MARYLAND GEOTHERMAL ASSOCIATION

March 5, 2021

Chairman Delores Kelley and Members
Finance Committee
Miller Senate Building
Annapolis, MD 21401

Re: SUPPORT – SB 810 – Renewable Energy Portfolio Standard and Geothermal Heating and Cooling Systems (Feldman)

Dear Chair Kelley, Vice Chair Feldman and Members of the Senate Finance Committee:

The Maryland Geothermal Association (MGA) asks that you move favorably on Senate Bill 810 -- Renewable Energy Portfolio Standard and Geothermal Heating and Cooling Systems. MGA represents the residential and commercial drillers, installers and manufacturers that comprise our State's geothermal industry.

By harnessing the thermal energy in the ground beneath our feet, geothermal systems are the most efficient, reliable, and lowest carbon approach to electrifying heating and cooling in buildings. Geothermal heat pumps (GHPs) are recognized by the U.S. Environmental Protection Agency as among the most efficient heating and cooling technologies currently available and are up to 500% more efficient than standard heating systems. According to Maryland Commission on Climate Change's "Decarbonizing Buildings in Maryland" report, released in September of 2020, geothermal heat pumps are up to 500% more efficient than standard heating systems and outperform all other electrification technologies, such as air source heat pumps, and offer even greater emissions reduction.

Furthermore, as has been noted in several of your committee hearings this session, the most recent Annual Maryland Public Service Commission Report shows that a staggering 82.6% of all RECs retired in Maryland are generated outside of the State. Our RPS is currently benefitting other states from a dollars and jobs perspective; this bill would go a long way in changing that since geothermal systems require the building of actual infrastructure here in the State by Maryland workers.

All that being said, the geothermal industry is where solar and wind were 15 years ago. Customer adoption is just beginning to accelerate. Despite the high efficiency and tremendous potential of GHPs, they currently account for only a small fraction of the heating and cooling market. This, historically, is due to higher up-front costs, low consumer awareness, and inadequate state incentives.

MGA is working with our fellow industry stakeholders and supporters – including environmental justice advocates and labor organizations – to overcome existing awareness and cost barriers. SB 810 will

provide the incentives we need to dramatically grow the GHP market here in the state of Maryland and allow us to invest in the cleanest and most efficient electrification technologies to benefit our economy, our environment, and ALL Marylanders, not just the top-income earners.

HB 810 creates a modest carveout for RECs generated by geothermal systems installed after December 31, 2021. Within that carveout, the bill also requires that 25% of all projects benefit low and moderate income homeowners and communities, which will ensure a more equitable deployment of GHPs in our state.

It also requires that all larger-scale projects – specifically, multifamily housing and commercial projects such as schools, hospitals, office buildings, etc. – be installed by companies that provide family sustaining wages, health-care, career advancement training, fair scheduling, employer-paid workers' compensation and unemployment insurance, a retirement plan, paid time off, and the right to bargain collectively for wages and benefits. Additionally, for those large-scale projects, the bill also requires that the installation company must ensure that at least 10% of the employees working are enrolled in an apprenticeship program approved by and registered with the State or the Federal Government.

As Maryland moves to meet the State's ambitious target to reduce emissions by 40% by 2030 and 80-95% of gross emissions by 2050 as outlined in the 2019 Greenhouse Gas Reduction Act (GGRA) Draft Plan, it will need not only to decarbonize its electricity grid, but to dramatically reduce its reliance on the fossil fuel energy sources that currently heat the majority of the State's residential and commercial buildings. About 17.5% of Maryland's greenhouse gas emissions come from heating and cooling in buildings. High-efficiency GHPs must be part of the solution.

How Geothermal Heat Pumps Work

GHPs work by collecting heat from the ground, where it remains a constant 55 degrees Fahrenheit year-round and transferring it to heat a home or business. In the summer, the system works in reverse, collecting heat from the building and transferring it to the ground.

Installation takes place in two steps. First, a contractor drills holes underground and insert buried pipes filled with fluid (called ground loops) that are used to transfer heat between the building and the ground. (The loops are either vertical or horizontal loops depending on the installation site.) The contractor then connects these loops to the interior of the building. Second, the contractor installs a heat pump inside the building that exchanges and concentrates heating energy between the building and the loops. The system life is estimated at up to 24 years for the heat pump and 50+ years for the ground loop.

Ratepayer Impact

For electric utilities, GHPs offer significant grid benefits by increasing baseload demand without meaningfully increasing seasonal peaks. This is in contrast to technologies such as air source heat pumps (AHPs), which provide electrification benefits, but also increase peak usage dramatically. A

study by the Brattle Group found that fully electrifying Rhode Island's heating sector using GHPs would only minimally impact peak demand and leave energy prices unchanged, whereas switching to AHPs would nearly double the peak and increase electricity prices by up to 20%.

Impact of geothermal on jobs in Maryland

Geothermal energy is a labor- and capital-intensive industry that creates high-paying jobs in Maryland. Just as the solar industry retrained local contractors, the geothermal industry does the same for the HVAC contractors and for oil, gas, and water well drillers. Geothermal installation jobs are high-skill and high-wage, with geothermal drillers making $75,000 to $120,000 or more per year. We estimate that each system installation creates 1 week's worth of work for a crew of 5. A steady stream of geothermal installation work supplements income for HVAC professionals, or in the case of well drillers, helps keep their companies in business. Many well drillers now make the majority of their income from geothermal projects, since the same rigs and equipment used to drill water wells are used for geothermal. Without the presence of geothermal projects in Maryland, this industry would shrink greatly and we would lose much of our in-state well drillers and drilling expertise. Even today, many Maryland-based companies that provide geothermal services travel out of state to find work in better market opportunities, particularly in neighboring Mid-Atlantic states and New England.

Access by Low- and Moderate-Income Families and Individuals

MGA is focused on ways to democratize the geothermal market and enable any homeowner to afford and install a geothermal system and see instant energy bill savings. We are striving to find ways to enable geothermal providers to enter the market, create a new wave of good-paying clean energy jobs, and significantly lower the energy bills and carbon footprint of Maryland's households and businesses. Increased incentives would help open up the market to lower and middle-class homes and drive the kind of customer adoption and innovation we've seen with solar throughout the State. We are hopeful this bill, should it become law, would serve to democratize geothermal efficiency and savings and make it accessible to all.

Once again, the Maryland Geothermal Association asks that you pass this important piece of legislation to grow GHPs in Maryland and help establish our state as a national leader in the adoption of clean, renewable heating and cooling technologies.

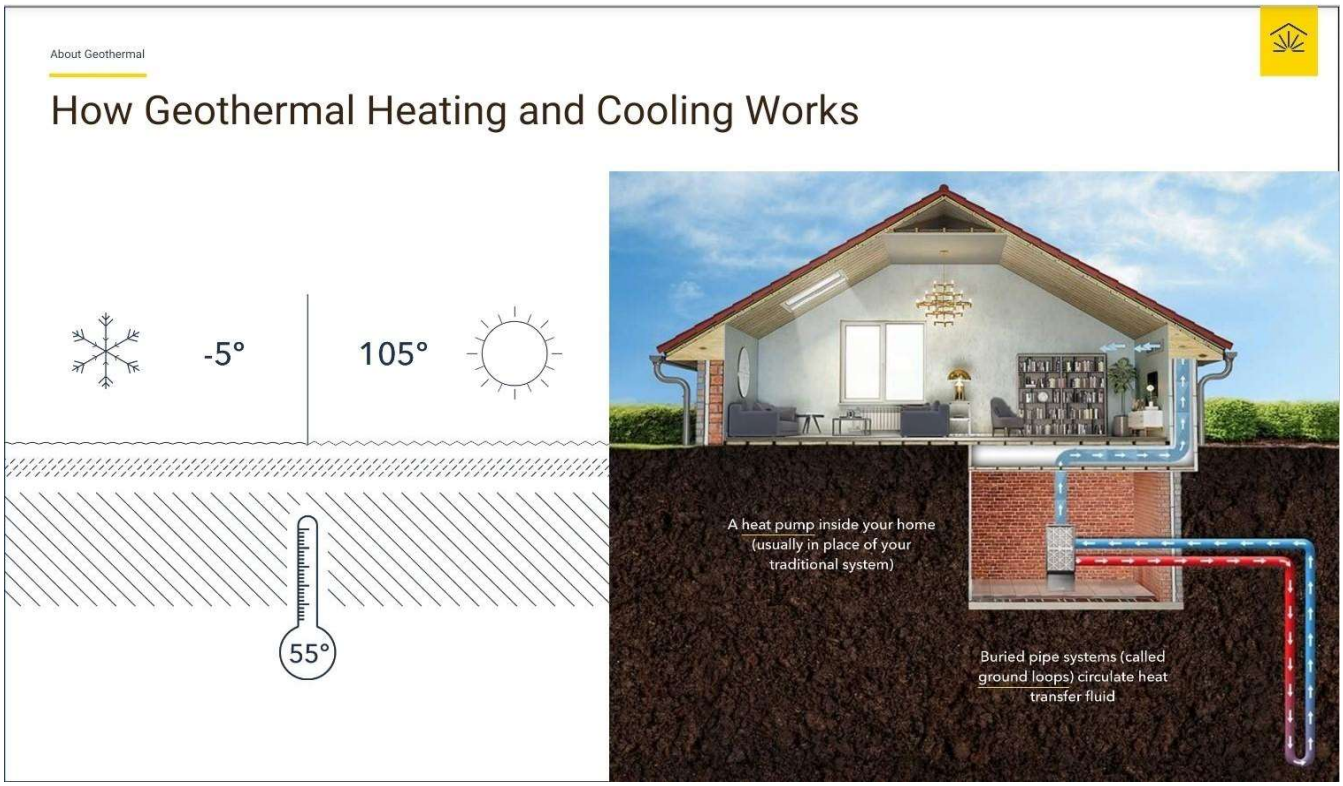
Sincerely,

Adam Santry

Adam Santry
President

1 State Circle
Annapolis, MD 21401

410.268.3099



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