Elements

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/ LEGAL ASPECTS OF GEOHTERMAL PROJECTS

// OUR TEAM

Baldvin Björn Haraldsson
Partner

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Baldvin Björn is a Supreme Court Attorney, qualified to practice law in Iceland and France. He has extensive 28-year experience in M&A, banking & finance, energy law, renewable energies, mergers & acquisitions, capital markets and commercial and company law.

Baldvin Björn has actively advised clients throughout his career in Energy Law, with a focus on Renewable Energy. He has played a key role as a project leader in various geothermal projects over the last 20 years. Some of his recent projects include a legislative review and drafting of laws and regulations for the competent authorities in Iceland, France, Turkey, Djibouti, Kenya, Ethiopia, Bulgaria, Kazakhstan and the Comoros Islands. Recently, he acted as a legal adviser to the Icelandic Ministry for Environment, Energy and Climate, in relation to the preparations for a legislation on wind energy in Iceland.

Baldvin also advised an Icelandic developer on negotiating a power purchase agreement, reviewing license issues and on various legal issues relating to an independent geothermal power project in Ethiopia.

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Antoine Lochet
Counsel

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Antoine is admitted to the Icelandic and French bars. He has a 15 years experience in cross-border M&A, corporate, banking, energy and infrastructure transactions.

Some additional projects of Antoine's include a prominent role in various legislative projects, including a review and drafting of laws and regulations for the competent authorities in Iceland, France, Turkey, Djibouti, Kenya, Ethiopia, Bulgaria, Kazakhstan and the Comoros Islands.

Anna Björg Guðjónsdóttir
Senior Associate

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Anna is an Icelandic qualified lawyer with an LLM degree from UCL in International Banking and Finance law. She has been working for BBA//Fjeldco since 2013, most recently as a Senior Associate since January 2023.

She specialises in corporate law, M&A, banking and finance law and capital markets. Additionally, Anna focuses on energy law, including legislative review for various authorities and governments globally in relation to renewable energy.

// Our Energy

BBA//Fjeldco advises clients on legal issues relating to harnessing natural resources in various countries.

Iceland is at the forefront of geothermal development worldwide, and at BBA//Fjeldco, we have advised some of the leading companies in the space in countries including the Philippines, Indonesia, China, Abu Dhabi, Nepal, and Ethiopia.

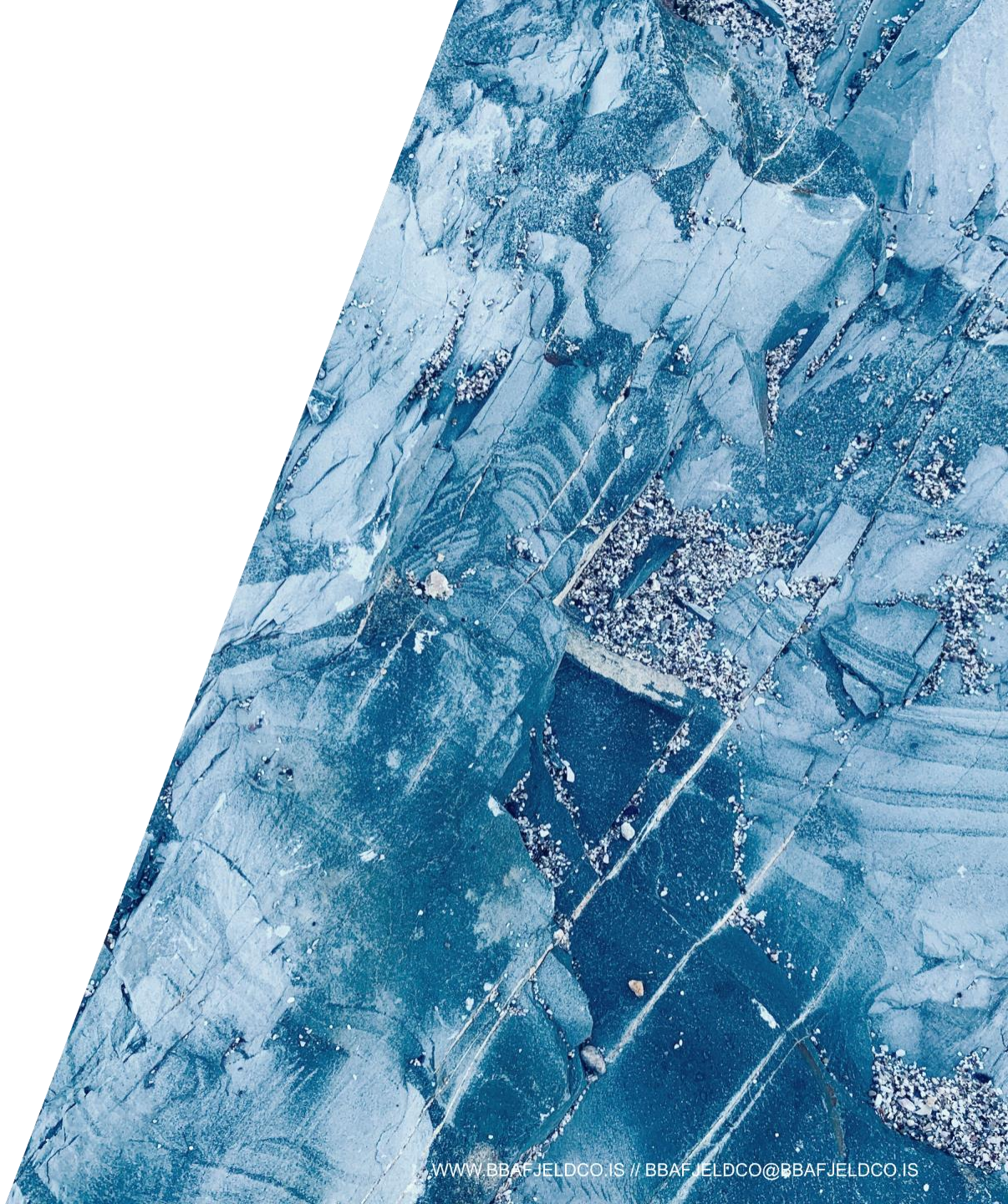
Our project advisory scope extends to securing terrain for geothermal research, advising on Power Purchase Agreements and Project Agreements, and dealing with governments and energy authorities concerning licenses, feasibility studies, exploration drilling, construction of facilities, and more.

We have advised governments, inter-governmental agencies, and development banks such as the World Bank, UNDP, the European Union, and the Turkish Development Bank on regulatory aspects of renewable energy.

We have contacted regulatory review and gap analysis and been involved in modifying or drafting laws and regulations in Iceland, France, Turkey, Djibouti, Kenya, Ethiopia, Bulgaria, Kazakhstan, El Salvador and the Comoros Islands. We also participate in international research and development projects in renewable energy.

In cooperation with several first-class law firms in the world, we created the Geothermal Transparency Guide, providing an overview of the geothermal regulatory framework in 17 countries – see http://www.geothermal.bba.is/.

The firm is expanding the Guide scope to include between 30 and 40 countries.



/ Services

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Gap Analysis

- International Development Banks
- Governments
- Free Trade Area

Regulatory Framework

- International Development Banks
- Governments
- Free Trade Areas

Risk Mitigation Schemes

- International Development Banks
- Governments
- Free Trade Areas
- Underwriters
- Developers

Corporate, Finance

- Developers
- Banks
- Underwriters
- Corporates

Training Capacity building

- International Development Banks
- Governments
- Free Trade Areas
- Underwriters
- Developers
- Corporates

Gap Analysis Methodology

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Establish a consortium

Project Leader and Legal Advisor: **BBA//Fjeldco**

Dev Firm: **Reykjavik Geothermal**

Geoscience Firm: **ISOR**

Engineering Firm: **Verkís**

Econ Consulting: **Intellecon**

Local Law Firm: **TBD**

Review existing laws

Review existing laws/regulations

Provide Report / Gap Analysis

Workshops with Authorities

Provide Final Report

Roadmap and Action Plan

Suggestive legal changes, as applicable

Draft Legal Framework

Draft Geothermal Energy Act

Draft Implementing Regulation

// Legal aspects of geothermal projects

Definitions of resources	Ownership of resources	Environmental obligations and sustainable use	Access to land/resources
Licensing authority (one-stop-shop)	Licensing procedure and types of licenses	Access to networks and grid connection	Monitoring and surveillance
Cascaded use of resources	Information sharing	Incentives and risk sharing	De-commissioning

// The importance of state policy

- Most countries which are successfully developing their geothermal resources, have established and followed a clear and realistic policy relating to the harnessing of geothermal resources
- Policies need to consider both the short-term and long-term goals of the government in respect of exploration and exploitation of resources
- In order to establish meaningful policies, it is critical to understand the country‘s potential resources, as well as the success or failure of existing projects
- Therefore, the collection of data and the creation of a „geothermal atlas“ is an important aspect of establishing and maintaining a viable state policy on the use of geothermal reservoirs
- Policies need to take into account environmental issues and the potential impact on communities and municipalities

// Definitions differ but have similarities

- Geothermal resources are usually defined as the heat contained within the earth, including but not limited to geothermal waters. Legislations might also differ on whether geothermal deposits qualify as minerals under the relevant applicable mining act. That would depend on whether the general mining act is intended to apply to the exploration of geothermal resources. **The trend in countries enacting ad hoc legislation for geothermal is to create a separate legal framework for geothermal resources.**

- Legislations also differ on whether by-products, for instance minerals such as lithium, are part of the geothermal resource. The issue here is whether the extraction of such by-product should be allowed under a geothermal permit or whether it should be subject to a separate permit. **Extraction and commercialization of by-products may increase the potential revenue of geothermal projects, and therefore enhance their bankability.**

// Ownership of resource is generally vested in the State.

- **The question of ownership and right of use of the geothermal resource is crucial in a direct use project, especially when the project is developed and operated by a private entity**. Since such project extensively relies on a secured access and right to use and to dispose of geothermal heat, fluids and other components of the geothermal resource, it is essential that the developers have a clear view of their rights on the geothermal resource.

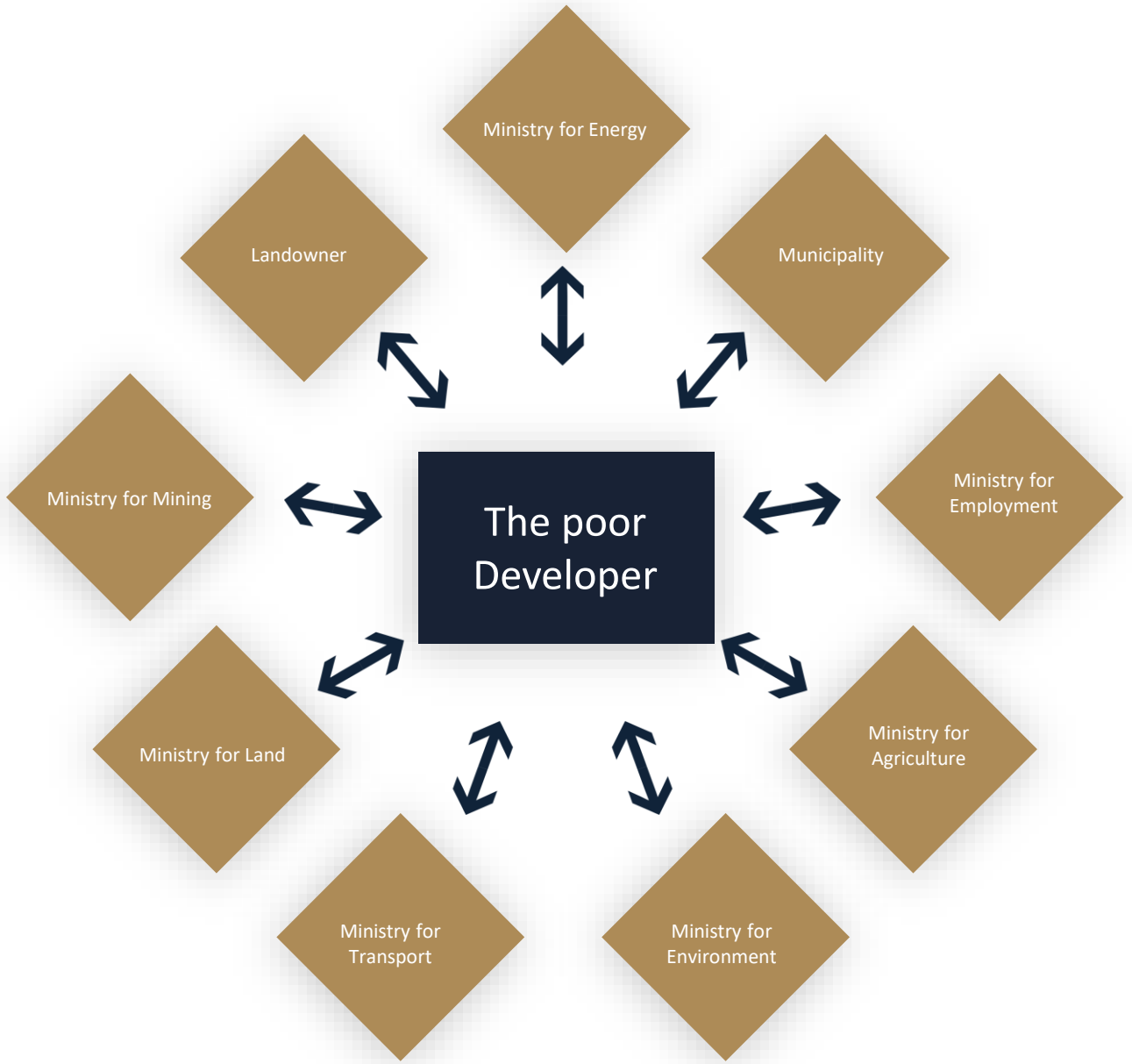
- As a general practice, the legal framework should ensure that the ownership of the resource is vested in the state, which in turn grants licenses for their exploration, development and exploitation, in a transparent and non-discriminatory manner and for a sufficient duration, in order to enable developers and investors to secure a feasible rate of return on their investment. In most countries, ownership of resources contained in the ground, including geothermal resources, is vested in the state. **As a consequence, the exploration or exploitation of such resource is subject to a license delivered by the state.**

Access to land needs to be guaranteed

- In cases where plots of land with geothermal prospects are held by private parties, and although due consideration needs to be taken with respect to the interests of the private landowner, the private landowner should not
  - (i) be able to explore or exploit the geothermal resource located under its land unless with a license from the applicable state authority; or
  - (ii) be able to prevent such land from being exploited by other parties, if the state decides to grant geothermal reconnaissance-, exploration- or exploitation licenses on such land.

- Due compensation needs however to be granted to private landowners when a license is granted to other parties to exploit geothermal reservoirs on the land.

/ Institutions: a complicated environment



// Existing data to be managed – more data to be collected

- It is critical to collect as much data on existing geothermal reservoirs as possible.

- Maps of geothermal resources are to be found in various countries, including the Netherlands, Hungary and Iceland. These sources of information can be hugely important for the future development and management of resources, for the benefit of the country in question.

- Permit holders should be obligated to supply results of investigations into geological, geochemical, geophysical and hydrogeological studies, results of drilling and reservoir tests conducted.

// Risk-sharing mechanisms can significantly increase investment

- Examples from various countries, including Iceland, Turkey, France and the Netherlands, indicate that risk-sharing agreements between the public and private sector at the exploration stages can significantly increase the chance of private investment in geothermal energy projects.

// Incentives and support

- Incentives often used to attract investors at the early stages of geothermal development, but the up-front cost of geothermal projects is high.
- In Iceland, the Energy Fund allocates yearly grants to energy projects, in accordance with the government's priorities on energy transition. In 2022, 140 projects received grants with a total grant amount of around USD 7,300,000. A grant from the Energy Fund can amount to a maximum of one third of the total cost of a project.

Projects

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- Djibouti
- Bulgaria / WB / EU
- European Union
- Comoros / UNDP
- Renewables Transp. Guide
- Iceland / State
- El Salvador / WB
- Kenya / UTN
- Corporate / Development
- France / Strasbourg
- Indonesia / WB
- Kazakhstan / WB

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