

Geothermal Energy Development in Alberta

Geothermal Policy Support and Incentives



Environmental
Law Centre

Environmental Law Centre Webinar Series

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We acknowledge that what we call Alberta is the traditional and ancestral territory of many peoples, presently subject to Treaties 6, 7, and 8. Namely: the Blackfoot Confederacy – Kainai, Piikani, and Siksika – the Cree, Dene, Saulteaux, Nakota Sioux, Stoney Nakoda, and the Tsuu T’ina Nation and the Métis People of Alberta.

We acknowledge the many Indigenous peoples who have lived in and cared for these lands for generations. We make this acknowledgement as an act of reconciliation and gratitude to those whose territory we reside on or are visiting.

This webinar series is made possible with funding from



About the Environmental Law Centre

- The Environmental Law Centre (ELC) has been seeking strong and effective environmental laws since it was founded in 1982.
- The ELC is dedicated to providing credible, comprehensive and objective legal information regarding natural resources, energy and environmental law, policy and regulation in the Province of Alberta.
- The ELC's mission is to advocate for laws that will sustain ecosystems and ensure a healthy environment and to engage citizens in the law's creation and enforcement.
- Our vision is a society where our laws secure an environment that sustains current and future generations and supports ecosystem health.



ELC Geothermal Law & Regulation Webinar Series

This is a three-part webinar series presented by ELC:

- Alberta's Existing Geothermal Regulatory Framework
- Recommendations for Geothermal Law & Regulation in Alberta
- Geothermal Policy Support and Incentives



Presentation Outline

- Regulatory scheme is foundational but may not be enough
- What policy tools can be used to support geothermal energy development?
- What does the ELC recommend?



Why is a regulatory scheme not enough?

- Policy support is essential as a means to reduce development risks and alleviate market pressures on nascent industry
- Development risks can include:
 - High up-front costs to develop field and power plant
 - Lack of available transmission to geothermal sites
 - Lack of infrastructure for easy access to geothermal sites
 - Limited availability of technical expertise
 - Unknowns about the geothermal resource
- some of these are eased due to high level of oil and gas development in Alberta



Potential Policy Tools

- Royalties
- Government financial support
- Market Incentives
- Research and Data



Policy Tools: Royalties

- Royalties = unique form of taxation on natural resources
- May be **in rem tax** which is applied to the production without consideration of costs - can take many forms
 - Unit-based royalty – fee applied to production, linked to operation size and amount of extraction
 - Resource rent royalty – based on revenue gained from using the resource
- May be **in personam tax** (a.k.a. accounting profits royalty) – calculated as percentage of the operating profits



Policy Recommendations: Royalties

- Maintain authority to impose royalties, recognizing it may not be appropriate to impose in early stages of industry
- *GRDA* amends the *Mines and Mineral Act* to grant authority to impose a royalty on geothermal resources

Policy Tools: Financial Support Programs

- Government financial support may address research and development, provide investment aid or operating aid
- These include thing like:
 - Cost-share programs
 - Public insurance
 - Early-stage fiscal incentives



Policy Recommendations: Financial Support Programs

- Countries that have been successful have used a combination of policy approaches – precise mix requires stakeholder consultation, economic analysis and clear priorities BUT remember polluter pays principle!!
- Consider cost-share and public insurance programs which reduce the risks associated with geothermal resource exploration and development
- Early-stage fiscal incentives such as easing import duties on machinery and equipments, reduced licence fees and tax credits/exemptions



Policy Tools: Market Incentives

- Worldwide, the dominant market incentives are:
 - Feed-in-Tariffs
 - Renewable Portfolio Standards
- Feed-in-Tariffs
 - set guaranteed price for renewable energy and guarantee access to the electrical grid
- Renewable Portfolio Standards
 - Government sets renewable energy targets which are enforceable



Policy Recommendations: Market Incentives

- For geothermal power generation
 - There should be exploration of using Feed-in-Tariffs and Renewable Portfolio Standards in Alberta
 - These are demonstrated to encourage development of geothermal electrical generation by securing market and prices



Policy Tools: Data and Research

- Designed to address the “data gap” regarding geothermal resources
- Some approaches:
 - Government led research and development which leads to publicly available data
 - requirements for private entities to release data



Policy Recommendations: Data and Research

- increase access to exploration data, which could include making sub-surface data public after a prescribed period of time
- participation in provincial schemes such as cost-share or public insurance programs should be conditional upon a requirement to publicly release data.



Questions?

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