

Policy Opportunities and Gaps to Advance the Geothermal Industry in Canada

Canadian Geothermal Energy Association (CanGEA)

GRC

GEOTHERMAL RISING CONFERENCE

OCTOBER 27-30, 2024 | HILTON WAIKOLOA VILLAGE | WAIKOLOA, HI





About CanGEA

- Founded in 2007
- Policy development, regulatory affairs, and government advocacy
- Members work collaboratively with staff to identify key issues and establish priorities



Kitselas
Geothermal
Inc.



Command Tubular



HALLIBURTON

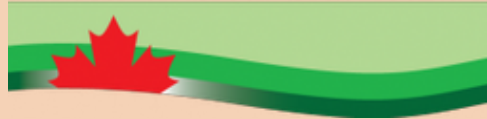




DEI Profile

CanGEA

CANADIAN GEOTHERMAL ENERGY ASSOCIATION



CanGEA monitors the presence of underrepresented groups within the organization to measure and assess results and outcomes of the Company's diversity policy, striving to provide opportunities wherever possible to these groups

2024

Diversity Statistics



12%

New Canadian

41%

Women



100%

Youth



6%

New Immigrant



31%

Visible Minorities



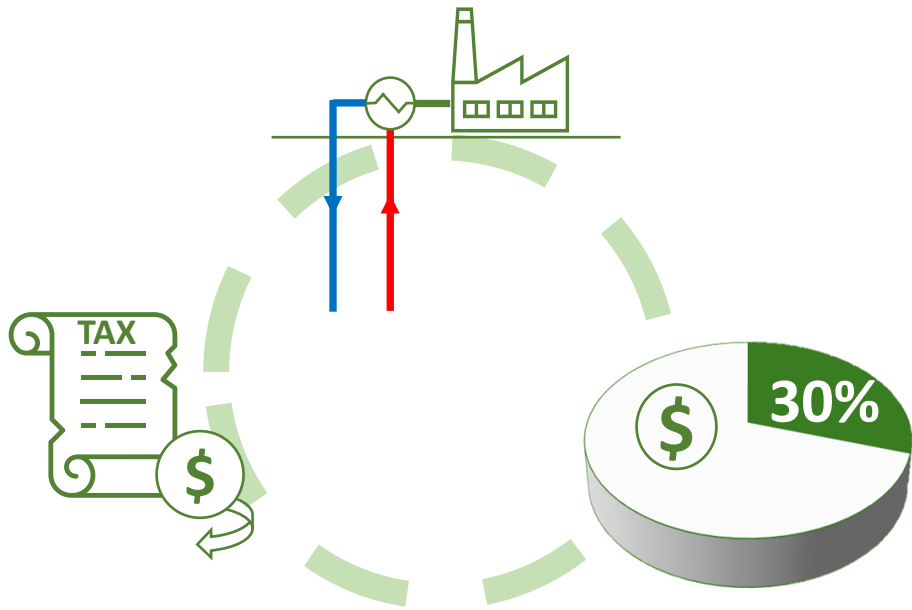


Policy Priorities

- Highest quality resources exist in Canada's western provinces and territories
- Thus, policy reforms are primarily needed in Alberta and BC
 - New BC government presents opportunities
- Targeted federal funding programs
- There is also geothermal potential in Saskatchewan, Yukon, and NWT; yet populations (and markets) are smaller



Federal - 30% Clean Technology Investment Tax Credit (ITC)



- Analogous to IRA's clean electricity ITC
- Announced in 2022
 - Geothermal initially excluded
 - Co-produced fluid projects excluded
- Amended in 2023 to include geothermal **heat and electricity**
- Bill C-59 passed in Summer 2024
- Legislative amendments proposed to exclude **drilling**; outcome pending



Federal Proposals

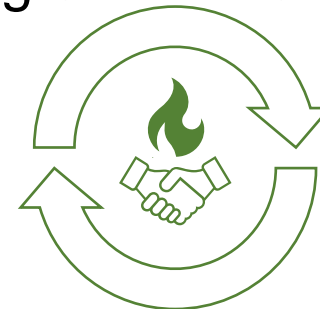
Geothermal Exploration Drilling Fund

- Guaranteed, forgivable loans
- Drilling risk/cost shared between public and private sector
- Potential to be a budget neutral program
- Similar programs:
 - Africa's Geothermal Risk Mitigation Facility
 - USDA's Rural Energy for America



Renewable Heating Portfolio Standard (RHPS) and Heat Price Swapping Agreements

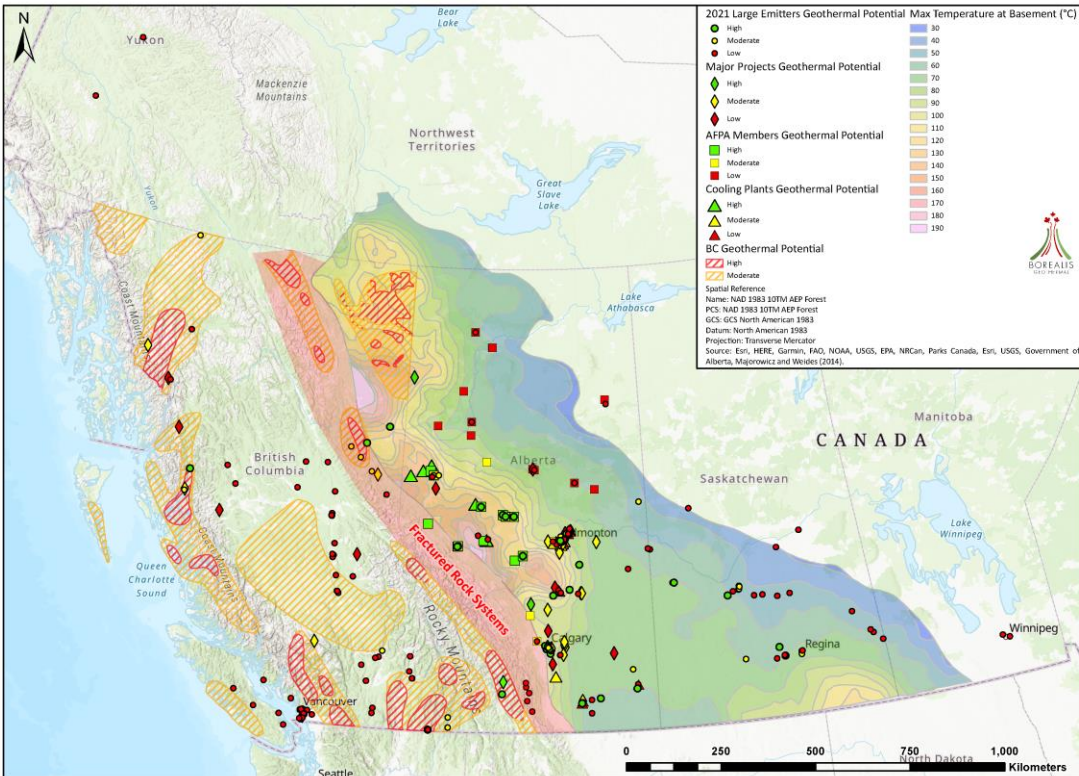
- Federal gov't goal to purchase 100% clean power by 2025
- In parallel, could mandate a RHPS for federal agencies
- Price swapping agreements would enable purchase of geothermal heat
- The Canadian Gas Association proposed similar program for natural gas at \$18/GJ





Provincial Proposal - Industrial Fuel-switching to Geothermal Direct-use Heat Demonstration Project Portfolio

- Develop a program like the U.S. DOE to fund innovative energy demonstration projects
- Great fit between heat demand of Large Final Emitters and potential for geothermal to supply
- Technical challenges are retrofitting existing natural gas systems to accommodate geothermal energy, and pumping costs emissions – including their emissions
 - Can be solved with first-of-kind demonstration
 - Use carbon-free electricity





Alberta

Geothermal Incentive Program

- Gain parity with 12% Alberta Petrochemicals Incentive Program (APIP)
- Include co-production projects and ensure program covers drilling costs

Expanded Scope of the Alberta Drilling Accelerator (ADA)

- Current focus just on drilling techniques and technologies; testing of deep sedimentary reservoirs and basement needed

Regulatory Reform

- Surface access rights; Urban Drilling in the Sour Gas (H₂S) fields; Exclusive pore space rights; Incentivize use of Geothermal Waste Heat

Electricity Market Reform

- Energy-only market makes it difficult for geothermal to compete on price
- Due to grid constraints and 'economic withholding,' the gov't is more open to market reform
- Gov't introduced temporary measures in 2024 to address economic withholding, but reform to reward baseload clean power is still needed





British Columbia

Regulatory Reforms

- Reconsider Well Classifications; Streamline Permitting; Periodic Reviews of the Legislation

Tax Incentives and Public Investments

- Geothermal overlooked compared to other clean industries
 - Require district heating parity with heat pump subsidy program



Enable the Public Utility to Purchase Geothermal Power

- Power market is a monopoly dominated by BC Hydro
- Geothermal missed BC Hydro's 2024 Call for Power due to permitting delays (regulations, leases, consultations)



Recap

Federal

- Ensure that the Clean Tech ITC includes drilling
- Introduce first-of-kind heat-swapping agreements
- Risk mitigation drilling fund

Pan-Provincial

- Geothermal industrial heating for Large Final Emitters (LFE) public-private projects

Alberta

- 12% Geothermal Incentive Program
- Fully leverage the Alberta Drilling Accelerator (ADA)
- Regulatory: surface rights, sour gas drilling, pore space exclusivity, mandate use of geothermal waste heat
- Electricity market reform

BC

- Various fiscal incentive disparities to advocate for
- Various measures needed to streamline permitting and reduce timeline uncertainty



How You Can Help

- The Canadian geothermal energy industry needs engagement from more stakeholders across the supply chain
- Key players need to agree on top policy priorities for project development
- Direct inquiries to info@cangea.ca