



March 2nd, 2021

To: Hon. Associate Minister Prabmeet Sarkaria, for Small Business and Red Tape Reduction
Ministry of Economic Development, Job Creation and Trade
7th Floor, 56 Wellesley St. West, Toronto, ON M7A 2E7

To: Hon. Minister Jeff Yurek
Ministry of Environment, Conservation and Parks
5th Floor, 777 Bay St., Toronto, ON M7A 2J3

Re: Regulation 98-12

Dear Associate Minister Sarkaria and Minister Yurek,

I am writing today to convey an urgent request to amend MECP's Regulation 98-12, which is outdated and causing irreparable damage to Ontario's small business in the Geo-Exchange ("Geothermal") industry. Amendments to the regulation would support recovery from *the COVID-19 economic recovery*. This regulation only *hurts* the more viable Ground Source Heat Pump (GSHP) installations, *not Air Source Heat Pumps (ASHP)* which decline in efficiency in our colder climates and require natural gas backup. It's critical to note that GSHPs are a "*load leveling*" technology, meaning the technology mitigates peak demand for electricity from Ontario's local electricity distributors during both our winter/summer peaking seasons.

Regulation 98-12 has been unchanged for 9 years, and as such, forces small businesses that need to custom-model sites before drilling deep boreholes, to first apply for an Environmental Compliance Approval (ECA) a process often taking 12 months, and in a recent case 1.5 years. The current regulation only recognizes the out-of-date standards and forces the industry to work with these older standards. This impedes construction, and hurts Ontario's local engineering firms, drilling companies, installers of Geo-Exchange equipment, investors, and project managers. Similar requirements are *not imposed* by the Provincial Government on water extraction, building shoring, installing sonotubes, or drilling/ trenching below 15 ft.

The immediate repeal or amendment of Regulation 98-12 is required owing to the following:

- Ontario's 45-year history of its Geo-Exchange industry has seen a spotless health and safety record of **zero fatalities**. The Ontario Government should be **rewarding excellence** for this industry's strong and recognized history of stringent safety practices.

- The Geo-Exchange industry is **already governed by CSA** (Canadian Standards Association) **Standards 448 and 131**, and the **Ontario Building Code**; and Regulation 98-12 can be **amended by embedding international standards into existing CSA Standards**.
- **Ontario's 2030 Climate Change commitment** to decarbonize its building stock via **electrification** requires regulatory improvements. It **will be impossible** to design and build to net zero by 2030 **without using Geothermal GSHP** installs in Ontario. The *Canadian Green Building Council's* database shows 28 Ontario projects using Geothermal to achieve the highest level of LEED. ([Canadian Green Building Council](#))
- Existing Regulation 98-12 is **incompatible with neighbouring US States like New York**, which, in February 2021, received a USD \$30m investment from Bill Gates' *Breakthrough Energy*, into *Dandelion Energy* to retrofit homes quickly with Geothermal. (<https://electrek.co/2021/02/18/egeb-dandelion-raises-30m-led-by-bill-gates-breakthrough-energy/>)
- **US Stimulus Bill Supports Economic Recovery Post-Covid** – From the *US Geothermal Organization*, based on a US\$100m incentive program per state:
 - State Sales Projections: Average sales of 200 units per month/ 2,400 per year.
 - Installation Jobs: Every 18 GSHP installs create one new job.
 - Jobs Created by end of Year 1: 133 jobs per state (2,400 units/18 installs per job)
 - Economic Spend: US\$2,000/Unit; Total of Job Creation Program is US4.8m p.a.
 - Labour: (Manufacturing and O&M Jobs): Every GSHP needs 24 hours of manufacturing and 32 hours of installation.
 - GHG reduction: Average 4 metric tons reduction x 24.4 years or 97.6 metric tons of GHG reduction over the life of one unit. Oak Ridge National Laboratory estimates 35-40 percent path for carbon reduction in the US building sector. Source: <file:///Users/admin/Desktop/Stimulus%20Bill%20-%20Geothermal%20Exchange%20OrganizationGeothermal%20Exchange%20Organization.htm>

Geothermal work and manufactured parts:

Skill Sets needed: Engineers, Designers, Energy Modelers, Net Zero Training, Finance etc.
Vertical or horizontal-outside work:

- Equipment: Drilling equipment, drilling specialty tooling, trenching equipment, plastic pipe manufacturing, pipe fusing tooling, grout material, thermo-fluid (food grade)
- Outside Labour: Skilled trained driller, trained pipe fusing, drill assistant, labourers
- Inside Labour: Heat pump installer training, refrigeration, system installation, electrical, plumbing, refrigeration
- Equipment: Heat pump equipment, electrical Equipment, plumbing material, HWTs
Note: Labour is typically 50-65% of the retail price of the geo-exchange installation.
- ***GSHPs reduce peak load and electric consumption*** impacts of aggressive electrification relative to ASHPs— particularly in colder climates. While GSHPs cost more upfront to install, the peak load and electric consumption benefits more than offset this additional cost. Increased ***investment in GSHPs reduce the need to invest in expanded electricity***

infrastructure by a greater amount – resulting in overall cost reductions for Canadians.
(Source: HRAI and Dunsky Report)

Recommendations:

1. *Update Regulation 98-12 quickly* to harmonize with international standards and remove harmful impediments to GSHP installs, and to Ontario's Geo-Exchange businesses.
2. *Encourage homebuilders and commercial developers*, to evaluate Geothermal technology options in order to reach *Net Zero* and *meet Ontario's Climate Change Goals*.
3. Recognize that GSHP technology used world-wide, and partly developed in Ontario back in 1948, has major *long-term benefits in energy/emissions reduction, storm proof resilience, and as a significant boost to jobs and skilled trades as the Province electrifies its buildings*.
4. *Accelerate Covid-19 Economic Recovery* with GSHP installation incentives, perhaps via local electricity distributors' programs, now administered through the IESO, or other means.
5. *Invest Provincial funding* today to grow the Ontario Geo-Exchange industry to advance manufacturing, modeling, engineering, drilling, and installation skills and training.
6. *Support Ontario's local manufacturers* with potential to export product to the US Market:
a) GeoFlex, London, b) Skymark (Johnson Controls. Mississauga) and c) CGC Bulldog Equipment Fergus-(Now 50% owned by a large Swedish conglomerate NIBE).

We look forward to hearing back from you on this long overlooked and important issue.

Sincerely,



Dan Goldberger

President and Chairman of the Board, Ontario Sustainable Energy Association

CC Heather Potter, Chief of Staff, Associate Minister's Office - Small Business and Red Tape Reduction
Nicholas Stacey, Executive Assistant to Minister Yurek
Stan Reitsma, Chair, Ontario Geothermal Association
Gino Di Rezze P. Eng., Groundheat Solar Wind Corp.

Sources:

- New York State (and now Connecticut) is a model for implementing rapid Geothermal installs via State (NYSERDA) incentives with its 6 utilities based on the output of the heat pump's heating capacity. Incentives also include detailed energy modeling and names qualified contractors; <https://www.nyserda.ny.gov/nY/PutEnergyToWork/Energy-Program-and-Incentives/Renewable-Technology-Programs-and-Incentives>
- US Federal ITCs provide Geothermal with a competitive leveling to other favoured renewable energy technologies (26% in 2021 and slightly declining thereafter). <https://www.jdsupra.com/legalnews/congress-extends-renewable-energy-tax-98223/>
- DUNSKY Energy Consulting Report on the value of Ground Source Heat Pumps in Canada with support from Heating, Refrigeration & Air Conditioning Institute. <https://ontariogeothermal.ca/ClientFiles/images/Dunsky-OGA-Benefits-of-GSHPs-for-Beneficial-Electrification-FinalRevised.pdf>