MGA
MARYLAND GEOTHERMAL ASSOCIATION

January 26, 2021

Chairman Dereck Davis and Members
Economic Matters Committee
House Office Building
Annapolis, MD 21401

Re: SUPPORT – HB 40 – Maryland Energy Administration Study on Geothermal Heating and Cooling Systems and Geothermal Energy Workgroup (Charkoudian)

Dear Chair Davis, Vice Chair Dumais, and Members of the Economic Matters Committee:

The Maryland Geothermal Association (MGA) asks that you move favorably on House Bill 40 - Maryland Energy Administration Study on Geothermal Heating and Cooling Systems and Geothermal Energy Workgroup. 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.

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 to overcome existing awareness and cost barriers. Maryland should be a national leader in geothermal energy. However, the State's current incentives for GHPs are a fraction of leading states like New York and Connecticut. It is our hope that this MEA study and corresponding group of stakeholders will work collectively to craft and submit informed recommendations to this committee as to how to achieve effective and substantive growth of geothermal in Maryland. While we know it offers numerous potential benefits, we still lack a detailed understanding of the specific

impacts that expanding geothermal would have in Maryland as well as recommendations on the level and types of incentives needed in the State to best develop the market.

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.

Sincerely,

Adam Santry

Adam Santry
President

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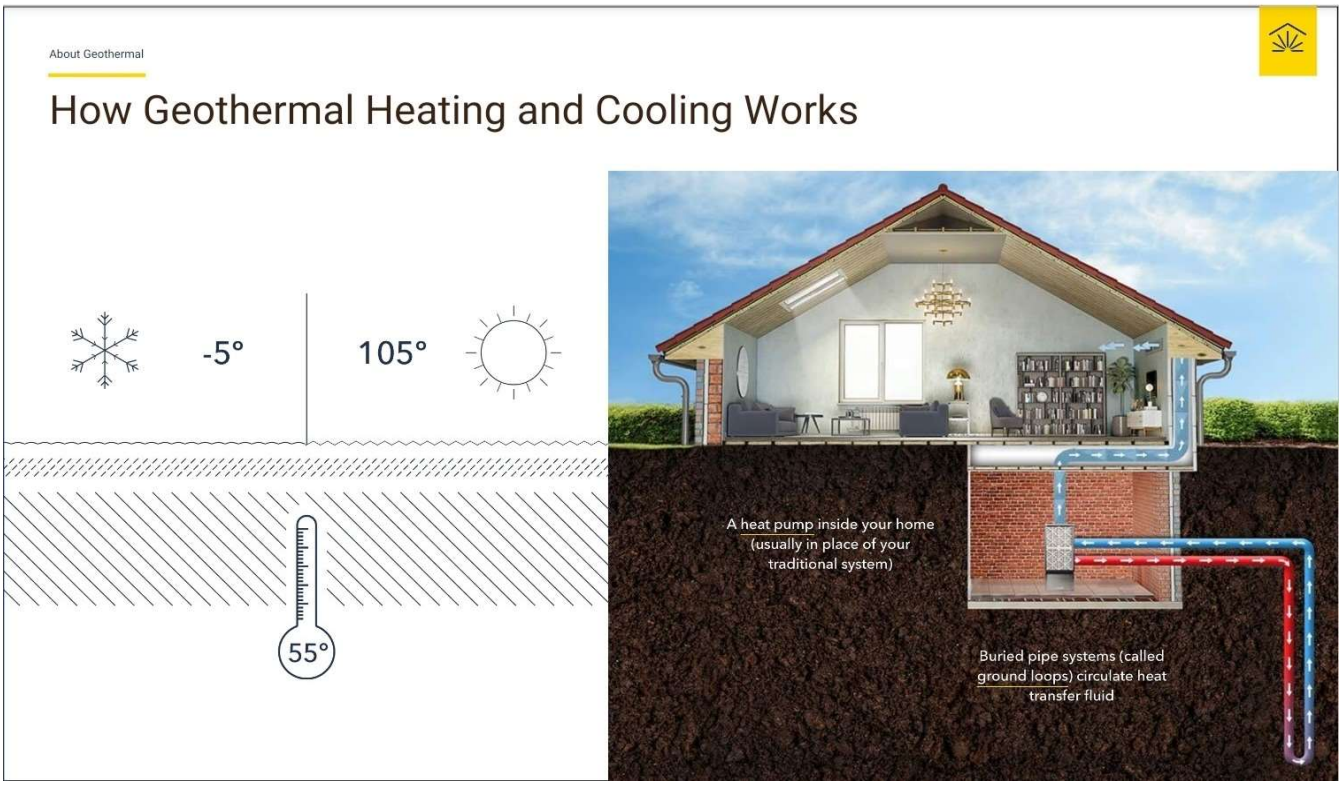
MGA
MARYLAND GEOTHERMAL ASSOCIATION



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