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Alberta government introduces Bill 36: The Geothermal Resource Development Act

NOVEMBER 2, 2020 7 MIN READ

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On October 20, 2020, the Alberta government introduced Bill 36: The *Geothermal Resource Development Act*[1], which is aimed at creating a dedicated regulatory framework for the development of geothermal resources in Alberta. Bill 36 signals a more proactive approach to attract investment in this emerging industry by creating greater policy and regulatory certainty.

Alberta's geothermal resources

Geothermal energy is thermal energy that is generated and stored in the earth, which can be used to generate renewable electricity. According to data from the Canadian Geothermal Energy Association, there is geothermal resource potential of 388,500 megawatts (MW) in Alberta that can be used under existing technical, structural and ecologic restrictions (assuming medium recovery).[2] This is almost 24 times more than Alberta's installed electricity capacity in 2019.[3]

Alberta is well-positioned to develop its plentiful geothermal resources based on its extensive experience developing oil and gas resources. These advantages include:

- extensive oil and gas expertise, including drilling and completions expertise and leading technologies;
- availability of extensive subsurface data, a well-established service sector and existing infrastructure; and
- opportunities for co-production with oil and gas and to repurpose inactive oil and gas wells.

As a renewable energy option, geothermal energy is attractive because it does not have the same variability problem as wind and solar energy, where generation varies throughout the day and the year. This means that geothermal is a renewable energy option that itself can balance changes in generation that occur in the grid because of variation in other renewable energy sources such as wind and solar energy.[4]

To date, geothermal project applications in Alberta have been assessed on a case-by-case basis, which has been cited as a reason why no commercial projects have been developed. For example, a 2018 report by the Canada West Foundation noted the following:

Without a clear, fair and efficient regulatory framework, would-be developers face the

uncertainty of an uneven or inconsistent application of existing regulatory structures to geothermal development or of a future framework being implemented that is at odds to their technology or business model. This uncertainty can severely limit emerging technologies by increasing risk and driving away investors – potentially fatal for new innovations trying to get off the ground.[5]

The Alberta government has cited increased interest in geothermal development as a reason for the establishment of a dedicated geothermal framework, along with the potential for geothermal resources development to create jobs while lowering greenhouse gas emissions.[6]

New regulatory framework for geothermal development

Bill 36 establishes a new framework to regulate geothermal development below the base of groundwater protection (the depth at which groundwater is estimated to transition from non-saline to saline). It does so by creating the *Geothermal Resource Development Act* (the GRDA) and amending several acts, including the *Mines and Minerals Act* (the MMA).

The GRDA is modelled after the *Oil and Gas Conservation Act* (the OGCA) and would put in place a similar regime in which the Alberta Energy Regulator (the AER) is charged with regulating the safe, efficient and responsible development of the resource. It would include similar requirements and processes for land use and liability, including with respect to well and facility licensing; inspection; suspension and abandonment; preventing impairment and damage to the well or facility; entry on land; remediation and reclamation. Like the OGCA, the GRDA would give the AER the power to make rules respecting many items (including licensing, monitoring and compliance, suspension and abandonment, and costs of remediation and reclamation) and it would give the Lieutenant Governor in Council the power to make regulations respecting several items (including any matter considered necessary to carry out the purposes of the GRDA).

Bill 36 would also amend several acts, including the MMA. Amendments to the MMA would vest the owner of the mineral title (rather than the surface title) with the right to explore for, develop, recover and manage the geothermal resources associated with those minerals and with any subsurface reservoirs under the land (the Ownership Amendment). This is how the Alberta government plans to establish its authority to receive revenues for geothermal resource development, given that the provincial Crown is the owner of the mineral title in most of Alberta. Bill 36's amendments to the MMA would permit the provincial Crown to exercise this authority by entering into contracts respecting geothermal resources associated with minerals or subsurface reservoirs that are owned by the provincial Crown, and amounts payable to the provincial Crown for exploration for or development and recovery of them. Bill 36 would also permit the Lieutenant Governor in Council to make regulations respecting the amounts payable to the provincial Crown for such exploration or development and recovery.

Implementation of the framework and remaining uncertainty

If it is passed, Bill 36 will take effect upon proclamation. Many details regarding how its new geothermal framework will be applied will remain unclear until the AER makes new rules and the Province makes new regulations, including a potential royalty regime. The Ownership Amendment to the MMA may itself be amended, given concerns that it may not be effective at vesting rights to geothermal resources in the mineral owner (rather than the surface owner),[7] as it is intended to establish the Alberta government's authority to receive revenues.

Moreover, while Bill 36 is aimed at providing clarity regarding how development of geothermal resources will be regulated, it is unclear how these projects will fit within the current electricity regulatory regime. For instance, Bill 36 does not address the role of the Alberta Utilities Commission (the AUC), which is responsible for reviewing and approving power plants and grid connections. For geothermal projects that include power generation, the extent of regulatory overlap between the AUC and AER – both of which have similar mandates to assess and balance impacts – is currently unknown. Also, it is understood, although not confirmed, that geothermal projects that produce power would be considered renewable assets that generate environmental attributes (offsets or credits) under the *Technology Innovation and Emissions Reduction Regulation*. Further clarity on if and, if so, precisely how these projects fit within that regime will be required by proponents seeking to secure financing and make investment decisions.

To help inform the next steps of implementing the policy and regulatory framework for geothermal resources, the Alberta government is planning to hold discussions with industry and other key stakeholder groups in the near future. These may include discussions of policies to reduce exploration risk and provide certainty for investor returns. According to a Pembina Institute report, government policies aimed at reducing exploration risk at the early stages of geothermal projects have been instrumental in the successful development of geothermal industries in other countries.[8] Further, a guaranteed long-term price for geothermal electricity has been cited by the Pembina Institute[9] and industry stakeholders as a necessary incentive to provide return on investment and develop geothermal resources, with power purchase agreements, such as those issued through the Renewable Energy Program, being one option to provide such guarantees.[10]

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[1] Bill 36, *Geothermal Resource Development Act*, 2nd Sess, 30th Leg, Alberta, 2020.

[2] Canadian Geothermal Energy Association, "Canadian National Geothermal Database And Territorial Resource Estimate Maps: Alberta," online: https://www.cangea.ca/albertageothermal.html.

[3] Alberta Utilities Commission, "Alberta Electric Energy Net Installed Capacity (MCR MW) By Resource," online: https://www.auc.ab.ca/Shared%20Documents/InstalledCapacity.pdf.

[4] U.S. Department of Energy, *GeoVision: Harnessing the Heat Beneath Our Feet*, 2019, pp 30-31, online: https://www.energy.gov/sites/prod/files/2019/06/f63/GeoVision-full-report-opt.pdf.

[5] Canada West Foundation, *Hot Commodity: Geothermal Electricity in Alberta,* July 2018, p 16, online: https://cwf.ca/wp-content/uploads/2018/07/2018-07_CWF_HotCommodity_GeothermalElectricity_Report_WEB.pdf.

[6] Government of Alberta, "Setting the stage for clean geothermal development," October 7, 2020, online: https://www.alberta.ca/release.cfm?xID=7341824DD37BD-01E5-6C50-33049485E06CEEAB.

[7] These concerns are essentially that there may be a common law presumption in favour of the surface owner, and that the Ownership Amendment is not sufficiently clear to overcome

that presumption. See Nigel Bankes, "A Legal Regime for the Development of Geothermal Resources in Alberta" (October 24, 2020), online: ABlawg, http://ablawg.ca/wp-content/uploads/2020/10/Blog_NB_Bill_36.pdf. See also Alberta, Legislative Assembly, *Hansard*, 2nd Sess, 30th Leg (26 October 2020) at 2755 (K Ganley).

[8] Pembina Institute, *Heat Seeking: Alberta's geothermal industry potential and barriers*, December 2017, p 15, online: https://www.pembina.org/reports/heat-seeking.pdf.

[9] *Ibid*, p 16.

[10] The Canadian Business Journal, "The Canadian Oil Service Sector Supports the Emergence of New Canadian Geothermal Developers," May 26, 2020, online: https://www.cbj.ca/the-canadian-oil-service-sector-supports-the-emergence-of-new-canadian-geothermal-developers/.