This project would combine policy, planning and geoscience (the candidate does not have to have a background in the geosciences).</p>
<b>4. Project Scope</b>
The aim of this Fellowship project will be to examine existing Irish planning requirements at national and local levels that are relevant to the use of the subsurface for geothermal energy (to include, but not limited to, environmental protection, petroleum, mining, water, groundwater abstraction, and heat). The final report will clearly define the current likely planning requirements for a range of geothermal project types involving subsurface drilling (e.g., shallow open loop, shallow closed loop, deep closed loop, deep open loop). A case-by-case assessment of up to ten priority candidate

district heating areas will be carried out to assess planning conditions for potential geothermal heat sources. This work will also identify existing gaps or inconsistencies to be addressed by the Geothermal Regulation Authority (within GSRO) during the development of a regulatory framework for geothermal energy. This research will be of use in the rollout of scientific geothermal demonstration projects in the near future. Past projects in Ireland and permitting regimes in other jurisdictions could be looked at as part of a literature review and to inform the final recommendations of this work.

The Fellow will primarily work within the Groundwater and Geothermal Unit of Geological Survey Ireland under the supervision of Dr Sarah Blake (Geothermal Programme). However there will also be opportunity to engage with all programmes across the organisation. As a line division of the Department of the Environment, Climate and Communications, the Fellow will have an opportunity to engage directly with staff in collaborating with other departments and agencies, academic partners, and staff within DECC (in particular the Geoscience Policy Unit and Geoscience Regulation Office).

#### **5. Skills/Expertise Required**

Demonstrated knowledge and/or experience of planning legislation and policy, demonstrated written communication skills, ability to synthesise information from multiple disciplines including scientific/engineering fields, some background in geoscience or environmental sciences would be helpful. Experience working with spatial datasets through e.g., Geographical Information Systems, is essential.

#### **6. Expected Outputs of Project**

- Clear synthesis of existing and likely Irish planning requirements for a range of sizes of geothermal energy developments.
- A review of geothermal planning requirements in other jurisdictions.
- Area-specific planning assessments of up to ten priority candidate geothermal district heating areas.
- Recommendations for future planning and regulations.

The Fellow will learn how policy, regulation and legislation is developed and implemented in practice and how scientific and research outputs are used by public bodies. The project will also demonstrate how organisations like Geological Survey Ireland can provide the role of translating high quality research to practical tools for local and national government and other key stakeholders.

Geological Survey Ireland will benefit from embedding governance/planning expertise within a technical programme and improve engagement with external, non-technical stakeholders.

#### **7. Working Arrangements**

Ideally would be hosted in GSI head office (Booterstown Hall), but flexible offsite/working from home arrangements available. It would also be useful if they could attend relevant events, conferences etc

#### **8. Expected Timeline**

Approximately 12 months full-time or equivalent

<b>9. Contact Details</b>
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Dr Sarah Blake, Groundwater & Geothermal Unit, Geological Survey Ireland Dr Aoife Braiden, GSI Research Manager
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