CanGEA:
The Right Risking Mitigation Scheme for the Canadian Market

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It’s a Big Country...Many Different Geothermal Types Exist
Simplified Cross-Section of Canada Depicting the Types of Geothermal Systems that Could Potentially Exist
2 Ends of a Market Maturity Spectrum Exist
Greenfield (Grants) and Co-Produced (Private Insurance)

Source: Seyidov and Weismann (2020)
CoProduced Fluids may be Ready for Private Insurance; Greenfield Projects Are Not

- The conversation around geothermal developers acquiring their own private risk insurance is premature for greenfield projects.
- The beginning of any new industry requires the assistance of the government.
- This has been the case for the geothermal industry in several International geothermal energy markets.
- The Canadian and Provincial/Territorial Governments can look towards these countries and their public geothermal insurance schemes.
  - CanGEA first introduced this concept to the governments in 2011.
- Almost/All greenfield projects are using Capacity Funding or Developer Grants.
O&G Data and Project Sites Offer Benefits, with Brownfield Pollution Risk
CanGEA stands firm on its belief of the ‘polluter pays’ principle. New legislation should consider the transfer of liability when repurposing wells for geothermal use

- “On the granting of a licence under subsection (1), the holder of the
  - former licence for the well or facility is relieved from all obligations under
  - this Act with respect to the well or facility except as to outstanding debts
  - to the Regulator or to the account of the orphan fund continued under the
  - Oil and Gas Conservation Act in respect of suspension or abandonment
  - costs.”
CanGEA believes that this section should read that only all “forward” liability should accrue to the new rights holder of the well.

- Successor liability creates a financial burden for geothermal developers before projects begin, as they are obligated to take on liabilities that they did not originally incur.

- Any past liabilities need to be the responsibility of the former license holder of that well or facility and anything after will be the responsibility of the new geothermal license holder.

- Everyone/every site in Alberta has ultimate recourse to the Environment Protection & Enhancement Act.
Priority Areas for Research/Projects (using Grants) Must Follow Commercial Readiness
For technology providers, this CanGEA report informed research and business plans by discovering what priority areas of research still remain unsolved and by identifying step-out applications for the markets they currently serve.
A Grant Opportunity Can Also be an Industry Barrier

- 2018 Canadian government chose to focus on electricity only projects
  - Heat allowed but not as the main/only goal
  - Fit geothermal into a grant for offshore wind, tidal (2nd generation renewables)
- Perturbed the industry (good and bad)
  - Created a wealth of technical advancements in HSA/O&G techniques
    - Go Saskatchewan!
  - Pushed projects to be larger as Economy of Scale is needed to payback cost
    - Now managing Major Projects, $$$
  - Accelerated policy in Alberta
    - Favours O&G incumbents
- Slowed the industry’s ability to build heat only projects
  - Created space for other competitors, Hydrogen/Renewable Gas, Electrification of Everything (EoE)
Technical Support Groups Should Be Choosing Projects Based on Commercial Readiness (a Precursor to Using Risk Insurance)

- Academic, Geological Survey, Provincial Geological Societies mandate
  - “…collaboration with the resources sectors, academia, communities, indigenous groups and government develops and shares unbiased and credible earth science research and data…”
  - Geoscience group opts to exclude geothermal project developers on its Technical Advisory Committee, yet this is standard practice for their Mining and O&G Committees

- Geological Survey of Canada/Geoscience BC joint work not commercially focussed for the near term:
  - Taking cues from incumbent Crown utility BC Hydro not needing electricity until >2040
    - Mount Meager is an ice-clad volcano situated 160 km north of Vancouver in the centre of the Garibaldi Volcanic belt. Understanding gained in the smaller Mount Meager area can be applied across the wider Garibaldi Volcanic Belt.
  - Economically viable heat projects in BC adjacent to supportive communities have been overlooked by Geological Surveys/Societies
    - This will slow down the geothermal insurance market in Canada
Geothermal Risk Insurance is Needed in Canada
Projects Exist at These Market Maturity Levels

- Grants
- Public Insurance Scheme
- Public Private Partnership
- Private Risk Insurance

- So how can the insurance industry become involved?
- How can the geothermal supply chain become more involved?
Become Involved in CanGEA’s Work to Participate in Governments’ and Geological Surveys’ Prioritization of “Support” (grants, free/cost shared research, etc.)